Elements of a Hermeneutics of Knowledge in Government

The Coalition of Public Sector Reform and Enterprise Resource Planning

Thesis submitted to the Faculty of Information Technology in partial fulfilment of the requirements for the degree of Doctor of Philosophy at Queensland University of Technology

Helmut Klaus

Brisbane 2004
*Frontispiece and caption from: The management cockpit [ca. 1999]. Singapore: Origin Asia Pacific [commercial flyer]
Who ordered the scale of the market? 
And who demands that everything be weighed on it alone?¹

Abstract

In techno-organisational innovation, knowledge is reconstituted. Understanding this process in its complexity and its outcomes asks for an inquiry and interpretation that heed to the conditions at the end of modernity, and must therefore take recourse to practical philosophy. This understanding has been formulated with reference to a field study that inquired into the conduct of reform and effectuation of new information technology by the central department of a regional government over a period of approximately eight years. In considering this ambience, the study has been informed by (i) a synopsis of hermeneutic thinking on knowledge; (ii) an outline of governmentality and (information) technology; (iii) a reflection on the conditions of the social sciences and their relation to information technology; (iv) an exploration of the possibilities of social inquiry at the end of modernity. Deliberating the stipulations of social inquiry, the destructive narrative is proposed that allows for a rational and argumentative appropriation of the past, beyond scientific method and mere perceptivity. Events, ideas, and experiences indicate the reciprocal relation of political and organisational rationalities, on the one hand, and managerial and informational technologies on the other. Within these dimensions, the knowledge of governmentality is being re-defined, shifting expertise into the harness of business discipline. The rationalities of information, process, integration, prediction and performance, and ultimately efficiency, make bureaucracy itself an object of increased scrutiny. These rationalities also remind that the challenge of Ge-stell and the rule of politics-as-fabrication do neither come to pass primarily in implementations of managerial technologies, nor in instantiations of information systems, but within the articulations of the technological worldview. Due to the fragmented and contentious nature of knowledge, innovation as routine nevertheless appears disjointed and asynchronous, yet upholding the representational and disciplinary constellations.
Acknowledgements

For this piece of work to be commenced, carried through, and completed, the help of others was indispensable. Their sincere and honest support is highly appreciated. I am grateful to Guy Gable for accommodating my studies within a research project that was co-sponsored and co-funded by SAP Australia, and which provided me with an Australian Postgraduate Award – Industry (APAI) scholarship. I feel particularly obliged to the managers at Queensland Treasury who participated in my investigation, and shared their experiences. I extend special thanks to John Weatherley and Michael Bucior for this aspect, and to Aaron Palmer who piloted me through the riffs and shoals of conducting field research between the shores of a modern government administration.

I am very thankful to Christine Bruce for originally sending me on this way when supervising my master’s studies and for lending her full support to this more daunting endeavour. Jörgen Sandberg deserves special thanks for his subtle direction at an early stage of the project, initiating questions that significantly strengthened my approach. I am indebted to Carol Steiner for an inspiring exchange on Martin Heidegger’s philosophy and contemporary science studies, and to Rafael Capurro for communicating his insights into the onto-theological grounding of a certain strand of philosophy of science.

Last but not least, I want to thank Tina Thornton for her professional services in editing and layout.
## Contents

*Towards a Phenomenological Account of the Completion of Organisational Modernisation*

**Chapter 1: The Question of Knowledge and Technology in Modern Organisations**

- On Theory and Practice of Understanding ............................................................... 4
- The Practice of Questioning and the Questioning of Practice ............................... 9
- From Projections towards Phenomena ................................................................. 12
- Confinements and Potentialities ........................................................................ 14

**Chapter 2: Thematic Overview** ................................................................................. 15

- Acquisition .............................................................................................................. 15
- Synopsis ..................................................................................................................... 15

1. **Knowledge in Modernity: Technology and Information**

**Chapter 3: Problematising Knowledge in Organisations** ....................................... 19

- Knowledge as Object ................................................................................................. 19
- Knowledge as Social Cognition ................................................................................ 23
- Knowledge as Involved Interpretation .......................................................................... 26

**Hermeneutics and the Phenomenology of Science and Technology as a Way of Interpreting Knowledge in Organisations** ......................................................... 28

**Chapter 4: Recalling Knowledge with the Phenomenology of Science and Technology: Projecting, Representing, Ge-stell** ................................................................. 31

- Existential Pragmatics or Philosophy of Modernity? .................................................. 32

**Hermeneutics as Uncovering of Knowledge** ............................................................. 34

- Hermeneutics—From Exegesis to Existence .............................................................. 34
- Knowledge in the Hermeneutical Circle ........................................................................ 35

**The Phenomenology of Science and Technology in the Modern Age** ......................... 38

- The Truth of Science ................................................................................................. 40
- Practice and Way of Knowing of Science—Research and Theory ............................. 42
- Projection and Rigour ................................................................................................. 43
- Method and Objectness ............................................................................................. 44
- Specialisation and Ongoing Activity .......................................................................... 47
- Truth as Representation ............................................................................................. 49

**The Essence of Technology—Representation and Ge-Stell** ...................................... 54

- The Insufficiency of the Anthropological and Instrumental Determination of Technology ......................................................... 55
- The Technological Essence of Science ....................................................................... 60
- The Essence of Information Technology—the Information Ge-Stell .......................... 61

**Language in the Information Ge-Stell—Information** .................................................. 63

- Information as Representing Nature—Challenging Disclosure and Sufficient Reason ......................................................... 64
- Language as Instrument for Communication—Language as Information ................. 65
- World as a System of Information—Cybernetic Interpretation of Man ................... 69

**Information as Anthropological Category** ............................................................... 73
Representation, Information, Organisation and Information Technology ..........77

Response to the Pro-Vocation—Knowledge-as-Information and Myth ..........78
Organisational Information Systems as Objects of Knowledge ........................................... 78
The Securing of Organisational Information Systems—Myths of Knowing and Organising ..... 81

Response to the End of Metaphysics—Overcoming or Negation ..........82
Dialectic versus Ontology or “Difference in Accent”?............................................ 83
The Historicity of Hermeneutics—Technology and Humanism ........................................ 89

II. Knowledge in Modernity: Social Science, Liberalism, Management

Chapter 5: Social Sciences and Governmentality — Power/Knowledge in Modernity .................................................................................................................................93

Power in Modernity ...........................................................................................................94
Power as Actualisation of Action and Speech in the Public Realm.................................. 95
The Reification of Power—Politics as Fabrication ......................................................... 97
De-Politicised Action—Scientific Research and the Uncertainty of Processes.................. 100

The Knowledge of Technologies of Power—Social Sciences ......................................101

Governmentality—the Liberal Constitution of Government, Economics and Society109
The Reason of the State and Theory of Police ................................................................. 111
Liberalism—Creation of New Knowledge of Man ......................................................... 113

Chapter 6: The Rationality and Technology of Neo-Liberal Public Sector Reform119

Problematising Government Reform—Paradigm Change or Paradox Diversity?....119
Public Choice—the Neo-Liberal Criticism of Politics .................................................... 122
The Market—homo oeconomicus and Allocative Efficiency ......................................... 124
Management—Administration of Production and Engineering Efficiency ..............128
Management—Efficiency through Accounting ............................................................... 129

Efficiency in Public Administration—Public Management by Accounting ..............133

Chapter 7: Commodified Management Knowledge: Information Systems and
Expertise .................................................................................................................................137

Commodification of Information Systems and Management Knowledge—From MIS to ERP .............................................................................................................................138
The Organisation as Picture ............................................................................................. 140
Information Systems Expertise ...................................................................................... 141
The ERP Narrative ......................................................................................................... 145
The Limits of Information Systems Knowledge .............................................................. 147

Information Technologies in Public Administration—Neo-Liberal Government and
Expertise ..............................................................................................................................148

Chapter 8: Representation and Rationality—Utility and Action.................................153

III. A Description of the Re-Constitution of Knowledge in Government Reform

Chapter 9: From Phenomenological Reflection to Destructive Narrative.............159

Reflecting On Information Technology—the Pertinence of Hermeneutics ..........160
Conditioning Modern Society—the Social Sciences and Information Technology...161
Governing Information Technology—Social Scientific Projections of Im-Position ..162
Responding to Modernity—Communicative Rationality or Reflective Openness ....168
Qualitative Social Research—Understanding as Scientific Method......................174
Interpretation Beyond Method—Dismantlement and Dialogue..............................179
Chapter 10: Narrating Modernisation ......................................................... 224

Chronology of Reform and Technology .................................................. 252

The Coalition of Public Sector Reform and Enterprise Resource Planning .... 256

From ideal to the real ............................................................................. 256
From rule to transaction ........................................................................ 257
Supplementing the reason of the state with economic reason .................. 257
From economic reason to business accounting ...................................... 258
... to eliminate waste ........................................................................... 259
... from authority to delegation ............................................................. 260
... through commitment ...................................................................... 263
... with assistance ............................................................................... 264
... with software .................................................................................. 266
... with information ............................................................................. 270
High tier consolidation ......................................................................... 272
The true costs of costing — ................................................................... 278
calculate ... ......................................................................................... 280
and discipline ....................................................................................... 283
Consolidation deferred—accounting and accountability ......................... 285
Expertise in transition—mediating the blueprint .................................... 288
The benefits realisation campaign ........................................................ 293
Benefits realisation guidelines ............................................................... 294
Benefits realisation workshops .............................................................. 297
Benefits realisation conference .............................................................. 299
Benefits realisation network .................................................................. 299
Non-commercial management knowledge mediation – the pitfall of transposing strategy and methodology ................................................. 303
Scheme and review—............................................................................ 304
... ontic structures, institutionalisation of innovation ............................... 306
and periodic intervention ...................................................................... 309

Chapter 11: Governing Efficiency or the Essence of the New Public Management is nothing Managerial ................................................................. 315

The Efficiency Narrative ....................................................................... 317

The Efficiency Technology ................................................................... 318
Accounting ........................................................................................... 318
Information Systems ............................................................................ 319

Truth as Efficiency and Knowledge as Information ............................... 320
Efficiency and the Dissolution of Objectivity ........................................ 320
Knowledge-as-Information as Concealment ......................................... 322
Towards a Phenomenological Account of the Completion of Organisational Modernisation

Chapter 1: The Question of Knowledge and Technology in Modern Organisations

Modern organisations, whether governments or corporate businesses are always innovative, they are always re-organising themselves, which suggests that they are in a state of “routinization of novelty”\(^1\). Knowledge appears to be both a force and an outcome of the re-making of organisations. Information technology in general and organisational information systems in particular, are intrinsically linked to organisational innovation. Information systems determine how organisations become known by producing images of the organisation and by structuring practices. Organising is articulated in terms of application of information technology—both knowledge and information systems appear instrumental in innovation. Innovation itself largely appears as an economic, rational, and technical response to a change of circumstances in the organisational environment.

Yet, despite the significance of knowledge and technology within perpetual innovation, reflection upon their nature has largely disregarded their temporality. Similarly, it has been only minimally acknowledged that reorganising is political (meaning initiating something new), is always carried by action and speech, and its outcomes are inherently unpredictable. Thus, the rather common idea that knowledge is a category of human existence in its temporality appears to be rather absent from contemporary academic discourses. Consequently, knowledge is presented:

- as knowledge-as-information, i.e., as the communication of something useful, and as shaping action, as reporting and effecting;
- within the juxtaposition of involved interpretation,
- and also as the colonisation of lifeworld by expert knowledges;
- as oscillating between a personal and tacit dimension and explicitness within communities;

− as devoid of any humanistic connotation, being the outcome of the interactions of forces within a network that consists of any kind of matter.

In turn, technology appears to be:

− a totality of artefacts;
− an assemblage of artefacts, their experts and users;
− instruments that serve human purposes, or
− influences on extant forms of human life.

The obliviousness towards the non-instrumental dimensions of the categories of knowledge and technology suggests a certain hubris that asserts knowledge and technology as manageable, and thus void of political connotations. Understanding what happens in innovation is thus hampered in that common sense regards knowledge and technology as instrumental and rational, while the political dimension of change remains in limbo, despite the insight that “management is political”\(^1\). Alternatively, specialisation and representation in scholarly domains concerned with information technology and organisations are committed to a mode of knowledge that precludes stepping out of these bounds. To give an understandable account of knowledge and technology in innovation, knowledge and technology must be reflected upon, an activity however not possible in the very same mode of knowledge, in which innovation comes to pass.

Consequently, not only in order to render the complexity as it is encountered within an organisational setting\(^2\), these chasms need to be surmounted. It is necessary to try (1) to abandon representational thinking, since it disallows reflection on itself—and (2) since it lacks basic utility for guiding action in everyday life\(^3\), to make understanding practical. Since scientific knowledge \textit{per se} has severe difficulty in claiming relevance for consideration of past actions and potential alternatives for the future in organisational contexts, a different approach has to be taken to avoid selectively objectifying certain aspects of the world. This approach must pre-empt ill-founded explanations that would put the potential practical relevance of an inquiry at risk.


Inquiring into, and reflecting on, the endeavour of techno-organisational innovation calls for interpretation of the concepts of knowledge, technology, and politics and their interrelatedness. Hermeneutics is concerned with understanding, and its task is interpretation. As hermeneutical philosophy established by Martin Heidegger, it has illuminated the workings of science and technology as setting up the human condition in the modern age, and thus rendered an interpretation of modernity of our era. Hermeneutics not only reminds us to heed language in the form of speech and texts, but also opens a way of comprehending the social, theoretical, and practical conduct of humans. The pertinence of hermeneutics is further warranted by the centrality of information technology and language to innovation. For hermeneutics, information technology (as suggested by Rafael Capurro and Gianni Vattimo), is essentially neither a rule nor an apparatus, but a generalised attitude towards the world. It is also described as the “Ge-stell of information” that becomes evident in the view of language characterised by domination through representation. Information technology “operationalises … the correspondence view of language”\(^1\) and the view of the world as a picture\(^2\). Simultaneously, information technology not only creates an image of world within the instrumentalist-scientific perspective but also creates an image of itself in the form of tales of performance and improvement. In other words, narratives are intrinsically bound up with information technology praxis\(^3\), meaning that in terms of knowledge, formalisation and representation belong to information technology, as well as the constant assurance of its benefits and their future accomplishment. Lastly, hermeneutics reminds us to be reflective of the human condition, including reflection on the knowledge and status of the inquirer. Innovation is an event of the public world and therefore the encounter of different ways of being human—as manager, technologist, consultant, or as researcher. It is thus an encounter of different ways of reasoning, and of the changeover from one realm of knowledge and truth to another. In acknowledging the manifoldness of knowledge and truth, the following consideration of governmental and technological innovation follows a:

‘hermeneutic’ logic that seeks truth as continuity, ‘correspondence’, dialogue between texts, and not as the conformity of what is said to some

---


mythical state of affairs. … It emphasize[s] the plurality of ‘tales’ and put[s] it to use in freeing ourselves from both the inflexibilities of monological tales and the dogmatic systems of myth.¹

For the conduct of social inquiry that improves understanding and may alter practice, searching truth following a hermeneutic logic means firstly to critically reconsider everyday and scientific concepts that are saturated with instrumental and representational connotations to make apprehensible the notions and propositions about ‘reality’ they continue. Secondly, this inquiry can only proceed from an awareness of what it means to understand, both in theoretical and practical terms. A brief hermeneutic elaboration on assertions and questions, interpretation and understanding may help to articulate the vocation of the inquirer. This will provide the background against which to reconstruct the evolution of my questions in this project.

On Theory and Practice of Understanding

Understanding, within scientific discourse, means to be able to control and/or predict; it is synonymous with positive knowledge. Comprehension of this nature does not befit the investigation of human affairs². In contrast, for Hannah Arendt understanding of our present condition means to encounter reality attentively and impartially³. Understanding as a human category as distinguished from scientific understanding has been determined by her as follows⁴:

– Understanding “is an unending activity by which, in constant change and variation, we come to terms with and reconcile ourselves to reality, that is, try to be at home in the world.”⁵

– “Understanding is unending and therefore cannot produce final results.”⁶

– Understanding “is the specifically human way of being alive; for every single person needs to be reconciled to a world into which he was born as a stranger and in which,

¹ Vattimo, The transparent society [La società trasparente, English], 26.
² The problematic of a positive knowledge of man and society has been expanded on in the section The Knowledge of Technologies of Power—Social Sciences.
⁴ Ibid.
⁶ Ibid, 308.
to the extent of his distinct uniqueness, he always remains a stranger. Understanding begins with birth and ends with death.\textsuperscript{1}

\begin{itemize}
  \item “The result of understanding is meaning, which we eventuate in the very process of living insofar as we try to reconcile ourselves to what we do and what we suffer.”\textsuperscript{2}
  \item “Knowledge and understanding are not the same, but they are interrelated. Understanding is based on knowledge and knowledge cannot proceed without a preliminary, inarticulate understanding.”\textsuperscript{3}
  \item “True understanding does not tire of interminable dialogue and ‘vicious circles’, because it trusts that imagination eventually will catch at least a glimpse of the always frightening light of truth.”\textsuperscript{4}
\end{itemize}

This determination of the process of understanding is distinct from the common preoccupation with methods and facts in social research. Hans-Georg Gadamer characterises methodical and factual knowledge as the outcome of the “definite conditions of methodological abstraction” to which scientific undertakings are subjected; that abstraction is the foundation for “the successes of modern sciences”, while closing-off “other possibilities for questioning”\textsuperscript{5}. This entails that, within the “possibilities of knowing and making” of modern science and technology, their founding suppositions are also left largely unquestioned\textsuperscript{6}. Against the shunning of questioning within modern knowledge, Hans-Georg Gadamer posits the “first determination” of “modern hermeneutics”\textsuperscript{7}, namely that “[n]o assertion is possible that cannot be understood as an answer to a question, and assertions can only be understood in this way”\textsuperscript{8}. This delimits the significance of statements made by science and the figures established by statistical method, since:

\textbf{[...]} what is established by statistics seems to be a language of facts, but which questions these facts answer and which facts would begin to speak if other questions were asked are hermeneutical questions. Only a hermeneuti-

The search for meaning, the inquiry into what is at stake, when some assertion is uttered implies that knowledge is relativised by understanding. According to Hannah Arendt, pre-understanding and understanding gained through interpretation are the conditions for knowledge having substance at all:

Understanding precedes and succeeds knowledge. Preliminary understanding, which is at the basis of all knowledge, and true understanding, which transcends it, have this in common: They make knowledge meaningful.²

Yet questioning, and hence interpretation and understanding, are contingent themselves and not human activities that occur randomly within the encounter with the world. On the contrary, understanding is guided by interests from its very beginning, without which there would be no drive to understand. It is therefore untenable to assume that what we want to interpret and understand is subject to liberal choice and may be guided by “[a] neutral, completely objective concern”³. Since the inquirer is already determined by interests that are both knowable and subconscious, the question why this involvement emerges is ever present⁴. If someone wants to understand something, the interest is not to receive the message of an objective assertion. “On the contrary, we have to get behind such putative facts in order to awaken our interest in them or to make ourselves expressly aware of such interests.”⁵

The search for motivations and interests is a recurring process in which questions are turned into answers, which may subsequently be subject to further scrutiny. This review of statements is a critical response to the experience of the world, and is actually the basis for all interpretation, in that meaning is sought beyond judgements that are readily available. “Without an inner tension between our anticipations of meaning and the all-pervasive opinions and without a critical interest in the generally prevailing opinions, there would be no question at all.”⁶

---

¹ Ibid.
⁴ Ibid.
⁵ Ibid.
This (critical) questioning as the way to understanding is nothing excogitated, but rather belongs to ordinary, everyday practice. If a question is not understood immediately, only by eliciting the "motivating meaning" can the lack of understanding be remedied by directing the searching for an answer. This is such a commonplace happening that abstracting from presuppositions is actually a contrived undertaking. It is even more unreasonable to assume that statements can be analysed or interpreted without reflecting on their background and to what questions they respond. Consequently, "in any research project, it is required that one elaborate an awareness of the hermeneutic situation. That has to be our initial aim when we approach what the question is." Retracing the concatenation of statements, questions and motivation should not be taken as psychological exploration into subconscious suppositions; rather it brings into awareness what has been obscured and implied. Within academe, it requires imagination to bring forward pertinent questions. For the inquirer:

> [i]magination naturally has a hermeneutical function and serves the sense for what is questionable. It serves the ability to expose real, productive questions, something in which, generally speaking only he who masters all the methods of his science succeeds.

The awareness of the hermeneutic situation that should precede any systematic interpretation is, according to Hans-Georg Gadamer, carried by the insight that the labour of understanding is both infinite and restricted. Firstly, to exhaustively reveal motives and interests is inconceivable; it should nevertheless be attempted to a feasible extent, since "[o]nly then we are in a position to understand the statements with which we are concerned, precisely insofar as we recognise our own questions in them." Secondly, restriction of the hermeneutical project arises out of impediments proffered by assertions and textual matter, and it is terminated by the retrieval of shared meaning in the form of acknowledgment of diverging beliefs or prior misunderstanding.

From the awareness of the ambiguity of the hermeneutic situation—of the infiniteness and boundedness of interpretation and already implied in the "very word hermeneutics and its cognate word interpretation"—it becomes obvious that the truth claim of interpretation is entirely different from that espoused by science. Whereas scientific knowledge is oriented towards the explanation of "a fact completely through deriving all

---

1 Ibid.
2 Ibid.
its conditions; through calculating it from the givenness of all its conditions; and
learning to produce by artificial arrangement”, the outcome of the hermeneutic
endeavour always concedes “to be no more than an approximation: only an attempt,
plausible and fruitful, but clearly never definitive”.

Since understanding and interpretation always need to go beyond “the simple application
of a general knowledge of rules to the statements or texts to be understood”2, and can
never restrict themselves “to register what is there or said […] the hermeneutical ex-
erience has a far less degree of certainty than that attained by the methods of the natural
sciences”3. Thus, in forsaking the certitude of methodically establishing facts, the herme-
neutic situation is therefore more of an “adventure”4. While it is precarious, it also bears
positive potentiality in terms of “broadening of our human experiences, our self-
knowledge, and our horizon, for everything understanding mediates is mediated along
with ourselves”5.

This determination of understanding and interpretation and the difference of the herme-
neutic experience towards, and its primordiality over scientific and factual knowledge,
simply precludes that contemporary hermeneutics may be regarded as offering a novel
method of interpretation, or making prescriptions about understanding6. It is however:

a theoretical attitude toward the practice of interpretation, the interpretation
of texts, but also in relation to the experiences interpreted in them and in our
communicatively unfolded orientations in the world. This theoretic stance
only makes us aware reflectively of what is performatively at play in the
practical experience of understanding.7

Hermeneutic theory should be understood in the sense given to teoria by Aristotle—
namely that it should be bare of any considerations of utility, while simultaneously main-
taining the “primacy of ‘practice’”8. This practice is communication, since understanding
is conditioned by language and rests on articulation that makes it communicable9. Within
communicative practice, the hermeneutic experience “always harvests a broadened and

1 Ibid, 105.
3 Ibid, 110.
5 Ibid, 110.
6 Ibid, 111.
7 Ibid, 112.
8 Ibid, 111.
9 Ibid, 110.
deepened self-understanding. But that means that hermeneutics is philosophy and as philosophy it is practical philosophy”¹.

The Practice of Questioning and the Questioning of Practice

The preceding description could be taken as if I sought recourse to adventurous imagination in order to justify statements that could not be upheld against the scrutiny proffered by rigorous methodical assessment. My primary intention is, however, to present an account of the emergence of my questioning that eventually resulted in the following report. It is understood that my interests have been partly conditioned by the constraints and relative comfort of a sponsored research project. These conditions are similar across a range of topically diverse endeavours, and presumably, rather external to the evolution of reflection on what became thematically evident and therefore explored. I would claim that what shaped the overall inquiry could be circumscribed as the contention associated with the interrelated dimensions of theme, method, and reflexivity.

The issue of understanding innovation and the changes in knowledge that it brings about becomes even more pressing when change occurs in government, an institution crucial for the social world. The issue becomes more compounded, when organisational and technological transformations are occurring concurrently. This is the case in government reform in OECD countries, which gained considerable momentum during 1990s in re-shaping administration according to managerial principles and business information systems.

This situation was present in the case that eventuated the following investigation. The case thematises the introduction of public sector reform and information systems within a core department of a state government. It further focuses and how this department acted as mediator of organisational change and information systems implementation towards the other departments.

The theme—namely how to scope the study, in which site to conduct the field inquiry, and so forth—was determined by practical and methodical considerations. The methodical aspects were reflected back on the methods or approaches considered and eventually applied. Within the dimension of reflexivity, I sought to articulate issues of social science, both in regard to the specifics of the site being selected as well as to the project.

At the outset, the inquiry was circumscribed by the overall theme of the major project of which my work was a part. Thus, my initial direction was to investigate the (re)constitution of information systems expertise and management knowledge in organisations within the context of the adoption of standard business systems—mostly known as enterprise resource planning (ERP) systems. This issue became prevalent due to the management knowledge purported to be accommodated within the design of the information system, on the one hand, and the significance of external expertise in making these systems work on the other. These two trends suggested that a great deal of mediation of management knowledge and information systems expertise had taken place, which may have triggered changes that had reshaped management knowledge and IT expertise across organisational boundaries. The clustering of management knowledge and expertise was supposed to be a matter between the user, the developer, and third party IT experts. Given the diverging interests of these three parties, I assumed that the process of adoption of these standard business systems was a matter of interpretation performed by the actors and that power relations would become visible within their interpretations of the organisation and the information system. My emphasis was therefore not to define management knowledge and IT expertise in terms of the novel standard business system, but rather to identify how these knowledges were shaped in the process of the systems adoption. In brief, my conceptualisation of the process was that learning was co-constituted by politics. Furthermore, I saw my task as reconstructing events and relations, rather than addressing problems ‘out there’. The concomitant method to be applied to this endeavour was an approach known as actor-network theory, which supposedly allowed for extensive reflection of the mutual conditioning of technology and society. This positing of method and questioning corresponded to the tendencies in organisational and information systems research to turn towards interpretation—the relation between technology and organisation, and the accompanying power relations.1

Practical and methodical considerations suggested that it was not feasible to pursue the theme across a spectrum of diverse organisations. From a practical perspective, multiple case studies involving a detailed analysis appeared to be unmanageable with the resources available. Methodically, the appropriateness of conducting of multiple case studies was doubtful, given the level of detail sought, and that high level abstraction

1 In the section Organisational Information Systems as Objects of Knowledge, a brief overview of these tendencies is given. Chapter 9: From Phenomenological Reflection to Destructive Narrative deals extensively with the problematics of interpretation in the world of technology.
from the context of investigation was not the intent of the study—especially since this was not in accord with the chosen method. Consequently, the study was thematically delimited to a public sector organisation.

Giving due attention to the type of organisation to be studied resulted in having to account for another dimension of politics—the politics of government that are prepared and executed through administration. The adoption of standard business systems co-occurred with a comprehensive reform endeavour that sought to reconceptualise the workings of government administration. Thus, to inquire into the episodes of change, the topic had to be recast as the constitution of management knowledge and information systems expertise in government reform. The ensuing and final iteration of the topic emerged from interaction with the field, and has been reported in the following. To relate its emergence, I need to discuss first matters of method and reflexivity.

Against the prevailing view of knowledge as something neutral and sanitised from any potentially contentious aspects, my intention was to use the concept as articulated within the approach of actor network-theory—namely knowledge as emerging out of action that brings forth new technology and new social relations. Due to the apparent affinity in terms of method and conceptualisation between the tenets of actor-network theory and earlier contributions to that problem (such as those by Hannah Arendt and Martin Heidegger), I decided to examine from the ‘original’ (phenomenology) onto the ‘derivative’ (actor-network theory). Presumably, this step would permit a more thorough assessment of the latter. Eventually, I became critical of actor-network theory, since it imposed peculiar concepts and terminology, which, in my view, did not allow for a critical approach towards knowledge in terms of science and technology. I felt it was open to ambiguities in mimicking the worldview of those groups whose working and acting was made the object of study. Moreover, its stringent focus on local practices appeared to limit the potential to establish a historical perspective.

This contention had alerted me to the problem of reflexivity in the context of social inquiry. Reflexivity entails to be critical about disciplinary boundaries, grand theories, and methodical regulation. Being critical about the conditions of modern knowledge production means also not casting the outcomes of investigations into models and prescriptive conclusions. Simultaneously, reflection on the context of my intended field study brought to mind the affiliation between the business of government administration and
the social sciences. This area had been explored from its origins by Michel Foucault\(^1\), who had stressed the nexus between the developments of the human sciences and modern government. This also helped me consider the knowledge of government. Social science disciplines, namely a certain branch of economics and management science, also provided the discursive grounding and practices for government reform. Bringing social science, information technology, and governmentality simultaneously into view eventually allowed me to frame the question about the reconstitution of knowledge and practices within government in a comprehensive way. It no longer supposed merely an import of private business theory and practice into the public sector and finding its technological complement in business automation software.

**From Projections towards Phenomena**

This brief overview of the evolution of my investigation highlights that my pursuit of the initial question regarding the constitution of information systems expertise and management knowledge in organisations did not assume any problems ‘out there’, nor was it perceived as a mission to establish the facts. Neither did I adopt a way of binary thinking—of working under the premise that success or failure of the information system could be identified; that information technology was imposing constraints or was ‘enabling’; nor on a more general level, that technology is a master or an instrument. Nor did I want to adhere to essential definitions of a standard business system, for example, and from that derive its desirable ‘application’ by the user.

I would rather claim that I have avoided abstraction demanded by rigid adherence to a method. Concurrently, my further questions have emerged from interaction with the conditions in the field, and the constitutive discourses. From the outset, I have applied a critical stance in trying to identify the interests that have eventuated statements and events, and have inspected current conceptions—such as those of ‘knowledge’ or ‘efficiency’. My interpretative efforts have not yielded findings that are offered with the intent of being of immediate usefulness. I have understood my endeavour as assembling a story from texts and conversations in order to find a meaningful answer to the simple question ‘What has happened?’ without simplifying towards cause and effect relationships.

\(^1\) Hubert L Dreyfus and Paul Rabinow, *Michel Foucault: beyond structuralism and hermeneutics; with an afterword by and an interview with Michel Foucault*, 2nd ed. (Chicago, IL: University of Chicago Press, 1983).
In terms of the stipulated dimensions of innovation, knowledge, politics and information technology, the ambience of government reform suggests the following constellation that was sought to respond to in the investigation:

− Innovation in government is characterised by the intermingling of three strands of scientific-instrumentalist knowledge, each following its own temporality. These strands are (1) management knowledge as it has emerged historically within a particular setting and constantly having been infused by thinking developed in the academic area; (2) the postulates and prescriptions emerging out of the mediations of the neo-liberal reform agenda; and (3) the templates and visions of organisation purported by business systems.

− Concurrently, the politics of techno-organisational innovation in government can be located in three different spheres. It can be seen as (1) the political-economic project of neo-liberal government reform that spans all levels of government, instructed and monitored by special commissions and academic advisers; and on a more pragmatic level, as (2) the cognitive politics of implementing the reform within the government organisation, which interacts with (3) the cognitive politics of deploying concomitant business or resource planning systems, also involving the computer and service industry (developers, consultants).

− Lastly, information technology within techno-organisational innovation in government needs to be considered (1) as social technology—the rules and procedures by which the organisation generates and processes information (e.g., accounting); (2) as artefacts, or the business or resource planning systems (hardware and software), which have come to be seen as co-extensive with organisational rules due to their imbedded rules and organising imperatives.

In conclusion, the guiding questions of the following inquiry have neither been cast in the sense of: How is it possible to innovate better? Or, how and why does ‘instrumental reason’ fail?

On the contrary, to understand organisational and technological innovation in government it has been asked: What is knowledge? What is government reform? What are information systems? What are the scientific-representational principles on which they are grounded? What image of man is projected and prescribed in these knowledges and technologies? Ultimately, the determination of the shape of knowledge must
necessarily reflect back on the conduct of and the reporting on the inquiry. Consequently, an attempt has to be made to inquire and to understand human affairs beyond representation, positive knowledge, and onto-theological commitments.

Confinements and Potentialities

In attempting to understand as interpretation that transgresses domains, and necessarily their projections and methods, the objective of creating knowledge within the confines of research is forsaken by default. Instead, this approach needs to be cognisant of the risk that emerges from the general weakening of truth claims and take it on as a challenge. Reflexivity and narrativity in social inquiry and the concomitant insecurity about method may thus be taken as rendering a potential to evolve theory and practice of questioning and reporting. This theory and practice, in correlating experiences with contemporary thought, must cope with the fragmentation of the former and the displacement of propositional knowledge and ensuing prescriptions of the latter. It thus leaves behind the security of expert knowledge and the common acceptability of its claims, while striving for exploration of alternatives within dialogue.

These aims are exposed to a range of confinements. The prevailing form of knowledge makes it difficult to avoid the mode of propositions and the imposition of meaning. In an ambience where change is the rule, stories that reflect on past events may have very little attraction to participants in the field. This consequently limits the potential of a dialogical endeavour that could provide a new opening. Alternatively, the explicit communicative and dialogical nature of this social inquiry also makes it difficult to anticipate its practical implications; this is usually the case when recommendations based on methodical abstractions are administered.

Largely due to the demands of accommodating different discourses for communication of results, the dialogical side of hermeneutic inquiry has only been implemented to a limited extent. This means that, apart from the impossibility of attempting a proof of utility in terms of research, an inconclusiveness of this study remains when appraised against its own pretence.
Chapter 2: Thematic Overview

Acquisition

The principal supposition of the ensuing elaborations is that hermeneutics proffers the concepts to deal with questions and dilemmas of our era. At the outset, therefore a discussion of hermeneutical thought on knowledge, information, technology, and language is offered. These ideas provide the backdrop for an attempt at demonstrating of how knowledge comes to pass in government reform and information systems induction. Methodically, the study subscribes to the unity of theory and practice in hermeneutic social inquiry and seeks to further a determination of the task and mode of social inquiry as practical philosophy. This is done in contention with prevailing modes of investigation in the techno-organisational domain, which tend to lack a critical stance towards techno-science, or still tend to appeal to critical students, despite being veiled apologetic pastiche.

Synopsis

The following chapter questions modern conceptions of knowledge in organisations, which present it as either objective or constructed, and as a-temporal and beyond location—as knowledge-as-information. Critiquing these prevailing conceptions opens a view on the organisation-technology relation that does not reify, and avoids mystification and instrumentalisation through an interpretative understanding that overcomes the paradox of applying instrumental reason to the thematisation of techno-science.

This thematisation is carried out in chapter four based on the observation that at the end of modernity, the mathematical projection of nature and society sets the standard for truth and knowledge, obviating the distinction between natural and human sciences, as well as the separation between basic science and applied science (technology). This determines the essence of knowledge as technological, which is conspicuous in information technology that is intrinsically connected with representation, effecting that the world becomes known as pictures produced and reproduced through a techno-scientific perspective. Knowledge-as-information is the consequence of representation.
that is actualised in the formalisation of language as language-as-information. Simultaneously, representation is crucial for organising and therefore fundamental to information systems. The instrumental conception of representation obscures that it is constituent to domination by knowledge, while its reification deflates its emergence and consequently its contingency.

After the political dimension of knowledge and technology production has already been alluded to, chapter five proceeds from the concept of power as specific constellations of practices and knowledges that became institutionalised as the sciences of man and modern government. Government institutions are thus agents within the generation of scientific images of the world.

This is perceptible, as elaborated on in chapter six, in the reshaping of governments in OECD countries, which has been informed by neo-liberal doctrine and scientific management, and is approaching its completion since the mid-1990s through the explicit adoption of business accounting and management models into core administrative functions. These reforms are fusing theoretically the tenets of neo-liberal economics with managerial principles, and practically technologies of accounting with information technology, supplemented by sophistication of political arithmetics. The image of man and society (homo oeconomicus) of neo-liberal doctrine is transposed into public administration through its derivative of public choice theory. It provides the discursive means to problematise traditional practices, and a normative frame for the design of new coordinating mechanisms in the form of the structure of the multidivisional corporations and ‘the market’, meant to ensure productive and allocative efficiency.

Chapter seven explores the archetype of commodified management knowledge in the form of standard business software and related expertise, which happened to co-constitute the knowledges and practices of the new public management. The attachment of external expertise (i.e., management consultants) to generalised management knowledge and information and communication technologies represents the consummation of general managerial principles—such as efficiency and control—based on the perspective of process and integration and embedded into templates and instructions.

The elements of a hermeneutics of knowledge in government are synthesised in chapter eight, before turning to methodical considerations in the following. The latter attempt to take stock of the relation of social science with information technology, with an
emphasis on interpretative methods. The vocation of social inquiry is conceptualised as
retrieving a different interpretation of the organisational condition, as opposed to
instrumental reason—pervasive in formal organisations that move towards automation
and information—that is oblivious to other dimensions of knowledge production. These
considerations are facilitated by a hermeneutic turn in many fields of social science,
particularly in organisation studies, which substantiates an orientation towards inquiry
and reporting that aspires to a form of knowledge that regards openness to experience of
the world as taking precedence. This form of knowledge of the social world does not
appeal to the impregnability of techniques in producing verity, but rather corroborates
forsaking foundational ‘principles’ that pre-configure an interpretative effort.
Concurrently, an orientation towards praxis and speech overcomes the juxtaposition of
facts and stories. Currently dominant approaches to inquiry into techno-organisational
setting however fail to heed the crisis in social science. One approach is guided by social
theory that commits itself to the ideal of transparent communication and its alleged
emancipatory potential, combined with the urge of defining interpretative research via
method, thus reverting to the conventional practice of science as research,
simultaneously seeking disciplinary control. The other one, originating from science and
technology studies, has turned out to proffer a veiled but veritable apology of the
business of science in a sociological pastiche.

In contrast, social inquiry heeding the hermeneutic situation of the social sciences deals
productively with the crisis in method, reflexivity and the turn to narrativity. Reflexivity
is not a methodical twist, but primarily a call to reflect on the conditions of modernity,
entailing the phenomenological task of destruction—to criticise theories and worldviews
by analysing their presuppositions. Narrativity is conceived of as an outcome of those
conditions, rather than an object of research and literary style of reporting—restoring
temporality and not obscuring the preliminary and fragmented nature of interpretation.

The narrative presented in chapter ten is an assemblage of fragmented re-descriptions of
processes and events as they could be retrieved from documents and through conversa-
tions with a selection of key personnel involved in the reform of a state government. The
inquiry focused on the ‘lead agency’ within the reform endeavours—the Treasury de-
partment—and covers a period of approximately eight years. The aim of the narrative is
to reconstruct the evolution of the knowledge of the government organisation in both
senses of the genitive. Organisational (management knowledge) has been re-constituted
Corresponding to the three levels of management—financial-operational, cost measuring-
managerial, and policy measuring-strategic—in the adaptation and development of cal-
culative technologies and attempts to establish their affinity with standard business soft-
ware. The notion of efficiency established the truth of organisational knowledge. Yet, the
ultimate knowledge of efficiency associated with the combination of strategic and per-
formance information against the background of financial information proved to be unat-
tainable. Nevertheless, the lead agency increased its ontic power by assuming responsi-
bility in the establishment of strategic measurement knowledge. This move diminished
the significance of information technology and associated expertise, which was
paralleled by the technologists defining themselves in terms of the technical rather than
aspiring to ‘strategic’ status.

In closing, chapter eleven seeks to analyse the preceding narrative, in the light of the
concepts that have been evolved in the first two sections, and the methodical
considerations from chapter nine, and reminds to attend to the destructive or corrosive
tendencies of modernity, and the ensuing limitations of narrating at the end of
modernity.
Chapter 3: Problematising Knowledge in Organisations

The notion of knowledge has been appropriated in discourses around computers and organisations. In these discourses, there has been frequent recourse to philosophical treatments of knowledge, with the aim to develop theory towards an applicability of this category in managerial and technological contexts. These references are eclectic, since they are made arbitrarily to validate an already determined viewpoint rather than contributing to philosophical discourse. The problematic nature of these rhetorical moves and the underlying intents has been widely acknowledged. Yet, technology and management discourses espouse conceptions of knowledge that present it synonymously with information, instrumentalise it as a thing, or alternatively as a social construction. It appears that abstract views of knowledge prevail that separate it from truth and its social and temporal divergences and deflect from its potentially contentious nature. These reductionist determinations of knowledge that do not consider its present conditions are therefore unavailing for understanding social practice; however, they have to be inspected as a mode of contemporary thinking. This is a hermeneutic task, not only in the sense of interpretation, but first and foremost as a way to respond to the conditions of modernity, for which these derived modes of the existential category of knowledge are constitutive.

Knowledge as Object

The ongoing preoccupation with the topic of knowledge in a range of scholarly disciplines and fields of practice indicates that knowledge has become something problematic and questionable. In contrast, popular accounts in these discourses affirm that knowledge is formal and distinctively operational: “The knowledge we now consider

---

knowledge proves itself in action. What we now mean by knowledge is information effective in action, information focused on results.\(^1\) The dominance of this approach to knowledge has been described by Rafael Capurro as “[i]nformation is the shape of knowledge at the end of modernity”\(^2\). Equalising knowledge with information has been summarised as “knowledge-as-information”\(^3\). This modern determination of knowledge allows viewing it as an asset, as a resource or factor of production, and as manageable in a formal way. It is supported by constructs such as the data-information-knowledge continuum that is based on empiricism already refuted by a range of philosophical traditions during the last century\(^4\).

As asset, resource, or factor, ‘knowledge-as-information’ is an object for management. Thus, being a trope in managerial discourse, this conception is indicative of how organisations are conceived of, and consequently acted upon, by management. This reification of knowledge can be seen as an outcome of theory-praxis nexus of management. Organisational research, theory, and its domain of intervention or field of practice stand in a complemental relationship to each other. In this way, the work of academics pursued in the scientific tradition of positivism has informed management practice, while the factory and its operation has served as an exemplar for the theoretical elaborations in academe\(^5\). This has resulted in the conventional conceptions of organisation as the object of management, and of how the managerial subject should act. An organisation is commonly depicted metaphorically as a machine, while “practical action [is] predominantly conceived of as involving the manipulation of inanimate and animate resources to achieve certain ends”\(^6\).

---

4 Ilkka Tuomi, “Data is more than knowledge: implications of the reversed knowledge hierarchy for knowledge management and organizational memory,” in 32nd Hawaii International Conference on System Sciences (Maui, HI: 1999).
5 Addleson, “Organizing to know and to learn: reflections on organization and knowledge management.”
6 Tsoukas and Cummings, “Marginalization and recovery: the emergence of Aristotelian themes in organization studies,” 656. The most obvious manifestation of the productionist conceptions of the notion has of course been triggered by the knowledge management ‘discipline’, which has spawned neologisms such as knowledge transfer—instead of teaching and learning or training—as well as representations of knowledge objects in process diagrams.
Due to the influx of information technology into the environs of formal organisations, information became an object for management. The linear means-ends relationship that defined managerial acting became amplified through the image and expectation of information technology, resulting in a reasoning that Richard Boland has rightfully dismissed as a manifestation of myth. He identified five fantasies making up that myth: (a) information is structured data, (b) an organisation is information, (c) information is power, (d) information is intelligence, and (e) information is perfectible. This organisational information/knowledge myth is based on a reductionist view of human understanding and agency; in particular, it purports that:

- meaning can be present without human interpretation, it can be reified;
- organising is performed by making decisions upon information, thus denying the primordiality of action over articulated intentions and knowledge;
- power is something substantial and acquiring and controlling information is a way to possess it, thus ignoring the duality of the power relationship and objectifying it;
- structured data and their computing through machines equals intelligence that consequently ceases to be a human accomplishment, and
- it is legitimate to pursue the objective of complete information, and hence eradicating the historicity and situatedness of human knowledge.

These assumptions provide the fertile ground for “[d]igital narratives [...and which] emphasise what will be accomplished while downplaying current achievements, which are inevitably more modest than the predictions.” Thus, the rationality of management in conjunction with the image of information technology has evinced a myth of information, which eventually shaped the conception of knowledge.

---

3 Ibid.
4 Ibid.
This event is in contrast to the claim that the current era is characterised by the end of the meta-narrative\(^1\). Although the traditional meta-narratives are no longer valid, it now seems as if the “epistemic master narrative [of information has emerged.] which translates all problems of knowledge into problems of coding”\(^2\). It presents “information […] as the lifeblood of the modern organization, a necessary condition for the decision making subject ‘management’” correlating to, and legitimising information systems\(^3\).

The meta-narrative of information, including ‘knowledge-as-information’, could appear as inconsequential except for the ensuing scepticism and even cynicism that antagonise expectations constantly carried to the excess. Yet, being dismissive about it under the motto ‘hype versus reality’ and regarding it merely as a marketing plot is actually untenable since it separates discourses from praxis\(^4\). On the contrary, everyone concerned with information systems is “implicated in digital narratives” and actually within the “IT praxis of which they are part”; these “[d]igital narratives are influential in the kinds of products and systems we create”\(^5\). Downplaying the narrative would otherwise also belittle the imports of these products and systems and disregard that:

[d]atabases, information and expert systems, software packages of one or the other kind are not exercises in disinterested forms of thinking, but the result of complex and persistent efforts to embody in material the organizational-

---


\(^3\) Ibid. Alluding to the elusive and all encompassing use of the notion, ‘information’ has ironically been named the “phlogiston of the 20th century”, likening it to an imaginary chemical substance that was believed to be real in the 19th century; see, Eckhard D Falkenberg and others, A framework of information system concepts: the FRISCO report, web ed. (Leiden: Department of Computer Science, University of Leiden, 1996/1998).

\(^4\) Boland, “The in-formation of information systems,” 376.

\(^5\) Coyne, Technoromanticism: digital narrative, holism, and the romance of the real, 15. E Burton Swanson and Neil C Ramiller, “The organizing vision in information systems innovation,” Organization science 8, no. 5 (1997): 460. is a functionalist explanation of the digital narrative in terms of product promotion. It originates from the creators of techno-organisational products and services and serves to interpret, legitimise, and mobilise. Interpretation means a narrative to put the product into context and reduce uncertainty. Legitimation links the vision to an issue that is currently of interest for management and is also exercised through the authority of the vision’s promoters and its early adopters. Mobilisation refers to the vision being co-constitutive with the social environment that allows for the communication between the participants of the marketplace by means of items such as publications, conference-expositions. An alternative conceptualisation of the innovatory management dicourse has been proposed by Eric Abrahamson, “Management fashion,” Academy of Management review 21, no. 1 (1996). Metaphorically linking techno-organisational transformations to aesthetic experience appears to belittle the significance of the discourse. Considering mainly the legitimisation needs of the adopters in terms of the norms of rationality and progress, as Abrahamson does, suggests that the particulars of any ‘innovation’ are rather negligible.
administrative models, and the social and cultural characteristics such prac-
tices and models imply.¹

The view of the world implicated in, and summarised by, the conception of knowledge-
as-information thus becomes effective in novel organisational arrangements and
information systems, which in turn are founded on a projection of social being.

Knowledge as Social Cognition

The digital narrative of knowledge-as-information as an organisational instrument that is
mastered by technology implies that knowledge can be reduced to something that can be
ultimately formalised has become questionable. This was not because information sys-
tems implementations and corporate restructuring legitimised by these narratives were
not always performing to expectations set into them. Rather it seems that the view of
knowledge as ‘thing’ became counterbalanced by the perspective of knowledge as human
accomplishment that comes to pass within particular communities, or by the tenet that
knowledge is social cognition. This contradistinction is based on constructionist
accounts of knowledge that perform “the abandonment of the idea that knowledge is
something separate from the knower”².

This “new problematization of knowledge” is based on “the assumption of the ‘non-posi-
tivist’ nature of knowledge”, which is commonly supported by pointing to Michael Po-
lnayi’s³ juxtaposition of tacit and explicit knowledge⁴, or the sociology of knowledge
and social constructionism⁵. Social constructionism is the inversion of the positivist view
on knowledge—instead of positing, that humans acquire facts relating to what is out-
there, it proposes that significance and meaning are created and negotiated within
communities⁶. It is a pastiche of social theory composed of certain tenets of
phenomenologists and concepts from hermeneutics, the later Wittgenstein and activity

¹ Jannis Kallinikos, “Organized complexity: posthumanist remarks on the technologizing of
² Capurro, “Hermeneutics and the phenomenon of information.”
³ Michael Polanyi, The tacit dimension (Gloucester, MA: Peter Smith, 1983).
⁴ Richard Hull comments that the notion of tacit knowledge was invented by Polanyi in order to
support his political objective of waging a propaganda campaign against state planning of science.
⁵ Richard Hull, “Actor network theory and conduct: the discipline and practices of knowledge
⁶ Addleson, “Organizing to know and to learn: reflections on organization and knowledge
management,” 148, George Von Krogh, “Care in knowledge creation,” California management
theory, meaning that in the constructionist problematisation ‘… ‘knowledge’ has been taken out of the hands of philosophers and placed in the safer keeping of other experts’[1].

Within management and IT discourses, the thematisation of knowledge emanating from a selective and unreflective appropriation of theoretical tenets, disregarding the pre-existing and conflicting assumptions, has stimulated numerous “working definitions”, for example, that of Davenport and Prusak who, after diffidently pointing to “epistemologists[‘]” failure to render “a definitive account” to their liking, stipulate that:

[k]nowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms.2

Extreme “vagueness” has been observed in this kind of working definition3. However, it appears that it is not because these attempts do not actually propose any delimitation of their object, but that by imposing plausibility they blatantly cover up any other consideration. Alternative endeavours to operationalise the concept either have proposed typologies according to assumed properties of knowledge4 or have suggested using the word to relabel conventional concepts5. Common to these labours of conceptual adaptation is their “ontological incoherence”, and obviously strict avoidance of matters relating to knowledge that have some potential to be contentious. In particular, the question of the epistemic quality of knowledge claims, or the relation of knowledge and truth—as well as the question of the socio-political dimensions of knowledge, or the relation of knowledge and power6. The functional creed has no interest in the re-

---


vealing potential of conceptual correlations and distinctions and is content with the working of notions to sustain discourses and associated practices. Hence, ‘working definitions’ appear to be of a rather apologetic nature, as observed by Richard Hull, who sees within management and associated academic inquiry the: “development of a body of discourse, which treats ‘knowledge’ as a unit of analysis. An additional feature of that discourse is the utilization of theories of knowledge as a rhetorical justification for particular forms of economic intervention.”

The presence and dominance of this body of discourse does not necessarily imply that inquiry might be restricted to debunking, for example, knowledge management, and critically observing the practices that are surrounded by it. The seizing of knowledge as a unit of analysis should not foreclose the possibility of using the notion as a thread in a narrative on techno-organisational innovation. On the contrary, the inadequacy of the objectifications of knowledge, the jumble that its functionalist conceptualisations eventuate, rather demand that their triviality is made obvious and that all this is in fact indicative of a certain obliviousness. Thus, conceptions of knowledge, whether as information or as construction, cannot be simply discarded as being just arbitrary excogitations. They are a way in which this category appears, and is being utilised in world making. Yet, working definitions and typologies of knowledge surmise that their meaning is in the eye of the beholder and imply that it can be drawn upon as deemed fitting. The participants of the knowledge discourse seem to have lost sight of the academic business they inhabit, and consequently, the crucial phenomenon that knowledge comes to pass in our time in one particular way—and that is science. Gianni Vattimo describes this simple fact as follows:

Modern science is not one of the possible forms of knowledge, i.e., one of the possible modes in which internal articulation of a determinative precomprehension takes shape: for this would imply that such modes could be lined up next to one another on a transcendental level, as possible ‘dimensions’ of reason. Rather it is an aspect of the epoch of Being in which we find ourselves.

Even when the intent is to delimit the claims put forward to functionalise knowledge in technology and management discourses, and when interpretative approaches are pursued to criticise the reification of the category, this rather prosaic insight into the nature of knowledge in modernity remains mostly unacknowledged.

Knowledge as Involved Interpretation

Exemplary for approaches that respect the integrity of philosophy and refrain from utilising concepts to confirm pre-determined patterns of theorising are those by Lucas Introna and Haridimos Tsoukas. Their contributions can be distinguished firstly with regards to the explicitness by which reference is made to hermeneutics. Lucas Introna explicitly takes recourse to Martin Heidegger’s existential hermeneutics, while Haridimos Tsoukas’ contribution builds on elements of hermeneutic reflection, which are not however articulated as such. Another distinguishing feature is their contemplation of information technology and organisation. Lucas Introna sees the narratives around information technology as conveying a distorted image of managers’ knowing and acting, while Haridimos Tsoukas, on a more general plane, seeks an interpretative-pragmatic grounding for knowledge in organisations.

Lucas Introna\(^1\) has sought to tackle the problem of knowledge and information in organisations in particular by relativising the significance of reports from information systems for managerial decision-making. His attempt is based on an anthropological depiction of the manager’s acting and thinking with information technology, and builds significantly on Martin Heidegger’s analysis of *Dasein*. Lucas Introna juxtaposes the manager’s everyday involvement as actor in the organisation with the claims of the scientific mode of knowing as mooted by the proponents of management information systems, decision support systems, and the like. His principal argument is that the manager always already understands how to deal with the information supplied by the computer system, which forms the basis of his capacity to act. Algorithmically generated ‘information’ is thus subsidiary, rather than essential for managerial decision making, and the interpretation of data is not objective but rather situational and shaped by interests.

---

Although Lucas Introna pays close attention to the issues of understanding and action for management, it appears as if this emphasis in attempting delimitation actually downplays the role of representational knowledge in organisational settings. Facts and proposed programs of action and the information technology generating it are depicted as being mere pieces of equipment in everyday involvements, which they are clearly not. Information technology and its output are not things that can be dealt with deliberately, as something that lends support to rhetoric in one way or the other. Thus, despite having taken interpretation and politics into consideration, Lucas Introna seems to have only adopted the existential side of hermeneutics, while his analysis is largely unaffected by its criticism of science and technology.

Haridimos Tsoukas in his unthematised hermeneutic reflections demonstrates that knowledge is far from being an entity that, provided the proper governance of machines and people, can be mastered at will. He objects to the representational worldview and insists on the equiprimordiality of understanding and doing. He rejects the distinctions (explicit/tacit, individual/social knowledge) that are drawn based on an individualistic view of human beings, and stresses that speaking and doing always occur against a common shared background that never becomes fully articulated. Reification of knowledge and separating it from doing has serious limitations, as practices can never be fully described, since this would imply that human acting is fully predictable and at the same time could be captured in adequate representations, which is not the case. Humans’ knowledge is finite, and a practice can only be articulated in interpretations. Furthermore, when acting, humans are doing this based on their own dispositions and the expectations directed towards them. The choices that open up for acting depend on what is seen to be relevant within a local context. Haridimos Tsoukas thus argues for the centrality of interpretation for the constitution of all knowledge, its inseverable nexus with practice, its elusiveness—since it resists delineation and predictability—and, being related to judgment, its always emergent character.

1 Capurro, “Informatics and hermeneutics.”
2 Lucas Introna’s approach appears to be based on an infelicitous appropriation of Martin Heidegger’s concept of “world” as put forward in *Being and Time*, the limitations of which have been made ostensibly clear by the philosopher in Martin Heidegger, “The age of the world picture [Die Zeit des Weltbildes, English],” in *Martin Heidegger: The question concerning technology and other essays* (New York, NY: Harper & Row, 1952/1977).
Haridimos Tsoukas\(^1\) introduces a range of elements of hermeneutic contemplation, such as the equiprimordiality of understanding and doing and the shared horizon that is both the enabling condition and the delimitation of knowing. Also included is the centrality of interpretation to attain knowledge about practice, which in turn is guided by interests and dispositions, and the contextual nature of relevance into the discussion of formal organisations. Yet, the derivative character of knowledge in relation to understanding and practical involvement does not appear to have been clearly explicated. In focusing on local contexts and practices, the question of mediation across social entities (inter-organisational, markets) remains relatively open. Haridimos Tsoukas’ knowledge-about-practices viewpoint appears to neglect the truth aspect of knowledge, or its political-epistemological dimension. Lastly, he does not take into account knowledge based on the scientific paradigm and its prominence for contemporary organisational life, omitting a significant historical phenomenon.

It appears that these interpretative approaches have been firstly struggling with the apparent duality of knowledge. Knowledge is seen as being derived from understanding and the concomitant social and temporal circumstances. Concurrently, representational knowledge with its truth claims that transcend localised and temporal conditions holds sway in all walks of life. Secondly, concentrating on the interpretative foundation of knowledge, they seem to have lost sight of its historicity. Hence, interpreting and accounting for knowledge in organisations needs to overcome this perceived ambiguity, and heed to its epochal nature as well.

**Hermeneutics and the Phenomenology of Science and Technology as a Way of Interpreting Knowledge in Organisations**

The aim of social inquiry is to improve understanding of social practice. Improved understanding means firstly to understand differently. To understand differently entails approaching inquiry with a critical stance. This critical stance is firstly derived from the condition that management knowledge and information technology expertise are based on representational thinking or the paradigm of scientific knowledge\(^2\).

\(^{1}\) Ibid.

Understanding differently and critically is supported by hermeneutics. Contemporary hermeneutics is critical in that it does not subscribe to the fundamental assumption of representational thinking and scientific knowledge, which is the division between mind and exterior world; it is also realistic in that it does not set out with the questioning of the reality of an exterior world. Simultaneously, hermeneutics acknowledges the condition that “science is the standard for truth and knowledge in modernity.” Hermeneutics therefore provides an opening to speak differently about knowledge and truth—which entails knowledge within technological and organisational innovation—under consideration of our present epoch, and thus to seek to reveal some new insight.

Yet, this opening cannot be found in the traditional view of “[h]ermeneutics understood as theory of interpretation.” It is rather hermeneutic philosophy that has not aspired to develop a methodological framework for the social and human sciences, but is directed towards language, science and technology and the human condition in a way, as formulated by Hans-Georg Gadamer:

Language is the fundamental form of operation of our being in the world and the all-embracing form of the constitution of the world. Hence, we always have in view the pronouncements of the sciences, which are fixed in nonverbal signs. And our task is to reconnect the objective world of technology, which the sciences place at our disposal and discretion, with those fundamental orders of our being that are neither arbitrary nor manipulable by us but rather simply demand our respect.

More acuminated, the opening that appears consists in—as summed up by Gianni Vattimo—hermeneutics being the philosophy of modernity in both senses, in that it stands within its time and is occupied with it. It was exactly the involvement with the present condition out of which has emerged what has become known as ‘hermeneutic ontology.’ The constitutive elements of ‘hermeneutic ontology’ are (i) rejection of ‘objectivity’; (ii) extension of the hermeneutical model to all knowledge, and (iii) the

1 Rafael Capurro, *Hermeneutik der Fachinformation* [Hermeneutics of specialised information] (Freiburg (Breisgau): Alber, 1986), 16.
6 Gianni Vattimo, *The adventure of difference* [Le avventure della differenza, English]: philosophy after Nietzsche and Heidegger. actually uses the concept of hermeneutical ontology for the purpose of eventually elaborating on what are the deficiencies of that ‘system’; for the purposes of the text at hand, ‘hermeneutical ontology’ is used without any critical connotation, for the sake of structuring the argumentation about knowledge.
linguistic nature of Being\textsuperscript{1}. These constituting moments also reflect on their temporal succession—first, there was the move from pointing out the inadequacy of a positive/scientific model of knowledge for history and the human science towards a general critique of the scientific method; finally, universality of the hermeneutic problem is claimed and argued for based on the linguistic nature of Being\textsuperscript{2}.

The consequences of the hermeneutic ontology for an approach to social inquiry are obvious. It must not succumb to the common urge of research towards theory and model-building. Instead, it must attend closely to questions of speech. Referring back to hermeneutics as philosophy of modernity, social inquiry must also be critical in a second sense, namely of itself by pointing towards its own conditions and limitations. Lastly, a further obligation arises out of hermeneutics being “distinctly inclined towards ethics”\textsuperscript{3}.

\textsuperscript{1} Ibid.
\textsuperscript{2} Ibid.
\textsuperscript{3} Vattimo, \textit{The transparent society [La società trasparente, English]}, 105. \textit{Chapter 9: From Phenomenological Reflection to Destructive Narrative} seeks to explore the possibilities of social inquiry with regards to the situation of the social sciences and information technology, as well as against the challenge arising out of the loss of meaning at the end of modernity, as posited by Hannah Arendt.
Chapter 4: Recalling Knowledge with the Phenomenology of Science and Technology: Projecting, Representing, *Ge-stell*

The hermeneutic criticism of science and technology originates from the characterisation of scientific knowledge as a derived mode of interpretation, within which subject and object originally belong together. Moreover, any knowledge is the articulation of what is already understood, which means that a basic condition for knowledge is interpretation, or that knowledge emerges out of a hermeneutic situation. As articulation and interpretation, knowledge is intrinsically linked to language, and is constituted within a specific historical opening. In modernity, all knowledge is shaped by scientific and technological knowledge but, due to the selective projection of science, an account of knowledge cannot be rendered within the bounds of science. The constituting elements of scientific knowledge hold sway in all walks of life, with representation as the determinative element. Representational knowledge is common to both science and technology, the latter having become the key determinant of the modern world. In bringing forth the knowledge character of technology, hermeneutics stipulates that its essence is not being a means to an end but a challenging disclosure (pro-vocation) of Being. In information technology as the incarnation of the representational worldview, or the world as picture, and the acme of technological development, the im-position (or essence of technology) becomes lucidly apparent. It challenges language and thus knowledge through pervasive formalisation, while the reflection of the instrumentalisation of knowledge and language can be located within ahistorical and decontextualised narratives that provoke man to proceed within this im-position. The imposition is, however, simultaneously the opportunity to re-think this constellation as a destiny, and consequently in terms of its overcoming.

Western philosophy, from its very beginning, has been concerned with being and knowing. Philosophy should thus give a hint at how to address the problem of duality of knowledge instead of helping to delimit knowledge as an object for analysis and intervention. Knowledge appears as being derived from understanding, while coincidentally it appears as being representable and objective. Modern hermeneutics has pursued this question and identified the scientific mode of knowing as a crucial determinant of our age. A précis of some of Martin Heidegger’s analyses of science, technology, and lan-
guage will therefore set the scene for an attempt to explicate why knowledge appears as information, how knowledge comes to pass in research, how scientific and technological knowledge are related, how representation and information technology correspond to social organisation, and what actuality and truth emerge out of these constellations, which determine our being. However, the ensuing elaborations will not attempt to take stock of the discussions of hermeneutical thoughts in general. They only seek to clarify those crucial concepts as prerequisites for the present inquiry and its communication.

Existential Pragmatics or Philosophy of Modernity?

Despite its influence on the thinking of the last century, Martin Heidegger’s work has drawn a rather biased reception in some circles. This situation is also apparent in attempts to draw on his work to address questions concerning technology, and information technology in organisations in particular. It appears as if some parts of his work are acceptable, while others are dismissed or ignored. This tendency can also be found in appropriations of his ideas in the discussion of information technology and information systems. Their authors adopt “key concepts from Martin Heidegger’s Being and Time 1

---

1 Martin Heidegger’s shipwrecked short period as rector of Freiburg University during the years 1933-34 has given ample opportunity for his most vehement denunciation as person and thinker. Due to this ‘involvement’ he suffered serious personal consequences after the defeat of Nazi-Germany, and it remained a matter of controversy since then. The incessant endeavours to make Heidegger a verboten person remain partial and are not without peril and paradox themselves. Even Victor Farias, *Heidegger and Nazism [Heidegger et le nazisme, English]*, trans. Dominic Di Bernardi (Philadelphia, PA: Temple University Press, 1989), fails to prove that Martin Heidegger had sympathised with terror against the own people, racism, anti-semitism and the war of annihilation and genocide that were the ideology and practice of the fascist regime in Germany; see Rafael Capurro, “Um einen Heidegger von innen (nochmals) bittend [Asking (again) for a Heidegger from the inside],” in *Schopenhauer, Nietzsche und die Kunst*, ed. W Schirmacher (Wien: Passagen Verlag, 1991). In addition, identifying Heidegger’s thought with German fascism equals a tremendous revaluation of the latter by attributing to it a degree of thought that they obviously lacked, and moreover this plays down and conceals the actual core of fascist ideology (ibid). Peter Sloterdijk, *Critique of cynical reason [Kritik der zynischen Vernunft, English]*, trans. Michael Eldred, Theory and history of literature; 40 (Minneapolis, MN: University of Minnesota Press, 1983/1987), 209. argues that when considering Heidegger’s “central philosophical achievement [he] would still not be a man of the Right even if he said still more muddled things than he actually did”, and he backs up this claim by referring to “a wealth of hidden similarities and analogies between Adorno and Heidegger”, which due to the “repulsion” between those tendencies [that actually predated the period of Nazism in Germany], and the tabooing of the latter as “fascist ontologist” largely remain unmentioned. Glazebrook, *Heidegger's philosophy of science*, 159, instead relates Heidegger’s period as rector sensibly to the evolution of his thought about knowledge, science and the university, and draws the conclusion that through the experience of this activity that ended with his resignation “he has come to the question of ethical and evaluative reflection upon the sciences, and the question of the relation between science and technology is now incipient”.

and leave aside their connection to Martin Heidegger’s overall project of a philosophical foundation of the natural and socio-historical sciences”¹, and also brush aside his analyses of modern technology. Additionally, as critically observed², authors have erroneously correlated information technology to Martin Heidegger’s tool concept in Being and Time³, which is completely at odds with his criticism of the merely instrumental interpretation of technology, “the latter being in its essence anything but a tool”⁴. Likewise, in philosophical discourses, Martin Heidegger’s project is subject to a distorted interpretation, consisting in the simultaneous adoption of what is understood as existential pragmatics with a most vehement renunciation of his criticism of technoscience as being tainted with mythology and irrationalism⁵. For the latter scholars, “it seems patent that Martin Heidegger is the anti-technological philosopher par excellence”⁶. Against these all too popular accounts it needs to be stressed however that neither in ‘Being and Time’ nor in his later writings was Heidegger merely criticizing modern science and technology; he was looking for a point of view, which would allow us to see their specific demarcations.⁷

The widespread misapprehension of Marin Heidegger’s depiction of the condition of modernity as characterised by science and technology—as opposed to the acceptance of his ‘existential pragmatics’—is certainly partly because following his thematisation of techno-science cannot be done by applying instrumental reason and its correlate of “problematical, investigative questioning”, but rather requires “reflective or responsive questioning”, a different access to truth; indeed, Martin Heidegger’s approach should not to be taken as hostility but as an effort to destruct and delimit science, which has preceded many other critical accounts of scientific endeavour⁸. This approach might be conceived of as having emerged within a changeover or fold—albeit not in a rigid sense.

¹ Capurro, “Informatics and hermeneutics,” 364.
³ Ehn, Work-oriented design of computer artifacts, Winograd and Flores, Understanding computers and cognition: a new foundation for design.
⁴ Ciborra and Hanseth, “From tool to Gestell: agendas for managing the information infrastructure,” 318. Martin Heidegger holds the instrumental conception of technology being correct, yet not illuminating its essence. He applies however the reflection on the instrumental conception of technology, and by showing that it has been taken to the extreme, demonstrates that the essence of technology necessarily transcends means-ends relationships (see below).
⁷ Capurro, “Informatics and hermeneutics,” 364.
as two phases\(^1\)—within which many prior concepts, such as interpretation, understanding
and essence altered their meaning, and ways of thinking such as hermeneutics and
phenomenology changed their direction.

Hermeneutics as Uncovering of Knowledge

The phenomenological destruction and delimitation of science has been performed
within a project that later became known as “hermeneutical ontology”\(^2\). Within this
project, as pursued by Martin Heidegger, ontology was initially seen as “philosophy as
science” and became “philosophy of science”\(^3\), while being oriented towards the
meaning and truth of Being. The constitutive and consecutive dimensions of the
hermeneutical ontology are the move from pointing out the inadequacy of a
positive/scientific model of knowledge for history and the human science towards a
general critique of the scientific method, and to eventually claiming and arguing the
universality of hermeneutics on the basis of the linguistic nature of Being\(^4\). These
dimensions provide guidance for the question of knowledge in modernity to be expanded
in the following.

Hermeneutics—From Exegesis to Existence

Hermeneutics is concerned with interpretation and understanding and, in its
contemporary sense, has its origin with Martin Heidegger. Antecedently, hermeneutics
used to be a theory of interpretation in the form of exegesis and a methodical implement
of religious studies, philology, and law. For a long time, understanding was seen as an
operation of the intellect in construing insights. In the 19\(^{th}\) century, understanding
became redefined as a procedure of knowing that was supposed to provide the
methodical grounding for the humanities and thus to claim their genuine knowledge in
contrast to the natural sciences\(^5\). With Martin Heidegger, hermeneutics became the
philosophical concern with human existence (Dasein), for which interpretation and

\(^2\) Vattimo, *The adventure of difference [Le avventure della differenza, English]: philosophy after Nietzsche and Heidegger*, 18. See the section *Hermeneutics and the Phenomenology of Science and Technology as a Way of Interpreting Knowledge in Organisations* in the preceding chapter.
\(^3\) Glazebrook, *Heidegger’s philosophy of science*, 20.
\(^4\) Vattimo, *The adventure of difference [Le avventure della differenza, English]: philosophy after Nietzsche and Heidegger*.
understanding are primal dimensions—“Not theory of interpretation, but interpretation itself is the subject matter of hermeneutics that is to achieve the status of philosophy”\(^1\). The conceptions of understanding and interpretation obtained a radically different meaning than in the past. The “epistemological understanding” of the humanities was considered by Martin Heidegger “to be secondary and derivative from a still more universal hermeneutical understanding”\(^2\). He based this novel concept of understanding in conceiving of it as a capacity and not as knowledge. Understanding became the capability to deal with everyday involvements; it became practical and a fundamental mode of being-in-the-world\(^3\). Correspondingly, the meaning of interpretation was altered. In exegetical hermeneutics, interpretation was a means to achieve understanding—that is, interpretation preceded understanding. In contrast, in hermeneutic philosophy—where understanding is primordial—in interpretation, understanding becomes explicit; interpretation unfolds what was already extant in understanding; interpretation does not yield a different understanding, rather primarily understanding becomes itself\(^4\).

**Knowledge in the Hermeneutical Circle**

The existential conception of knowledge locates its becoming within a movement that is called the hermeneutical circle. The hermeneutical circle is a central metaphor carried over from exegetical hermeneutics into hermeneutic philosophy. Like the concepts of understanding and interpretation, this metaphor underwent a change in meaning. In exegetical hermeneutics, with its concern with texts and the access to their original and complete meaning, the circle is a methodical implement requiring the iteration between different levels of aggregation of language and reference. The circle is the notion for the movement between words, sentences, and paragraphs of a text and the text in its entirety in relation to its elements, to texts by the same author and other texts of the same era. The hermeneutical circle in exegetical hermeneutics is a means to achieve an objective interpretation and thus objective knowledge. In hermeneutic philosophy, as developed by Martin Heidegger, the structure of the hermeneutical circle is constitutive for human existence in its self- and world-understanding\(^5\). Within this context, the hermeneutical

---

\(^1\) Ibid, 98.
\(^2\) Ibid, 93.
\(^3\) Ibid.
\(^4\) Ibid, 96.
\(^5\) Capurro, *Hermeneutik der Fachinformation* [*Hermeneutics of specialised information*], 22, Grondin, *Introduction to philosophical hermeneutics* [*Einführung in die philosophische Hermeneutik, English*].
circle is the mark that points to the impossibility of objective knowledge. The hermeneutical circle now stands for the tension between understanding and interpretation, which is founded in the pre-understanding of the ‘interpreter’ and what is interpreted in the process. The circularity in the relationship between pre-understanding and interpretation belongs to the basic structure of Dasein—given the fore-structure of understanding is always brought to bear in interpretation; there is no other way to improve interpretation than bringing the pre-conceptions to the fore. Although pre-conceptions are eventually inescapable, reflection on them in the process of interpretation is always required, which can never claim objectivity held previously to be attainable. Thus, in that the existential hermeneutical circle presupposes both the primordiality of understanding or pre-understanding and being-in-the-world as the basic state of Dasein, it evolves a concept of knowledge that overcomes the subject-object dichotomy and consequently also the realist-subjectivist problematic. According to Gianni Vattimo:

In its bare essentials the hermeneutical circle designates a particular reciprocal belonging between ‘subject’ and ‘object’ in interpretation, whereby these terms become necessarily invalidated, since they originated and developed within a perspective that assumed their separateness and antithesis and used them to give expression to these. Heidegger viewed interpretation as nothing other than the articulation of what is understood, and so always presupposing comprehension or precomprehension of the thing; for him this meant simply that knower and known belong to one another reciprocally prior to any explicit act of knowing and prior to any recognition of something as (als) something, so that the known is already within the horizon of the knower, but only because the knower is within the world that the known co-determines.

Hence, knowledge emerges out of the act of interpreting as the articulation of what is understood, which supposes that the ‘known’ is always already within the horizon of the knower. Accordingly, knowledge production or scientific activity is tied to the structure

---

1 Grondin, Introduction to philosophical hermeneutics [Einführung in die philosophische Hermeneutik, English], 97.
3 A hermeneutical view of knowledge is of course incommensurable with the ideas of personal and tacit knowing that enjoy some popularity and are spread with the formula “we know more than we can tell” [Polanyi, The tacit dimension.]. Knowledge as an explication of the already pre-understood through interpretation is intrinsically bound up with language, be it in speech or reflection, while language is an entirely social phenomenon. Thus knowledge is only what can also eventually be communicated (only what can be told is knowledge), as opposed to know-how, which is based on understanding. Michael Polanyi, Personal knowledge: towards a post-critical philosophy, Corrected edition. ed. (Chicago, IL: Chicago University Press, 1974). claimed hence that his ‘tacit dimension’ is identical with Heidegger’s being-in-the-world.
of understanding as the precondition of knowledge and science. Yet, understanding is not a cognitive operation that signifies the relation of a subject to the ‘real’ world outthere. “On the contrary, what is primarily there, is precisely our involvement in the world, which takes the form of interpretive projects.” Hence, the basic tenet of the hermeneutical circle questions the exegetical efforts of the humanities to establish the objective meaning of a text. It also questions the subject-object dualism and the ensuing question of conformity and objectivity of statements and methodical and epistemological problems that have plagued the sciences, and especially philosophy, in the form of theory of science.

The “extension of the hermeneutical model to all knowledge” is vindicated by the observation that the positivistic conception of propositional knowledge and method is actually relying on ‘disclosedness’ that holds the potential for both conformity and non-conformity, for truth and untruth. Knower and known dwell within the primordial disclosedness. This determination of science as one of Daseins projects that is inseparable from man’s being-in-the-world, instead of being the cognition of a detached subject, is an ontological grounding. Therefore, Martin Heidegger’s reflections on science in Being and Time posit that the possibility of explaining science is intrinsically bound to the understanding of Being, or ontology:

When the basic concepts of that understanding of Being by which we are guided have been worked out, the clues of its methods, the structure of its way of conceiving things, the possibility of truth and certainty which belongs to it, the ways in which things get grounded or proved, the mode in which it is binding for us, and the way it is communicated - all these will be determined. The totality of these items constitutes the full existential conception of science.

The temporality of existence and man’s finite horizons also calls for the consideration of science within a particular era. However, it does not invalidate the ontological grounding of knowledge, and hence science, their givenness by Being:

---

2 Grondin, Introduction to philosophical hermeneutics [Einführung in die philosophische Hermeneutik, English], 95.
4 Ibid.
5 Capurro, “Informatics and hermeneutics,” 370.
... scientific knowledge is interpretation insofar as it is an articulation of that which is understood. This articulation may still be guided, as in the case in modern science, by the general criterion of conformity, and by the specific modes of verifying that; but the establishment of these specific modes of articulation/interpretation is itself an ‘event’ that involves the most primordial disclosedness of Being, and the giving—concealing itself that constitutes its epochal nature.¹

Therefore, in Martin Heidegger’s later writings “science becomes not simply one existential possibility of being-in-the-world, but a temporally or historically given actuality that rules the present age”². Turning towards the distinctiveness of modern science, Martin Heidegger demonstrated that it is a way of world-disclosure that correlates to the perspective of the world as picture³. What is evident is the ambiguity of science being at the same time an existential involvement, and a totalising juxtaposition of man and world.

The Phenomenology of Science and Technology in the Modern Age

Martin Heidegger’s phenomenology of modern science and technology has enquired about their essence. In some adoptions of phenomenology into academic disciplines⁴, phenomenology is often, with reference to its founder Edmund Husserl, defined as the study of essences, while at the same time the phenomenological ‘movement’ is depicted as a one-dimensional evolution from its founder towards the hermeneutics of Hans-Georg Gadamer, and other philosophers in the hermeneutic tradition. These all too popular accounts tend to overlook that with Martin Heidegger phenomenology changed considerably, as did the meaning of hermeneutics. Although Edmund Husserl made an implicit contribution to what became contemporary hermeneutics, it was his student

Martin Heidegger, who “stamped the hermeneutic turn on phenomenology”\(^1\), which was a critique of his mentor\(^2\).

Edmund Husserl’s “phenomenology investigates the intentional correlates of consciousness and hence clarifies all fundamental kinds of objectivities” and it deals with “pure consciousness, that is, essences and essential relations”\(^3\). Edmund Husserl’s aim was to establish philosophy as grounding for itself and the sciences. Although, Martin Heidegger agreed with his teacher at that time on the tenet that phenomenology should be the method of scientific philosophy, the former raises the question of Being, or of ontology, which is irrelevant for the latter\(^4\). Patricia Glazebrook has demonstrated the difference between them with the three constituents of the phenomenological method: _epoché_ means for Edmund Husserl the deflecting (bracketing) of the question of Being, the corresponding term used by Martin Heidegger—_reduction_—is the first step of ontological questioning, to proceed from looking at an entity towards the being of that entity; the next step is construction, that is the consideration of Being not as an entity, complemented by destruction, the critical appropriation of handed-down concepts\(^5\).

Thus, there is significant divergence between the two concerning the task of philosophy and hence of phenomenology: while Edmund Husserl was interested in consciousness, Martin Heidegger was interested in Being\(^6\).

As the meaning of phenomenology changed with Martin Heidegger, so did its central concept of essence. This concept must be seen in the context of hermeneutic truth. To the concept of knowledge as interpretation of the already understood belongs a different understanding of truth. Hermeneutics conceives of truth as opening and as dwelling, as opposed to the traditional “idea of truth as correspondence [, which] conceives of knowledge of the true as the possession of an ‘object’ by way of an adequate representation”\(^7\). Hans-Georg Gadamer explains how the new conceptualisation of essence matches truth as opening and dwelling: while in Being and Time, _Dasein_ was simultaneously engaged in revealment and concealment and characterised by authenticity and unauthen-

---

3 Glazebrook, _Heidegger's philosophy of science_, 21.
5 Glazebrook, _Heidegger's philosophy of science_, 22.
6 Ibid, 25.
ticity, Martin Heidegger’s later thinking attributes truth to Being that grants and withdraws. It is within the new nexus of concealment and revealment, where essence is to be found now. Hans-Georg Gadamer illustrates: an implement does not have its essence in its immediate presence and objectivity, but in that it can be used in such a way that it disappears from our awareness in that it allows to concentrate on the task at hand, i.e., “what is beyond the implement itself”; essence is also the truth that is available through a work of art and only in it; essence can also be found in a thing that is unique, irreplaceable, and cannot be subjected to human ends; and finally essence can be found in the word, which is not be found in its being clear and fully expressive, but within what remains unsaid, the silence that surrounds it.

Essence is however a rather infelicitous translation of the German *Wesen*, which could be mistaken as the identification of critical features or properties. To avoid this, essence should not be ‘translated’ as ‘substance’ but rather as ‘presencing’, which again is “not a static conceptual category or ideal, but a dynamic, ongoing process or movement”. Another possible rendering of essence could be ‘the way something concerns man’. In any case, the nexus between revealment and concealment should be kept in mind. The phenomenological investigation into knowledge may thus be seen as an attempt to determine how and what truth is brought about within the practices and discourses that constitute knowledge, and at the same time, what tends to be concealed, or falls into oblivion by the establishment of new truth.

**The Truth of Science**

Scientific knowledge has become the model for all other knowledge in our era. It therefore seems rather deficient to attempt to elaborate on knowledge without primarily referring to this form of knowledge. The stipulation of prevailing scientific knowledge consequently questions the common distinctions between science and technology or between pure and applied science, and the distinction between science and humanities. The division between pure science versus applied science or technology has become untenable, implying that science and technology can be inquired into in the same terms, as techno-

---

2. Carol Jean Steiner, “Constructive science and technology studies: On the path to being?,” *Social Studies of Science* 29, no. 4 (1999).
3. R. L. Rutsky, *High techné: art and technology from the machine aesthetic to the posthuman*, Electronic mediations ; 2 (Minneapolis, MN: University of Minnesota Press, 1999). points out that *Wesen* has been rendered as “goings-on” to stress the dynamics of the concept.
science. Babette Babich stresses, “[f]or Heidegger, the very technological order of science begins in theory”\(^1\). It is not the application of sophisticated devices that makes something like physics akin to technology, but rather the way the inquiry into nature is conducted from the very beginning, it is the theoretical setup of nature.

Modern physics is not experimental physics because it applies apparatus to the questioning of nature. [...] Because physics, indeed already as pure theory, sets nature up to exhibit itself as a coherence of forces calculable in advance, it therefore orders its experiments precisely for the purpose of asking whether and how nature reports itself when set up in this way.\(^2\)

The technological character of science is now widely recognised in the philosophy and sociology of technology, although this discovery is not always credited to Martin Heidegger\(^3\). He however also rejected the notion that scientific endeavours can be understood in terms of a phenomenon that becomes explainable in sociological terms or in the sense of discovery of new facts. It is rather that when discoveries occur:

> fundamentally and primarily it is our approach to the question and our way of seeing that has been transformed—and in accordance with this the facts. This transformation of seeing and questioning is always the decisive thing in science. The greatness and vitality of a science is revealed in the power of its capacity for such transformation. Yet this transformation of seeing and questioning is misunderstood when it is taken as a change of standpoint or as a shift in the sociological conditions of science. It is true that this is the sort of thing which mainly or exclusively interests many people in science today—its psychologically and sociologically conditioned character—but this is just a façade. Sociology of this kind relates to real science and its philosophical comprehension in the same way in which one who clambers up a façade to the architect, or to take a less elevated example to a conscientious craftsman.\(^4\)

Equally, he holds that a worldview or regional ontology also does not provide a way to understand science:

> He argues that the beliefs that science is valid in itself, happy to have a worldview behind it, or that a worldview grounds a science that is valid

\(^1\) Babich, “The essence of questioning after technology: techne as constraint and the saving power,” 117.


\(^3\) Babich, “The essence of questioning after technology: techne as constraint and the saving power,” 117.

only for that worldview, are but confused (verworren) conceptions that make neither science nor worldview clear in their relation to each other.¹

For Martin Heidegger, science must be in a position to put itself to work in the sense of establishing validity and possibility in terms of truth. If this is not the case, science loses is significance as intellectual potency and turns into “technology of knowing” and the instruction for particular “techniques” or procedures of working².

By contrast, is the scope of contemporary science and technology studies, which inquire into science and the practice of research and their socio-political dimension. These approaches tend to overly stress the menial and tangible aspects of scientific and technological work to the extent that the common shared horizon that is a constituent moment in this practice and constantly reconstructed most obviously in the form of ‘epistemologies’ (persuasion, etc.) is considered rather unimportant, denouncing it as Zeitgeist³. In conceptually separating the practical and social from the horizon or worldview, and reducing the matter of research to humble and manual tasks, the historical dimension is lost, while the aspect of truth is seen merely as a human construction.

Practice and Way of Knowing of Science—Research and Theory

Martin Heidegger’s phenomenology treats science and technology as a way of knowing, and as a way of practice—it is not bound to sociological projections such as science and technology studies, but rather aims at the essence⁴. In the following, I will first present my reading of the ‘Age of the World Picture’⁵, and ‘Science, and Reflection’⁶. Within the former, the emphasis is primarily on science as practice, while the latter stresses the truth aspects of science and hence its limitations. Finally, I will show that the notion by which the essence of technology has been captured by Martin Heidegger, Ge-stell, is also the essence of science⁷.

¹ Glazebrook, Heidegger’s philosophy of science.
² Ibid.
⁴ For a comprehensive elaboration of the development of Heidegger’s thought on science see Glazebrook, Heidegger's philosophy of science.
⁵ Heidegger, “The age of the world picture [Die Zeit des Weltbildes, English].”
⁷ Glazebrook, Heidegger's philosophy of science.
In both of these lectures, Martin Heidegger questions the essence of science, and expands on the propositions of “The essence of science is research” and “Science is the theory of the real”, respectively. It would be futile to expect a detailed analysis from Martin Heidegger’s project of questioning into techno-science. From a current perspective, his thoughts are revealing since he experienced the completion of a transformation, the outcomes of which are now taken for granted. Furthermore, the effort of his philosophy of science is rather constitutive for a larger endeavour—he holds that science and technology are essential phenomena of our age and that an understanding of the modern age can be attempted out of an elaboration of the essence of science. Thus, “the question of science is foundationally informative of Heidegger’s work” and the main proposition evident in his entire treatment of the issue is “science is the mathematical projection of nature”, which arises out of the circumstance that physics is the “earliest science”. Physics is thus the exemplar, and the essence of modern science is elaborated with reference to this exemplar.

**The essence of science as research**

From the thesis that “[t]he essence of what we today call science is research” follows that the essence of research must be determined. Martin Heidegger argues that science becomes research by setting up its “distinct object sphere”, which initiates the dynamics of all its other dimensions, like specialisation, methodology, its perpetuity and commercialisation, and the way it eventually shapes the relation between man and world as world picture.

**Projection and Rigour**

The essence of research is that cognition “establishes itself” as an operation in a domain of “what is”. This is achieved by projection—setting up some fundamental assumptions and abstractions and the plan in which the way of knowing must remain within the domain.

---

5. Ibid, 1.
7. Ibid.
8. Ibid.
9. Ibid.
In research, then, in Heidegger’s view, there is a prior determination of what counts as an object for a particular science. For example, in the case of physics the scientific method has a priority over nature, for physics as a specialized science entails the determination in advance of what nature is.¹

Martin Heidegger calls the attachment of cognition to its object sphere “the rigour of research”². The establishment of a domain of cognition, projection and rigour, are illustrated by the characterisation of physics as mathematical. According to Martin Heidegger, physics is usually called mathematical because it applies mathematics. However, the application of mathematics is only possible because physics is more profoundly mathematical. In this sense, mathematical relates to what man already knows prior to his dealing with things, of which the numbers are the most obvious “always-already-knowns”³. Hence, the mathematical characteristic of physics is to be found in its projecting of nature, and is evident in its abstract definitions of motion, force, place, and not in figures, calculations, and algorithms.

The rigour of physics is exactness that comes to bear in that “events of nature” in order to be considered as such “must be defined beforehand as spatiotemporal magnitudes of motion”⁴. This definition corresponds with measuring and calculating. The exactness of research into nature is therefore not exact due to its precise calculation, but rather due to its rigour—the way it is attached to its projection and domain. By contrast, within history and the humanities rigour is achieved by not being exact. This is not something lacking, but pertains to the specific projection of their domain, which cannot abstract ultimately from that it deals with living beings and must therefore remain inexact. This projection of the domain is a more difficult accomplishment than in science, so is the rigour or attachment to the object-sphere⁵.

Method and Objectness

Projection and rigour (in science) become manifest in method, the second constituent of research⁶. Method establishes facts in a particular way, in that “[i]t is only within the purview of rule and law that facts become clear as facts that they are”⁷. In order to set up the domain or its things as objective, it must be possible to confront them in all their

---

¹ Glazebrook, *Heidegger’s philosophy of science*, 111.
² Heidegger, “The age of the world picture [Die Zeit des Weltbildes, English],” 118.
³ Ibid, 119.
⁴ Ibid.
⁵ Ibid, 120.
⁶ Ibid.
⁷ Ibid.
complexity and dynamics. “Only within the horizon of the incessant-otherness of change does the plenitude of particularity—of facts—show itself”\(^1\).

Martin Heidegger argues that for things to become objective, they must be imaginable, or represented in a particular way—they must be secured, while not neglecting their motility. Thus, method stipulates that the immobility of facts and their perpetual change is ‘rule’, while the perpetuality of change and its mode is ‘law’. “Research into facts in the realm of nature is intrinsically the establishing and verifying of rule and law”\(^2\). The method by which the domain becomes represented works as explanation: “[e]xplanation is always twofold. It accounts for an unknown by means of a known, and at the same time, it verifies that known by means of that unknown. Explanation takes place in investigation”\(^3\). In the sciences, investigation is performed by experiment that corresponds to the domain and the kind of explanation that has been posited as objective.

At this point, Martin Heidegger argues against the common conception that it is the experiment that makes research scientific, but that it is the case that experiments only become possible because the way of knowing has been transformed into research. He emphasises again that the a priori determination of the domain is the crucial event of modern science and not the experiment, which is a method that operates over that domain:

Experiment is that methodology which in its planning and execution, is supported and guided on the basis of the fundamental law laid down, in order to adduce the facts that either verify and confirm the law or deny it confirmation.\(^4\)

The a priori determination of the domain is a theoretical projection and is the relation in which science relates to what is:

Theory makes secure at any given time a region of the real as its object-area. The area-character of objectness is shown in the fact that it specifically maps out in advance the possibilities for the posing of questions. Every new phenomenon emerging within an area of science is refined to such a point that it fits into the normative objective coherence of the theory.\(^5\)

Martin Heidegger emphasises that the theoretical nature of modern science has nothing to do with neutral observation, that science is not just a way of getting to know the world as such. According to him, common sense holds that:

\(^1\) Ibid.
\(^2\) Ibid.
\(^3\) Ibid, 121.
\(^4\) Ibid, 121-122.
After all, science as theory is surely ‘theoretical’. It spurns any refining of the real. It stakes everything on grasping the real purely. It does not encroach upon the real in order to change it. Pure science we proclaim, is ‘disinterested’.¹

In contrast, Martin Heidegger holds that, through method, science impinges upon the real and cannot be musing over its objects, but acts upon them. Indeed, method determines what can be known, since the topic of research is defined by it and remains within it. The ever-accelerating development of research is fuelled by the progress of method, meaning that ultimately “[m]ethod holds all the coercive power of knowledge”². The theoretical projection sets up the condition under which the real can show itself, and become represented.

Science sets upon the real. It orders it into place to the end that at any given time the real will exhibits itself as an interacting network, i.e., in surveyable series of related causes. The real thus becomes surveyable and capable of being followed out in its sequences. From this there result spheres or areas of objects that scientific observation can entrap after its fashion. Entrapping representation, which secures everything in that objectness which is thus capable of being followed out, is the fundamental characteristic of the representing through which modern science corresponds to the real.³

This kind of scientific knowing, is a unique phenomenon, absolutely alien to other eras and cultures, and should not be taken for granted. Nor can it be rightly assumed that scientific knowledge is either constructed by man, or that it has been simply seized out of what is.

Quite to the contrary, the essence of science is rendered necessary by the presencing of what presences at the moment when presencing sets itself forth into the objectness of the real. This moment remains mysterious, as does every moment of its kind.⁴

Science is impossible without that objectness, which must be held up as a normative principle. Since, in Martin Heidegger’s view, science is dependent on that objectness, method that warrants this objectness by “entrapping-securing” is all-important. The assurance is given through measurement, which means, “what may pass in science […] for assured knowledge rests with the measurability supplied in the objectness of nature and, in keeping with that measurability, in the possibilities inherent in the measurement

¹ Ibid, 168.
⁴ Ibid, 168-169.
procedure"¹. The main feature of method is however not that operations are performed with numbers, but that it is a “reckoning-up”, in the sense of counting on something, or having some definite expectations about something². Therefore, for Martin Heidegger

[a]ll objectification is a reckoning, whether through causal explanations it pursues the consequences of causes, whether through morphology it puts itself into the picture in precedence over objects, or whether in its fundamental elements it secures and guarantees some coherence of sequence and order.³

In the humanities, where there are no experiments to generate facts and to (in)validate laws, research as practice holds sway. Martin Heidegger uses historical research or historiography as an example of how sciences that are not dealing with nature establish their domain of investigation. Here, exegetical efforts aim at explanation, employing as method ‘source criticism’ corresponding to the use of experiment in science. “‘[S]ource criticism’ designates the whole gamut of the discovery, examination, verification, evaluation, preservation, and interpretation of sources”⁴. This method, like those in science, sets up history as an ‘object’: only that which is past, and which fits into the explanatory efforts of historiography can be history. Hence, there is the relation between projecting, method and outcome—explanation that characterises research. “Because historiography as research projects and objectifies the past in the sense of an explicable and surveyable nexus of actions and consequences, it requires source criticism as its instrument of objectification”⁵.

Specialisation and Ongoing Activity

The projection of the domain, or object sphere, is also crucial for the dynamics of specialisation in scientific activity. Not only is science as research organised in distinct and thus “individualised” sciences, it is an essential requirement that, within the disciplines, particular areas of research activity evolve according to the advancement of the projection of the domain through method. Martin Heidegger emphasises that “[s]pecialization is not the consequence but the foundation of the progress of all research”⁶. The productivity of specialisation, the effect of research not becoming just a

¹ Ibid, 169.
² Ibid, 170.
³ Ibid.
⁵ Ibid, 123.
⁶ Ibid.
mixture of haphazard endeavours—is due to the third constituent of science as research described by Martin Heidegger as being an “ongoing activity”\(^1\).

Martin Heidegger distinguishes the ongoing activity of research from plain self-propelling activeness. There is a risk that the ongoing activity of research can always turn into self-complacent diligence. This occurs through routinisation—the nexus between projection, method, and results is broken when the two former are taken for granted and merely new results are sought. He posits that the peril of this routinisation increases with the establishment of research as an ongoing activity and “[f]inally a situation arises in which the distinction between ongoing activity and mere busyness not only has become unrecognizable, but has become unreal as well”\(^2\). According to Martin Heidegger, counterbalancing the essential against the trivial and obvious is what keeps modern science thriving, but he is pessimistic whether this may be sustainable.

Work being continuous corresponds with it being organised in institutions, or modern science is necessarily institutionalised. Martin Heidegger points out that science as research is ‘ongoing activity’ per se, and not due to its being carried out in institutions. By means of method(s), the domain is seized in a specific way that does not consist of just accumulating ever more facts. For Martin Heidegger, the incessant efforts of research are grounded in the nexus between results and method. Results generated by method, in turn modify that method for generating new results—research is accommodating itself to what it produces in a reciprocal movement between method and outcomes. “This having-to-adapt-itself to its own results as the ways and means of advancing methodology is the essence of research’s character as ongoing activity”\(^3\). As an example, the latest achievements and equipment in physics are based on all prior accomplishments, while in historiography sources are bound into an ever-closer network of mutual validation.

Arrangements and implements of institutionalised research work—such as those pertaining to combination of methods, scientific communication and promotion of gifted researchers—are taken by Martin Heidegger as indicators that the unfolding of modern science is taking place, and the totalising claim of its projection being the only way of knowing. According to Martin Heidegger, the socio-economic dynamics of the institutionalisation of science as research, has a socio-cognitive substance, which is “the making secure of the precedence of methodology over whatever is (nature and history),

---

\(^1\) Ibid, 124.
\(^2\) Ibid, 138.
\(^3\) Ibid, 124.
which at any given time becomes objective in research”1. Science as a theoretical project performs the definition and delimitation of object areas that correlate to the objectification through method. This becomes institutionalised, therefore “[t]he theory of the real is necessarily departmentalized science”2.

Within the research institution, “the scholar disappears” making room for the “research worker” who works on projects and is involved in various activities related to a communicative or commercial nature. Eventually, the researcher resembles the “technologist”, whose characteristics match the features of someone doing research in this age3. Corresponding to the dynamics of research, the university—where science as research is institutionalised—does not endure because of an intrinsic unity of the sciences maintained and fostered in its walls. Unity comes about due to research being an ongoing activity, and its working is the movement that brings specialisations together4. Thus, Martin Heidegger posits that what holds the sciences together, “the real system of science”, is based neither on a pre-defined structure between the individual specialisations, nor on the subject matter of these specialisations. Rather, that this system is founded on the sciences’ shared approach towards the “objectification of whatever is” and that becomes manifest in coordination and “planning”. Hence, research and its specialisations are operating under the condition of freedom to introduce and move around new research tasks and concomitant suppositions – a condition that is however regulated5. Specialisation in research itself creates conditions with areas that are central to a domain and those at the margins, or borders, to other fields. It is at the borders where science as research appears to be most creative. Specialisation “yields a border traffic between [domains] by means of which boundary areas are marked out. Those areas are the source of a special impetus that produces new formulations of questions that are often decisive”6.

Truth as Representation

In conclusion, Heidegger holds that the constituting and primal moments of science as research are “projection and rigor, methodology and ongoing activity”7. In Martin Heidegger’s view, the essence of modern science is not exhausted by demonstrating the

---
1 Ibid, 125.  
5 Ibid, 126.  
relation and working of the phenomenal aspects of research as practice. It is required to
determine the underlying “understanding of what is” and the commensurate “concept of
truth” which together make up research as a way of knowing1. It seems that for Martin
Heidegger, these two moments of knowing nearly collapse into one—representation—
only what is represented is, and truth is that it is represented. Thus, science as research
sets up a particular relation to the world, which he describes as follows:

Knowing, as research, calls whatever is to account with regard to the way in
which and the extent to which it lets itself be put at the disposal of represen-
tation. Research has disposal over anything that is when it can either
calculate it in its future course in advance or verify a calculation about it as past.2

This coming about of science as research is a historical event that occurred “when the
being of whatever is” can only be explored in the “objectiveness” of representing, and
“truth has been transformed into the certainty of representation”3. This historical happen-
ing of the grounding of science as research is located in the metaphysics of Descartes4.

Foundation and Consequence of Modern Science—the World as

Picture

Martin Heidegger asserts that since “science as research is an essential phenomenon of
the modern age”, then the foundations of research have already provided the grounding
of the essence of the modern age prior to the establishment of modern science5. He
points towards the “reciprocal conditioning” of subjectivism-objectivism in our age as an
indication of that grounding6. This metaphysical foundation could be called anthropocen-
trism, which for Martin Heidegger means that man becomes the only subject in the sense
that “[m]an becomes that being upon which all that is, is grounded as regards to the man-
ner of its Being and its truth. Man becomes the relational center of what is as such”7.

While the metaphysical foundation of modern science may be called anthropocentric, its
historical genesis and how it has shaped the contemporary world must be qualified as
Eurocentric:

1 Ibid.
2 Ibid, 126-127.
3 Ibid, 127.
4 Ibid.
5 Ibid.
6 Ibid, 128.
7 Ibid.
The reality within man of today moves and attempts to maintain himself is, with regard to its fundamental characteristics, determined on an increasing scale by and in conjunction with that which we call Western European science.1 Due to the power of science unsurpassed in previous history, it wields the dominance of the Western world over the rest of the whole earth².

As the self-understanding of man is transformed in terms of subject, so is the understanding of world. World should be understood here in its widest possible sense. To the centrality of man corresponds the understanding of world as world picture. Yet, this does not mean that humans make and view images of the world; Heidegger insists that the man-world relation is rather “the world conceived and grasped as picture”³. World picture is something radically exclusive: only that which can be represented by man, can enter the picture, can be world at all⁴. According to Martin Heidegger, the presence of a world picture is something unique that was neither possible in ancient times, nor in the Middle Ages. “[T]he fact that the world becomes picture at all is what distinguishes the essence of the modern age”⁵.

Reciprocally, the position of man is determined as “the representative [der Repräsentant]⁶ of that which is, in the sense of that which has the character of object”⁷. This position is actually intentionally adopted. For Martin Heidegger, the modern age is not simply new as in relation to times past or to historically prior eras: the modern age establishes itself explicitly as new (or modern)⁸. The event of man becoming the representative or subject and the world a picture brings about a social condition in which the individual appears; only then it is possible to bring up the question of identity,

---

1 Heidegger, “Science and reflection [Wissenschaft und Besinnung, English],” 156.
2 Ibid.
3 Heidegger, “The age of the world picture [Die Zeit des Weltbildes, English],” 129. The radical position taken by Martin Heidegger is divested of part of its critical power through pragmatist rendering of this trope. World picture means much more than the practices of making visible, and privileging vision through scientific and technological implements of vision, such as optical instruments, spatial arrangements, and representations, such as those used in information systems development – even if this notion is linked to a critique of functional reason and concomitant power relations, as in Bloomfield and Vurdubakis, “Visions of organization and organizations of vision: the representational practices of information systems development.”
5 Ibid.
6 German words in square brackets appear in the translation being quoted.
8 Ibid.
whether a human being is a unique ‘I’ or rather defined through its belonging to one or more communities, such as organisations, nation states or humanity in its entirety.\(^1\)

The dichotomy between man and world, or the dichotomy between subject and object, is not merely a way of knowing. Modernity is rather characterised by a violent act, which is “the conquest of the world as picture”\(^2\). This appropriation of world is carried forward among men in a contentious and competitive manner. Martin Heidegger posits that in the process of representing and subjugating, there is a striving for what has nowadays become known as ‘ontological power’:

In such producing, man contends for the position in which he can be that particular being who gives the measure and draws up the guidelines for everything that is.\(^3\)

This contending for, and establishing of, ‘ontological power’ finds its expression in world views that are confronting each other as those which have already carried this position to the extreme and “with the utmost resoluteness”\(^4\). Within the contention of worldviews, “man brings into play his unlimited power for the calculating, planning and molding of all things”, of which science as research is an essential component\(^5\).

The Limits of Techno-Scientific Doing and Knowing

For Martin Heidegger, the all-encompassing of representation, of the world being a picture that is seemingly produced by man, also points at its own limitations. The indication of the limits of the modern worldview is the coming to the fore of the “gigantic”. The “gigantic” is the becoming accessible of the huge, and simultaneously of the extremely small, through representation and technology. Martin Heidegger’s rendering of this phenomenon is that it is not exhausted by looking at it in merely quantitative terms; for him the “gigantic” is the “concept of greatness” that prevails in modernity. Thus, there occurs a changeover from the quantitative into the qualitative dimension:

… as soon as the gigantic in planning and calculating and adjusting and making secure shifts over out of the quantitative and becomes a special quality, then what is gigantic, and what seemingly can always be calculated, becomes precisely through this, incalculable. This becoming incalculable

\(^1\) Ibid, 132-133.
\(^2\) Ibid, 134.
\(^3\) Ibid.
\(^4\) Ibid, 134-135.
\(^5\) Ibid, 135.
remains the invisible shadow that is cast around all things everywhere when man has been transformed into *subiectum* and the world into picture.¹

The most apparent example for the ultimate incalculability of scientific-technological doing is the fact that man acts into nature and triggers processes, which can neither be calculated in advance nor made reversible in their consequences².

As there are limits to sciences in terms of being unable to keep the outcome of their practices within the realms of calculation and predictability, there are similar limits of modern science as a way of knowing. For Martin Heidegger the limits to science as a way of knowing are of a reflective nature. These limits are to be found primarily in “what cannot be gotten around”³. In science for example, nature can only become present in objectness. However, for Martin Heidegger, this is “only one way in which nature exhibits itself”⁴. Objectification as performed by science is therefore necessarily selective. Conversely, objectification always presupposes the presence of the objectified—it is always directed towards it, cannot surpass it and thus is always uncertain about its full comprehension. Since science discloses only one way in which nature presences, it is even incapable to determine whether this way actually conceals, rather than shows, what presences.

Ultimately, this problem cannot be posed by science itself, since it has already been determined in advance to deal with nature as objectification⁵. Accordingly, the same applies to all modern scientific endeavours, whether concerned with man as in psychiatry, with history as historiography, or with language as in philology. Nature, man, history, and language are not created by the sciences, they are independent of them and only represented by them. Martin Heidegger emphasises that this deficit or “impotence of the sciences” is not based in the problem that objectifying everything is unattainable, but that representing always continues to be one way of how something appears⁶. Thus, that “what cannot be gotten around” belongs to the essence of science,

---

¹ Ibid.
² Hannah Arendt, *The human condition. Introduction by Margaret Canovan*, 2nd ed. (Chicago, IL: University of Chicago Press, 1958/1998), 231. Most compelling examples in this context are the processes that have been unleashed through nuclear physics and genetic engineering.
⁴ Ibid, 174.
⁵ Ibid.
⁶ Ibid, 176. Martin Heidegger has drawn a sharp distinction between thinking and scientific activity with the statement “Science does not think”. This means in simple words that for the sake of science, it must be recognised that thinking (or philosophy) and science are qualitatively different, in that they are separated by a chasm. Philosophy does not partake in the production of scientific knowledge, and philosophy is not scientific in itself. He therefore dismisses the swift connections between the two as “mischief [… effected by] the makeshift ties and asses’ bridges by which men today would set up a
but is at the same time hidden from it. Martin Heidegger posits that in order to recognise its limits, science must be able to conceive of these bounds, which is impossible since science is incapable of conceiving its own essence—it cannot perform selective objectification upon itself.

If the sciences themselves should at any time be able to find at hand within themselves what is not to be gotten around of which we are speaking, they would have before else to be in a position to conceive and represent their own essence. But they are never in a position to do this.¹

It is out of bounds of any science to make statements about itself: it is not feasible to make physics the object of an experiment, nor perform a philological observation on philology². Historiography can establish a historical account of itself, but is still unable to explore its essence as science³.

The Essence of Technology—Representation and Ge-Stell

Science, irrespective of its inherent limitations, which even remain opaque to itself, has shaped “the modern epoch, in its determination by representation”⁴, since “representational thinking, which underwrites modernity, has its genesis in the scientific method”⁵. Representation is at the core of both science and technology, and thus their way of knowing is similar. This has evoked the conclusion that, for Martin Heidegger, the essence of science is also the essence of technology⁶. To follow up this statement, a recapitulation of the philosopher’s key ideas on the essence of technology is required based on The Question Concerning Technology.

² Ibid.
³ Ibid, 177.
⁴ Glazebrook, Heidegger’s philosophy of science, 117.
⁵ Ibid, 118.
⁶ Ibid.
The Insufficiency of the Anthropological and Instrumental Determination of Technology

As with science, the exploration of the essence of technology aims at also demonstrating its limitations. Again, it is worth noting that Martin Heidegger’s aim is not to respond to the question of what technology is, but to seek to explore its essence. “Technology is not equivalent to the essence of technology.” In exploring its essence, he first has to come to terms both with common attitudes towards technology, as well as popular definitions. Common attitudes towards technology are to “affirm or deny it” and as a third alternative to “regard it as something neutral”. These attitudes are still bound to the technological, and therefore inhibit looking for its essence, which cannot be found in its uncountable instantiations. Popular definitions tend to refer to the “first and second technological revolution”: the first being the changeover to machines driven by engines, the second being the thrust to “maximum possible ‘automation’, whose characteristic is determined by the ruling and leading technology, cybernetics.” A determination of technology usually becomes elicited by referring to objects, activities, or networks of people and objects:

Technology can mean: the totality of the extant machines and apparatuses, merely as objects that are available—or in operation. Technology can mean: the production of these objects, whose production is preceded by a project and calculation. Technology can also mean: the appertainment of what has been specified into one with the humans and the groups of humans who work in the construction, production, installation, service, and supervision of the whole system of machines and appliances.

According to Martin Heidegger, in being attached to artefacts and humans, the common conception holds that: (1) technology is an instrument; it is a means to ends posited by

---

2 Ibid.
3 Ibid.
5 Ibid.
6 Ibid. The latter two definitions usually undergird current studies of technology, such as actor-network theory. see The Destruktion of Symmetrical Anthropology. Martin Heidegger’s illustration of the inadequacy of conceiving of modern technology simply as objects uses the example of a passenger plane that stands at the beginning of the runway. Regarding it as an object would actually disregard the whole net of significations it is bound into and consequently “conceal” what and how it is. On the other hand “Revealed, it stands on the taxi strip only as standing reserve, inasmuch as it is ordered to ensure the possibility of transportation” [Heidegger, “The question concerning technology [Die Frage nach der Technik, English],” 17.]. This is echoed by technology studies weakly as “Flying is a property of the whole associations of entities that includes airports and planes, launch pads and ticket counters” in Bruno Latour, Pandora’s hope: essays on the reality of science studies (Cambridge, MA: Harvard University Press, 1999), 182.
man; (2) this instrument is based on the practical application of modern science; (3) because of its grounding in science, which is a genuine human accomplishment, technology constitutes a part of human culture; (4) technology evolved in stages out of the manual labour process according to the possibilities available; (5) technology is an instrument that has to be controlled by humans.

These elements of the common conception of technology are summarised as “the instrumental and anthropological definition of technology.” The anthropological definition, in the sense of technology being part of culture, appears to be rather weak for Martin Heidegger due to the intractability of many technological activities in relation to a betterment of the human condition. Similarly, defining technology as an instrument is also insufficient, since the notion is too vague and could encompass a simple tool and the most sophisticated satellite. However, the anthropological-instrumental definition “is correct within its perimeters,” and because of that it “conditions every attempt to bring man into the right relation to technology.”

Martin Heidegger approaches the essence of technology from two aspects, in discussing instrumentality to the farthest, and in relating it back to science. Instrumentality is always at play when means and ends are posited; when something is effected; means and ends that produce an outcome are causes, and causality is the basis of instrumentality. With reference to the ancient Greek notion of causality, Martin Heidegger argues that

---

1 Heidegger, “Traditional language and technological language [Überlieferte Sprache und technische Sprache, English],” 133.
5 Ibid, 6-7, 9.
6 By means of the example of a silver chalice, or goblet, Martin Heidegger illustrates the notion of the four causes, which are causa materialis (material), causa formalis (form), causa finalis (end), and causa efficiens (effecting). Thus there is the material—silver, out of which the vessel is made, the form that the chalice will finally have, the end, i.e., the ritual in which it will be used, determining its shape and material; eventually, there is the one who brings about the item, who effects it, the silversmith. Martin Heidegger points out that, although the concurrence of the four causes has been taken for granted for a long time, more recently, the emphasis has been put on the causa efficiens, making it the baseline for the other causes, except the “telic finality”; which is even not regarded as a cause any more (Ibid, 6-7). Most importantly however, Martin Heidegger indicates that, although the four causes had been developed by Aristotle, their original conception had nothing to do with causing and effecting. The primordial meaning of what is now called cause is rather “that to which something else is indebted”; consequently “[t]he four causes are the ways, all belonging to each other, of being responsible for something else” (Ibid, 7). In other words, what we call causality, is within the Aristotelian doctrine a reciprocal relation. Applied to the example, the chalice is indebted to, owes thanks to the matter and the aspect, which are joint together by circumscribing the item as a ceremonial implement in advance. Most striking is the difference to conventional thinking in regards to what Martin Heidegger calls the “fourth participant in the responsibility of the finished sacrificial vessel” (Ibid, 8): the silversmith does not represent the causa efficiens in that he effects the vessel by
what is nowadays conceived as causality, means basically to “bring something into appearance”\textsuperscript{1}. This can be seen as a qualitative change:

Bringing-forth brings hither out of concealment forth into unconcealment. Bringing-forth comes to pass only insofar as something concealed comes into unconcealment. This coming rests and moves freely within what we call revealing [\textit{das Entbergen}].\textsuperscript{2}

Martin Heidegger suggests considering revealing as the ancient Greek notion of truth. Likewise, the origin of the word technology is from ancient Greece where it was techné. Techné used to refer to a way of knowing, the mastery of arts and crafts, as this rendered the possibility of bringing something forth towards an end specified in advance\textsuperscript{3}. However, it has to be stressed that “techné is not a concept of making, but of knowledge”\textsuperscript{4} and therefore the crucial matter is that techné reveals. Revealing determines causality, or occasioning, and consequently instrumentality or means-ends relations as well. Thus, Martin Heidegger concludes that if the conception of technology as means is taken seriously, then it should be seen as a way of establishing truth that, in turn, transcends the instrumental dimension.

Technology is therefore no mere means. Technology is a way of revealing. If we give heed to this, then another whole realm for the essence of technology will open itself up to us. It is the realm of revealing, i.e., of truth.\textsuperscript{5}

Modern technology is however, a special mode of establishing truth: “The revealing that rules in modern technology is a challenging [\textit{Herausfordern}]…”\textsuperscript{6}. This challenge is firstly directed against nature, in that the earth becomes a factor in industrialised production, be it in mining and energy, or in agriculture. Nature’s exploitation “unlocks and exposes” what was previously hidden and “is always […] directed from the

making it; this notion is completely alien to the Aristotelian doctrine. What the silversmith does is that he “considers carefully and gathers together the three aforementioned ways of being responsible and indebted” or “the three [other] ways of being responsible owe thanks to the pondering of the silversmith for the ‘that’ and ‘how’ of their coming into appearance and into play for the production of the sacrificial vessel” Ibid, 8. Thus, owing and being responsible, which nowadays are seen either as an ethical issue, or in terms of effecting or causality, had primordially a dissimilar signification. According to Martin Heidegger, this original meaning of responsibility is “starting something on its way into arrival” or “occasioning” (Ibid, 10)Heidegger, “The question concerning technology [Die Frage nach der Technik, English],” 10. The four modes of responsibility come into play concurrently in bringing-forth. The concept of bringing-forth is equally applicable to human activities as in arts and craft, as well as in animate nature (Ibid, 11).

\textsuperscript{1} Heidegger, “The question concerning technology [Die Frage nach der Technik, English],” 9.
\textsuperscript{2} Ibid, 11.
\textsuperscript{3} Ibid, 13.
\textsuperscript{4} Heidegger, “Traditional language and technological language [Überlieferte Sprache und technische Sprache, English],” 135.
\textsuperscript{5} Heidegger, “The question concerning technology [Die Frage nach der Technik, English],” 12.
\textsuperscript{6} Ibid, 14.
beginning toward furthering something else, i.e., toward driving on to the maximum yield at the minimum expense”¹.

Martin Heidegger refers to this as “setting upon” nature, which happens in the processes of “unlocking, transforming, storing, distributing, and switching about” and their proceeding is so regulated and secured, that this turns out to be the main feature of challenging disclosure². These processes eventuate in everything being disclosed as “standing-reserve [Bestand]”³. The bringing about of truth within the enchained ordering is man’s accomplishment, while simultaneously he is challenged to perform this kind of disclosure, whether this is within his awareness or not. This suggests that because it is man’s doing, and he is the one who is originally challenged, he “belong[s] even more originally than nature within the standing-reserve”⁴. Because of this active involvement, however, man is never transmuted into the standing reserve completely, while he also has no control over technology. The unattainability of mastery or control is founded in the primordiality of unconcealment, which is always already in any historical era. Thus, any doing of man is, according to Martin Heidegger, a response “to the call of unconcealment” regardless whether he heeds this call or negates it. This occurrence of what is real permeates the entire modernity and begins with the establishment of science as research, which objectifies. It finds its consummation in the challenging disclosure of technology, which constitutes a totality of immediate availability and utility:

Thus when man, investigating, observing, ensnares nature as an area of his own conceiving, he has already been claimed by a way of revealing that challenges him to approach nature as an object of research, until even the object disappears into the objectlessness of the standing reserve.⁵

The way of constituting truth that obliges man in the era of technology is called Ge-stell by Martin Heidegger. Ge-stell is commonly translated as ‘enframing’. Gianni Vattimo suggests a more felicitous rendering as im-position:

…in which the hyphen indicates a particular etymological use of the term, and there is an echo of the ‘setting in place’ suggested by the German

---

¹ Ibid, 15.
² Ibid.
³ Martin Heidegger employs the notion of standing-reserve as a singulare tantum—emphasising that it is not synonymous with ‘stock’—in order to denote the change-over that takes place between science, where the real becomes object, and technology, where everything is under the demand of availability and utility. Consequently “[w]hatever stands by in the sense of standing-reserve no longer stands over against as object” Ibid, 17.
⁴ Ibid, 18.
⁵ Ibid, 19.
stellen, at the same time as the general sense of an ‘urging’ that we cannot escape...\(^1\)

Gianni Vattimo summarises im-position as “the ‘constellation’ in which modern man finds himself at the close of the epoch of metaphysics and at the moment of triumph of technology”\(^2\). Im-position, as a temporally given actuality brings forth:

...the world of planned production, served by knowledge as representation, and in which man is repeatedly interpellated in an ordering process imposing on him a continuous pursuit of things to serve as reserves or resources, and these serve the ever-increasing development of production...\(^3\)

Likewise, Gianni Vattimo proposes to render *Her-ausforderung*, commonly translated as challenging, as ‘pro-vocation’\(^4\). Martin Heidegger sees man so much directed by this pro-vocation, that it is neither apprehended as a claim, nor does man find himself as the one who is incessantly addressed. Man consequently fails to recognise in which way he exists—the im-position supersedes all prior modes of revealing (or knowing). The im-position sets man into a relation to beings that “is at once antithetical and rigorously ordered” which also conceals that im-position itself, is indeed also a mode of revealing (or knowing)\(^5\). Hence, the essence of technology, or how technology comes to pass, is entirely different to artefacts like machines and blueprints, it is neither the activity to produce these artefact, nor the network consisting of men, their expert knowledge and the system of implements. All these things do not occasion or make up the im-position (*Ge-stell*); they are the response to its pro-vocation\(^6\).

---

2. Claudio U Ciborra, “*Gestell,*” in Ciborra, Claudio U.: *The labyrinths of information* (Oxford: Oxford University Press, 2002), 73. renders *Ge-stell* as “The gathering of the multiple actions and their enchainment...”, which suggest that it is merely human doing, while for Martin Heidegger *Ge-stell* stands for the constellation between man and Being at the end of modernity.
4. Ibid.
6. Ibid, 21. It appears rather infelicitous to render Heidegger’s thinking of the essence of technology as a metaphor for infrastructures, such as the internet and business networks that utilise Enterprise Resources Planning (ERP) systems as done by Ciborra, “*Gestell,*” Ciborra and Hanseth, “From tool to Gestell: agendas for managing the information infrastructure.” It could be at least questionable whether the concept that reflects the totalising presence of technologies can be reduced to describe something ultimately tangible like a network, however gigantic its dimensions may be, nor does it seem to be appropriate to apply this philosophical concept as a quasi-supplement to the technologists’ research agenda on infrastructures.
The Technological Essence of Science

Martin Heidegger employs the conception of techné also to illuminate the relation between science and technology. He renders the sense of this word as “to know one’s way in producing. Knowing one’s way is a kind of knowing, having known and knowledge”\(^1\). Technology therefore has the potential and claims that corresponding knowledge evolves in the form of science—a unique event in history that occurred at the beginning of the modern era\(^2\). It is however, deceptive to assume that since modern technology must employ exact physical science, technology is applied science\(^3\). Martin Heidegger holds that from the point of view of their essence, modern technology was actually prior to modern science, despite the latter being chronologically a predecessor of the former\(^4\). Because science must use devices that are ever more sophisticated in its research, the relation between the two must also be founded on knowledge, with the effect that “[t]echnology is a co-determinant in knowing. It can only be so if, in what is most peculiar to it, it has something of a knowledge character itself”\(^5\). Martin Heidegger observes that the relation between science and technology is nowadays seen as reciprocal one, rather than technology being applied science. However:

\[\text{[a] reciprocal relation between natural science and technology can only subsist if both are coordinated, if neither science is only the foundation of technology, nor technology is only the application of science.}^6\]

Referring back to the characterisation of science as the mathematical projection of nature with its selective objectification and calculative method, which render “[o]nly what is calculable in advance […] as being”, he detects in research the same workings as in technology. Scientific research challenges nature according to its prior plan and secures it as its proven object. “Yet precisely this positing that challenges forth [herausforderndes Stellen] is at the same time the characteristic of modern technology”\(^7\). Thus, the relation between science and technology is that of a “common origin [that] conceals itself in what we called the positing that challenges forth”\(^8\). Patricia Glazebrook summarises that

---

\(^1\) Heidegger, “Traditional language and technological language [Überlieferte Sprache und technische Sprache, English],” 135.
\(^2\) Ibid.
\(^3\) Heidegger, “The question concerning technology [Die Frage nach der Technik, English],” 23.
\(^4\) Ibid, 22.
\(^6\) Ibid.
\(^7\) Ibid.
\(^8\) Ibid, 137.
the essence of technology is simultaneously the essence of science, as the im-position having found its first manifestation in science.

Modern natural science is already the basic form of technological thinking. Science shares its essence with technology such that technological representation, Ge-stell, can intervene in modern technology. [...] Ge-stell, in fact captures precisely the notion of projection at work in Heidegger’s account of modern science, such that h argues that science and technology are essentially one.¹

The Essence of Information Technology—the Information Ge-Stell

Information technology, with its underlying mathematical and systems thinking, has come to be seen as the latest manifestation of the pro-vocation that constitutes the relation between man and what is. Gianni Vattimo’s “Ge-stell of information” is “the world of images of the world” that has emerged from the superseding of machine technology by computers and computer networks. It comprises all representations—as either the world presented by the media, or the world as it becomes visible through statistics and planning in government and business². The successive ordering to which man is pro-voked is extended and augmented by the pervasiveness of computer technology and ubiquitous concomitant applications. Manipulation and transfer of data connections are expanding calculability, and with it the appearance of control and mastery of machines, and also of the processes of planning and reckoning themselves. The representative relationship towards society and nature becomes actually constituted by computer software.

Software packages are cognitive “machines” which cannot be supplied inputs other than symbolic while they produce ceaselessly new conceptual items and relationships. They classify, order, process, store, retrieve, transfer and control data and information. Once automated information processing is installed, the process tends to become self-propelling. More data demands new computer-based systems for processing information, which produce more data and so forth.³

Thus, being composed of ‘cognitive machines’, “[d]igital technology embodies the representational world-view in its very physicality”⁴. Despite the strong nexus between the ‘world as picture’ and the ‘world of pictures of the world’ (the representational

¹Glazebrook, Heidegger's philosophy of science, 252.
²Vattimo, The transparent society [La società trasparente, English], 117.
world-view and the representations that make up information systems and their ‘products’ their nature and their connection tend to fall into oblivion. Jannis Kallinikos cautions against the tendencies in current discussions of information technology and representation, which posit that representation is just another form of symbolic coding, and which tend to stress the practical aspects of only representing techniques, while denying or ignoring their inherent attachment to the representational world-view. These conceptions of representation are based on scientific abstraction and generalisation. Thus, they “…see only the sophisticated manipulation of mathematical or computable models, to regard playing with formalisms as the acme of human intelligence as for example Piaget […] did”¹. In generalising about representation “every use of images and symbols is looked upon as an instance of representation” and subsequently “appears as the universal formula of cognition”, which can then become akin to the manipulation of these tokens by animals and machines². Hence, abstraction occurs in that knowledge-as-representation is detached from its historical givenness, from the circumstance that the practices of representing are only conceivable within the view of the world as picture, and the concomitant instrumental orientation³. Only when performing this abstraction, is it possible that “representing techniques appear as innocent techniques of world mediation”⁴. This conception of representation as means conceals that it takes place within im-position and that it is indeed a mode of revealing (or knowing). Computer technology, as the confluence of representation and machines, does not reflect the world-out-there, or mediate man’s relation to it—it is an im-posing revealing, since “[r]epresentation and technology […] produce actuality and truth”⁵. As in scientific endeavours, information technological representation is secured by methods that refer back to the projection of selective objectification⁶. It is institutionalised as ongoing activity, in the sense that “[r]epresentation as world-view, representing techniques and

² Kallinikos, “The archi-tecture of the invisible: technology is representation,” 121.
³ Ibid.
⁴ Ibid, 138.
⁵ Ibid, 124.
⁶ The world-making intentions of representations in information systems attain some visibility in the various attempts to found systems development in ‘regional ontologies’, which seek to sketch philosophically a world view Falkenberg and others, A framework of information system concepts: the FRISCO report, Rudy Hirschheim, Heinz K Klein, and Kalle Lyytinen, “Exploring the intellectual structures of information systems development: a social action theoretic analysis,” Accounting, management and information technologies 6, no. 1/2 (1996), Ron Weber, Ontological foundations of information systems, Coopers & Lybrand accounting research methodology monograph; 4 (Melbourne, Vic: Coopers & Lybrand Australia, 1997). These world views can be considered as securing representational practices by strengthening their credibility to avoid the hermeneutical problem of the simultaneous constitution of the object and its symbolic representation and the ensuing interpretational differences.
social institutions are involved in an ontological complicity, a constitutive relationship whereby each one presupposes and supports the others. The perimeters of information technological representation are also analogous to those of science. In being reliant on selective objectification, it is impossible to account for the essence of representation, and hence of their limits within the information systems discourse and practice themselves. Thus, limitations of information technological formalisation do not arise from “a naïve copy view of knowledge but […] from a world view that acts on its own projected image that conceives and approaches the world as though it were no more than an object of its intention”.

**Language in the Information Ge-Stell—Information**

Within Ge-stell, everything that is, is selectively objectified, represented, and according to that acted upon. This does not apply only to world, but likewise to the actual knowledge of world. The transformation of the concept of knowledge from a philosophical category into an entity of theorising and measurement in organisational contexts, which has been previously outlined, is the mode of knowledge within Ge-stell. This mode is reliant on a view of knowledge as the communication of something useful or, as Haridimos Tsoukas has put it, knowledge-as-information. The view of knowledge as something communicated points towards the question of the relation between language and information. This relation has become problematic, after the technological connotation of information was coined by Claude Shannon, and this concept of information entered the scientific discussion in the advent of computer technology.

The following exposition has been largely instructed by the reflection on information in relation to language and computer technology as performed by Rafael Capurro, with reference to Martin Heidegger’s thought. Rafael Capurro, in a similar manner to Gianni Vattimo, relates information technology to the concept of Ge-stell (im-position),

---

2 It appears however, that attempts to establish meta-representations bring these limits somehow to the fore, since they make obvious that these projects quickly turn out to be nothing more than an infinite regress.
3 Kallinikos, “The archi-tecture of the invisible: technology is representation,” 128.
4 See the sections Knowledge as Object and Knowledge as Social Cognition in Chapter 3: Problematising Knowledge in Organisatons.
although in the sense of the pro-vocation of language. The information *Ge-stell*, for Rafael Capurro, is the challenging disclosure (pro-vocation) of language—its objectification and formalisation through semantics, logic, etc., its disambiguation in programming languages and systems modelling. This very objectification shows that organisational information systems are not the simplification and “codification of practical knowledge”, but rather the outcome of “scientific reflection”\(^1\).

Since within the technical connotation of information, which is based on precise definition, its common and traditional meaning that relates to humans may still resonate, Rafael Capurro cautions against the “use of an undetermined notion of information”\(^2\). Within the human realm, information can be determined as having two basic dimensions—those of reporting and forming. The most typical instantiations are firstly scientific-technological and economic reporting, and secondly, the formation of public opinion by the messages of the media industry. According to Martin Heidegger, the common meaning of information is “on the one hand the instant news and reporting that, on the other hand and at the same time, have taken over the ceaseless molding (forming) of the reader and listener”\(^3\). Its current meaning is determined from the way it is used in contemporary English, which means “the appraisal that as quickly, comprehensively, unequivocally, and profitably as possible acquaints contemporary humanity with the securing of its necessities, its requirements, and their satisfaction”\(^4\). Within technological understanding, information can refer to representation of nature and society, as well as to language as an instrument for communication.

**Information as Representing Nature—Challenging Disclosure and Sufficient Reason**

Technology has unfolded within the realms of modern physics. Consequently, Martin Heidegger discusses the technological concept of information within this context and posits that in physics nature must show itself correspondingly now as ‘standing-reserve’—in a way amenable to calculation and remaining accessible as “a system of information”\(^5\). Thus, information is one way of disclosure, in which man represents what

---

\(^1\) Kallinikos, “The archi-tecture of the invisible: technology is representation,” 126.

\(^2\) Capurro, “Heidegger über Sprache und Information [Heidegger on language and information],” 342-343.


\(^4\) Ibid, 124.

\(^5\) Heidegger, “The question concerning technology [Die Frage nach der Technik, English],” 23.
is disclosed (nature) as stock at hand [standing-reserve, *Bestand*]<sup>1</sup>. The representation of nature in this way conditions a changeover in the essence of language, namely as reporting the stock at hand. Therefore, for Martin Heidegger, this “determination of language as information first of all creates the sufficient grounds [*zureichenden Grund*] for building and using computer systems and concomitant models for “large calculations”<sup>2</sup>. This means, that formalisation of language takes place, not due to machines like computers requiring unambiguous instructions, but that the representational mode of knowledge of science and technology and the concurrent disposition of language as reporting instrument furnishes that rationality within which computer software systems and networks can be actualised. Thus the view of language as information, its technological understanding, precedes the actual technological determination of information after the Second World War. Within the technological world, information as a dimension of challenging disclosure of standing reserves establishes a new concept of causality. As the object of science has transmuted into the standing-reserve, thus diluting the subject-object dichotomy<sup>3</sup>, in this new concept of causality, all earlier conceptions collapse into one. Rafael Capurro argues that “[i]t seems as though causality is shrinking into a reporting—a reporting challenged forth—of standing-reserves that must be guaranteed either simultaneously or in sequence”<sup>4</sup>. Hence, he claims that information has become a structural dimension of man’s existence in the modern age, and he sums up: “That what is in our age is the dominance of this kind of disclosure”<sup>5</sup>.

**Language as Instrument for Communication—Language as Information**

In contrast to the challenging disclosure that comes to pass in the informational procedures of nuclear science and technology, for example, conceiving of language as information, or of language as an instrument for communication, appears to be innocuous<sup>6</sup>. Yet, this instrumental view of language is now carried to the extreme and becomes most apparent in the development of computers. This technology appears to determine what is

---

<sup>1</sup> Capurro, “Heidegger über Sprache und Information [Heidegger on language and information],” 335.
<sup>2</sup> Heidegger, “The question concerning technology [Die Frage nach der Technik, English],” 23.
<sup>3</sup> See footnote 3 on page 58.
<sup>4</sup> Capurro, “Heidegger über Sprache und Information [Heidegger on language and information],” 335. The explication of causality as reporting may be understood as the completion of the understanding of causality as man’s effecting of standing-reserves; the latter are only available when reported upon (e.g. through supply chain management).
<sup>5</sup> Ibid, 336.
<sup>6</sup> Ibid, 337.
meant to be language out of its conditions and functions as a machine\(^1\). Yet, Martin Heidegger does not hold that the technicality of computing is the determinant of this conception of language. Language as information is rather bound to the way of constituting truth that obliges man in the era of technology, called Ge-stell. It is Ge-stell, im-position that provokes man to regard all what is as standing-reserve, and to order it accordingly in the manner of calculative thinking. Consequently, language becomes the language of im-position—“Speaking is challenged to correspond in every respect to Framing [im-position] in which all present beings can be commandeered”\(^2\). It is within Ge-stell where “speaking turns into information”\(^3\). Language as information is constituted by a reciprocal relation in that this language is set up and secured in the form of information theory. Ultimately, man within Ge-stell is formed by what is commonly believed to be a medium or instrument:

Framing [im-position]—the nature of modern technology holding sway in all directions—commandeers for its purposes a formalized language, the kind of communication which ‘informs’ man uniformly, that gives him the form in which he is fitted into the technological calculative universe, and gradually abandons ‘natural language’.\(^4\)

The abandonment of ‘natural language’ Martin Heidegger considers already pre-configured in that formalised language is posited as an objective. Thus, “the ‘natural language’ of which one must talk in this context is posited in advance as a not-yet-formalized language that is set up to be framed in formalization”\(^5\). In his view, the circumstance of information theory having to refer back to ‘natural language’ is only a transient concession made by information theory. Hence, for Martin Heidegger, for information theory “the natural aspect of language [is] a lack of formalisation”; this means that ‘natural language’ is determined out of its polarisation against the potential for formalisation and this “negatively”\(^6\). However, the conception of language as information does not represent the nature of language, since how language comes to pass is determined within time:

All language is historical, even where man does not know history in the modern European sense. Even language as information is not language per se, but historical in the sense and the limits of the present era, an era that be-

\(^1\) Ibid.
\(^3\) Ibid, 132.
\(^4\) Ibid.
\(^5\) Ibid.
\(^6\) Ibid.
gins nothing new but only carries the old already outlined aspects of the
modern age to their extreme.¹

Wanda Gregory has pointed out that Martin Heidegger’s reflection on the essence of
technology provides the point of departure for thinking about language. The condition of
*Ge-stell* that turns language into information provides the opening within which the
question of the essence of language becomes exigent. The preceding sections have
shown that for Martin Heidegger the conception of language as information, or as
instrument is a historically given actuality. It is now necessary to outline how he has
determined the essence of language, which grants the possibility for it being transmuted
into technological language, information². His question into this matter is:

> In how far is it necessary to talk about the technological-language, i.e., about
> a language that is technologically determined by what is most peculiar to
> technology? What is language [die Sprache], which is precisely what in a
> special way remains exposed to technology’s dictate [Herrschaftsanspruch]?³

Martin Heidegger considers one part of the delineation of language as provided by
Wilhelm von Humboldt, whom he regards as the founder of modern linguistic research,
as definitive of the current conception of language. This conception regards speech as
“(1) A faculty, an activity and achievement of humans. (2) […] The operation of the
instruments for communication and hearing. […] (3) The expression and communication
of emotions accompanied by thoughts in the service of information […] (4) A
representing and portraying of the real and unreal⁴. For Martin Heidegger, Wilhelm von
Humboldt also bears witness to an insight into the essence of language that says,
“Language is not a mere means for exchange and understanding”⁵. Wanda Gregory⁶
explicates that Martin Heidegger’s positive answer to the question is found within
language itself by concentrating on “what language itself gives us to think with” the
word “‘sagen’ [to say]”⁷. The philosopher proposes that “[i]n keeping with the most

---
¹ Ibid, 133.
² Wanda T Gregory, “Heidegger on traditional language and technological language,” in 20th World
Congress of Philosophy (Boston, MA: 1998).
³ Heidegger, “Traditional language and technological language [Überlieferte Sprache und technische
Sprache, English],” 138.
⁴ Ibid.
⁵ Ibid, 139.
⁶ Gregory, “Heidegger on traditional language and technological language.”
⁷ Heidegger, “Traditional language and technological language [Überlieferte Sprache und technische
Sprache, English],” 123.
ancient usage of the word we understand saying in terms of showing pointing out, signaling. He explains:

And what does it mean to show? It means: to let something be seen and heard, to bring something into appearance. What remains unsaid is what has not yet been shown, has not yet come into appearance. However, what is present [Anwesendes] comes into appearance through saying, that and how it presences [anwest]; what is absent [das Abwesende] as such also comes into appearance in saying. Yet to say properly, i.e., to show, i.e., to let appear, is something humans can only do with what shows itself to them, which appears from itself, manifests itself and grants itself.

In this way, Martin Heidegger challenges the anthropocentric and instrumental determination of language by claiming that the essence of language is nothing human. Instead, man is given to language, since speech is characteristic to man; it grounds him and bestows him with his possibilities. Consequently, the instrumental view of language in effect reverses matters, by installing man as the master of language, while in fact the opposite is the case. Hence, for Martin Heidegger from the determination that “[t]he essential being of language is Saying as Showing”, it follows that “language speaks”, because of the reciprocal relation between speaking and listening.

In contrast, saying as showing also has the potential that language turns into information, that language becomes technological. This happens when “showing means only making signs”. A sign then replaces something that is not present itself, and this works only when it is agreed in advance what these signs shall represent. It works only when semantics and syntax are unambiguously defined.

The sole character of language remaining in information is the abstract form of writing that is transcribed into the formulae of a logic calculus. The clarity that is hereby necessarily required of signs and formulae ensures the possibility of secure and rapid communication.

---

1 Ibid.
2 Ibid, 140.
3 Gregory, “Heidegger on traditional language and technological language.”
4 Ibid.
5 Heidegger, “The way to language [Der Weg zur Sprache, English],” 123.
6 Ibid, 124. For adherents of realism, like Weber, Ontological foundations of information systems, 182. not surprisingly, the view that man is not the master of language can only come along as “obtruse and opaque” language itself, and henceforth as if someone would not be able to master language according to common perception and this view is consequently ridiculed and dismissed as frustrating nonsense. It is however not the language of philosophy that is inaccessible to these ‘critics’, but the very idea that a different view other than the anthropocentric and instrumental determination of language and technology could be thinkable.
7 Heidegger, “Traditional language and technological language [Überlieferte Sprache und technische Sprache, English],” 140.
8 Ibid.
Wanda Gregory notes that for Martin Heidegger the derivative status of technological language means that it is “atrophied into the mere transmission, the reporting of signals”.

World as a System of Information—Cybernetic Interpretation of Man

Since the technological view becomes all-prevailing in our time, due to its utility and immediacy, it is paradoxical that, according to Martin Heidegger, information is regarded as the “highest form of language”, while it is actually a deduced mode of language and just one of its possible instantiations. Based on his linguistic determination of man, for Martin Heidegger language-as-information means that from this determination of language a conception of man arises, “which is also a threat to [his] own most essence”. This threat comes to pass most apparently in cybernetics, which he regards as “the most widely extended discipline of modern technology”. It has shaped the perspectives of many areas of research from biology to organisational studies and thus has stamped the image of man—also in the sense of being a knower. The application of the concept of information in biology and medicine has certainly had a significant impact on the image of man, and it is hard to imagine how projections in the sciences of nature and man are connected to issues of knowledge and technology in modern organisations. There are circumstances that excuse this apparent digression that include: (1) information in biology and medicine is related to the concept of control as presented by cybernetics; (2) information theory and thus cybernetics form a significant backdrop for a branch of science and technology studies; and (3) cybernetic thinking has informed organisational theory and management, and of course computer science.

Martin Heidegger’s friend, the Swiss psychiatrist Medard Boss, has criticised the concept of information in the natural sciences and its effects. His elaborations have emerged from an exchange with Martin Heidegger. Thus, Medard Boss’ writings on this matter do not only represent the influence of Martin Heidegger’s thinking on language.

---

1 Gregory, “Heidegger on traditional language and technological language.”
2 Heidegger, “Traditional language and technological language [Überlieferte Sprache und technische Sprache, English],” 141.
3 Ibid.
4 Ibid.
5 Ibid.
6 Capurro, “Heidegger über Sprache und Information [Heidegger on language and information].”
7 Examined in Chapter 9: From Phenomenological Reflection to Destructive Narrative
and information on science; they have rather emerged within a dialogue between the philosopher and science and scientists¹.

For Martin Heidegger, the centrality of information and the subsequent change in the conception of man and human life is strikingly captured in some statements of one of the founding fathers of cybernetics, Norbert Wiener. Martin Heidegger quotes “To see the whole world and give commands to the whole world is almost the same thing as to be everywhere”, and “To live effectively means to live with adequate information”². These assertions by Norbert Wiener document the attribution of control and the centrality of information within the projection of systems thinking. Medard Boss has characterised this thinking as being “based on the concepts of information and feedback of bits of information. Information is neither simply material nor simply energetic, but it is nevertheless, in its founder’s conception, quantitatively measurable”³. Thus a crossover of the concept becomes possible, which completely abstracts from the origin of information. This matter becomes more compounded when there is a crossing from the technical use of the information concept, into the realm of biology and psychology—then Medard Boss asserts that these disciplines “are taking loans from sociology as well. The very name was borrowed from sociology, for ‘information’ originally means the transmission of a message among socially organised people”⁴. Based on the transfers from the social and technical realms, “information suddenly becomes a particular arrangement of chemophysical processes and structurings which enter the brain along with perceptions and communications, and which can be measured and quantified from the brain matter⁵. Medard Boss holds that there is no proof for the authenticity of this claim, but information is nevertheless posited to be the phenomenon that establishes the fundamental identity of the psychic and the somatic⁶. Whether the human psyche is related to chemophysical processes in the nervous system, to its “molecular structure, or to stochastic processes within the molecule, or to ordered sequences of electrical impulses”, all these applications of information theory sum up for Medard Boss to “scientific reductionism”⁷. This kind of biology and psychology:

---

¹ Capurro, “Heidegger über Sprache und Information [Heidegger on language and information],” 341.
² Heidegger, “Traditional language and technological language [Überlieferte Sprache und technische Sprache, English],” 141.
⁴ Ibid.
⁵ Ibid.
⁶ Ibid.
⁷ Ibid, 28.
exaggerates and anthropomorphises the molecular systems into analogs to consciousness and consciousness-like messages. Both this and the chemo-physical reduction presuppose obliviousness to the essential character and substance of the realm of material-energetic processes as well as the realm of language and human conduct. It is impossible to overlook the profound differences between chemistry and language unless one’s vision is so intent on the concept of information that everything else must appear distorted. The vagueness with which exact science defines information strengthens the tendency to use this definition as the basis for supposed interaction between all sorts of systems.\(^1\)

Since the “cybernetic interpretation of man” is simply based on scientific thinking, it considers the associations between “electrochemical systems and information systems” as another instantiation of causality\(^2\), which is already reduced to “temporal succession”. Causal relations between systems, which would otherwise appear to be void and formal, in information theory are “rewritten as ‘message relaying’, or ‘symbol transference’, as ‘molecular script’ or ‘translation’”. Medard Boss concludes that the entirely human phenomena of perceiving and communicating meaning become ascribed as capabilities to “material-energetic systems”\(^3\).

Information theory, in conceiving all processes as informational and controllable through feedback, also redefines human accomplishments such as learning in terms of these concepts. This effectuates “that language is not an exclusive attribute of man, but is one that he may share to a certain degree with the machines he has constructed”\(^4\). Cybernetics is also able to accommodate the paradox that, within its projection, information can be simultaneously the highest form of language, while language is also equated with the manipulation of signs by machines and animals. Information, in its cybernetic determination, hence emerges as the central category which overcomes the psychic-somatic, man-machine, man-animal distinctions.

In this way the essence of technology—im-position (Ge-stell)—comes to pass in the transformation of language, and since man is determined as the linguistic being, in the transformation of his essence. Wanda Gregory summarises the relation between technology and language with recourse to the linguistic nature of Being:

---

\(^1\) Ibid.

\(^2\) For the problem of causality in science and philosophy see the preceding sections on The essence of science as research, subsection Method and Objectness and The Insufficiency of the Anthropological and Instrumental Determination of Technology and Rafael Capurro’s observation of causality shrinking into reporting in the section Information as Representing Nature—Challenging Disclosure and Sufficient Reason.

\(^3\) Boss, Existential foundations of medicine and psychology [Grundriß der Medizin, abridged, English], 28.

\(^4\) Heidegger, “Traditional language and technological language [Überlieferte Sprache und technische Sprache, English],” 141.
Technological language is thus itself an effect of the essence of language as Saying-Showing. Neither language nor technology has shown to be anthropological and instrumental in their essence. Moreover, technology in its essence is nothing technological, in the sense of machines and their parts, and language in its essence is nothing linguistic, in the sense of human sounds or words. Enframing [im-position], as the essence of technology, and Saying-Showing, as the essence of language, are not human doings. In fact, we are commandeered by Enframing [im-position], and founded on and mastered by Saying-Showing. Thus, in technological language there lies a convergence of these into the event that appropriates the human being to challenge-forth all that is and to speak about all that is in the terms of information. Moreover, Enframing [im-position] dictates its mandate to Saying-Showing as it unfolds into technological language. In the language of Enframing [im-position], the essence of technology prevails over the essence of language.1

In brief, what happens within Ge-stell—that “thinking is transformed to representation, i.e., (re)writing and (re)constructing the world from the horizon of human intention”2 effects that eventually the overall reductionism of science—takes its firm hold by making man and everything that is causally known in terms of informational control.

This suggests a further denotation of Rafael Capurro’s and Gianni Vattimo’s concatenations of information and Ge-stell. For Rafael Capurro, the information Ge-stell is the pro-vocation that comes to pass in the formalisation of language, for example, language is seen as instrument, which in turn reflects on man as the linguistic being. The setting up of language as formalised language effects information as the language of imposition. For Gianni Vattimo, the Ge-stell of information is the pro-vocation that comes to pass in the representational worldview and the incessant truth production through representation. I would propose then that the Ge-stell of information is to be understood in the sense of the subjective genitive—as the pro-vocation that comes to pass by the conceptuality of information, which has been proffered by information theory and cybernetics. Hence, the information Ge-stell is also the cyber Ge-stell, the pro-vocation towards control, within which the completion of modern thinking comes to pass. Information theory and cybernetics are the overcoming of the distinctions between nature, man, and machine. It is the cyber Ge-stell that provokes to regard everything that is under the aspect of control, irrespective of essence, and where causality is the reporting of control and controllability in informational shape. The reductionism of the information Ge-stell is what Martin Heidegger has called “one-track thinking”; this kind of thinking is “one of those unsuspected and inconspicuous forms […] in which the

---

1 Gregory, “Heidegger on traditional language and technological language.”
essence of technology assumes dominion—because that essence wills and needs absolute univocity\(^1\).

Thus, the information *Ge-stell* is also the condition under which the conception of knowledge-as-information becomes possible. If chemical exchanges between cells count as information in the same way as the exchange of signals between machinery, and communication between humans, the same reduction can be performed on the category of knowledge. This reduction involves (a) abstracting knowledge from meaning; (b) detaching it from acting; (c) objectifying it as a means of control; (d) regarding it as computable and hence detached from human accomplishment; and (e) denial of its historical and social dimension\(^2\). Objectified in this way, knowledge can be integrated into means-ends relationships and be manageable by computing devices. This also implies a change-over in meaning of the category of knowledge from its original metaphysical determination as true representation, into an object itself—knowledge as controlling and controllable. Knowledge, set up in this way can be generated in systems based on it; it can be engineered and managed.

**Information as Anthropological Category**

Against the “cybernetic meaning” of information, it is possible to insist on restricting the use of that concept entirely to the realm of man, to consider it as an “anthropological phenomenon”\(^3\); more precisely, to consider it as the communication between humans, leaving aside any instrumentalist connotations. In this way, as shown by Rafael Capurro, questions of understanding and interpretation emerge—and thus the hermeneutics of information\(^4\). Questions of social order, and thus questions of the politics of information also emerge. Criticising the information *Ge-stell*, while regarding it as the “only possible perspective” means to indicate that it sustains “the illusion of an ideal language, of pure intelligence, of objective information, and so on”\(^5\). This results in just projecting the negative side of the image presented by cybernetics, and may eventually turn out to be affirmative, since it remains chained to the way cybertechnology appears. To overcome

---

\(^1\) Heidegger, *What is called thinking?* [Was heißt Denken, English], 26.
\(^2\) See the five information fantasies by Richard Boland in the section *Knowledge as Object*.
\(^4\) Capurro, *Hermeneutik der Fachinformation* [Hermeneutics of specialised information].
\(^5\) Capurro, “Informatics and hermeneutics,” 374.
this conundrum it is therefore necessary to understand the information *Ge-stell* as “a possible perspective among others”¹.

Rafael Capurro formulates the basic tenets of the anthropological view of information, as follows: (1) Messages always belong to a particular environment, where they are exchanged (There is no “information in itself”). (2) Pre-understanding is the condition for messages being extant as information. (3) These two conditions actually determine man’s being in-the-world with others, i.e., his “mode of existence as communicative being” (Extantness in communication is moreover common to living beings in general). (4) Messages as language are not merely communication, but rather in-forming, in that they may constitute new meaning, and thus are determinative for the capacity “to change our relationships to ourselves and to the world”. It is language, which grants the potential to be involved, to alter, or initiate thinking and action. Therefore, *Dasein* as being lingual is neither surrendered to a “communicative context”, nor restricted to react upon signals. In an anthropological sense, information appears only “within an open horizon of alternatives”. In contrast, for man to be within a “context of ‘pure communication’” most likely constitutes either an individual or social pathology—paranoia or totalitarian social order².

Being bound up with acting and thinking within an open horizon of possibilities, information can never be indifferent, but is always signified by change. Thus the anthropological determination of information reads:

> A message we send or receive is to be called information if, and only if, it entails the possibility of changing in a significant manner something of our previous ways of relating to ourselves, to other persons, to things and to situations in the world.³

As an anthropological category, information denotes a social phenomenon, and consequently its relation to power is germane and pertinent. Rafael Capurro sketches this relation as formed by two dimensions “namely a vertical one, where messages are being imposed, and a horizontal one where messages are freely interchanged”⁴. These dimensions are derived from the way Western thinking has conceived of messages in the human realm since ancient times. The vertical transmission of messages in its ideo-typical mode happens in myth, poetry, and revelation, and is connotated with *angelia*, which means the passing on of news from the Gods to the mortals in Greek mythology. The horizontal

---

¹ Ibid.
³ Ibid, 261.
⁴ Ibid.
communication of messages in its ideo-typical mode happens in philosophy, science, and modern publishing. From Socratic philosophy onwards, the horizontal dimension dominates and is based on dia-logue and is connoted with lógos. The shift from the communicating the wisdom of the gods, as in the oracles that announce the occurrence of important events or of authoritative decisions associated with the sacred status of the message and/or the messenger (from angelía), to the establishment of truth in the mode of dialogue is a qualitative leap. It is indicative “of the emergence of new and different kinds of institutions and practices concerned with the process of transmitting knowledge, of teaching and learning”1.

Message as lógos, as truth between humans in the sense of an epistemological notion, in the modern era becomes something that belongs to man as subject. Alternatively, “its signs or symbols” are correspondingly considered objective and, under the influence of thinkers like Descartes and Leibniz, “as something to be stored and processed”. According to Rafael Capurro, “information as a commodity” as currently perceived, being based on this subject-object dualism is the immediate consequence of its rationalist determination.

The fact that lógos is associated with dialogue does not imply that it should be equated with an entirely horizontal dimension of information2. By using as example Plato’s political utopia, Rafael Capurro shows that there is always interplay of both, depending on the historical constellation of institutions and practices3. He argues that in Plato’s political project the ‘king’ was attributed “‘higher’ but philosophical knowledge of the Divine”, which replaces the earlier mythical and poetic angelía. The ruler’s knowledge of the good is superior to the technical knowledges (techné) of all the other citizens. His divine techné is the result of a long ‘dialectical’ education that entails above all the:

…mathematical and the ‘ideal’ structures and their imperfect representations in the cosmic and political order. […] The mythical experience of the divine is integrated into the platonic ‘infological’ structure as a ‘sudden’ (exáiphnes) encounter with an ‘unspoken’ dimension (árrheton) after a long journey of searching for the truth under the guidance of a philosophy master. This ‘searching together’ is therefore not symmetrical.4

1 Ibid, 262-263.
2 Rafael Capurro’s account of the informational structures as represented by the different philosophical schools in ancient Greece cannot be expanded on in the present context.
3 For Hannah Arendt’s criticism of Plato’s political thought see te section The Reification of Power—Politics as Fabrication.
After the dominance of the vertical mode of information during the Middle Ages that was institutionalised within the church, Renaissance and the Enlightenment sought to secure the horizontal dimension of information within the emerging sciences. It was the printing technology and the dissemination of its products through publishing that held the promise of a debate based on reason, and on arguments presented in writing. This was also the period within which it became evident that the print medium needed to be used without restrictions of censorship resting in state institutions, and that messages should be freely disseminated. Consequently, “the modern or classical ‘knowledge order’ based on printing was characterized by the separation of ideas and property, of ideas and interests, of theory and practice, and of science and state”¹.

Modern information technology, and in particular communication networks between computers, have proliferated modes in which messages can be disseminated and exchanged. According to Rafael Capurro, the consequence is that:

[the idealized censorship-free structure of the modern scientific lógos becomes part of a global network of messages and messengers. If science has become a new source of power in modernity, a kind of secularized angelía is now at work.]²

This does not imply that those tendencies that oppose this vertical information structure could be equated with a disintegration of power structures, like those associated with science and its methods. For Rafael Capurro, the present “discourse of information” bears some similarity to those shifts of institutions and thus power that occurred in ancient Greece at the beginning of modernity when lógos unsettled angelía. The current discourse however, with its claim to foster a pluralism of messages, undermines the belief in the “value-free lógos”, as the privilege of the rational scientific communication becomes questioned by this overt liberal attitude. Rafael Capurro characterises this discourse as laissez-faire and oriented towards the individual, and that it sustains the assumption that every message has value due to its potentiality of finding a recipient or user. At the same time, it conceals that the pervasiveness of messages correlates to oligopolic power over the channels of communication. The discourse of information is pitted against, and aims at, the dismantling of the modern image “mankind in itself” by inverting it. In the current discourse, information “looks chaotic, i.e. individual oriented, but it is based on power as such and on its outward sign, money”³. The language of the information economy depletes information of its social dimension—both in terms of the

¹ Ibid, 265-266.
² Ibid, 266-267.
³ Ibid, 267.
construction of meaning and in terms of information being a public good—under the guise of seemingly supplanting it with a “non-hierarchical, […] powerless structure”. The new mode of “horizontality” of information is intrinsically linked to the values of profitability, efficiency, and individualism being considered as superior. Thus, the new practices, discourses, and institutions of information result where knowledge in the form of knowledge-as-information becomes a commodity. Rafael Capurro concludes that the discreteness of “ideas” and merchandise used to be rather fictitious but has now undergone an inversion analogous to other distinction, such as those between “ideas and interests, theory and practice and science and state”.

While information in academic communication and the mass media occurs in the disguise of liberal distribution, dissemination, and consumption, within organisational environs (such as businesses), it is conspicuously already connected to the values of efficiency and profitability and to relations of power. Information and its technology, in the latter contexts, constitute a strengthened reciprocity between representation and organisation, which is analogous to the world as picture.

Representation, Information, Organisation and Information Technology

The nexus between the view of the world as picture, ways of representing and information technology becomes crucial when an inquiry into modern organisations is pursued. Drawing on Shoshana Zuboff’s investigation of information systems in organisations, Robert Cooper reminds that information systems in their representational workings are nothing external to organisations at all, but rather their acme. “Information technology encapsulates a general function of all formal organization: the need to make transparent what is opaque, to make present what is remote and to manipulate what is resistant”. In its operation within a modern organisation, information systems accomplish the following: (a) they make possible acting at a distance, based on representations that inform; (b) they overcome time and space, in that a representation

---

1 Ibid.
4 Ibid, 255.
may be available throughout the organisation, irrespective of where it resides and at any time; finally (c) they condense and reduce the complexity of actuality, in that events and relations become displayed within the two dimensions of the terminal screen and its reservoir of symbols\(^1\).

According to Robert Cooper, such representations enhance the capacity to act in that they follow a particular ‘economy’ that, in overcoming human deficiencies (physical and mental restrictions), turns them into advantages\(^2\). Information technology is rather representational technology since, as Robert Cooper argues, representation is inherent and at the same time primal to information: information is constituted by representation\(^3\). In tandem, representation and information within organisations bring forth remote control, immediacy, and complexity reduction, and within this constellation, they are obeying the ‘economy’ of “representational and informational gain”\(^4\). Analogously, to the world-as-picture created by the scientific endeavour, the nexus between organisation and representation, combined with information technological effectuation, proves to be in this domain in that the organisation becomes knowable as a picture. This is due to the transition between the represented and its representation, or the ‘object’ and the information given about it—“… the significance of representation through remote control … takes precedence over the event it represents. This means […] that we no longer see a ‘picture of the organization’ but the organisation grasped as a formalized picture”\(^5\).

Response to the Pro-Vocation—Knowledge-as-Information and Myth

Organisational Information Systems as Objects of Knowledge

The reciprocity of representation and organisation, and thus the co-constitution of organisational knowledge (knowledge about the organisation as well as knowledge within the organisation) by information systems, becomes entirely obscured within the instrumentalist view of technology. This instrumental conception of technology has found its expression in how organisational information systems have been dealt with in

\(^1\) Ibid, 256.
\(^2\) Ibid, 256-257.
\(^3\) Ibid, 266.
\(^4\) Ibid, 266-267.
\(^5\) Ibid, 268.
academic discourses, yielding viewpoints that are partially contradictory. Firstly, information systems have been seen as a tool—“to consider technology as something exterior, imported as it were, in organizations to carry out pre-existing organizational tasks effectively”\(^1\). In contrast, information systems were reified, and believed to be something that cannot be controlled, corresponding to “a conception of technology as an autonomous force impacting for better or worse (depending on one’s point of view) on society”, of technology as having its own dynamics and causing many effects in organisations, such as restructuring of the workforce, improved competitiveness, etc.\(^2\).

It appears that holding up these viewpoints\(^3\) has become untenable, since it has been acknowledged by the ‘interpretative turn’\(^4\) towards the information technology and organisation nexus that our knowledge of the world is co-constituted through language. This insight has been sustained by a range of social (constructionist) theories mostly applied to inquiring into issues of ‘implementation’. This kind of interpretative approach understands the technology-organisation relation as a problem of exegesis. Though it is contended that software has ‘interpretative flexibility’\(^5\), the assumption prevails that software is something ‘out there’, with ultimately definite properties. This occurs even if it is conceived of as a configurational potential, that there is some kind of objective meaning of the software or information system, which is eventually realised only in a limited way due to the biases of the different groups in appropriating the product\(^6\).


\(^3\) Keith Grint and Steve Woolgar, The machine at work: technology, work and organization (Cambridge: Polity Press, 1997). propose an elaborate categorisation of social theory relating to technology and innovation.


\(^6\) Grint and Woolgar, The machine at work: technology, work and organization. It seems to be an irony that the perspective on information systems as objects of interpretation has brought forth the notion of interpretative flexibility. While technology, and especially information technology is in its instrumental dimension a way to stabilise human affairs through control, the proponents of the
Nevertheless, research still tends to characterise technology as either objective or subjective, and still hypostatises “technology and organization as two ontologically separate entities”¹. All these understandings apply the metaphysical subject-object dualism to the analysis of the computerisation of institutions, wherein the organisation (or management) is the subject, and the technology (hard- and software) is the object. In effect, the technology that is the incarnation of the view of the world as representation² becomes the object of selective objectification itself. Thus, the objectification of information technology denies actually recognising the primal and intrinsic relationship between it and the organisation. The objectification simply ignores the phenomenon that what makes up an organisation is only accessible through technology, be it a manual or an electronic systems—while technology is at work only within environs constituted by it, as Brian P. Bloomfield and Theo Vurdubakis have argued:

[T]he reverberations, which seem to ensue from the convergence of the technical and the social, belong to a way of knowing, rather than being solely attributable to reified objects (e.g. the technology, the organisation etc.) Views of the organisations are, therefore, intertwined with visions of IT and vice-versa. For example, IT provides a set of conceptual units (e.g. data, information) by means of which the ‘organisation’ can be re-cognised: its ‘necessary’ properties ‘separated’ (called forth as it were) from a confusing background of undifferentiated social processes and events. Conversely, IT can be said to acquire its objective quality only in the context of particular organisational knowledge practices and procedures.³

Consequently, the dilemma of the objectifying way of knowing organisations and information systems, together with an instrumental conception of language—to regard interpretation as directed towards uncovering some objectively already present meaning—has set up a discursive field. Within this field the question of organisational knowledge remains opaque, as this way of knowing is unable to recognise its representational core, like scientific knowledge and all other technological knowledge.

---

² Kallinikos, “The archi-tecture of the invisible: technology is representation,” 128.
The Securing of Organisational Information Systems—Myths of Knowing and Organising

The line of thought pursued above would suggest that there is only one way to know about information systems and organisations. However, technology and organisation become known in many ways. Technological language actually extends beyond formalisation, abbreviation, acronyms, and concomitant attempts of disambiguation. Language used for the sake of technology or rationality is more than programming languages, manuals, modelling languages and the like. The discourses that Richard Coyne has named “digital narratives”¹ and the socio-economic phenomenon described in terms of an “organising vision” by E. Burton Swanson², are equally an outcome of the holding sway of information technology in our time as are modelling grammars and programming languages.

There are myths surrounding information in organisations³ such as the myth of ‘tacit knowledge’ of experts—the latter actually emerging from the reification of knowledge and its abstraction from organisational context, for the purpose of its representation, thus making it appear partly inaccessible⁴. There are also visions, like the one, which presents the organisation, and its information technology as being one integrated system, as it is the case with standard business systems. All conform to a trope that builds on abstractions that span the realm of the technology and the realm of humans. The way of disclosure performed by representational reasoning and practices of representation thus generates its own irrational equivalent in the form of stories about objectifications. From im-position, as the mode of revealing of modernity, the representation of the standing-reserve in the form of information, as well as the hypostatisation of this pro-vocation in narrative, myth, and vision emerge simultaneously. This talk about representations and the correlating technology has the status of a myth in the sense articulated by Roland Barthes⁵, namely that myth is depoliticised speech—a trope that raises its topic out of its temporal and social condition. The myth substitutes for the embodiment of the representational world-view, it is the pro-vocation and interpellation of the im-position, securing the subject-object dualism as the only apparent way of knowing.

¹ Coyne, Technoromanticism: digital narrative, holism, and the romance of the real.
² Swanson and Ramiller, “The organizing vision in information systems innovation.”
³ See footnote 3 on page 19.
Representational knowing, being firmly established, and being always reflected upon in terms of its utility and further augmentation, in its total pervasiveness, conceals its origin and nature, as indicated by Martin Heidegger:

The essence of Enframing is that setting-upon gathered onto itself which entraps the truth of its own coming to presence with oblivion. This entrapping disguises itself, in that it develops into the setting in order of everything that presences as standing-reserve, establishes itself in the standing reserve, and rules as the standing reserve.¹

Response to the End of Metaphysics—Overcoming or Negation

The preceding elements of a re-consideration of knowledge, representation, information, technology, and language remain only a partial appropriation of Martin Heidegger’s inquiries into the essence of technology. They are still largely tied to the instrumental and anthropological view, with the consequence that they “find in the ‘reflection’ on Ge-stell only a generalization about the category of manipulability” restricting themselves “to the technicality of technology”². This view of im-position and its drive towards pervasive control through projecting and computing is also, “reminiscent of the ‘totally administered’ world of Adorno and the Frankfurt School”³. Criticism of modernity is always at the peril of being conceived as “nothing more than the expression of a humanist, anti-scientific and, […] anti-modern position”⁴. This is, according to Gianni Vattimo, due to a significant sector of European thinking, which includes “[p]henomenology and early existentialism, together with humanistic Marxism and the theorization of the ‘sciences of the spirit’”, which has in common the “pathos of authenticity or a resistance to the accomplishment of nihilism”⁵. Thus, Martin Heidegger’s criticism of science and technology could be mistaken as one of the many voices of Kulturkritik that have resonated during the last century⁶. It is therefore not sufficient to see only in Martin Heidegger one of the many critics of instrumental reason

² Vattimo, The adventure of difference [Le avventure della differenza, English]: philosophy after Nietzsche and Heidegger, 177.
³ Ibid, 158.
⁴ Ibid, Beyond interpretation [Oltre l’interpretazione, English]: the meaning of hermeneutics for philosophy, 24.
⁶ Ibid, 8.
and to adopt this perspective since, being still bound to technology, there would be no possibility to strive for a “free relation to technology"¹, as he had suggested.

Dialectic versus Ontology or “Difference in Accent"²?

It may not lack a certain poetic irony that the strongest affinity to Martin Heidegger’s thought on modernity, however seems to be found in the work of Theodor W. Adorno, while there are also significant differences, as analysed by Hermann Mörchen³. Superficially, Adorno and Heidegger appear to have entirely juxtaposed positions, which seems to be evidenced by their problematic relationship, which is characterised by Adorno’s perpetual attacks on Heidegger, and the latter’s nearly complete ignorance of the former; this belief is however unwarranted⁴. By relying largely on Fred Dallmayr’s précis⁵ of Hermann Mörchen’s analyses⁶, a brief differentiation against Theodor Adorno’s critical approach may shed some more light on Martin Heidegger’s reflection on the modern condition, and show the uniqueness of his approach.

Fred Dallmayr cautions that Hermann Mörchen meant not to compile an inventory that matches the answers, “results” or “doctrines” put forward by Heidegger and Adorno, but that his approach was to identify matters of concern that appear to be mutually shared⁷. For both thinkers, the quandaries that science and technology imposed in the modern age provided the crucial element of their criticism⁸. For Heidegger, it was Ge-stell⁹, and with it, the undisputed dominance of representational and calculative cognition and technologies as the outcome of the destiny of Western history, that determined our time¹⁰. Adorno, understood science and technology as constitutive of the ‘dialectic of

¹ Heidegger, “The question concerning technology [Die Frage nach der Technik, English]” 3.
⁵ Dallmayr, Life-world, modernity and critique: paths between Heidegger and the Frankfurt School.
⁶ Mörchen, Macht und Herrschaft im Denken von Heidegger und Adorno [Power and domination in Heidegger's and Adorno's thought], Mörchen, Adorno und Heidegger: Untersuchung einer philosophischen Kommunikationsverweigerung [Adorno and Heidegger].
⁷ Dallmayr, Life-world, modernity and critique: paths between Heidegger and the Frankfurt School, 45.
⁸ Ibid, 47.
⁹ See section The Essence of Technology—Representation and Ge-Stell.
¹⁰ Dallmayr, Life-world, modernity and critique: paths between Heidegger and the Frankfurt School, 47.
enlightenment’, within which man’s domination over nature by science and technology is concomitant to constant accrual of social control and domination, eventuating totalitarian trends and manifestations with human suffering in the form of “damaged lives”.

Fred Dallmayr regards the strongest resonance between Adorno and Heidegger to rest in their urge to leave behind “metaphysical foundationalism”, in that the task of thinking was comprehended as having to endeavour beyond the immediately given; in Heidegger’s words this was “openness”, while Adorno referred to “otherness”. Based on that, both also advocated the overcoming of the metaphysical heritage of the subject-object dualism, thus distancing themselves from the modern notions of subjectivity and individualism, as well as anthropocentrism.

A further similarity consists in their opposition to value; Martin Heidegger considered turning everything that is into an object for valuation by the subject as the manifestation of nihilism as the completion of metaphysics, where ‘being has turned into value’, thus as a phenomenon of obliviousness of Being. Adorno, on the other hand approached the issue more from the economic aspect that everything becomes commodified, and is considered in terms of its exchange value, or monetary equivalent. Indeed, both thinkers are regarded as having seen a grave irreverence in appraising everything in money in the capitalist economy.

Correlating the subjectivism of modernity and the valuation of everything that is, is the concept of value-free cognition in the form of science, which both thinkers rejected as the “world view” that underpinned reification and objectivism, especially in its incarnation of positivism. For Adorno, this view was a corrupted image of the “conformism” and “complicity” with the powers that be that prevails in modern science. Accordingly, Adorno and Heidegger, distinguished between “scientism” as worldview, science as practice, and philosophy, or thinking; Heidegger’s statement “science does not

1 Ibid.
2 Ibid.
3 Ibid.
5 Ibid.
6 Ibid.
7 Ibid.
8 Ibid.
10 Dallmayr, Life-world, modernity and critique: paths between Heidegger and the Frankfurt School, 48.
think”1 corresponds to Adorno’s “thinking is unscientific”2. Thus, both followed their vocation in the awareness that they could not indulge in “system building”3. Fred Dallmayr points to Adorno’s Negative Dialectics4 as the denial of any system5, which Adorno’s has summarised as “It is up to the self-reflection of critique to extinguish that claim [to absolute knowledge], to extinguish it in the very negation of negation that will become a positie”6. It is an even more delicate poetic irony that, in this work, which devotes a significant portion to the most stinging criticism of Heidegger, in his “revival and transformation of dialectic” as observed by Gianni Vattimo “Adorno is closer to Heidegger, here, than he would admit to think”7. Adorno’s rejection of the possibility to find truth in a system, and to devise a picture of history, is grounded in the experience that system has found its completion, in that the “rational totalization of the world has been realized, in principle at least”8. Thus, Gianni Vattimo can envision a partial convergence as follows:

The world’s total organization and its domination by instrumental rationality capable of exercising an almost all-embracing discipline on society is precisely what Heidegger described as the completion of metaphysics. Adorno, as we have seen, still hoped that the levelling out of reason to its instrumental and dominant form could be corrected and that, via a comprehensive transformation of society, rationalization could know a new emancipatory destiny. But this conviction gave way more and more explicitly to the growing negativity of utopia and, effectively, to the rejection of every philosophy of history.9

Based on the shared rejection of metaphysics, both thinkers also argued for representational thinking to be overcome10. Representation is central to Heidegger’s analysis of modern science and technology; for Heidegger, representation is unique to modernity, and characterises the relation between man and world as one of violent appropriation and subjugation in the form of images11. As Fred Dallmayr notes, Adorno’s rejection of representation was even more pronounced, in that he rejected the picture nature of

---

1 See footnote 6 on page 53
2 Dallmayr, Life-world, modernity and critique: paths between Heidegger and the Frankfurt School, 49.
3 Ibid.
5 Dallmayr, Life-world, modernity and critique: paths between Heidegger and the Frankfurt School, 49.
6 Adorno, Negative dialectics [Negative Dialektik, English], 406.
7 Vattimo, The transparent society [La società trasparente, English], 86.
8 Ibid.
9 Ibid, 86-87.
10 Dallmayr, Life-world, modernity and critique: paths between Heidegger and the Frankfurt School, 49.
11 See the section Foundation and Consequence of Modern Science—the World as Picture
cognition and argued for an “imageless truth”, which was linked to advocating in a quasi-religious fashion a “prohibition of images”.

A shared concern between the two thinkers has also been effected by the “progressive instrumentalization and corruption of language”. Martin Heidegger’s response to this dilemma is that he claims that language is essentially not under the command of man but a historically given mode of disclosure. Adorno, similarly gave language the primacy over speech, and consequently sought to overcome realism and nominalism; yet, since he did not want to be involved with ontology, his position in this matter was less articulated than Heidegger’s.

The crucial difference between Adorno and Heidegger, which in any respect has overshadowed the shared concerns, is that the former dismissed sharply ontological inquiry. Adorno held the concept of Dasein either to be a mere tautology, or the elevation of ordinary matters to a transcendental status in terms of “permanent essence or meaning”. Likewise, Adorno held ‘being’ to be a conceptual object to be constituted by a correlating subject; he claimed that Heidegger’s ontology insinuated an “object-realm of a quasi-higher order” analogous to positivism and Husserl transcendental phenomenology. Yet, Adorno’s charge of ontologization involved at least three misconstruals: a misreading of the ontic-ontological difference; the imputation of an atemporal meaning of being; and subsumptions of ontic beings under atemporal essences. It is ‘difficult to imagine’, [Mörchen] adds, that these misconstruals ‘resulted from a simple misunderstanding; for they too obviously conflict with Heidegger’s texts’.

From these flawed interpretations, Adorno surmised underlying motivation for the alleged reactionary nature of Heidegger’s philosophy, such as the “desire for fixity and security”. Following from that, was an alleged striving for unchangeable essences, and the alleged conflation of empirical phenomena with abstract categories. A further

---

1 Dallmayr, Life-world, modernity and critique: paths between Heidegger and the Frankfurt School, 49-50.
2 Ibid, 50-51.
3 See the section Language as Instrument for Communication—Language as Information
4 Dallmayr, Life-world, modernity and critique: paths between Heidegger and the Frankfurt School, 50-51.
5 Ibid, 52.
6 Ibid, 55.
7 Ibid, 55-56.
8 Ibid, 56.
9 Ibid.
10 Ibid.
11 Ibid, 57.
objection was that Heidegger sought to integrate everything into a whole, with ‘being’
seen as a “totalizing concept”\(^1\). With this concept, Heidegger was believed also to have
promoted an “immediacy” which negates the mediated nature of all knowledge\(^2\). Finally,
the charge of mysticism and “cult of origins”, which in Adorno’s view meant that with
the re-establishment of philosophy to its “claim of supremacy”, simultaneously,
domination was sanctioned\(^3\). These accusations, based on untenable inferences, could be
easily shown to be unfounded, as done by Fred Dallmayr:

Fundamental ontology in his treatment was not an exercise in foundationalism, but rather preparatory step toward the ‘question of being’ – which
as question could not provide a solid ground. Likewise, *Dasein* for him was
not an Archimedean point but the site of radical exposure and ‘dissemination’ (*Streuung*). In addition, the term ‘origin’ (*Ursprung*) has
two possible meanings, which Adorno fails to distinguish: namely, origin as
the place from which thought proceeds and as a possibility to which it is
underway (as a calling). Only the first meaning has the character of fixity
while the second involves a journey into unchartered terrain.\(^4\)

Nevertheless, from these surmises, Adorno draws an image of Heidegger, which blamed
the latter to foster “inwardness”, and through “a doubling of existing reality, coupled
with its uncritical affirmation” endorsed the “powers that be”\(^5\). Adorno did not go as far
as some of his pupils and called Heidegger a *Nazi*, but he was convinced that the irrationalism he believed to have unmasked in Heidegger’s fundamental ontology was
proto-fascist\(^6\).

According to Fred Dallmayr, Hermann Mörchen sees the principal restrictions in
Heidegger’s approach not his ontological endeavour as such, but that he devoted no or
little attention to “mundane social life”, and that consequently, his criticism of
metaphysics attained a perspective, within which it appeared to be detached from time\(^7\).
Thus, Heidegger appears to have been not concerned with “concrete social-political
struggles”.

Gianni Vattimo, on the contrary holds that the charges brought out against Heidegger
have in common that “[t]hey attack [him] for having theorized the decline of the subject

\(^{1}\) Ibid.
\(^{2}\) Ibid, 57-58.
\(^{3}\) Ibid, 58-59.
\(^{4}\) Ibid, 59.
\(^{5}\) Ibid, 60.
\(^{6}\) Ibid.
\(^{7}\) Ibid, 64.
in the face of more powerful forces: historical destiny, or, in any event, Being.”¹ It is just this theoretical merit, which allows refuting these critics². Moreover, since it cannot be claimed that Heidegger was “merely an apologist for Nazism”, his obviously “equivocal” approach to the Nazi regime should be put into the context of the prevalence of socio-political constellation and events over individual experience and action³. In fact, Heidegger was acutely aware of the power that superpersonal structures have over the individual, indeed more radically aware than anyone else, perhaps even more than Marxist thinkers themselves. The *Introduction to Metaphysics* grasps the very root of the constitution of our civilization’s conceptual language; in this respect it represents that very ‘complement’ which has been called for to fill the lacunae of Marx’s *Capital*.⁴

Gianni Vattimo therefore concludes, “Heidegger represents the crisis of the subject in reference to its radical and constitutive belonging to a historico-social world. In all probability this also explains the importance of language in his thought”⁵.

While for Heidegger, the decline of the subject is an irrevocable historical event, it is, according to Gianni Vattimo, eventually Adorno, who is “representative” for broad strata of European thinkers of the last century, who had determined their vocation as “resistance to the attack on man’s humanity still defined in terms of subjectivity and self-consciousness”; these thinkers are, regarding history, kept within a “reappropriative horizon”⁶.

The decisive difference between hermeneutics that is guided by a Heideggerian perspective, and other critics of modernity is, that the latter present themselves as seeking to establish a new meaning out of rationalisation through criticising it, as if modernity were a choice that can be corrected. Gianni Vattimo emphasises that this view of history is incompatible with hermeneutics:

---

¹ Vattimo, *The adventure of difference* [Le avventure della differenza, English]: philosophy after Nietzsche and Heidegger, 52.
² Ibid.
³ Ibid, 53.
⁴ Ibid. Martin Heidegger’s fundamental criticism of domination becomes even more explicit in Heidegger, *Contributions to philosophy* [Beiträge zur Philosophie, English]: from enowning. Michael Eldred, *Kapital und Technik: Marx und Heidegger* [Capital and Technology] (Dettelbach: Röll, 2000). is an example for reflecting on the essence of capital and technology in Marx and Heidegger.
⁵ Vattimo, *The adventure of difference* [Le avventure della differenza, English]: philosophy after Nietzsche and Heidegger, 53.
⁶ Vattimo, *The end of modernity* [La fine della modernità, English]: nihilism and hermeneutics in post-modern culture, 45.
From a rigorously Heideggerian standpoint, hence that is radically faithful to the historicality at the origin of hermeneutics, the latter cannot seriously take itself to be an alternative to modernity, since this would require that it legitimate itself as founded on some evidence that modernity had neglected or forgotten. Instead, it must present itself as the thought of the epoch of the end of metaphysics, that is as the thought of modernity and its consummation, and nothing more.¹

The Historicity of Hermeneutics—Technology and Humanism

The question of Being has provided the powerful direction towards the overcoming of metaphysics that differentiates Heidegger’s contribution from the Frankfurt School, and also from Hans-Georg Gadamer². Within this overcoming belongs also overcoming of humanism, which is in itself metaphysical and thus disallows a profound criticism of the conditions of modernity. Humanism is based on a predetermined conception or picture of man and world and in this way suppresses questioning beyond its presuppositions:

However different these forms of humanism may be in purpose or in principle, in the mode and means of their respective realisations, and in the form of their teaching, they nonetheless all agree in this, that the humanitas of homo humanus is determined with regard to an already established interpretation of nature, history, world, and the ground of the world, that is of beings as a whole. Every humanism is either grounded in metaphysics or is itself made to be the ground of one. Every determination of the essence of man that presupposes an interpretation of beings without asking about the truth of Being, whether knowingly or not, is metaphysical.³

This determination of humanism simultaneously precludes that a criticism of technoscientific knowledge can be performed by ultimately referring to some transcendent human values. The juxtaposition of humanism and technology and rationality is, as explained by Gianni Vattimo, a rather futile endeavour, which does not heed properly to the essence of both:

Technology does not represent the crisis of humanism because the triumph of rationalization subverts humanistic values, as superficial analyses have led us to believe; rather it does so because technology—in representing the fulfilment of metaphysics—calls humanism to an act of overcoming or Verwindung.⁴

¹ Vattimo, The transparent society [La società trasparente, English], 115.
² Vattimo, The end of modernity [La fine della modernità, English]: nihilism and hermeneutics in post-modern culture.
⁴ Vattimo, The adventure of difference [Le avventure della differenza, English]: philosophy after Nietzsche and Heidegger, 41.
This appellation directed towards man, comes only to pass within Ge-stell, which is concurrently a destining towards a particular way of revealing, which however, within a circular movement, conceals just that, and this concealment and oblivion is the danger that is seen in the presencing of Ge-stell. Yet, it was only that within the constellation of Ge-stell that the question of Being could be posed again, and in this way the possibility of questioning that condition was granted. Gianni Vattimo summarises the interrelation of the hermeneutical criticism of scientific technological knowing and its possibility of overcoming as follows:

...Ge-stell is also the condition – as yet not explicitly recognized – out of which Heidegger speaks in Being and Time; in other words, already the starting point for Heidegger the phenomenologist who raises his initial question about Being. In fact we are able to raise the question about Being and escape from metaphysical forgetting only because and to the extent to which Being occurs in the form of transpropriation, in other words in the form of the Ge-stell. Nor could we even think of Being as Ereignis if we were not interpellated by Ge-stell.¹

It is thus the very situation in which man conceives of himself as the master of the world, and everything that is as instrument and stock for his purposes, within which the possibility of thinking arises that this is rather a destining, which is nothing made by man.

The destiny of human existence in technological society, if it is not viewed through a theoretical critique of the subject, can only appear as – and be – the inferno of a wholly administered and regulated society as it is described by the Frankfurt School. It is not a matter of opposing a providential (or, even less, so fatalistic) view of capitalist rationalization of social labour to Adorno’s view; rather we need to recognise that – contrary to the essentially unfounded claims of critical theory itself – while this rationalization has created the historical and social conditions for the elimination of the subject, at the same time philosophy, psychology, and artistic and literary experience have autonomously acknowledged that this same subject does not merit a defence. If the Heideggerian analysis of the connection between metaphysics, humanism and technology is a valid one, moreover, then the subject that supposedly has to be defended from technological dehumanization is itself the very root of this dehumanization, since the kind of subjectivity which is defined strictly as the subject of the object is a pure function of the world of objectivity, and inevitably tends to become itself an object of manipulation.²

Two thinkers in close affinity to Martin Heidegger—Hannah Arendt and Michel Foucault—have reflected on concrete socio-historical conditions of power and domination, rationalisation and technology, while simultaneously establishing a critique of the

¹ Ibid, 168-170.
² Vattimo, The end of modernity [La fine della modernità, English]: nihilism and hermeneutics in post-modern culture, 46.
sciences of man as correlate of governance and purveyors of rationalities and technologies of domination. The following chapter will establish their relevance in the context of this study.
II. Knowledge in Modernity: Social Science, Liberalism, Management

Chapter 5: Social Sciences and Governmentality—Power/Knowledge in Modernity

Perhaps less visible, but equally as important as scientific and technological knowledge, is knowledge called forth by the social sciences. The link between the social sciences and work of government is crucial for investigating the shape of knowledge in government, including its co-constitution with knowledge related to information technology and management. Knowledge within this configuration is political in two dimensions: firstly in that it principally belongs to the working of political institutions, like government bureaucracies, and secondly in that it is a form of acting, albeit not into nature like in the sciences, but into society, and in this context driven by a certain image of man. Being driven by an image of man, this knowledge is also ethical. Being political in two dimensions, it becomes apparent that knowledge is related to power, and cannot be separated from historically given forms of governance and conceptions of the political. Liberalism is the historically given form of governance and conception of the political in Western democracies. It puts forth rationalities of government, which constitute society as a category of knowledge, and by that proffers the grounding of the social sciences and related forms of expertise. This knowledge is based on representation, sharing this feature with scientific and technological knowledge. Social science in pursuing its normalising positivity creates actuality and truth, but suffers from analogous limitations as do the sciences in terms of reflexivity (or recognising its essence). The challenging disclosure of nature is matched by the challenging disclosure of the subject through social science and governmentality.

As the preceding chapter, the following is not meant to be a comprehensive discussion of a particular strand of political philosophy, nor an attempt to expand or theorise upon its concepts. The objective is to sketch an interpretative space, rather than to assess constructs in terms of their applicability and fittingness. Some of the central tenets raised by Hannah Arendt and Michel Foucault will be explored for that purpose.
Power in Modernity

If knowledge within the context of techno-organisational innovation is to be considered as a social question, it appears appropriate to account for the phenomenon of power, since “power is central to social theory and the understanding of social life”¹. In particular, formal organisations remain rather void constructs as long as the critical aspect of power remains unacknowledged. Moreover, as suggested by Stewart Clegg, within this ambience there is an intrinsic nexus in organisational practices between power and knowledge:

The practices of management, produce, reproduce, and transform organizations. They irremediably involve both ‘power’ and ‘knowledge’ [...]. They involve power, because organization everywhere is premised on imperatively coordinated relations, constituted through persuasive or coercive means. They involve knowledge, because these practices include training, drill, habituation, creativity, and above all discourse.²

The discussion regarding organisational knowledge has eschewed the epistemic and socio-political dimensions of knowledge³—its relation to power. Likewise in organisational theory, the negative connotations attached to power and politics, as well as their apparent contradicting conceptualisations in incommensurable discourses appear to have rendered these as too problematic to be thematised. As Cynthia Hardy and Stewart Clegg argue, due to the design of organisations along hierarchical and functional divisions, and the adoption of the managerial perspective, the “legitimate” power that was vested along these lines “has been viewed as ‘normal’ and ‘inevitable’”; consequently, “power used outside formal authoritative arrangements was illegitimate and dysfunctional”⁴. Since investigations were exclusively concerned with power that emerged against formal structures, “[t]he concept of power was thus reserved primarily for exercises of discretion by organization members which were not sanctioned by their position in the formal structure”⁵. Politics, seen as the stratagems to mobilise power, was likewise discredited as a concept.

³ See Chapter 3: Problematising Knowledge in Organisations.
⁵ Ibid, 372.
Whether power has been seen as legitimate, and therefore not requiring being problematised, or as illegitimate as it is not exercised along the lines of top-down rationality, and therefore given a disparaging meaning—in each case, power was conceived of as power of the sovereign. The sovereign view of power is based on a feudal constellation, in which the sovereign has power over his subjects, as he is the owner of the land. Power was episodic, that is, exercised and ‘visible’ only at specific occasions. Correspondingly, exercise of discretion was seen as being based on resources, such as means of production, or technical expertise, thus reified and independent from human beings and their relations.

Power as Actualisation of Action and Speech in the Public Realm

Contemporary conceptions indicate that power is neither a property of groups or individuals, nor is it necessarily repressive and geared towards sanctioning of actions. For exponents of conceptualisations of power in modernity, like Hannah Arendt and Michel Foucault, power is immaterial, relational, and based on action. As argued by Amy Allen, while the approaches pursued by these two scholars are different in many respects, but complementary in their central tenets, their apposition allows for a differentiated understanding of the concept.

Hannah Arendt has sought a primordial notion of power. For her, power is contingent only on what she calls the space of appearances—the interrelation of humans in their plurality in action and speech. Power is thus antecedent to any institution that would organise a domain of acting and lend durability to it. Although it is transient and contingent, power is what invests the political sphere: “Power is what keeps the public realm, the potential space of appearance between acting and speaking men, in

---


2 Early investigations into power in relation to information systems, M Lynne Markus, “Power, politics, and MIS implementation,” Communications of the ACM 26, no. 6 (1983), M Lynne Markus and Niels Bjørn-Andersen, “Power over users: its exercise by system professionals,” Communications of the ACM 30, no. 6 (1987). applied a concept of power that was based on possession of something, i.e., information and was fixed within a location, i.e., the computing centre as criticised by Introna, Management, information and power: a narrative of the involved manager. Furthermore, Markus and Bjørn-Andersen, “Power over users: its exercise by system professionals.” separated a priori social from technical issues, as well as the user developer relation from its organisational context, as highlighted by Bloomfield and Best, “Management consultants: systems development, power and the translation of problems.”, Introna, Management, information and power: a narrative of the involved manager.

existence”. Regarding its etymology, she emphasises that power is unambiguously of a latent character. Power is “potential, and not an unchangeable, measurable and reliable entity like force or strength”. It therefore “can only be actualized but never fully materialized”. The positive meaning that Hannah Arendt attributes to power—its creativity—is accentuated when she distinguishes it from violence, and its correlate form of government, namely tyranny. She sees tyranny as that one form of governments that negates the human condition of plurality: it separates the ruler from the populace, and disunites the latter among itself by intimidation, thus negating the public realm that is co-constitutive with power. The basis of Hannah Arendt’s positive view of power is, however, her definition of action and speech as indispensable ways of being human. For Hannah Arendt, action involves beginning something new, taking the initiative, something that is innate to humans. As newcomers into the world humans embody an origin in themselves and speech correlates to the fact that humans are both equal and yet unique and distinct. Language, as the fabric of speech, is based on the commonality shared by humans, while through speech they are able to articulate their distinctness. For Hannah Arendt, speech and action are equiprimordial, since both are disclosive of the individual human agent. Action cannot be mute, since without accompanying speech, it would lack its actor, and would be incomprehensible. Speech and action are thus co-constitutive for human identity. This identity is not, however, an outcome of intentional and purposeful doing and speaking, but inherent in everything that is said and spoken by someone. Identity is implied in how an individual appears to others by deeds and words. Hannah Arendt draws a clear distinction against other forms of doing—such as making things for everyday use, or creating works of art—in making self-disclosure of the agent an indispensable element of action. She argues, “[w]ithout disclosure of the agent in the act, action loses its specific character and becomes a form of achievement among others”. Meaning of other forms of doing is revealed in the artefacts, while action must transcend the purposeful means and ends relationship by bringing forth the actor. Action is unpredictable, in both its beginning and its outcome. Action involves initiating, as the insertion of something new into a pre-existing web of relationships and meanings, as being always dependent on the presence of others, and thus as being acting upon the action of others. The unpredictability of the beginning derives from the uniqueness of the individual and his capacity to do something new: “The fact that man is capable of action

1 Arendt, The human condition. Introduction by Margaret Canovan, 200.
2 Ibid.
3 Ibid.
means that the unexpected can be expected from him, that he is able to perform what is infinitely improbable". The outcome of action remains elusive, since the initiative encounters biases and preconditions. “It is because of this already existing web of human relationships, with its innumerable, conflicting wills and intentions, that action almost never achieves its purpose”\(^2\). According to Hannah Arendt, this web of human relationships is the “medium” by which action by nature gives rise to stories that may be intended or not. These stories,

the results of action and speech, reveal an agent, but this agent is not an author or producer. Somebody began it and is its subject in the twofold sense of the word, namely its actor and sufferer, but nobody is its author.\(^3\)

The Reification of Power—Politics as Fabrication

The phenomenon that the outcome of action is always beyond the intent of its initiator; that a sequence of events may have a specific meaning that cannot be anticipated or reduced to the aims of the agents; and that history does not have “an active agent” at all, that it is not “made”, has actuated “perplexity”\(^4\). Excogitations such as “Providence, the ‘invisible hand’, Nature, the world spirit, class interest, and the like”\(^5\) have sought to address this dilemma. According to Hannah Arendt, misconstruing politics and history as being made, emphasises the political essence of history—namely that it emerges out of the deeds and words of humans, and not from reified forces and principles that are put in place as substitutes for an author who directs the unfolding of events.

Hannah Arendt criticises traditional conceptions of politics and power for “reifying the messiness and uncertainty that are an ineradicable element of the political into the calm stability of the rule of some over others”\(^6\). This implies that a separation took place between the two dimensions of action—starting and leading and executing. Once this Platonic divide was performed, the primordial meaning of politics and power was covered over and vanished into oblivion\(^7\). As Hannah Arendt identifies the primal meaning of politics as being unblemished by relations of ruling and governing and hence of domination, in power and its actualisation, agency analogously becomes manifest in a positive way.

\(^1\) Ibid, 178.
\(^2\) Ibid, 184.
\(^3\) Ibid.
\(^4\) Ibid, 184-185.
\(^5\) Ibid, 185.
\(^6\) Allen, “Power, subjectivity, and agency: between Arendt and Foucault.,” 136.
\(^7\) Arendt, The human condition. Introduction by Margaret Canovan, 224-226.
Power is actualised only where word and deed have not parted company, where words are not empty and deeds are not brutal, where words are not used to veil intentions, but to disclose realities, and deeds are not used to violate and destroy but to establish relations and create new realities.¹

In following Amy Allen’s interpretation, it could be claimed that Hannah Arendt’s conception of the public realm and power rests in the potency they hold for being human. She argues that:

Insofar as one’s identity as an actor is only fully realized in and through action in the public, political realm, and the public political realm is constituted by power, it turns out that, for Arendt, power is a condition for the possibility of (the full achievement of) agency.²

Furthermore, this simultaneously implies an ethical dimension, since reflection upon deeds must always refer back to the common shared world. For Hannah Arendt:

[...]he conditions for being a thinking subject are only in place when there is a public space constituted and preserved by the power that arises out of the sharing of words and deeds.³

This is due to the dependency on common sense for thinking, which can only be established through speech requiring the public realm to be communicated, and which presupposes power that establishes and maintains it⁴.

Against this image of the primal potency of the public realm, Hannah Arendt articulates her criticism of politics in the modern age. In the contemporary Western world, politics is equated with the art of government. As an art, it is based on following certain techniques, and as governing it is necessarily concerned with the rule over others. Hannah Arendt holds that in the modern age, from the beginning “[a]ction was soon and is almost exclusively understood in terms of making and fabricating”⁵. She traces the conflation of action and fabricating back to Plato, from whom all later political philosophy and utopia drew its inspiration. According to Hannah Arendt, Plato’s project was established through the transfer of philosophical ideas of the good into the political realm as defining its aims, and the transfer of the model of the household (that is the master-slave relationship) as defining its organisation. The ancient Greek idea of the good in terms of “‘good for’ or of ‘fitness’”, was transmuted into “standards,

¹ Ibid, 200.
³ Ibid.
⁴ Ibid, 140.
⁵ Arendt, The human condition. Introduction by Margaret Canovan, 322.
measurements, and rules of behaviour”. Thus, the “personal element in the Platonic notion of ideal rulership” was eradicated, which meant that by adherence to prescripts laid-out in advance, the political body could be constructed as an artefact. The view of action as fabrication has always carried the notion of violence as being instrumental and the legitimate means to an end. As in Hannah Arendt’s thought, the identification of action with fabrication has reached its consummation in the modern era, so has violence has become seen as the ultimate means of constructing the political body.

According to Hannah Arendt, as the conflation of acting and making has emerged, in Platonic thinking, so does the fusion of the individual and the political body. In the ideal city, people partake in public affairs but there is no room for dissent, let alone its organised articulation. This all-encompassing unity is founded in the general category of rule, which, in Plato’s sense, applied to all human matters and not only the political realm, and eventuates in the introduction of:

the principle of domination into the intercourse of man with himself. The supreme fitness for ruling others is, in Plato and in the aristocratic tradition of the West, the capacity to rule one’s self. Just as the philosopher-king command the city, the soul commands the body and reason commands the passions.

Hannah Arendt suggests that the impact of Platonic thinking on the tradition of Western political theory is owed to the backing of the project of “his substitution of rulership for action” by the latter’s “plausible interpretation in terms of making and fabrication”. The work of making and fabrication by nature can be distinguished into two distinct parts, firstly the envisaging of the product or its design, and secondly the gathering of resources and the performance. The conceptual transfer into the realm of action ensues in the separation of knowing and doing which, according to Hannah Arendt, instantly removes meaning and relevance from political activity. Thus the Platonic project entails the “identification of knowledge with command and rulership and of action with obedience and execution”, a conceptualisation which “has remained at the root of all theories of domination which are not mere justification of an irreducible and irresponsible will to power”.

---

1 Ibid, 255-266.
2 Ibid.
3 Ibid, 224.
5 Ibid.
Hannah Arendt’s critique of political thought and historical reflection indicates that for the sake of the overcoming “the frailty of human affairs” and to introduce certainty, objectivity and instrumentality have taken over the realm of action. Hannah Arendt considers that all things political—action, power, the public realm—are primordially of a revelatory nature, beyond the realm of necessity and reproduction. The permutation of acting into making equals the “degradation of politics into a means to an allegedly ‘higher’ end” such as, “in the modern age, the productivity and progress of society”\textsuperscript{1}. It is this very means–end relationship within the political realm that poses a severe ethical dilemma. She cautions against the ‘means-ends’ thinking since the “definition of an end [is] precisely the justification of means”, which can have the dire consequence of following “a line of thought that forces one to admit that all means, provided they are efficient, are permissible and justified to pursue something defined as an end”\textsuperscript{2}.

De-Politicised Action—Scientific Research and the Uncertainty of Processes

While acting has been superseded by fabrication in the political realm, by subjugating the former to instrumentality, action has shifted into man’s relation to nature in scientific endeavours. In setting up nature under the experimental conditions in the laboratory, and forcing “natural processes” into preconceived rules, man actually acted into nature, fabricating processes that nature would not have brought forth by itself. Hannah Arendt maintains that:

\[ \text{[t]he actual underlying human capacity which alone could bring about this development is no ‘theoretical’ capacity, neither contemplation nor reason, but the human ability to act – to start new unprecedented processes whose outcome remains uncertain and unpredictable whether they are let loose in the human or the natural realm.} \textsuperscript{3} \]

Yet, uncertainty emerges as the major determinant of the modern world\textsuperscript{4} as attempts to stabilise human affairs in the political realm—to overcome their “frailty” by turning it into a domain of fabrication by introducing instrumentality—and apparently despite the vast extension of human capacities regarding nature, as well as the unexampled historical consciousness. It is due to action that process became the “central

\textsuperscript{1} Ibid, 229.
\textsuperscript{2} Ibid.
\textsuperscript{4} Ibid, 232.
concept” in the natural and historical sciences alike, so that their objects, nature and history, respectively, are conceived as “systems of processes” in modernity\(^1\). Although the natural and the human realm have become seen in this way, it remains the very nature of action that processes started cannot be reversed or nullified; their consequences are unpredictable and cannot prevented, nor can the underlying motivations exhaustively been made transparent\(^2\). For Hannah Arendt, the attempt to make history in a means–ends relationship, in applying instrumental reason towards pre-determined objectives is limited in that the dimension of action can ultimately never been ruled out of human doing: “Unpredictability is not lack of foresight, and no engineering management of human affairs will ever be able to eliminate it, just as no training in prudence can ever lead to the wisdom of knowing what one does.”\(^3\)

Hannah Arendt employs the concepts of human conditions—natality, worldliness, life itself, and plurality—together with modes of human activities such as action, work, labour and fabrication and speech and action as a matrix to demonstrate how Western history and thought have evolved into the modern condition. It could be argued that she uses these primal notions together with reference back to antiquity to draw on their differences. She used these differences to illuminate and criticise the fading of the political realm and its making way for an instrumental regulation of public matters, and the ensuing loss of a space for disclosure and hence truth. The modern age is characterised for Hannah Arendt by the “substitution of behaviour for action and its eventual substitution of bureaucracy, the rule of nobody, for personal rulership”\(^4\). The body of knowledge that initially correlated with bureaucracy was economics that objectified man only in a well-bound area of doings. This was followed by a whole gamut of social sciences, which pursue the objective “to reduce man as a whole, in all his activities, to the level of a conditioned and behaving animal”\(^5\).

The Knowledge of Technologies of Power—Social Sciences

The workings of the social sciences (discourses), bureaucracies (institutions) and their regulatory interventions (practices) towards modern society has been the major theme of

---

\(^1\) Ibid.
\(^3\) Ibid, 60.
\(^5\) Ibid.
the writings of Michel Foucault. Although he has acknowledged Hannah Arendt’s contribution to the questions of power and politics, he has raised the caveat that she has used so-called universals, which might require empirical verification. His empirical investigations, as a complement, provide the necessary historical account of governance, social sciences, and power relations. It has also been suggested that there is a strong affinity between Martin Heidegger’s Daseins-analysis and Michel Foucault’s socio-historical investigations, in that the latter worked out what was already inexplicitly present in the work of the former—particularly in pointing towards the possibility of resistance against practices of disciplining and normalising. Moreover,

[a]lthough Foucault does not think technology in the way or on the ontological-historical level that Heidegger does, his description of power relations in terms of technologies of power is certainly not unrelated to Heidegger’s non-instrumental understanding of technology.

While Martin Heidegger and Hannah Arendt in their respective treatments have dealt mainly with the natural sciences and technology, and historiography, Michel Foucault has worked on analysing the sciences of man. The following discussion of some of Michel Foucault’s thinking will further explore the configuration of knowledge, power, and technology in the modern age.

Hannah Arendt was full of disdain for the social sciences, and did not seek to analyse them; it was Michel Foucault, who subjected these disciplines to a profound criticism. He thought that the way scientific discourses are constituted, conducted, and the standing they obtain is an issue for political practice. He selected the social sciences and medicine, which are considered both epistemologically weak and attempt to represent a most complex and compact domain.

---

1 Michel Foucault, “Politics and ethics: an interview,” in *Michel Foucault: The Foucault reader*, ed. P Rabinow (Harmondsworth: Penguin, 1986), 378. Michel Foucault rejects universals, but he cannot help to refer to the same basic notions as Hannah Arendt does, namely speech, which becomes discourse, action which becomes practices, and rules and devices, that are the means to make social relations durable, which become technologies.


3 Ibíd.

4 The implications of Michel Foucault’s analyses for social inquiry will be discussed in *The Knowledge of Technologies of Power—Social Sciences in Chapter 9: From Phenomenological Reflection to Destructive Narrative*.


It is pertinent to draw on Hannah Arendt’s concept of the relation between technology and politics in the modern age. For her, in all earlier periods, there used to be always a distinct boundary between the realm of nature and the realm of man. Making—the creation of artefacts—was the way in which man interrelated with nature, in building and securing his world against natural forces. Action, which for Hannah Arendt is bound up with the releasing of an ultimately unpredictable chain of events, was largely restricted to the realm of humans. Hannah Arendt indicated that fabrication always also had a dimension of acting, in that artefacts become integrated into the human world, independent of their producer and their use cannot be pre-determined once and for all. Modern science and technology, by acting into nature, transgress this boundary that had been preserved in all prior societies. Thus, “nature has been taken into the human world”\(^1\). Moreover, in acting into nature, the unpredictability of man has been inserted into an area that was always perceived to be ruled by laws. Thus, technology is “the ground on which the two realms of history and nature have met and interpenetrated each other”\(^2\). In addition, technology makes both nature and history no longer conceivable as being determined by something of a law\(^3\).

It is thus the ‘political’ dimension of technology, or its affinity to action that suggests the trope of the power of technology. The essence of technology as described by Martin Heidegger as im-position (\textit{Ge-stell})—its power that provokes man—is, including its instantiations as knowledge, activities, and artefacts, equiprimordial with the technological nature of power:

Technology as scientific invention and mass production becomes possible only within relations of power that determine power as technological, that is, as power to render the actual as standing-reserve of resources to reveal or, as Foucault might say, to discipline what is into something that is, in principle calculable and usable.\(^4\)

Krzysztof Ziarek goes even further in positing that power in modernity is synonymous with technology\(^5\). Indeed, power in Michel Foucault’s thinking is deployed in a

---

\(^1\) Arendt, \textit{Between past and future: eight exercises in political thought}, 60.
\(^2\) Ibid, 61.
\(^3\) Ibid. The consequences of the relation between history and nature as understood in our time as described by Hannah Arendt are dealt with in the section \textit{Modern History and the Possibility of Meaning}.
\(^4\) Ziarek, “Powers to be: art and technology in Heidegger and Foucault,” 173.
\(^5\) Ibid, 175.
technological fashion—it is constituted within “contextually specific practices, techniques procedures, forms of knowledge and modes of rationality [...] in attempts to shape the conduct of others”¹. For Michel Foucault and similarly for Hannah Arendt, power is the concept for what lends durability to social relations, and makes them thus apprehensible². Michel Foucault’s power concept, in being technological, is linked with domination—with action upon the action of others, or “forms of governance”³. Action upon the action of others presupposes ‘freedom’ and is not to be confused with the application of force or violence. It is not principally coercion as a modality of power that holds sway in “liberal capitalist society, [but rather] attempts to shape the wills, desires, interests, and identities of subjects”⁴. According to Michel Foucault, “the construction of the individual as object”⁵, which is the projection of man that sets up a domain of knowledge and that enables power as technology, is an accomplishment of the social sciences. Their “requalification of the subject” relied on “a whole technology of representation”; hence the “art of manipulating representations could provide a technology for the correct ordering and reordering of social life”⁶. As scientific activities, they are constituted within the very same structural dimensions as the natural sciences, as outlined by Martin Heidegger⁷—projection and rigour, method, and specialisation and ongoing activity. Likewise, social science is not disinterested, but also sets up the real (now the individual and society) and subjects it by means of methodical knowledge. Social sciences are however not only a way of knowing enmeshed in the modalities of power. Their origin, evolution, and practice “as scholarly ‘disciplines’ are closely linked to disciplinary technologies”⁸. Michel Foucault demonstrated that these domains of knowledge:

psychology, demography, statistics, criminology, social hygiene, and so on [...] were first situated within particular institutions of power (hospitals, prisons, administrations) where their role became one of specialisation. These institutions needed new, more refined and operationalised discourses and practices. These discourses, these pseudo-sciences, these social science

² Ibid, 172.
³ Ibid, 175.
⁴ Ibid, 173.
⁵ Dreyfus and Rabinow, Michel Foucault: beyond structuralism and hermeneutics; with an afterword by and an interview with Michel Foucault, 160.
⁶ Ibid, 148.
⁷ See Chapter 4: Recalling Knowledge with the Phenomenology of Science and Technology: Projecting, Representing, Ge-stell.
⁸ Dreyfus and Rabinow, Michel Foucault: beyond structuralism and hermeneutics; with an afterword by and an interview with Michel Foucault, 160.
disciplines developed their own rules of evidence, their own modes of recruitment and exclusion, their own disciplinary compartmentalisations, but they did so within the larger context of disciplinary technologies.¹

Hubert Dreyfus and Paul Rabinow point to the problematic of the hermeneutic situation within the practice of the social sciences in comparing them with the natural sciences². To the sciences, as determined by Martin Heidegger, their own essence is inaccessible within their own theoretical endeavours³, while hypothetically being able to do so would render scientific theory and practice impossible. Seen as a hermeneutic situation, scientific practices are also restricted in terms of being accessible to theorising about them. Hubert Dreyfus and Paul Rabinow argue that the practices of science are based on understanding, or know-how, which can never become expressed in formal rules, like those produced by it⁴. Thus theorising about sciences as a way of knowing and as a way of practice within science is either impossible or obviously limited, respectively. For science to succeed, self-reflection is neither required nor desirable; moreover, science is successful simply because the thematisation of its practices can be entirely neglected, and the common shared understanding of a community of experts can be taken for granted⁵. Additionally, the issue of the hermeneutic situation of the social sciences—the fact that their practices are situated within a pre-understanding that never can become fully explicit, is much more precarious, according to Hubert Dreyfus and Paul Rabinow—particularly for those called objectifying social sciences. In following Michel Foucault’s critique of the efforts of establishing a positive and objective knowledge about man and society, they claim that the forgetfulness of the social sciences about the historical and social situatedness of their practice does not result in normal activity, but in normalising social science. Despite the pretension of studying the human world, these normalising sciences exclude their own world from any questioning, which makes them rather questionable in terms of rigour (as defined as the attachment to their domain). This means that eventually neither the “disciplinary matrix”, nor the “matrix of power” within which these normalising sciences have originated and thrive can be made explicit. It means that “orthodoxy” has established itself by nullifying any alternative interpretation,

¹ Ibid.
² Ibid.
³ See Chapter 4: Recalling Knowledge with the Phenomenology of Science and Technology: Projecting, Representing, Ge-stell.
⁴ Dreyfus and Rabinow, Michel Foucault: beyond structuralism and hermeneutics; with an afterword by and an interview with Michel Foucault, 163.
⁵ Ibid.
and not by having opened up a new perspective and accomplished agreement about it, as occurs in the sciences of nature\(^1\).

The establishment of a disciplinary matrix—the control of individuals through rules and institutions—was a political event rather than a reaction to the necessities of the organisation of production and reproduction:

\[\text{C}ontrol\text{ through discipline is pioneered not in the factory, but in a variety of state institutions. [...] The objective of disciplinary power [...] the construction of obedient bodies [...] initially reflects the purpose of the superintendents of total institutions rather than the factory master. Indeed Foucault points to the interplay between capitalists and learned and reforming societies in the construction of a range of specific disciplinary powers through the nineteenth century.}\]\(^2\)

This political-historical genesis of the disciplinary power in modern society does not however mean that power is brought about in the mode of “residing in the state and [...] filtering down to lower levels such as the school, the courts, and so on”; this conceptualisation of power is limited to a juridical perspective\(^3\). Power is pervasive into the most trivial and mundane aspects of everyday life, establishing a “globality of discipline”\(^4\). The pervasiveness of power makes challenging discipline at one point and leaving it unchallenged in others a futile endeavour. Modern power cannot be weakened by abolishing or replacing some institutions. In Michel Foucault’s conceptualisation of power, resistance to discipline is rather constitutive of the overall matrix of power relations in a somehow dialectical nexus:

The very existence of power is seen as relying upon a multiplicity of points of resistance, which play the role of adversary, target, support or handle within power relationships. Thus, resistance is inconceivable without discipline. The existence of resistance does not mean that discipline is threatened. It means that discipline can grow stronger knowing where its next efforts must be directed.\(^5\)

Hubert Dreyfus and Paul Rabinow maintain that discipline and resistance make up the dynamic nature of power. Resistance has a disruptive effect from the point of view of

---

\(^1\) Ibid, 163-164.
\(^4\) Ibid.
\(^5\) Ibid, 21.
Disciplinary power, nevertheless, “[r]esistance is both an element of functioning of power and a source of its perpetual disorder”¹.

Disciplinary power may be seen as the notion that made the socio-political constellation in modernity conceivable. Power is extant in-between men, and hence not based on the possession of resources or status, nor is power operating by establishing rules and enforcing compliance with them. As emphasised by Stewart Clegg, power is “positive” in the sense of being productive by turning men “into something useful and both docile”; within organisational life, this applies equally to those in charge, as to their underlings². Disciplinary power is not tied to intentional acting and strategies, but it is “invested in, transmitted by, and reproduced through all human beings in their day-to-day existence”³.

Disciplinary power sits within a dynamic that is based on the separation of knowing and doing. Stewart Clegg explains the activities that function in a circular motion and reproduce power relations ever anew. In these “discursive practices”:

knowledge [is] reproduced through practices made possible by framing assumptions of that knowledge. Moreover, it’s a very practical knowledge: it disciplines the body, regulates the mind, and orders emotions in such a way that the ranking, hierarchy, and stratification that ensue are not just the blind reproduction of a transcendent traditional order, as in feudalism. It produces a new basis for order in the productive worth of individuals defined by new disciplinary practices of power.⁴

Disciplinary power is held to have potency and efficiency when it appears to work as compliance to “administrative rules”. However, both devising and following rules depend on agency and discretion. Because of that, in “any particular complex of power/knowledge”, there is always “resistance [...] which, in turn, legitimizes disciplinary power itself”⁵.

Power, resistance and disciplinary power, since always being bound up with agency must therefore not be considered as quasi-natural laws, akin to the “inevitably of an inescapable ‘iron cage’”⁶. Acknowledging the temporality of human existence—its historicity—there cannot be “a theory of what power ‘is’”⁷. This also means to see power in

¹ Dreyfus and Rabinow, *Michel Foucault: beyond structuralism and hermeneutics; with an afterword by and an interview with Michel Foucault*, 147.
² Clegg, “Foucault, power and organizations,” 43.
³ Ibid.
⁴ Ibid, 30.
⁶ Ibid.
⁷ Knights and Vurdubakis, “Foucault, power, resistance and all that,” 172.
modernity by recognising the “historicity of disciplinary power”1. In refraining from a universal concept of power, there can only be “‘analytics’[, ...] that is perspicuous examples (case histories) of particular techniques of power at work and of the characteristic features they display”2.

Disciplinary power can draw on a large reservoir of expertise in the form of the social, normalising sciences; it is technological fabrication in some sense. But, this analytics does not subscribe to an instrumental view of power, which would affirm eventually “cultural pessimism”3. Likewise, it presupposes human agency, and therefore cannot be content to perform reductions and abstractions where “logic of efficiency, a singular rationality or specific limited sets of contingencies and designs”4 are offered as the forces that work behind the backs of the actors, serving as props of explanation, or applying theory.

Martin Heidegger interpreted technology in a non-instrumental manner, and showed that instrumentality is merely one view of technology that does not recognise its essence and rather conceals that essence. In a similar way, Michel Foucault reminds us that seeing power merely as technological, calculative domination that becomes perfected by repeatedly surmounting different points of resistance, is also only one way of how power comes to pass. As Krzysztof Ziarek has indicated, both philosophers have directed our attention to that what matters, namely, “is precisely how we ‘speak and see’, whether the forms of seeing and speaking are thoroughly technological or whether a different disposition of speaking and seeing, a ‘poetic’ one [...] becomes possible”5.

This does not obviate that discourses of power/knowledge have to be analysed in order to see them in their historical contingency. An indication of how government and the concomitant social sciences have shaped rationality and technology of power is not only appropriate for thematising governmental innovation in the current study, but it is also a recognition of how these discourses have created an image by which society seeks to define itself.

---

1 McKinlay and Starkey, “Managing Foucault: Foucault, management and organization theory,” 5.
2 Knights and Vurdubakis, “Foucault, power, resistance and all that,” 172.
3 Clegg, “Foucault, power and organizations,” 42.
4 Ibid, 43.
5 Ziarek, “Powers to be: art and technology in Heidegger and Foucault,” 186.
Governmentality—the Liberal Constitution of Government, Economics and Society

An inquiry into organisational and technological innovation in government cannot limit itself to an abstract notion of power and use it as a category to make social relations thinkable and representable. Without considering the meaning of the knowledge of government in both senses of the genitive in its historical contingency, innovatory projects may be considered as the contention between different agents of change. These agents negotiate the ways in which information technological effectuation and novel social techniques come to pass. Investigations conducted under this premise apparently take a critical stance towards the organisational technologisation. However, by stressing the ‘local’ configurations of power/knowledge, they tend to become oblivious of the temporal conditioning of these phenomena, and render thus another account of ‘how things are’, and omit the opening that a critical reflection beyond the presently given may yield1.

Insight into the workings of governmental innovation should therefore be guided by an appreciation of how the spheres of economy-society-government in Western democracy become knowable and represented in the domains of economics, social sciences, and politics—all of which are seemingly subject to their own regularities. It is within the discourses of these domains that the knowledge of government can be located. Thus, the projections of man and social life that emerged with the (neo)liberal genesis of Western democracies need to be clarified as the discursive framing of power/knowledge for government.

Michel Foucault has indicated towards the formation of these conceptual spheres and domains of knowledge in his historical reflections on liberalism as the “ethos of govern-

---

ment” of Western democracy. He has elicited the dynamic tension within the liberal project—it is both the promise of liberty, while simultaneously projecting an image of man that is ever more supported by social scientific rationalities and techniques. Liberalism must then be seen as discourses and practices in which power comes to pass, by problematising man (as citizen) and devising and actuating disciplinary rationalities and techniques.

Modern society, then, from the nineteenth century up to our own day, has been characterised on the one hand, by a legislation, a discourse, an organisation based on public right, whose principle of articulation is the social body and the delegative status of each citizen; and on the other hand, by a closely linked grid of disciplinary coercions whose purpose is in fact to assure the cohesion of this same social body.2

This modern society is indeed a political formation that is constituted by liberalism, as “[... ] it was only with the emergence of liberalism that it was possible for a domain of ‘society’ to emerge. In effect, society was the product of a mutation in the demands of governmental rationalities”3. This is a hermeneutic rendering of the genesis of the modern political condition, since it presupposes a particular interpretation of world as the primal event, which may then shape action to produce relations that correspond to that interpretation. Knowledge of government in the subjective sense of the genitive and being based on the projection and thus objectification of society thus comes to pass in the “variable ways in which expertise plays a part in translating society into an object of government”4.

Comparable to Martin Heidegger’s determination of the emergence of modern science as a unique historical event, Michel Foucault posits that government, economy and society emerged as they are now known only once in history, and only in Western Europe5. This new constellation of social life has been termed governmentality by Michel Foucault and now stands for “a certain way of thinking and acting embodied in all those attempts to know and govern the wealth, health, and happiness of populations”6. Government, in this

---

analytical view, is not defined as a set of institutions commonly identified with the state and its correlating activities; it is rather

the historically constituted matrix within which are articulated all those dreams, schemes, strategies and manoeuvres of authorities that seek to shape the beliefs and conduct of others in desired directions by acting upon their will, their circumstances or their environment. It is in relation to this grid of government that specifically political forms of rule in the modern West define, delimit and relate themselves.1

Equivalent to modern science, modern government is both a way of knowing and a way of practice. As Nikolas Rose and Peter Miller argue, government is a way of constituting knowledge, since all the activities are only possible through “cognition, calculation, experimentation and evaluation”2. It is thus government that constantly constitutes its objects of knowledge based on projections of what is “good, healthy, normal, virtuous, efficient and profitable”3. Agents of governmental expertise act upon this knowledge in their “attempts of calculated administration”, which do not result in a unified, centralised and coherent matrix of control, but often in numerous and contending strategies of rule4. Based on this, the formation of liberal democracy can be comprehended as the interrelation between “political rationalities”; this includes the varying projections, conceptualisations and justifications of the shaping and exercise of power, and “governmental technologies”—the mundane ways of operations and implements by which authoritative intentions are effected5.

The Reason of the State and Theory of Police

According to Michel Foucault, it was not liberalism that invoked the discontinuity of Christian and medieval conceptions of rule as being the actualisation of divine law. The primal rationalisation of government of the modern era evolved within two lines of teaching known as the “reason of state and the theory of police”6 that emerged in the 17th century. In this context, he emphasises the similarity between political and scientific practices, which both hinge on a selective projection or “specific type of rationality”7. He stresses that political rationality, unlike scientific endeavours, is completely aware that it

1 Ibid, 175.
2 Ibid.
3 Ibid.
4 Ibid.
5 Ibid.
6 Foucault, “Politics and reason,” 73.
7 Ibid.
operates within the limitations of a projection from its inception: it is “reflective and perfectly aware of its specificity”\textsuperscript{1}.

The reason of state is defined as an art, a technique based on rules that refer back to rational knowledge—its rationality is simply based in that it heeds to its object ‘the state’. Thus:

the early modern conjunction of raison d’état and science of police [...] is momentously original in both an epistemological and an ethical sense. It constitutes the activity of government as an art with its own distinctive and irreducible form of rationality; and it gives to the exercise of sovereignty the practical form of a political pastorate, a government of all and each for the purposes of secular security and prosperity.\textsuperscript{2}

Michel Foucault, however points out that the exercise of pastoral power within the confines of the reason of the state, emerged within a competitive setting, while aiming at ensuring the integrity and functioning of the state into an infinite future. He holds that merely preserving the status quo in such an environment would soon lead to the demise of that political entity, and that therefore it must “increase its own strength”\textsuperscript{3}. Knowledge, positive knowledge of the state’s strength, and of its rivals is hence mandatory for adhering to the reason of the state, not only “just implementing general principles of reason, wisdom, and prudence”\textsuperscript{4}. Thus, the art of government is inseparable from the precise knowledge of the strength of the different forces that sustain it, and how these forces may be augmented; this gives rise to “political statistics, or arithmetics”\textsuperscript{5}.

Police, the 17th century projections of the organisation of the state, is a set of institutions and activities that must by necessity complement the historical institutions of sovereignty—namely army, finance, and justice—in fact “the police includes everything”\textsuperscript{6}. Police takes care of everything on the territory, namely men and their relations among themselves and to things, under the objective of productivity. Living conditions and economic conditions therefore become the object of interest and of “rational intervention”\textsuperscript{7}. Within the theory of police, Michel Foucault also identifies its “central paradox”: by being concerned with population, it has to care for the conditions of well-

\textsuperscript{1} Ibid.
\textsuperscript{3} Foucault, “Politics and reason,” 76.
\textsuperscript{4} Ibid.
\textsuperscript{5} Ibid.
\textsuperscript{6} Ibid, 79.
\textsuperscript{7} Ibid.
being of individuals, but this has to be done always under the premise that these interventions have a positive outcome for the strength of the state\(^1\). Theory of the police also drew a distinction between policy (\textit{Polizei}) and politics (\textit{Politik}): politics is negative, in that it encompasses the state’s fighting its internal and external adversaries, while policy is positive in that it fosters the wellbeing of citizens and the strength of the state\(^2\). The theory of the police, in its most advanced articulation “is at once an art of government and a method for the analysis of a population living on a territory”\(^3\). In the following:

[the new science called political economy arises out of the perception of continuous and multiple relations between population, territory and wealth; and this is accompanied by a type of intervention characteristic of government namely in the field of economy and population.\(^4\)]

\textbf{Liberalism—Creation of New Knowledge of Man}

With the advent of liberalism, and the establishment of political economy as science “political and economic thinking” and “the relationship between knowledge and government” enter into a different modality: while the theory of the police did not separate the knowledge and the art of government, in political economy “scientific objectivity” is introduced into the knowledge of government, and can only be warranted by maintaining some autonomy towards the concerns of the government\(^5\).

The critique of the police by liberalism subsequently triggered knowledge of government in a distinct shape. Firstly, considering liberalism as political rationality grounded the social sciences as knowledge of government by constituting their object—or as Andrew Barry, Thomas Osborne, and Nikolas Rose describe “political reason is the historical condition of the very object of their disciplines – ‘society’”\(^6\). Secondly, the domains of knowledge of government are not purely scientific, but “are as much \textit{technical} as they are political or ideological”\(^7\). Society and economics, by becoming independent objects of knowledge from the activities of government, thus become the object of science in terms of thematising their “the autonomous dynamics” to determine “whether they

\(^1\) Ibid, 82.
\(^2\) Ibid.
\(^3\) Ibid, 83.
\(^7\) Ibid.
should or should not be an object of regulation”. This kind of reasoning equates to “a certain naturalism” in that society is something natural abiding to its own ‘laws’ of functioning. To maintain the perceived autonomy of government’s objects (i.e., of economy and civil society), certain spheres must be excluded from excessive regulation—such as the ‘market’ and freedom of speech. Prosperity generated in a market-economy is ultimately for the benefit of the state, as is criticism of government and the state by intellectuals in certain contexts and conducted in the name of “good government”; the relative autonomy of socio-economic spheres is rather a way of governing, rather than a withdrawal of government.

Thus, liberalism is the grounding of government knowledge in its modern shape. Firstly, a subject-object dualism comes to pass, as in modern science whereby the government as the intentional subject acts upon society, which becomes knowable and represented only as object. To retain this relation, society must be granted an objective status where it can only be conceived of as being somehow independent and determined by its own regularities, which need to be known and may be exploited for making adjustments. In Graham Burchell’s words, society is the “object and end of government”, or “what has to be governed and what government must produce”; this projection is a “problem space” that “is an open-ended space of real politico-technical invention, of a governmental constructivism.”

This objective knowledge of economy and society is generated and maintained by various branches of expertise which, to be objective, need to rejoice in certain autonomy from governmental institutions. The organised expertise of society and economy, and government administration are the two poles of a separation between knowing and doing. Nikolas Rose has made the issue of government and knowledge the first “feature of liberalism”, by stressing that “liberal strategies tie government to the positive knowledges of human conduct”. Combined with the incessant generation of facts, liberal government is concerned with the “production, circulation, accumulation,

---

1 Ibid.
2 Ibid. For example, the ‘naturalisation’ of the economy by objectifying it in the ‘laws’ of economics went to such an excess that Leo Regin, The meaning and validity of economic theory: a historical approach (New York, NY: Harper, 1956).as historian of economic theory in the middle of the last century felt compelled to stress that this science is actually intrinsically bound up with human affairs, and consequently with political projects.
authorization and realization of truth: in the academy, in government bureaux, in reports of commissions, public enquiries and pressure groups” for the sake of making “government possible [...] and better”. Secondly, liberal rule stipulates that individuals are acting in the sense of governing themselves; it thus is associated with institutions and knowledges that generate these types of individuals. It also supposes that a distinction can be made between those who are able to conduct themselves as citizens and those that lack this capacity. Thus, the making of the citizen of liberal democracy is marked by the move of the “rights to truth over man” from the church and justice system to the authority of positive knowledge. Thirdly, ‘social phenomena’ are made knowable and problematic by means of the authority of expertise that has evolved as knowledges and institutions, and which has a certain autonomy from government institutions and is nevertheless constitutive for the liberal form of rule. It is this division of labour that effects the differentiation between “the domain of ‘politics’” and “spheres of authoritative rule” based on expertise. Finally, “liberal political rationalities” are “reflective”, since their inception. Thus, reflexivity is not a feature of the end of the 20th century. This liberalism as the “ethos of government” is the ethos of continuous criticism of rationalities and politics. The critical stance is both as methodical as it is ‘ontological’—“Liberal theory problematizes the methods of government no less than it does the nature of reality which government has to address”. Hence, Nikolas Rose sees the foundation of this criticism in the constitution of two distinct domains of cognition; society with its ‘natural’ laws, and the reason or the law of the political sphere, which permanently sustains the dilemma how the ‘political’ should act upon the ‘natural’; this is also a question of legitimacy of rule, and of the legitimacy of authority. Expertise in the form of the social sciences holds the principal and technical means by which these dilemmas are addressed. The criticism of government inherent in liberalism also has a ‘positive’ direction with its grounds in its origin in economic theory—liberal government is “economic government” in both senses of the phrase:

1 Ibid, 45.
2 Ibid.
3 Ibid.
5 Ibid, 47.
that of government informed by the precepts of political economy, but also that of a government, which economizes on its own costs: a greater effort of technique aimed at accomplishing more through a lesser exertion of force and authority.¹

These dilemmas, self-criticism, and reflexivity should be seen as essential parts of the overall projection of liberal theory. Graham Burchell describes this projection as exactly founded in government being economic in the modes “of cheap government” and of government committed to constantly maintaining the preconditions for the working of the economy at its peak². Liberal governmental reason considers the accomplishment of both optimal functioning of the national economy and achieving this “at minimum economic and sociopolitical cost” as success³. Whether government can be considered to have accomplished its economic mission is a political truth rather than a rational truth. It is also a truth that is established within that projection. Thus, Graham Burchell concludes it is possible that an apology for government can be consistently and coherently put forward within the liberal projection, and still the doings of government can be contended as being entirely disastrous in terms of these principles. It does not have, however, the consequence that the liberal art of government falls into disrepute in its entirety⁴.

The constellation of politics within the liberal projection renders governmental knowledge as being in one dimension homologous to technological-scientific knowledge. This is not the case, primarily because the “social sciences thrive on the problems of government”⁵ and that this ensemble of expertise is always in service as the scientific instrument to act upon society. As science is not technological since it depends on technical devices, governmentality is likewise not technological as held by Nikolas Rose in the form that “[t]hought becomes governmental to the extent that it becomes technical, it attaches itself to a technology for its realization”⁶. Governmental knowledge is rather akin to scientific metaphysical knowledge in that it starts out from a projection of man or society and it attaches itself to that projection through certain methods of rule, it is institutionalised as an ongoing activity. It is also mathematical, since its aim (namely economising) is always already known in advance. It is constructive in that this

³ Ibid.
⁴ Ibid.
⁵ Rose and Miller, “Political power beyond the state: problematics of government,” 182-183.
knowledge is always built and based on ‘self-criticism’ and reflection in discourses of success and failure of its programmes. The ‘mathematical’ of government knowledge, its economising, is also the recurrent optimistic part of criticism. The recurrent optimism can never be discarded since, as in the dynamics of science paralleled with its selective objectification and specialisation, governmental knowledge will never become aware whether something has been done in the optimal way, that the possibility of its object sphere has been exhausted. Like science, the essence of governmental knowledge is inaccessible out of its own discursive setup, as a problem space or projection. It is not possible to make a statement on liberalism or modern democracy out of that projection, in the same way as nothing can be said about physics in a physical-mathematical formula. In a second dimension, retaining its nature as politico-technical invention, or governmental constructivism—as noted by Graham Burchell—a certain ambiguity comes to pass in liberal governance. Since governmental knowledge encompasses rationalities and technologies, as in technological discourse, there should be no separation assumed between stories and formalised speech. It should therefore be understood that:

> [t]he language of politics is obviously not the language of a single disciplined mode of intellectual inquiry. It is rhetoric, that language in which men speak for all the purposes and in all the ways in which men may be found articulating and communicating as part of the activity and the culture of politics.¹

Neo-liberalism as the currently dominant form of governmental rationality and technology in the Western world, “managed to re-activate” constructivism and criticism and combine them with a range of methods². The criticism, rationality, and technology will be dealt with in the following section with a focus on government administration.

---

Chapter 6: The Rationality and Technology of Neo-Liberal Public Sector Reform

Although governmental reform is carried by scientific knowledge, specifically the rationalities of economics and the technologies of business, conceptualisation of the actualised transformations is largely from a domain perspective. This often disregards the connection between projection and the related methods, so that what emerges from academe and enters practice becomes re-interpreted by other scholars. Yet, the new truth is that is supposed to happen within the public sector is centred on efficiency—as allocative efficiency from economics, and as productive efficiency from engineering and management. The technologies for accomplishing these tenets are supposed to be delivered as a managerial responsibility within corporate enterprises and through financial and cost accounting techniques. When focusing merely on the technical side of calculative and controlling techniques, the knower is discursively separated from the knowledge. This separation taboos the projection of man, as well as the disciplinary significance of that knowledge. It keeps silent about the re-constitution of identities through new knowledges that can only come to pass within power relations.

The concept of governmentality and the liberal constellation predicate that the transformation of governmental rationalities and technologies always already involves both the ‘subject’ and the ‘object’ of these knowledges, namely government and society. However, the ensuing discussion will focus primarily on how governmental knowledge is understood in the sense of how administration governs itself.

Problematising Government Reform—Paradigm Change or Paradox Diversity?

The reflexivity, self-criticism, and economising within the revitalised liberal projection of governmentality is aptly articulated in what has become known as the new public management. Under this label, the reshaping of the public sector became a crusade by the 1990s in many industrial countries around the globe. Its origins are commonly

\footnote{Andrew Gray and Bill Jenkins, “From public administration to public management: reassessing a revolution?,” Public administration quarterly 73, no. 1 (1995): 79.}
assumed during the Thatcher government in the United Kingdom, while New Zealand and Australia followed this example. Its proponents hold:

> that a coherent, strategic view of public management [...] is possible, and that many public management reform concepts are robust enough to apply reasonable well across the diverse political traditions and diverse cultures of OECD Member countries.¹

The international character of the new public management movement was institutionalised in the Public Management Committee (PUMA) of the Organisation for Economic Co-operation and Development (OECD) set up in 1990². This committee had claimed that “reform of a fundamental nature” was needed³. Since “[t]raditional governance structures and managerial responses are increasingly ineffectual” in a globalised economy that has made the environment of policy subject to “great turbulence, uncertainty and an accelerating pace of change”⁴. Moreover, “[r]adical change is required in order to protect the very capacity to govern and deliver services” and this demands, “organisations [...] build a capacity to adapt continuously”⁵.

Governments established different reform projects, and a standard framework for public management appears inapplicable across countries. Yet, the principal elements of public sector change have been keyed out as: “focus on results in terms of efficiency, effectiveness, and quality of service”, and a move towards “decentralised management environments”⁶. Further components of the move towards public management are the exposure of public service provision to competition and sell-off or restructuring of public enterprises under the banner of privatisation and corporatisation. In some instances this occurs to the extent that “reducing the core public service” is the aim⁷.

The devolution of responsibilities has been hailed as the “new managerial approach” paralleled by “stringent accountability for performance through contractual arrangements, target-setting and strengthened reporting”, with the effect of “letting and making managers manage”⁸. In this context, a different approach towards the

---


² Ibid.(accessed).


⁴ Ibid.

⁵ Ibid.

⁶ Ibid, 3.

⁷ Ibid.

⁸ Ibid.
management of staff is crucial; one that allows for “personnel and labour practices that are more flexible and performance-oriented”\textsuperscript{1}. The new approach to public management is emulating “best private sector practice”, and its “objective is fundamental change, transforming behaviour and attitudes”. It is further suggested that by subjecting the public sector to market principles consequently “[c]ompetition provides powerful incentives to contain costs and to improve quality through innovation”\textsuperscript{2}.

Scholars of public administration, focusing on the change of knowledges and practices only, have sought to come to terms with these innovations without thematising the underlying liberal rationalities. In particular, arguments have been raised against the strong claims by the proponents of the new public management\textsuperscript{3}. Thus, the purport of the transformation under this banner as paradigm change, and its extension on a global scale has been encountered with scepticism. The concept of paradigm, as advanced by Thomas Kuhn\textsuperscript{4}, has been deemed inappropriate in this context. This inappropriateness relates to its use as an exemplar that provides the common background and method of solving puzzles and problems for a community of experts, in the sense of pursuing normal science. One argument against the claim of a global paradigm posits that the facts are lacking to give sufficient evidence that things are changing in the projected direction. Furthermore, that uptake of the proposed model is slow and uneven due to too much difference based on national politics\textsuperscript{5}. The other argument focuses on the scholarly discourse within the political-administrative sciences accompanying the changes in the public sector and concludes that the theoretical perspectives that supposedly informed the reforms are too diverse. The academic communities maintaining these approaches, in themselves are also not led by unifying paradigms\textsuperscript{6}.

It seems as if these critical comments reveal more about the critics than about their object of scrutiny. Arguably, there is certainly a great deal of temporal and structural divergence on the international scale\textsuperscript{7}, as well as an ostensible intermingling of

\textsuperscript{1} Ibid.
\textsuperscript{2} Ibid.
\textsuperscript{3} Ibid, 8, David Osborne and Ted Gaebler, \textit{Reinventing government: how the entrepreneurial spirit is transforming the public sector} (Reading, MA: Addison-Wesley, 1992).
\textsuperscript{7} Owen E Hughes and Deirdre O'Neill, \textit{The limits of new public management: reflections on the Kennett 'revolution' in Victoria} [html] (International Public Management Network Conference, Sydney, NSW, 4 - 6 March 2000, accessed 10 October 2002); available from
narratives or ‘theoretical approaches’ within the discourses about the transformation of the public sector. These kinds of observations, however, do not inevitably imply that there is no other way of approaching the phenomenon than debunking it as being not extant at all. The point that common assumptions, such as the global nature of public sector reform, are fraught with paradoxes\(^1\), indicates the complexity of the issue as seen from a certain perspective, rather than precluding a way of explaining. Admittedly, the concept of paradigm currently tends to be overextended. Nevertheless, appealing to the facts\(^2\), and pointing out the paradigm-less status of the social sciences and mission-oriented scholarly practices that have allegedly informed public sector reform\(^3\) are discursive stances. They blur the boundary between government and academe and are rooted in a positivist perspective. The former argument follows the ‘hype versus reality’ trope, thus separating discourse from practice, while the latter articulates reflexivity about social scientific scholarly practices only in terms of the model of the positive sciences.

**Public Choice—the Neo-Liberal Criticism of Politics**

The quest for radical change of the public sector, as voiced by the OECD Public Management Committee, is argued by criticising current practices as being untenable due to the new environment that is an immediate threat for the capacity for policy implementation, and which requires the change to be continuous. The proposition that government reform is a response to emerging external constraints that are imposed on the traditional administration appears to be rather questionable; particularly since governments significantly contribute to the conditions of their ‘environment’. Consequently, it might be beneficial to consider changing knowledge and practices in the public sector as constitutive of a larger political-economic project. This might help to address such questions as: what are the proposals for change and how have they emerged? On which basis are traditional practices rejected? Which new practices and knowledge are emerging, beyond disciplinary and hence methodical constraints? These limitations originate in the condition that discourse and practice of government reform takes recourse to the social sciences—in particular economics, and associated mission-

---


\(^2\) Lynn, “A critical analysis of the New Public Management.”

oriented scholarly domains such as accounting, management, and information systems. However, the commingled approaches to evaluating, explaining, and theorising in the latter domains tend to single out *a priori* a distinct aspect as their object of inquiry. They consequently draw conceptual boundaries—such as between administration and politics, between political ideology and economic efficiency or between information systems and the organisation—which reduce the complexity of the matter, while disallowing reflection beyond those lines.

The phenomenon that public sector reform is not a mere response to external constraints, but has emerged as part of an enduring political-economic project, has long been regarded as evident¹. Indeed, where reforms have been pursued most fervently (as in the United Kingdom, in New Zealand, and in Victoria) reference to this political-economic project has been explicitly made. This political-economic project that assumed ascendance during the last two decades of the twentieth century has been named neo-liberalism. It has been sketched as a “hegemonic construct” that is composed of economic liberalism and political conservatism. Economic liberalism promotes the idea of the market economy, where the individual can exert freedom of choice and government intervention is minimal. By contrast, political conservatism stands for strong government, an emphasis on traditional values, such as discipline and authority organised by hierarchy, and the nation². The quest for minimal government within the neo-liberal agenda has been supported by public choice theory that posits the intrinsic inferiority of traditional bureaucracy in comparison to private business in terms of managing rationally and economically³.

This is not to say that public sector reform originated from the orthodox economics of neo-liberalism, but rather to point to the way in which practices have become problematised, or what kind knowledge of conventional administration is assumed within the discourse about change. The way of knowing as advanced by neo-classical economics and its descendant of public choice theory is, at its core, characterised by projecting an image of human nature in general, and of the nature of public servants, in particular⁴. It would

⁴ According to Ed Kaptein, “Neo-liberalism and the dismantling of corporatism in Australia,” in *Restructuring Hegemony in the global political economy*, ed. Henk Overbeek (London: Routledge,
be erroneous to assume that economic science has been abused for the legitimisation of political ends, that “economics [is] being taken over, hijacked one might say, by a particular social ideology”\(^1\). While economics is conceived of as a positive and mathematical science, economic thinking, that has been informing public sector reform, is not pure theory, but political speech with its peculiar truth claims.

The Market—*homo oeconomicus* and Allocative Efficiency

Adam Smith, considered the forefather of modern economics at a time when it was called political economy, was actually a professor of moral philosophy, and had built his theory of the ‘invisible hand’ on a range of ethical premises\(^2\). Whereas Adam Smith was also interested in the efficiency of production and in the evolution of political economy into economics, this field of interest was later abandoned, since the neo-classical orthodoxy (as exemplified by Alfred Marshall) became concerned with market transactions, abstracting from society, politics, and history\(^3\).

The construct of the ‘invisible hand’ is based on the assumption that the laws of the market effectuate that, although the economic actors pursue their ownmost private interest of maximising gain from their commercial activities, the overall wealth is promoted as the forces of supply and demand tend to ensure that eventually equilibrium is established. This equilibrium is the optimum state of the market posited as the only efficient mechanism for coordination of economic activity that accomplished the use of resources without waste and adequate prices for all commodities\(^4\). The efficiency of the market, in the sense of neo-classical economics is, however, distinct from what is commonly understood as efficiency. David Mathiasen points out that “economic or *allocative*...
efficiency” (i.e., efficiency of the market mechanism) is concerned with rational choice of market participants, rather than the economy of resources by which the commodities in the market have been produced. In fact, to posit in terms of economics that a state of allocative efficiency is extant, the issue of productive or engineering efficiency does not have to be addressed at all. Allocative efficiency is defined as “Pareto optimality”, which happens when rational choice is exercised—maximum utility is sought and simultaneously individuals do not have to accept anything to which they attribute a lower preference. Advocates of public sector reform, in promoting the market as a means to achieve economy and quality, hence construe the realm of transactions as the mechanism to achieve efficiency. However, it is actually the process of production where resources are applied and where their expenditure can be controlled.

Moreover, in order to sustain the hypothesis of the superiority of the market for achieving perfect allocation of resources and fair exchange, a range of assumptions have to be in place. These include perfect competition—meaning that no market participant can impose his conditions on others—and perfect information, in order that each participant can make a ‘rational choice’. For the market to work for the overall benefit, two requirements must be met: the unity of private and social costs and benefits, and the non-existence of public property rights. If these are not fulfilled, this gives rise to ‘externalities’ that hamper the market’s functioning.

The assumptions and conditions, on which the neo-classical image of the market economy rests, imply a strong belief in a minimal role of governments in economic pursuits. Contemporary exponents have voiced, “economic intervention by the state is generally not only inefficient but immoral”. This pessimistic stance towards political governance has been further developed by applying the image of man as led purely by selfish maximising utility on the workings government bureaucracies in the form of public choice theory.

2 Ibid.
3 Ibid.
5 Barton, “Public choice theory and economic rationalism: the basis of new public management.”, Self, Rolling back the market: economic dogma and political choice.
6 Barton, “Public choice theory and economic rationalism: the basis of new public management.”
7 Ibid, 877.
Public choice theory thus represents what its adherents term an economic theory of politics, an economic approach to political behaviour, an application of economic methodology to the polity, the conception of *homo oeconomicus* in the political marketplace, and the like.\(^1\)

Public choice theorists have also raised the claim of its conception of man and its theory of human behaviour in order to provide a framework for theorising in social sciences in general, and thus its universal validity. For public choice theorists, politics is a “special case of the market”\(^2\). The claim of the validity of economics as setting the standard for all social sciences has been determined by consecutive and cumulative extensions of the projection of its domain. First, it was posited that the realm of economic theory encompasses all activities regarding the allocation of limited resources within a range of choices of goals. The next step was to broaden the concern with choice into all goal-oriented doing that involves the application of means and instruments. Even further, economics concerns any activity that is performed under the recognition of the state of affairs\(^3\). This reformulation of the task of economics as being competent in explaining all human affairs, as applied to the realm of politics, means that all the activities of government can be performed by devising programs that are based on economic laws and rules only\(^4\).

Common to all shades of public choice theory is the identification of all kinds of deficiencies of traditional bureaucracies, which consequently results in the government failing its citizens by not providing for them according to their actual needs. This government failure also leads to the ensuing prescription for treatment of these deficiencies through the curtailing of administration in favour of the market and private institutions\(^5\). The failure of the public sector to make allocative efficiency possible is, in principle, a moral one. Public choice theory uses the notion of ‘rent-seeker’ to characterise the acting of government bureaucrats. The *homo oeconomicus* in administration, serving his interests, will seek personal gain from the office by increasing the area of responsibility, the discretionary budget and perks to increase his status and income and alleviate the chores related to the position. This opportunism is possible and rampant, since there are no controls in place that would curtail the rent-

---


\(^2\) Ibid, 669-670.

\(^3\) Gordon, “Governmental rationality: an introduction,” 43.

\(^4\) Ibid.

seeking—control based on bureaucratic principles only creates an ever-expanding bureaucracy.

The picture of man in neo-liberalism, the “homo oeconomicus” is both a reactivation and a radical inversion of the economic agent as it had been devised by the pioneers of liberal doctrine. The reactivation elevates choice to a basic faculty that in being amenable to reckoning can supersede all anthropological projections, which have been put forward by the sciences of man. The inversion of the ideas of historical liberalism involves recasting the homo oeconomicus—whose actions originally had to be kept sacrosanct—into “manipulable man, who is perpetually responsive to modifications in his environment”; Colin Gordon concludes: “Economic government here joins hands with behaviourism.” Hannah Arendt had described the relation between economics and the later sciences of man as follows:

If economics is the science of society in its early stages, when it could impose its rules of behaviour only on sections of the population and on parts of their activities, the rise of the ‘behavioral sciences’ indicates clearly the final stage of this development, when mass society has devoured all strata of the nation and ‘social behavior’ has become the standard of all regions of life.

It appears that the neo-liberal claim for universality over the other social sciences actually corresponds to an aspiration for totalising governance. This was already primally extant, albeit not actualised, and is now brought to completion and seeks to render all other endeavours of objectifying man and society obsolete.

The neo-liberal narrative appears as an apolitical doctrine where individuals, who are committed only to themselves, relate to each other through market transactions, which in turn are the means of normative control. The role of government is apparently reduced to the provision of goods and services, rendering it into an economic agent rather indistinguishable from others. Though this doctrine renders prescriptions, according to which society can be conceived (including a rationale for ‘minimal government’) the

---

3 Ibid.
4 Ibid.
5 Arendt, The human condition. Introduction by Margaret Canovan, 45.
hypostasised market and the price function do not provide a mechanism to rearrange the internal workings of an organisation.

Management—Administration of Production and Engineering Efficiency

While the market may be still a concept for economic theories, its role as the principal mechanism for organising economic activity has actually receded—especially in advanced industrialised countries such as the OECD countries engaged in public sector reforms. Alfred Chandler\(^1\) has shown that the major sectors of industrialised countries are the domain of large-scale modern business enterprises in the areas of transport, manufacturing, processing, or retail. In his economic history of the United States, he traces the development of modern industrial organisation from its beginnings in the mid 19\(^{th}\) century until the 1950s, when the “managerial firm had become the standard form of modern business enterprise”\(^2\). His main proposition is, according to Keith Hoskin:

that market-based economics, of the kind so fetishized by economists […] is dead, and has been dead since the genesis of management, approximately 150 years ago. For the invention of management […] is what made possible the triumph of that quite unprecedented organization, the multidivisional, multinational corporation […] the reign of the market, and its ‘invisible hand’ has been displaced by the power of the ‘visible hand’ of management, which has enabled the creation of oligopoly power of the multidivisional multinationals, which now dominate the world economy.\(^3\)

Alfred Chandler defines the modern business enterprise by two features: it consists of multiple units, and these are directed by a hierarchy of employed managers. These units are administered independently and are manageable and controllable through their own accounts and books, as if they were independent firms\(^4\). In this multi-unit company structure, managers manage other managers and there is a stratum of middle managers. He argues that management could rise to this position when the internalisation of transactions through “administrative coordination permitted greater productivity, lower costs, and higher profits than coordination by market mechanisms”\(^5\). Moreover, hierarchical

\(^2\) Ibid, 498.
\(^5\) Ibid.
organisation of management is crucial for administrative coordination. The managerial functions of controlling current activities and of planning future allocations of resources have to be differentiated but also kept within the same legal entity. Historically, the managerial enterprise emerged when, and within, those sectors of the economy where technology and expanding markets allowed for an increased output and its absorption by buyers. According to Alfred Chandler, once the managerial organisation had been established, its further existence became conjoined with management as a social formation—this ensured institutional durability of the managerial enterprise as it became independent from individuals. The emergence of management as a social formation was further reinforced by specialisation and professionalisation. This established a status for management similar to the liberal professions, and based the allocation of positions in the hierarchy on qualifications and performance. Another consequence of the managerial enterprise was the separation of ownership and administration. Owners were merely interested in the business as a source of income, while the managers were concerned with the day-to-day operations and their future viability. Subsequently, managers’ objectives were the long-term stability and growth of the enterprise; they tended to strive to optimise the use of the resources constantly, and to expand operations rather than to seek high profits in the short-term. Alfred Chandler concludes that, eventually, managerial enterprises changed the basic structure of the economy in that large-scale companies came to control the flow of goods from the raw material through production and sales to the consumer, as well as deciding on how to put resources to use in the future.

Management—Efficiency through Accounting

The decline of the market as an economic coordination mechanism and its supplanting by the managerial enterprise has occurred in conjunction with the evolution of techniques of accounting and the structuring of the managerial functions. Based on Alfred Chandler’s investigation, Keith Hoskin and Richard Macve have shown that, although accounting as an activity has emerged in ancient times, it had been established in the modern sense only in the 1830s in the USA\(^1\). They locate the genesis of modern accounting in the disciplinary education in a military academy, which entailed meticulous application of written reports, examination and grading. Graduates of the

academy subsequently introduced the reporting regimen into an armoury where—together with time and motion studies, cost calculation, and classification of the workforce according to the skills needed for the performance of particular tasks—it set up the principles of single-unit management. Simultaneously, the staff-line system from the military academy was introduced into the administration of a railroad company where, in combination with an extensive reporting regimen, it generated accounting data that furnished “systematic cost control and profitability”. Thus, as suggested by Keith Hoskin and Richard Macve, both the single-unit management as well as the multi-unit management emanated from an educational environment. The single unit management system was based on recording and reporting practices, “which could integrate the surveillance and control of time, activity and cost” and thus provided the means to articulate the “modern concerns with productivity, performativity and profitability”. Additionally, the subdivisions in the railroad business and the concomitant accounting procedures, although triggering a reshaping of the managerial discourse in the whole country, were characterised by producing extensive data and reports and being punctiliously regulated, so that they did not make any sense in economic terms. Keith Hoskin and Richard Macve concluded that this indicates that it was not merely business rationality at work in the emergence of modern management. They felt that there was much more involved and it was “a new kind of power-knowledge regime which made possible the new power of economics, not the other way round”. In other words, Keith Hoskin and Richard Macve regard:

the emergence of modern accounting not as the ‘practical’ response of men faced with new entrepreneurial challenges, sensibly devising ways to capture the data needed for rational economic decisions—for in that sense no ‘practical’ man would have invented modern accounting practice, the output of which are not at all what is obviously needed for such purposes. Instead [they] see modern accounting emerging as a powerful way of ‘writing the world’ which like the modern examination embodies the power relations and knowledge relations of a disciplinary (and self-disciplinary culture).

Thus, despite accounting drawing on structural sciences such as mathematics and statistics, as well as sciences of man such as economics, it remains a domain of power-knowledge.

---

1 Ibid, 87-89.
2 Ibid, 86.
3 Ibid, 91.
4 Ibid.
5 Ibid.
Accounting, in this view, is not a way to measure and record transactions and assess performance and value that are independent of the practice of measuring and recording. Accounting renders the organisation visible by scrutinising its individuals. This was accomplished through the emergence of standard costing in conjunction with scientific management at the beginning of the last century, which are the knowledges of modern management bureaucracy. Cost accounting is the core technology of management: “it is the set of practices which makes individuals knowable, divisional performances comparable, and organization governable”.

These knowledges are concomitant with the structure of the modern corporations, which, analogous to the Fordist assembly line, made it possible to practise “[m]anaging managers through continuous surveillance and comparison”. Recently, the evaluative view of management has been both extended and intensified by the technology of activity-based costing. It not only allows for even closer inspection of the processes in an organisation, but also to constantly monitor suppliers and customers, as well. Hence, Stewart Clegg and Gill Palmer suggest that management knowledge evolves in such a way that control becomes increasingly mediated by representation. Neither physical proximity nor “shared occupational or craft knowledge” is a prerequisite to manage, as it is common to “manage at a physical or geographical distance”; it is also the rule to “manage at an intellectual distance”.

Concurrently, the power-knowledge regimen of modern management, as with any new managerial-theoretical approach, constitutes new subjectivities and new knowing individuals as managers. Consequently, corresponding to the image of the organisation as field of power-knowledge, there is:

- the enterprising subject, the bureaucratic personality; the lean producer; the joint venturer; the heroic businessperson, [...]. What management theories produce are differential ways of being reflexive: of seeing oneself in and acting on oneself as subject of theory that premises action. [...] The manager is continuously constituted and constructed through social relationships, discourses and practices.

3 Ibid, 7.
4 Ibid, 8.
5 Clegg and Palmer, “Producing management knowledge,” 2-3.
6 Ibid, 5.
The pervasiveness of technology in organisations, be that accounting or computers, and the connected constant drive for structural innovation, make it a defining dimension of management.

The shared understanding of the social formation of management appears in the grand narrative of management, or as Virginia Ingersoll and Guy Adams have termed it—the “managerial metamyth”. These taken-for-granted tenets originated from the managerial organisation of production, ensuring a constant throughput of goods and optimum use of machines and labour time.

(a) eventually all work processes can and should be rationalised—that is broken into their constituent parts and so thoroughly understood that they can be completely controlled; (b) the means for attaining organizational objectives or ends deserve maximum attention with the results that the ends quickly become subordinated to that means, even to the extent that the ends become lost or forgotten; and (c) efficiency and predictability are more important than any other considerations in managing an organization.

This metamyth of rationality, control, the preponderance of means over ends, and of efficiency, is nothing but a distillation of the projections of standard costing and scientific management. Its central notion of efficiency has emerged from the managerial social formation and disseminated into society. Ironically, efficiency is a notion of political economy. It is, as Peter Miller and Ted O’Leary argue, equally applicable to the business organisation as it is to the nation state. While standard costing was a means to problematise and standardise individual performance in production and management, efficiency in the social realm was connected to established standards about people in general. Moreover, Peter Miller and Ted O’Leary posit that the rhetorical link between business and the government of people that was made through this notion, significantly furthered the success of scientific management and standard costing. Efficiency brought together two realms of social organisation. National efficiency became a political ideal that had to be realised in a variety of places, such as schools, hospitals and the like through the intervention of experts. In this way, “[e]fficiency was also a key term of a

---

1 Ibid, 14.
5 Ibid.
6 Ibid.
7 Ibid, 108.
role for expertise within the machinery of government". To further this expertise and its efforts towards the eradication of idleness and waste, politics and public administration were elevated to the status of science to be taught at academic institutions. Efficiency was a universal notion; it could mean “a personal attribute”, “a mechanical principle equivalent to the input-output ration of a machine”, “commercial efficiency in the form of profit”, and “a relationship between persons”. In this way, “it provided an opening into which experts such as accountants, engineers, industrial psychologists and many others could insert themselves”. Efficiency made innovation in the social order conceivable as being analogous to restructuring in the enterprise.

Efficiency in Public Administration—Public Management by Accounting

Within the neo-liberal public reform, efficiency is promoted under the aspect of performativity, which means, “optimising input-output relationships”. This cybernetic, or engineering concept of efficiency, according to Brendan McSweeney, attains the status of an imperative, an interpellation that obliges any organisation, but is nevertheless independent of them—an objective reality that has to be attained. This principle “has to be made operational”. Accounting is the way of accurate measurement that corresponds to that demand. Brendan McSweeney holds that, regardless of the incessant self-criticism of public administration concerning its accounting practices, this has not resulted in the questioning of accounting in itself; rather it is readily assumed that its knowledge and practices have been more than sufficiently substantiated in business, and hence readily available. Consequently, the truth of management accounting became dominant in administration:

In the practice of public management, the 1980s and 1990s have become the age of the financial manager. Accounting, auditing and budgeting have documented the discourse about the delivery of public services and changed

---

1 Ibid, 109.
2 Ibid.
3 Ibid, 110.
4 Ibid, 111.
5 Ibid.
7 Ibid.
8 Ibid.
9 Ibid.
the language and rules of resource allocation as diverse as education, health and policing both in the UK and overseas\(^1\).

Within the discourse about the requirement to use business financial accounting, or accrual accounting, instead of cameral accounting, or cash accounting, the argument for the former was that is the only right technique to determine the ‘true’ cost of governmental activities. However, “[t]his ignores the simple fact that the difference between cash- and accrual-based accounting numbers is ultimately one of timing”\(^2\). Data being considered over a longer period would hence render no significant difference for the assessment of cost\(^3\).

The shift in projection and methods of public administration was paralleled by a displacement of the institutional setting of knowledges. New expertise for public management was, in the United Kingdom for example, not located at traditional university departments, but in “business schools, … dedicated research institutes, … professional bodies” that crossed the line between theory and practice, as well as between business and public sector, and “various polemical think tanks”. Publications in this domain were also either adapted to the new trend, or new ones published\(^4\).

The knowing subject—new public manager—was to be constituted within a corporate structure that emulated Alfred Sloan’s model for General Motors, comprising the following elements:

- a devolved management structure,
- delegated authority to decentralised units,
- responsibility accounting,
- a framework, which relies on objective setting, management by objectives, and comparison of objectives with results.\(^5\)

Alan McKinlay and Ken Starkey depict Sloan’s model, which had become the design that determined the management processes in US-corporations after 1920 for over 50

---

\(^1\) Gray and Jenkins, “From public administration to public management: reassessing a revolution?,” 88.


\(^3\) Ibid.

\(^4\) Gray and Jenkins, “From public administration to public management: reassessing a revolution?,” 82.


The Next Steps initiative, which promoted the corporate model in the United Kingdom, heavily and explicitly informed the reform in the government that has been studied through Vincent W FitzGerald and Queensland. Commission of Audit, *Report of the Queensland Commission of Audit, June 1996* (Brisbane, Qld: Govt. Printer, 1996).
years¹: Sloan’s multidivisional corporate structure differentiated strategic and operational management. At its core was the combination of structure with reporting. This enabled executives to monitor the whole corporation, without being exposed to information overload. Only a single formula was employed to report of the division’s financial performance, return on investment (ROI). Simultaneously, divisional financial managers reported directly to the executives, rather than to the manager of the division. Associated with the corporate executive management was a structure of expert committees, whose only tasks were to devise new strategies and to direct and monitor operational performance. In that “continuous and intensive administrative scrutiny of managerial decision making was Sloan’s prime concern … he pioneered the archetypal form power/knowledge within the modern corporation”².

**Commentary**

It would be facile to seek to debunk the rhetoric of public management as oxymoronic. The discourse about public sector reform draws on diverging symbolic resources—the conceptual inventory of orthodox economics with its market ideal is being used to support the quest for fundamental change. Government must be placed into the market; competition drives government to enhance its services, and concurrently to strive to keep its costs down. Corporate structures are also taken as blueprint, which actually displaced the market as a mechanism for economic coordination in favour of oligopolistic planning. It would also be futile to attempt to judge the new public management against its own ideals that, within the liberal democratic worldview, are the occasions for perpetual self-criticism anyway.

In terms of knowledge, the new public management indicates the intermingling of the techno-scientific worldview and governance. It becomes obvious that the prototypical science of man— economics as positive science—articulates the connection between projections of man inherent in governmental rationalities and governmental technologies such as accounting and concomitant disciplinary practices.

In addition, truth as efficiency and governance as technology, that crosses all walks of life, suggest that knowledge follows universal principles and can be made readily effective. Management knowledge, as already validated, can be relied on in the form of exter-

---

² Ibid, 114.
nal expertise. Knowledge as commercial activity can enter into government as the ac-
counting and consultant businesses, policy advice, management consultants, and IT con-
sultants. Substantive modalities of commodified management knowledge, business soft-
ware and information systems consultancy that have shaped the new public management
will be the theme of the following chapter.
Chapter 7: Commodified Management Knowledge:  
Information Systems and Expertise

Information systems have usually been introduced into organisations under the imperative of structural change, rather than making operations merely more convenient. This suggests a connection between the knowledge of organising and the knowledge of information systems, which is most obvious in the discourse about organisational information and knowledge. The installation of artefacts and knowledges is a commercial venture, indicating that the attendant rationalities for those ventures are merging the technical-organisational with the business logic of suppliers and clients. Artefacts and knowledges are conjoined through a special body of expertise, the most conspicuous portion being information system consultancies. Although the knowledges represented by computer systems and techno-organisational experts are commodities in socio-economic terms, and thereby subject to ardent efforts of legitimisation, they are not deliberate constructions but a form of knowledge at the end of modernity. In the context of government reform, information technology becomes a technology of governmentality, as do the knowledge and practices mediated with it.

Information technological effectuation in conjunction with organisational transformation is promoted and mediated through the computer and associated service industries. This applies equally to government administration as it does to business enterprises. By necessity, software and corresponding expertise becomes thus a constituent of current management knowledge in all kinds of organisations. The ensuing elaboration attempts to corroborate that the creation and mediation of management knowledge can be comprehended as a phenomenon of scientific technological knowledge. It does not attempt to render an account of the computer and associated services industries in terms of attention to detail. The aim is rather to draw out the structural dimensions of this instantiation of modern knowledge, based on the simple assumption of avoiding the separation of the knowledge from the knower, nor from its representation within artefacts.
Commodification of Information Systems and Management Knowledge—From MIS to ERP

When dealing with organisational information systems, conceptual separations are commonly put in place between the organisation, instantiations of technical devices ready to use (the information system), software, and the people who install and manage that technology. These separations may not lack plausibility, and are maintained by discourses of different actors. When however suggesting relations of causality between reifications, they may hamper inquiry into the constellation of knowledge in organisational environs, since these separations commonly disregard the representational core of information systems, while simultaneously promoting stories about information systems.

Currently, what is most prominently singled out in this context is so-called Standard Business Software—mostly known in the English-speaking world under the label Enterprise Resource Planning (ERP) system. To stipulate that standard business systems (ERP) are commodified technical knowledge may still cover up what their codification actually accomplishes. This assumption would imply that technology is simply out there, and hence to separate the knower from what is known. However, artefacts in their technicality are originally related to objectified forms of knowledge and related practices, discourses and social formations. To contemplate standard business systems, the question what is information systems knowledge? needs to be addressed by including its social dimension that is the knowledge claims purported by those who represent it.

We must not “view [information technology] simply as concrete artefacts, but as involving different levels of embodied knowledge ranging from specific implementations, through generic designs, to professional and disciplinary knowledge”1. Especially ERP, although called software, have nothing to do with ‘shrink-wrapped’, ‘off-the-shelf’ items that can be used instantaneously after straightforward installation2. On the contrary “[i]nstalling complex packages such as those offered by SAP, for example, requires a tremendous configuration and customization effort”3, and thus “involves the development and utilization of large amounts of specialist knowledge and

---

3 Ibid.
This adoption of code and blueprints into an organisation is performed by information systems consultancies that, like the developers of ERP, are multinational oligopolistic corporations\(^2\).

Code (such as ERP software) written by large-scale developers and licensed and installed at high cost, is obviously a commodity. This commodity must become knowable to a wide range of people, most of them non-experts, while experts must be able to draw on a common conceptual background. Thus, software as ‘solution’—as an item with pre-specified attributes that holds a potential of improvement of business operations and management—appears to be more a persuasive trope, than something that could be substantiated by evidence. Packages have to be made marketable as generic products through black boxing, since they would otherwise show the attributes of “high complexity, low trialability, low compatibility, etc.”\(^3\). In this way, packages, especially offerings of software developers tagged as ERP, are “commodified forms of technical knowledge”, for which “portability” is claimed in the sense of “minimizing the knowledge needed to use the technology”\(^4\).

The ERP narrative seems therefore inseparable from the transactions between the developers and the user organisations. This suggests that the commodity form of large-scale computer applications determines how they become known. Knowledge of ERP not only refers to, and contributes to, managerial and information systems discourse, or purports to disclose valued ‘features’ of that concept. Simultaneously, it also conceals that these ‘features’ are not those of an artefact, but rather an accomplishment of organising, of social conditioning.

Hence, the structural dimensions of organisational information systems need to be held in view simultaneously; they are (1) representational knowing by rendering a formalised picture of the organisation\(^5\); (2) developed, installed, and operated through expertise. Moreover, (3) artefacts and associated expertise are commodities, external to the organi-

---

5 See the section Representation, Information, Organisation and Information Technology.
sation; and (4) as representational knowing and merchandise discursively constituted as narratives or myths.¹

The Organisation as Picture

The picture of the organisation is however not primarily brought forth through customisation and configuration of large-scale software as Jannis Kallinikos² has cogently argued, and there are not infinite permutations of ERP systems when installed into different organisational contexts. Software and service industries present their offerings as technical implements, as ‘packaged solution’ entailing best practice models. Yet, the core concepts of the ERP narrative—process and integration—are not just marketing pitches in response to the current interest of management and to constantly changing criteria of improvements. ERP proffers not only an ideal of organising, or a vision, that has been sought after for many decades, but it actually entails a ‘script’ to enact that vision, and thus means to reshape human agency in organisations³. This ‘script’, so Jannis Kallinikos, is quasi inescapable, since (1) it contains its own rationale against which the package is assessed by the purchasing organisation, excluding simultaneously any other criteria to judge its promoted capabilities; (2) as commodities, the technicality of these offerings has been ‘black-boxed’, assuming that their internal working must not be known in detail to the user and consequently the underlying complexity should be hidden⁴, with the consequence that significant changes, especially those affecting the underlying logic, is precluded⁵. This fundamental logic makes Jannis Kallinikos claim that

[i]t is thus of utmost importance to stress that ERP systems recount a conception of organisations as a huge series of procedural steps, tied together to sequences, sub-functional categories, modules, and cross-modular operations. On this account, organizing is no more that the mechanics by which these steps are brought together and coordinated.⁶

He holds that, although structuring and controlling of tasks is cardinal to any information system, in ERP systems, this principle is carried to the extreme, as they strive for a

¹ See the section The Securing of Organisational Information Systems—Myths of Knowing and Organising.
³ Ibid, 9.
⁴ Scarbrough, “Blackboxes, hostages and prisoners.”
⁶ Ibid, 16.
totalising perspective on the organisation in its entirety and to the last detail\textsuperscript{1}. Consequently, the form of acting and organising that can be cast into pre-arranged procedural sequences is strengthened in its dominance over all other forms of organisational acting\textsuperscript{2}. Since acting cannot be separated from knowledge of world, concurrently, a particular mode of knowledge is elevated against all others, namely what has been called “procedural knowledge”\textsuperscript{3}. The hypostatisation of this deprived mode of knowledge that separates intention and understanding from action, implicates according to Jannis Kallinikos, that any different experience of organisational procedures can only be considered, when it is reconfigured into the system; this however is contingent on other knowledges, than that of the procedure, namely the projections and methods of experts\textsuperscript{4}. Combined with the ultimate objective of ERP, “raising the manageability/control/predictability of the organizational system’s routine operations”\textsuperscript{5}, this renders questionable the claim of innovative potential of these systems. Thus, ERP systems appear to give evidence of one of the paradoxes that come to pass within what Martin Heidegger has called “one-track thinking”, for which unambiguity and incontestability are the same. The information system hailed as innovative is itself resistant to change by ossifying the principles of scientific management and representational truth.

**Information Systems Expertise**

IT expertise is distinct from the traditional liberal professions in that it is not subject to professional regulation and organisation. It is a new shape of expertise as “specialized technological knowledge”; its dynamics of differentiation and distribution are formed by “supplier networks and market arrangements” and become manifest in the constitution of occupational categories\textsuperscript{6}. The disciplinary dimension of information systems knowledge is largely shaped by the “computer technology regime”, i.e., suppliers, consultants and the IS occupation itself\textsuperscript{7}. The knowledge claims of this regime are of a peculiar nature since information systems knowledge permeates all sectors of the economy, while it is

\textsuperscript{1} Ibid, 17.
\textsuperscript{2} Ibid, 18.
\textsuperscript{3} Ibid, 23.
\textsuperscript{4} Ibid, 24.
\textsuperscript{5} Ibid, 19.
\textsuperscript{7} Ibid, 942.
tied to the dynamics of a particular sector—computer supply and services\(^1\). Moreover, the status of IS experts within organisations is somehow lateral to management, since it is based on their ‘technical’ knowledge, instead of having been assigned a function through delegation from management. This ambiguous role of IS knowledge is amplified by the development of the IT industry towards “commodification and standardisation”—for example, high-level programming languages, project management methodologies, and standard business applications\(^2\). Formalisation and complexity of IS knowledge enforce an even stronger separation between the validation of the claims of that knowledge, and its actualisation or application. IS knowledge is always out of context; for example, products that are marketed have been proven to be working on reference sites, and specialists are certified by hardware and software companies\(^3\).

Historically, as shown by Thomas Haigh\(^4\), since its emergence out of the movement for office automation, information systems as a domain of knowledge has from its very beginning always been characterised by the peculiarity of its claims. These claims have been articulated within the concept of Management Information System (MIS) that appeared in the United States in the late 1950s out of the “linking the computer to [already] existing claims to systems expertise”\(^5\). Earlier, systems expertise arrogated to objective knowledge, on equal footing with science and technology based on the concepts of scientific management. Yet this domain of knowledge was contentious and competitive, since it was nothing but management, and associated with shaping executive control over line managers\(^6\). The concept of management information system, as argued by Thomas Haigh, allowed for questioning the rigid separation between technical expertise, and managerial or organisational expertise\(^7\). It set up the projection of a domain that thrives on oscillating between ‘social’ and ‘technical’ and that entailed three dimensions. Firstly, it built on competence in the fast growing field of organisational computer systems. Secondly, the data generated by computers could be reshaped as management information, as provision of new means of control for corporate management, thus overcoming the stigma of merely technical expertise that sought to optimise clerical functions. Lastly, management information systems, by coupling the expanding functions of corporate computing, provided an opening to realms that were previously

\(^1\) Ibid.
\(^2\) Ibid, 943.
\(^3\) Ibid.
\(^5\) Ibid, 16.
\(^6\) Ibid, 17.
\(^7\) Ibid.
closed to organisational experts—namely management reporting, organisational transformation and strategic planning. It was during the 1960s when the concept of information became entrenched in business, as well as the vision of the totally integrated information system for the whole corporation, as for example put forward by Stafford Beer, who blended scientific management with cybernetics.

It was exactly that reified image of information characterised as myth by Richard Boland from which the information systems’ momentum emanated. Information connected everything into a whole—as a raw material, it emerged from the routine transactions and operations in the clerical office and on the shopfloor. It was distilled and compounded for frequent control and adjustment in routine reports. Ultimately, it finally fed into planning scenarios and simulations for forecasting and planning. Information turned out to be a fabulous substance that allowed for making ontic assertions, such as the data-information-knowledge-continuum that corresponds to the hierarchy of the corporation. Information and the correlating organisational system became the domain of a new mode of expertise. It crossed hierarchical, divisional, and organisational boundaries, vying for recognition as central to corporate decision-making, and therefore requiring a centralised staff function rather than divisional affiliation. Yet, this informational ‘pyramid’ rested on a plethora of transactional data, making any aggregation of these into reports the pre-condition for decision-making—even at the top-most level of the corporation; in this way, it made computer experts indispensable for management. Yet, the ambitious vision of the totally integrated management information system could not be realised in the early days of its conceptualisation; this was due to limitations of development methods and computer hardware and resistance to computer expertise from established experts, such as accountants, and management specialists who objected to entrusting the modelling and control of entire corporations to staff experts in computing.

Despite this temporary setback, the knowledge claims of early IS expertise in business, are according to Thoms Haigh, still significant today. The enthusiasm for cybernetics and computer technology in the early period of the cold war stipulated the potency of the

1 Ibid, 17-18.
2 Ibid, 18.
4 See the section Knowledge as Object.
6 Ibid.
7 Ibid.
8 Ibid, 52-54.
concepts of information and of information systems that were brought to bear in these claims. He infers that this legacy precludes a more tempered approach to dealing with information in organisations than in terms of formalisation and engineering, and that respective suggestions are nothing but wishful thinking. Standard business systems, that emerged in the 1990s as ERP are a resuscitation or even a continuation of the vision of total, universal, integrative, organisational information system that allows by real-time monitoring to control a multinational corporation like a corner shop are evidence for this proposition.

While the integrated organisation wide information system was temporarily put on hold, organisational information systems became merchandise as software packages and with them concomitant expertise in the shape of information technology consultancy. Changes in the information technology industry constituted consultancy expertise as one of its crucial sectors:

Unbundling of hardware and software in the 1960s and the arrival of microcomputers in the 1970s gave a tremendous boost to the commodification of IS knowledge through the diffusion of off-the-shelf software and distributed computing technology. Consequently “the demand for new IS knowledges [extended], centering on the customizing and integration of such packages for business purposes”. Thus, information technology consultancy is determined by the peculiarities of IT expertise in general, and the prevalence of ‘large-scale software packages’ as the common implements in organisational computing. Eventually, in the late 1970s, accountancy firms became involved with information technology applications in organisations, thus establishing a novel type of consultancy service that became known as ‘business solution provision’. These ‘integrated solutions to business’ comprised the installation of specialised application packages as well as all other activities—such as re-organising and training—required to manage the organisational change that accompanied the introduction of such a system. Thus, consultancy expertise in managing IT and change emerged, apart from the traditional management consulting industry. Multinational accounting and auditing

1 Ibid, 59. As a matter of fact, an executive front-end to an ERP-system has been devised consisting of multiple screens displaying a variety of financial and performance indicators, also in ‘real-time’, in a conference room that resembles the control room for strategic missile warfare, and has been appositely labelled ‘corporate war room’ by its developer (see frontispiece).
2 Ibid, 58.
3 Scarbrough, “Problem-solutions in the management of information systems expertise,” 946.
4 Ibid.
firms could draw on IT expertise, and expand into the consultants’ business due to the pervasiveness of IT and its experts in organisations. IT expertise already conjoined technical with organisational change and the accounting companies already had a huge client-base to whom their new services could be offered. Accordingly, consultancy expertise has also co-constituted instantiations of standard business systems in organisations; consultants have approached implementations as an issue of strategic transformation and organisational structuring in introducing new systems of working as ‘technical’ projects.

The ERP Narrative

These techno-organisational ventures are communicated by identifying a vision with an (non-extant) artefact. The vision is compacted into the acronym ERP. ERP as a ‘term’ was created by the business and technology analyst company Gartner Group, an opinion leader in the technology market. A category for offerings by software developers was thus defined and legitimised, since it originated from an authority in the market. As an organising vision, ERP must represent the confluence of managerial with technological discourse, similar to other innovative ideas like Business Process Re-engineering (BPR. As ‘systems’, ERP-systems represent business rationality as they are a “better, faster and more economical business solutions”. Moreover, as the new information systems ‘paradigm’, they supposedly also grant new possibilities, and hence progress. This arises since they allegedly achieve ‘integration’ across suppliers, departments and customers, and use state-of-the art information technology being based on a single relational database, and run on client-server architecture. The double nature of ERP as product and vision is further sustained by giving this construct a ‘historically-grown identity’. This is achieved by projecting a teleological development based on the dynamics between business logic and technological advancement, or associating the ‘term’ with advancement of knowledge that is conditioned by technology. ERP must be both a continuation of prior ‘software concepts’, while leaving these behind in a qualitative

1 Wright, “Promoting demand, gaining legitimacy and broadening expertise: the evolution of consultancy-client relationships in Australia.”
3 Swanson and Ramiller, “The organizing vision in information systems innovation.” See footnote Error! Bookmark not defined. on page 19.
4 L Wylie, ERP: a vision of the next-generation MRP II (Gartner Group, 1990), Computer integrated manufacturing: scenarios; S-300-339.
leap. It is proposed that a linear, incremental development has taken place from early materials management systems in the 1950s (Bills of Material [BOM], over to planning systems (MRP) in the 1960s and 1970s (MRPII) towards ERP\(^1\), which is even implied in the name itself. By contrast, a central tenet of that vision-artefact is stressed, namely the organisational integration, by information technology as pursued by Computer Integrated Manufacturing (CIM). It is in this aspect where ERP has to be differentiated from ‘products’ at that time on the market (i.e., Manufacturing Resource Planning II (MRPII) software) that could be perceived as being similar\(^2\).

In conceptualising work as process, ERP reflects the centrality of that notion in a range of management approaches, where process-orientation is considered to be the “primary paradigm for structuring the organization”, such as in “lean management, total quality management, the fractal company, agile manufacturing and virtual corporation”\(^3\). The concept of process orientation had already dominated an earlier organising vision called Business Process Re-engineering (BPR)\(^4\), which soon fell into disrepute due to its radical mechanistic view of information systems and organisations and the ensuing economic and social costs associated with its realisation\(^5\). Due to the concept of business process, ERP could also be regarded as a resuscitation of the interest in BPR\(^6\).

Remarkably, the ERP narrative with its central concepts of information, integration, ‘real-time’, and the value of transactional data as raw material, is built with reference to software packages that could be interpreted as predecessors of these systems, rather than being linked to the project of MIS that failed three decades ago, and with which it largely

---


\(^2\) Lopes, “CIM II: the integrated manufacturing enterprise.”


\(^6\) Westrup and Knight, “Consultants and Enterprise Resource Planning (ERP) systems.”
overlaps in terms of conceptualisation and ambition, in comparison to humble scheduling systems, like BOM.

The Limits of Information Systems Knowledge

The intermingling of the claim of performing strategic business changes, and their conduct as technical projects points to two critical phenomena. Effectuation of techno-organisational innovation conceals the political nature of these projects. To the instrumental view of technology, its own limitations remain hidden.

Techno-organisational transformation is inherently political, and to qualify the ‘political’ as disturbance that can be eliminated or controlled is, in itself, an attempt to exercise power. As stated previously, economic dynamics have commonly been held responsible for the specific modalities of IT expertise. However, the process-(re)engineering efforts that always surround the ‘implementation’ of ERP systems, and are carried out by external consultants, indicate the political nature of the formation of IS expertise. Thomas Haigh suggests that transformations around new technologies in a radical, cross-divisional way that follow an exogenous blueprint, are most likely unachievable—not necessarily in terms of competence, but in terms of status held by an internal staff department. External ‘software’ and external experts provide an opportunity for management to exercise power by initiating and effecting change, while the authority of that expertise can also be brought to bear in this process, which, under unfluctuating conditions, could prove to be a source of contention.

Still, control and predictability of routine operations, as purported by ERP, may for those who strive to control, namely management, become ridden with another paradox of Gestell, as analysed by Ole Hanseth et al. They claim that control is the “main objective” of developing and using ERP, under aspects of integration. First, prior diverse applications are superseded by and integrated into one system; second, data across the functional domains is integrated, enhancing managerial control; third, processes are engineered integrating functional entities, augmenting the opportunities for further visibility and control. Yet, even the integration or alignment of the technological agenda

---

1 Bloomfield and Danieli, “The role of management consultants in the development of information technology: the indissoluble nature of socio-political and technical skills,” 41.
4 Ibid, 35.
and the organisational agenda, as in the case presented by Ole Hanseth et al. does not warrant that intentions and plans are transformed faithfully into new ways of working, especially in a multinational organisation, which strives for tight control/integration. On the contrary, the objective of overall integration, of normalisation across space and time encounters external and internal conditions, such as enforced migration to other applications, differing version of the ERP, and its developer imposed maintenance and upgrade effort, outsourcing of a distributed and multilayered technological structure, centralisation of operations, etc., triggers numerous unintended outcomes¹.

Thus, the vision and script that is devised to render organisations more controllable, mutates its ambience into something that determines the latter, as if the control based on quantification had spawned a new qualitative dimension². Martin Heidegger has called this techno-scientific phenomenon the “gigantic” that “as such, is above all unpredictable”³. He has characterised the comportment of those who pursue representation as being bound by the principle “everything is humanly possible”, while being at the same time are entirely unaware of “the essence of the quantitative”⁴.

Information Technologies in Public Administration—Neo-Liberal Government and Expertise

Calculative technologies and expertise have moved into public administration through computerisation long before standard business systems emerged and the new public management provided a rationale to deploy them in government departments. In fact, government computerisation meant foremost that information technology became “central tools of government”⁵. In this way, parts of bureaucracy had been supplanted by information technology expertise⁶, and computerisation as a constituent of the scientific discourses of truth and concomitant expertise, have transformed political rationalities

¹ Ibid, 44-45.
² Ibid.
³ Heidegger, Contributions to philosophy [Beiträge zur Philosophie, English]: from enowning, 96. For the gigantic, see the section The Limits of Techno-Scientific Doing and Knowing
⁴ Ibid, 95. Hanseth, Ciborra, and Braa, “The control devolution: ERP and the side effects of globalization.” regard the consequences of modernity somehow ambiguously as “side effects” and “juggernaut of modernity”, that evade human control and appear to make technology the master of humankind. The concept of the gigantic with its much richer connotation seems to me a more feliculous rendering of the essence of the information Ge-stell.
⁶ Ibid, 29.
and technologies alike. Within the dimensions of technology and rationality computers in government are innovative in that they “support”, “intensify”, and “extend” already extant policies (or technologies), and grant the possibility of new policies; furthermore, they “support”, “intensify”, and “extend” already extant rationalities, and grant the possibility of new rationalities. Computers keep records, perform searches for matches across many databases and files, execute decision rules, generate extensive statistical reports, and make the use of vast amounts of data for extensive simulation and planning possible. In Paul Henman’s words, computers “implement”, “automate”, “protect”, “monitor” policies, and “model policy options”.

While not denying significant efficiency gains of computerisation in comparison to traditional administrative procedures, information technology in government, not unlike to business, is hardly ever applied to automate conventional operations; it rather makes more complex and more formalised policies possible. The fitness of computers in handling numerical data directs policy to a point where both its execution and its evaluation are shaped by information that expresses quantities. Paul Henman further suggests that the rationalisation augmented by the use of computers in public administration might indeed intensify traits that have long been extant in bureaucracies, such as the allegiance to procedures and statistics, and that this means an even stronger focus on the process of policy, rather than on its content.

With information technology, new knowledge enters public administration, and by that new governmental rationalities: computer experts attain a status in the formation of new policy, as being cognisant of bringing policy implementation and technology together, and make new domains of knowledge easily accessible. More importantly, computers as representational technology bring about new images of society; they constitute reality through their mechanisms of surveillance and calculation. Paul Henman argues that topoi of the neo-liberal constellation, such as risk, homo oeconomicus, and the future are conceived of how they are due to the new technologies. Risk becomes a “techno-discursive instrument” to define and identify groups of people who are at risk or can become a risk, and then be subjected to surveillance, all of which is done by computers. The image of

2 Ibid.
3 Ibid.
5 Ibid, 623-624.
6 Ibid, 424.
the homo oeconomicus as a responsibly and rationally acting person is complemented by the projection of a most accurate picture of society as well as of individuals’ circumstances through all the data that is made inspectable and manipulable by representational technology. The future becomes accessible in a new mode due to the data available and the capacities to handle them with ‘accuracy’ that are without precedent. Modelling and planning based on economics and statistics thus come to pass as new discourses of truth, as new governmental rationalities. Political truth, being always contentious is shaped by the new technological means of political discourse: “A technical politics based on contestations about statistics is extended to technical politics based on computer models”¹.

This suggests, that knowledges related to information technology have brought forth a determinant of the neo-liberal constellation, namely “a new relation between expertise and politics”². Concurrently, to computerisation, the expertise of the sciences of man was devolved and made accountable. Nikolas Rose argues that expertise based on the sciences of man is not questioned in itself, but put under a “formal” or technical rule. “The powers once accorded to the positive knowledges of human conduct are to be transferred to the calculative regimes of accounting and financial management”³. Thus, “scrutiny” replaces “authority”, and the truth claim of the social sciences is put under a universally applicable regimen by subjecting any activity to the inspection by means of measurement and calculation. “Marketization” and “monetarization” are two complementary techniques that place expertise into a certain distance vis-à-vis the core administration, and rendering it quasi-autonomous and responsible. Simultaneously they ensure that the work being performed is put under the constraints of tight budgetary control and measurements of performances⁴.

Another shift in expertise may have emerged out of the government policies to contract out information technology on a large scale into an environment, where “huge multinational companies have come to dominate the computer services market in general and are increasingly dominating the development, maintenance and operation of government computer systems”⁵. This problem is however beyond the scope of this study.

¹ Ibid, 426.
² Rose, “Governing “advanced” liberal democracies,” 54.
³ Ibid.
⁴ Ibid, 54-55.
⁵ Margetts, Information technology in government: Britain and America, 160.
What needs to be kept in mind is that government’s image of society and the image that government administration has of itself is determined by commodified technical knowledges. Modernity in the mode of truth as efficiency and governance as technology has arrived in government bureaucracy.
Chapter 8: Representation and Rationality—Utility and Action

The reconsideration of the concepts of knowledge, technology and power from a philosophical perspective allows the building of a difference from their scientific and commonsensical readings. It is only against this difference that the limitations of these popular interpretations can be disclosed. These limitations are inherent to the modern scientific worldview, and conceptually inaccessible to it. Within the scientific worldview, significant dilemmas emerge with each of these concepts. These include knowledge is simultaneously constructed and objective; technology is a tool that behaves like a master; power is both licit and illicit; and politics is bad and policy is good.

Knowledge, like information, has been set up as an object and become the constituent of technological and organisational discourse. In this way, the concept itself has been thematised in the production of expert knowledge. Performing the selective objectification of the concept of knowledge necessarily deprived it of its historical essence. Knowledge, thus devoid of its temporal dimension, also became disjoint from truth, stressing the utility aspect of the former. Since a ‘mathematical’ definition and understanding was not readily available, as it was for the concept of information, philosophical tropes were employed. These were made more or less fitting to the purpose to treat knowledge as a thing, or substance, regardless of their incommensurable connotations. The philosophical tropes expose the dualist worldview that rests on the subject-object juxtaposition, making knowledge appear as either objective or constructed (subjective). In particular, the ‘knowledge as thing’ discourse largely disregarded the sociology of knowledge, which had taken on the question of scientific knowledge. Instead, it focused on the construct of tacit knowledge—largely read as knowledge that had not been formalised, or made a ‘thing’. This appears to be in accordance with the ‘data-information-knowledge continuum’ construct that set up the resemblance of humans and computers in a similar fashion. The positing of tacit knowledge as not yet formalised knowledge resembles the juxtaposition of ‘natural’ language and formalised language, within which ‘natural’ language is the concept of not yet formalised language, since all language has now become seen under the aspect of formalisation. Arguably, the organisational knowledge discourse has inherited the earlier information myths, not only because of its strong link with information technology. These equated information with structured data, with organisation, with power, and with intelligence, and posited that perfect information
is a viable and desirable objective. The selective objectification of knowledge, having emerged at the intersection between theory and practice of management and information technology is ‘interdisciplinary’, and thus is resting on a multitude of conjectures. Since occurring in a border area, the knowledge discourse is also sustained by a special vigour, due to its purpose as part of a vision for the activity of organising and its commercial implications. In this context, a priori inconsistencies do not matter, for as medicine and economics have different projections of man, different domains may appropriate different notions of knowledge as the object of their business. The apparent vagueness, which appears to be disturbingly unscientific, is of secondary concern, since what is sought is the applicability of the projection(s) in explanatory efforts.

Alternative conceptualisations of knowledge or information in organisations that argue against the knowledge/information as thing discourse, have attempted to ground the concept in practical and collective involvements. They present knowledge, not as a fixed substance, but as a human accomplishment. These humanist accounts do not, however, seek out the specifics of knowledge in modernity, nor pay heed to the underpinnings of modern organisations and their way of knowledge production in the shape of information systems.

The phenomenology of science and technology grants the possibility to go beyond humanist and technologist representations in offering an approach to think about knowledge under the conditions of modernity. Scientific knowledge is paradigmatic for all other knowledge in our era. The way in which knowledge emerges in scientific activity as research holds sway structurally in domains that might be considered less theoretical, such as management. Science as research—with its projection, rigour, method and specialisation—generates in a continuous and expanding work knowledge in the form of the world as a picture. The only way in which scientific knowledge is possible—as selective objectification and concomitant representation—also defines the limits of this way of knowing. Regardless of its successes, it always remains selective, and the acknowledgement of this selective projection would also render science as research impossible. Science also cannot make statements about themselves with the conceptual inventory provided by their method and projection. The essence of science as research therefore remains elusive, which renders a description and critique of it only possible from a position beyond its bounds. Limitations for science as research also originate from its practice—the projection and method may be taken for granted and only results may be sought. This eventuates in an unchanging sequence—a circumstance
against which inherent control is not possible. The magnitude and complexity of endeavours based on calculability may change over into a new qualitative dimension and become incalculable.

Knowledge based on representation comes to completion in technology and its peak of information technology. Modern technology turns everything that is into standing-reserve, which is reported as such by information technology. Nature is challenged forth by science as object that turns into standing-reserve under the dominance of technology. As science and technology are ways of making and of knowing, both produce actuality and truth. Within the nuclear and information age, these ways of making and knowing determine the constellation between man and what is. This constellation is im-position. Im-position is a unique event that is anthropocentric and Eurocentric, based on its historical coming to pass.

As primordially being the articulation of the already understood knowledge is bound to language. Language, as the ‘medium’ of knowledge, is challenged through information technology. Language is challenged in that its dimension of being an instrument for communication is pushed to the extreme through formalisation in programming languages.

Organisations are already based on representational knowledge and technologies to enable control at distance, overcoming space and time, and complexity reduction. The use of information systems in organisations amplifies this configuration, which becomes obvious in the objectives of providing an integrated view of the organisation in real-time. Thus, organisational information systems render the organisation as a picture corresponding to the accomplishments of science and technology, which proffer the world as a picture. The interpretative turn in information systems research has acknowledged that the set up of organisational information systems is determined by a hermeneutic process. However, representational technology and organisation are still regarded as two distinct ontic entities. Hence, this selective objectification of organisation and information technology is unable to make statements about organisational knowledge, since its own representational nature remains opaque to it.

In modernity, world disclosure through language and knowledge happens not only within the formalising and representing mode. The essence of technology in its provocation actually speaks in what has been commonly referred to as visions, and narratives. These narratives are myths in the sense of de-politicised speech about
technology and correlate to the knowledge objectifying the world-as-picture by securing it as a-temporal truth.

As principles of knowing of and acting upon the world, utility and instrumentality, representation and rationality thus establish a condition, which becomes opaque and therefore fraught with danger. Under the claim of transparency and immediacy, information systems as the acme of representation and organisation, bring these ways of knowing in modernity to completion, which have been captured in the notion of information Ge-stell. It is also Ge-stell that opens the possibility of recognising its destining as well as its limitations, and to ponder the surmounting the modern condition.

Since utility and instrumentality, representation and rationality guide acting upon the world, they are necessarily political—they are thus the modalities in which power appears. As these are derived or based on a reductionist view, the human subject disclosed in the act is abstracted from the act. The phenomenon that men are constituted as subjects within webs of relations, and thus of power, vanishes within the utilitist view of knowledge. Thus, technological and organisational discourses hardly ever thematise power and politics. Acting, conceived of within these modalities, occurs as making or fabrication. This conceptually conceals the openness and unpredictability of action, without removing it. In this reification, political acting appears only to be legitimate as policy, as rules implemented toward specific goals. The uncertainty of processes, in both the human as in the natural realm that has become a feature of modernity is thus covered up, as with the relation between knowledge and truth. Instrumentality of action is institutionalised as knowledge of technologies of power—the social sciences—which are co-constitutive to modern forms of government. This governmentality, or the liberal constitution of government—economics—and society rest on a particular projection of man. This projection involves the problematisation of society as the object of government, and the latter’s constant reflexivity on its modes of intervention into the former. This enduring problematisation of society brings forth changing rationalities and technologies; these are articulated within the social sciences as the lateral space of governmental knowledge creation.

During the past 30 years, neo-liberal thinking has determined the change of the pattern of governance in the Western world, with reforms targeting the core public sector during 1990s. The rationality of the public sector reform has been articulated in the language of public choice theory. This presents an image of man or homo oeconomicus that claims to make knowable all aspects of human life within the realm of economic thought. This in-
cludes the portrayal of the public servant as rent-seeker, and the subsequent sharp criticism of forms of administration that do not comply with the principles of business. Correspondingly, the technologies of private business are posited as the only valid ones for organising the activities of government administration. These technologies are centred on the managerial structures for oligopolistic corporations and the concomitant techniques for financial and cost accounting. Truth is brought forth within the neo-liberal rationalities and technologies as efficiency; firstly, as allocative efficiency. This posits that resources can be optimally allocated through market exchanges, despite the market as coordinating mechanism having been superseded by administration within oligopolistic corporations. Secondly, as engineering efficiency, which is based on accounting techniques that represent the organisation of a site for constant intervention to optimally apply labour and reduce costs. These economic concepts of efficiency seem to fuse with the rather ‘political’ rationality of efficiency in terms of strengthening the performance of population in general. Representational techniques, such as accounting and other means of performance measurement, thus become crucial for shaping the new image of government and society. New governmental technologies must be held true and faithfully enacted; they require the discipline of new identities shaped in the image of the corporate manager.

Representational technology in the form of information systems becomes available as merchandise, incorporating blueprints not only for processing and reporting of transactions, but also for managerial calculations. Since the beginning of their establishment within business organisations, information systems are linked to a special form of expertise. The knowledge claims of information systems experts contest traditional managerial knowledge, holding that the blueprints delivered by commodified software contain the clue for an overall enhancement of organisational performance. The legitimisation of that knowledge is decisive, particularly in the form of consultants’ expertise deployed for the accommodation of hard- and software in organisational environs. The knowledge appears technical, but since it is demanding organisational change, it is also politically charged—it is a commodity but nevertheless comes under the pretence of universally valid and effective knowledge.

New representational knowledges in public administration appear within the common horizon of the liberal and technological discourses that both challenge the truth of information and the actualisation of efficiency. The new knowledges hinge on metaphysical projections, which remain concealed under the guise of instrumentality.
The narrative of information suggests the pervasiveness of valid knowledge based on the instrumentalisation of language. The narrative of the market posits a projection of the human agent as manager, who pursues the goal of complete control, in terms of efficiency and predictability. The narrative of efficiency holds all together in suggesting the attainability of progressive economising by getting hold of the proper representations. It is within the myth of efficiency where technological and liberal rationality merge into the ideal of truth at the end of modernity. What and how specific truth is being established—ultimately through disciplinary power and out of the contentious efforts of agents of change—is not foreseeable. However, it is always disclosive in terms of technology, as the truth of *Ge-stell*.

It is the task of hermeneutics to make explicit this problematic of knowledge, power, and technology. Hermeneutics must also articulate the import of this problematic on inquiring into the modern conditions in organisational environs. Hermeneutics must therefore find a mode of speech that takes this problematic seriously in a reflective way—without being affirmative. This is the theme of the ensuing chapters.
III. A Description of the Re-Constitution of Knowledge in Government Reform

Chapter 9: From Phenomenological Reflection to Destructive Narrative

Within modern society, the status of the social sciences and information technology demands special consideration, especially in social inquiry regarding questions pertaining to that technology. This is due to the reciprocal relation between them: information technology has dramatically contributed to the way of knowing the world-as-picture, while the social sciences tend to objectify society and the latter is defining itself through them. I seek to respond to this responsibility by reflecting on the potentiality that preserves a role for social inquiry beyond objectification and methodological border disputes. The potential for social inquiry is however, not to be realised by claiming a special condition for the social sciences as the arbiter of communicative rationality, and custodial of a form of lifeworld, which allegedly sustains transparency of society and consequently grants emancipatory articulation. This project of commissioning scientific practice with a political project is untenable, since it assumes an ahistorical position, which ultimately has also determined the condition that it claims to overcome. The potential for social inquiry is not found within interpretative research still fraught with the issues of defining research qua method, and hence objectifies both the participants as well as the inquirer in the name of valid knowledge. The contention about method within the social sciences is nevertheless an indication of the dissolution of scientific dogma, and also their move towards narrative forms of knowledge—both entail a significant self-reflective and self-critical stance. The disintegration within social science may bring forth an approach that is an endeavour that renders an apology of modern techno-science as something different from what is posited as ‘old science’. This occurs despite feigning a questioning of its own definition as research in terms of projection, method and institutionalisation. These developments have to be taken as encouragement as well as a caveat for a practical philosophical approach to social inquiry. This approach rests on a critical reading of modernity and seeks to help retrieve the meaning of that era, to be appropriated as an itinerary in the actualisation of ethical and social options. The task
of a destructive narrative, as the story that explores actuality by questioning its presuppositions, is not to defend humanist values and culture against the totalising claims of techno-science and organisation. Its task is to demonstrate their extent and potential consequences, without being affirmative, but retaining openness for a difference in experience of world.

Reflecting On Information Technology—the Pertinence of Hermeneutics

Information technology, organisation, and concomitant knowledge give rise to a range of questions that are categorised as pertaining to hermeneutics within the philosophical discussion. For hermeneutics, not only the output of information processing is meaningful (or not), but so are the system itself and the practices surrounding it. This encompasses more than technical functionality and business rationality that can be found in requirement specifications and management strategies, since these are only particular views of the world and subject to processes of constitution and re-interpretation. In being explicit about technology, and in particular information technology, hermeneutics is not limited to a locally bound perspective (i.e., organisational, practices and understandings). It is intrinsically related to a critical interpretation of techno-science as part of our contemporary condition. In positing, that knowledge is a derivative mode of being-in-the-world, hermeneutics also questions the sharp divide between scientific knowledge and practical know-how and their discursive correlates of facts and stories. In relation to information technology, it could be consequently claimed, “[n]arrative operates all the way to the determination of facts. In this area of study, there is no essential computer science in distinction to the stories we construct about computers.” If we agree with the notion that “[t]echnology is orientated towards the control and mastery of the world” and consequently “performative”, the contradistinction between brute facts and mere tales is obsolete—since performance is hardly ever a mute event.

1 Boland, “Phenomenology: a preferred approach to research on information systems.”, Boland, “Information system use as a hermeneutic process.”
3 Coyne, Technoromanticism: digital narrative, holism, and the romance of the real, 7.
Conditioning Modern Society—the Social Sciences and Information Technology

An inquiry inspired by a hermeneutical approach that deals with organisational information systems is confronted with a double dilemma. This is the objectification performed by social sciences and information technology. Firstly, Martin Heidegger has viewed what he has called ‘information technique’ as the greatest challenge for hermeneutics due to its formalising position towards language. Secondly, the social sciences have been established, as sciences—as applying the same method to humans as done by physics to nature—namely the setting up of prescribing conditions. They are pursuing the ambition “to ‘manage’ human affairs through an engineering science of human relations” as highlighted by Hannah Arendt. More precisely, when following Gianni Vattimo’s view, such an inquiry encounters the conundrum posed by the relation between the social sciences and information technology. He has argued that the social sciences in their entirety, and information technology, are qualified by their inverse conditioning. An objectifying, scientific approach to society implies the availability of means to do so, and in turn shapes the way society communicates, and thus conceives of itself.

… if in general the sciences in their modern experimental and ‘technical’ form (as the manipulation of natural data) constitute their object as opposed to exploring a ‘reality’ constituted and ordered beforehand, this is especially true of the human sciences. These are not simply a new way of addressing an ‘external’ and unchanging phenomenon, namely, humanity and its institutions. Rather their methods and cognitive ideal were made possible by changes in individual and collective life, and by a kind of social existence itself shaped directly by forms of modern communication. The possibility of sociology as the science, or prediction, of collective behaviour, or even as a typology of differences in such behaviour, depends on our ability to gather the necessary information (which presupposes a certain form of communication).

Returning to Martin Heidegger’s definition of the present era of modernity as the ‘age of the world picture’, Gianni Vattimo points out that these images are not meant to be taken as personal belief systems and world views, but rather as “images constructed and

---

2 Arendt, Between past and future: eight exercises in political thought, 59.
3 Vattimo, The transparent society [La società trasparente, English], 12.
verified by science”\(^1\). These ways of knowing are constituted within the practice of science that sets up experiments and draws on results to refine methods, and which find their climax within information technology and the scientific disciplines that bring it forth. Thus, Gianni Vattimo posits that our contemporary technological era can be called the “world of the social sciences and information technology”\(^2\). This is based on the condition of technology and society and their interrelation:

(a) the ‘sense’ in which technology moves is not so much the mechanical domination of nature as the development specifically of information and the construction of the world as ‘images’; (b) this society is not only that in which technology has reached its peak, but is also essentially the society of the human sciences – in both senses of the genitive. On the one hand, the society is known and constructed by the human sciences as their proper object; on the other, it is distinguished by the fact that it expresses itself through these sciences.\(^3\)

In recalling the inextricable link between social science, information technology and society or, as Michel Foucault describes, of discourse, technology, institutions\(^4\), Gianni Vattimo subjects ‘positive’ aspirations of the social sciences modelled according to the natural sciences to criticism, and also points to a possibility to respond to our present condition within the realm of social science.

**Governing Information Technology—Social Scientific Projections of Im-Position**

This response is fraught with problems, as has been highlighted within what Richard Hull has called the frameworks of computing\(^5\). He demonstrates that information technology and systems are not only configuring social life in terms of information gathering and disseminating, and providing an implement and data for the analyses of the social scientists. He feels that the reverse also holds true in that the development of information technology and systems, right down to the construction of hardware (such as peripherals) is conditioned by the images of man, organisation and society as they have been devised by the humanities and social sciences. These frameworks also evidence the pervasiveness of information and communication technologies, which has been

---

\(^1\) Vattimo, *The transparent society [La società trasparente, English]*, 16.

\(^2\) Ibid.

\(^3\) Ibid.

\(^4\) Foucault, “Governmentality.”

\(^5\) Richard Hull, “Governing the conduct of computing: computer science, the social sciences and frameworks of computing,” *Accounting, management and information technologies* 7, no. 4 (1997).
significantly promoted by the ‘interdisciplinary’ efforts of both the humanities and the computing domains.

Richard Hull’s frameworks could be regarded as an attempt to overcome the widely assumed dichotomy in analysing computing and information systems, which builds largely on positing its technicality. He is therefore distinguishing his approach from those that “merely […] relativize or contextualize” artefacts that have been separated conceptually due to disciplinary divisions. Richard Hull’s main proposition is that, within these frameworks standing for institutions, discourses and practices, truth is produced as well as power. This occurs as people involved in design and development of, and decisions about, computing applications relate to those artefacts in a special way. This makes some acting and thinking rational and desirable, while at the same time defining other ways of thinking and speaking about that technology as not sanctioned and thus impossible.

Richard Hull’s frameworks present three different ways of thinking about man, organisations and computer technology: the technical framework, which corresponds to the conception of the organisation as a machine, people as rational decision makers, and the system as an efficient processor of data for optimising the organisational performance; the partnership framework is based on the thinking that the computer should become an unobtrusive tool for the individual; needs of the human user are predefined, which subsequently are to be matched by the appropriate design and ‘configuration’ for the user; the benevolent framework regards information systems and their human ambience as an “integrated entity”, knowledge and communication become crucial and problematisations of that entity intermingle social and technical issues.

Within the earliest, the technical framework—, which has not been superseded due to the succeeding ones having developed from it—the rationalist and rather machine-like image of man is held to be prevailing at least for a while. This gave rise to the data-information-knowledge continuum, within which data was discrete and computable. That data shaped syntactically and semantically was information; knowledge was held to be the application of algorithms to problem solving and decision-making based on selection and aggregation of information. In this projection, communication entailed the transmission of information only. Richard Hull suggests that processing of data and the

---

1 Ibid, 214.
2 Ibid, 215.
3 Ibid, 217.
5 See also Knowledge as Object in Chapter 3: Problematising Knowledge in Organisations.
adoption of the concept of information from the human realm into technicality, constitute two aspects of this framework. The latter in particular evolved with the strong participation of the social sciences, firstly by setting up information science. Secondly, by merging with the idea of data processing, the analogy between human perception and thinking and data processing was construed; this provided the projections for the domains of artificial intelligence and cognitive psychology. These projections were based on the assumption that phenomena like information and its processing, be it in machines or humans, are amenable to measurement\(^1\).

While computing attained strong political significance due to its applications in research and the military, the mechanistic understanding of technology and humans ‘interacting’ with it was put into question. This relationship became an “object of study” through the insistence on the complexity of communication, and particularly of the feedback between humans and machines. Since this program of research was promoted by systems science, the favoured approach was to be “systemic”, and encompassed the psychological and sociological study of communication between humans and between humans and computers and “communication systems”\(^2\). Richard Hull claims that both the partnership and the benevolent framework, despite their varying emphases, have their origin in the systems approach to humans and information systems. This arises in that both attend to the issue to uncover the true nature of the relation between humans and computers\(^3\).

The partnership framework is based on the assumption that users of computer systems are “equal” and at the same time “different”, which implies that artefacts are supposed to cater for the diversity of needs for the sake of a successful ‘collaboration’ between computers and humans. Within this framework, Richard Hull distinguishes two strands—the first of which seeks to devise methods to optimise “communication” and “interaction” with the machine and focuses entirely on the individual relying on cognitive and behavioural science. Its results become designed into the artefacts themselves, thus shaping the design and use of hard- and software. The second strand is more holistically and pragmatically oriented and seeks to devise computing implements that have the features of a tool. Thus the latter strand is less concerned with the user and his way of doing things, than with the artefact, whether a programming language or an application

\(^1\) Hull, “Governing the conduct of computing: computer science, the social sciences and frameworks of computing,” 223-224.
\(^2\) Ibid, 226.
\(^3\) Ibid.
Richard Hull holds that the idea of “human computer interaction” (HCI) is “a prime example of the governance of computing”; the problem to be solved, for example the nature of the relation between the individual and the computer, has its origin in the technical framework, yet the way this problem is specifically addressed is determined by “social science concepts and techniques.”

The benevolent framework is characterised by its interest in organisations and computer systems, as opposed to individuals and computers in the partnership framework. It has taken from the systemic approach the idea of the analogy between the social network and the “network of the nervous system”, whilst eschewing strict measurements of constructs such as information. Networks of communication become problematised in tandem with the promotion and evolution of digital communication; no longer is the nature of information of interest, but rather its flow and use. The social dimension of the benevolent framework is double-edged in that it attends to the improvement of the use of computer and communications technology in its organisational applications. It also attends to how organisational and social problems can be addressed in terms of analysis and communication through computer networks. Moreover, knowledge appears to partly supersede information as a core concept, since it becomes thematised as resource. Its significance at large is reflected in the notions of the knowledge worker and knowledge society, while decision-making is no longer a purely rationalist activity but becomes seen as a social process.

Analogous to the HCI field in the partnership framework, computer-supported cooperative work (CSCW) can be regarded as an exemplary area that grew within the benevolent framework. Alongside computer conference systems and new methods for group decision making, such as the Delphi technique, social scientists became involved in the design of “groupware” on a large scale. They also adopted the role of advocates of user participation in requirements analyses for such systems. Social scientists observing the insertion of factory and office automation argued that the use of those systems was ultimately determined by the “work-setting”, which furthered the claim that user participation in requirements analyses would not secure the success of new systems. Through detailed study of the local context, the conditions that determine the system’s use can be analysed and secured, meaning that the “true nature” of the issue is only accessible through social scientific knowledge and practices. Richard Hull indicated that

---

1 Ibid, 227-228.
2 Ibid, 228.
3 Ibid, 228-30.
the basic components of this framework are that forms of work, including communication and decision making, rest on mediation through local knowledges and practices, and that computer-supported work has a different social dimension than earlier forms of work.

In conclusion, Richard Hull’s analysis presents an account of the increasing involvement of social science within the egression of social existence itself being shaped directly by modern communication and information systems. The early positing of a systemic view on the relation between organisations and computing and communication technologies has unfolded in the sense that the evolution of the socio-technical ensemble is inconceivable without the social scientist’s intervention. In fact, a large proportion of how technology is shaped and understood is derived from problematisations, and thus the positioning of the social scientist within the environs of technicality. Richard Hull also points to the shifts in meaning of terms such as interaction, user, and information network, communication within and across those frameworks. Eventually, the analysis cautions against overemphasising the view that technology evolves along the lines of the rationality of the machine, and is mindful that the complexity of the information and communication technologies is inseparable from an intensification of the social sciences intervention into this realm. It could be said that social science has been engaged from the beginning in the socialisation of these technologies, to where computing is now governed by the involvement of social science.2

I do not want to pursue the question, as suggested by Richard Hull3, whether these frameworks cater for the genealogy of the governance of computing in all its complexity—in terms of varying emphases, and coverage of other areas such as home computer use and global corporate computing. On the contrary, I believe that despite their perceived fragmentary character, the frameworks already provide the case for what Gianni Vattimo has called the inverse conditioning of information technology and the social sciences. This can be read by means of Martin Heidegger’s determination of the sciences and humanities as research. This would also be in support of Richard Hull’s

2 The social scientific complicity with the efforts of the technologists is, however, covered up in posing the problem of change of practices in a dichotomising fashion by assuming that technology impacts on organisations, or society at large. As Bloomfield and Vurdubakis, “Re-presenting technology: IT consultancy reports as textual reality constructions,” 473 has observed: “Much of what is subsumed under the rubric of impact studies is the putting into place of the conditions necessary for technology to be constituted as such. … rather than a pre-given technology having an impact on its social context of ‘application’, the two are mutually constitutive”.
3 Hull, “Governing the conduct of computing: computer science, the social sciences and frameworks of computing,” 234.
caveat that his frameworks neither represent a kind of progress, nor should assumptions be made that the partnership and benevolent frameworks are better, for example in the sense of their approaches to humans. Thus, the frameworks of computing show how the shift took place towards a humanistic approach, beginning from a merely mathematical projection of man in the narrower sense within the information processing analogy between humans and machines, and the ensuing measurability and calculability. Nevertheless, all approaches rest on fundamental abstractions like information, communication and knowledge, while systems thinking or cybernetics permeates as an overarching approach all endeavours. This shift is also an indication of the recognition that computing deals ultimately with living beings and must therefore remain inexact as it considers the ‘interaction’ between man and machine. This necessitates moving from the objectness of calculability and experiment towards that of ‘qualitative’ research. Now the locally bound, whether groups or organisations, attain their objectness thanks to the sophistication of approaches that have been influenced by a certain strand of phenomenology, such as ethnomethodology and ethnography. Qualitative research not only proffers a new vernacular to define its problems in the area of information technology, it eventually makes the settings it inquires into conceivable as forms of life, such as technology mediated communication and computer supported work. Examples of the social sciences’ direct involvement as an ongoing activity in the development of hard- and software, and its institutionalisation, can be found in the fields of HCI and CSCW. Thus, despite the apparent innocuous objectives of social research and its qualitative methods, the consequences are rather insidious in that it sets up man as a social being for the sake of technicality. As suggested by Richard Hull, caution and circumspection must be exercised in making recommendations for the application of the outcomes of social research, since these can have consequences that may be neither intended by, nor under the control of, the researcher. Hence, via information technology, social science as science impinges upon the real, and contributes to technological knowledge. Since

1 Ibid, 233.
2 The information retrieval experiments of information science modelled after experiments in physics as described by David Ellis, “The dilemma of measurement in information science research,” Journal of the American Society for Information Science 47, no. 1 (1996). are a ‘paradigmatic’ upshot of the early era. The interpretative ‘turn’ in information systems studies is an exemplar of the humanistic approach within the benevolent framework. Refer to the section Organisational Information Systems as Objects of Knowledge.
3 The impact of cybernetics in the study of science and technology, of which the most pronounced approach has been imported into information systems research, will be shown at the end of this chapter.
method determines what can be known, the partial abandonment of purely calculative methods in favour of interpretative investigations in social science while maintaining the theoretical projection means setting up adequate conditions under which the real can show itself, become represented, and can be acted upon. In this way, social science imparts, like any other modern science, that the contemporary condition of the Ge-stell is the only mode of knowing of and acting within the world.

It is not without irony that criticism of our technological era has been put forward with the claim for the perfection of communication – in this case as speech between people – by striving for disambiguation and veracity (in other words true representation) in order to accomplish rationality in human relations. This critical sociology has been actually promoted to provide the ‘philosophical’ grounding or the regional ontology of organisational information systems development¹. Moreover, it is believed that this social theory initiated the turn towards qualitative research in the information systems field². It has thus made a critical contribution to what Richard Hull has called the “benevolent framework” of computing³. This suggests a tension, or even contradiction between the critical and emancipatory aspirations of the Theory of Communicative Rationality, on the one hand, and its active involvement in determining society as what Gianni Vattimo has called “world of the social sciences and information technology”⁴, on the other. Following Gianni Vattimo, therefore an appraisal of the Theory of Communicative Rationality in the context of developments in the social sciences at large is given in the consecutive section.

Responding to Modernity—Communicative Rationality or Reflective Openness

While social science has become increasingly entangled in technicality, a certain branch of social theory has emerged that is critical of technology and its claims on the social

¹ Hirschheim, Klein, and Lyytinen, “Exploring the intellectual structures of information systems development: a social action theoretic analysis.”
³ Hull, “Governing the conduct of computing: computer science, the social sciences and frameworks of computing.”
⁴ Vattimo, The transparent society [La società trasparente, English], 16.
world and instead posits the “emancipatory implications of the social sciences”\(^1\). These implications are supposedly to be found within communicative rationality.

Gianni Vattimo refers to this ideal project as the ‘transparent society’, which is a “society of unrestricted communication”\(^2\). His rejection of this program is based on the criticism of social science in modernity. The emancipatory potential towards freedom is sought in the conceptual fusion of the phenomenological concept of lifeworld with the rationality and ultimately ethical legitimacy of action. Lifeworld is supposed to be the condition for the occurrence of diverse types of action and needs to be preserved as such against the claims or colonisation by technology and expert knowledges. The relation between the lifeworld and (the types of social) action can be recapitulated as follows:

A lifeworld is the entire shared culture, lived in everyday communication that must serve as the background to the various types of ‘special’ action that make up the life of a society, and by this is meant strategic action (which comprises science), action according to norms and expressive action.\(^3\)

The questions of dissent, conflict and domination that arise out of the dispute between programs of action become regulated through their articulation in speech (or communication):

Since all action aspires to its own specific rationality, which is intelligible only in terms of the defence of its validity to other subjects, to act according to reason, and therefore ethically, means to make explicit this implicit ‘argumentativity’ and, above all to keep its possibility alive by preserving and developing in the lifeworld the conditions of a communication that is not opaque, that is not impeded by inequalities, ideological obscurantism, deliberate distortions or structures of domination\(^4\).

In order to accomplish the removal of antagonistic difference, this ‘transparent society’, needs to be taken care of “via a process modelled loosely on a certain ideal of psychoanalysis”\(^5\). Moreover, it is only imaginable by making sweeping assumptions about the nature of language and speech. Gianni Vattimo points out that in order for it come into effect within this lifeworld, everyone who partakes in discourse needs to attribute to others the same rights as he claims for himself. This necessarily requires that language is truthful. Deliberate impediments to clarity and disambiguation of speech,

\(^{1}\) Ibid, 21.
\(^{2}\) Ibid, 20.
\(^{3}\) Vattimo, *Beyond interpretation [Oltre l'interpretazione, English]: the meaning of hermeneutics for philosophy*, 20.
\(^{4}\) Ibid, 33.
\(^{5}\) Vattimo, *The transparent society [La società trasparente, English]*, 20.
which come about by conscious violation of ethical standards, “but also all those various kinds of social, ideological and psychological obstacles that actually make communication opaque and imperfect” have to be eliminated. The communicative rationality that reciprocally sustains a lifeworld, projects an ideal image of society in which the individual resembles the scientist in the laboratory. This individual abstracts from his prejudices in measuring the facts objectively, in the lifeworld in which people speak and act like a scientific community. Thus, Vattimo asks:

[The] ideal of a community of unrestricted communication is undoubtedly modelled on the community of researchers and scientists […] But can one legitimately model the emancipated human subject, and ultimately society, on the ideal of the scientist in her laboratory, whose objectivity and disinterest are demanded by what is at bottom a technological interest and who conceives of nature as an object only to the extent that it is marked out as a place for potential domination – thereby implying a series of expectations and motives under widespread criticism today?

In this way, the community of experts (a phenomenon particular only to Western culture) becomes elevated to a prescriptive scheme that transcends historical and spatial boundaries—“society would be the subject-object of a reflexive knowledge”, that would correspond “to concrete reality by a ‘Platonic’ transcendence typical of metaphysical essences, with all their implications – including those that were, broadly speaking, repressive”. Ethically, this hypostasising of lifeworld is committed to instrumental rationality that regards the forms of social life as legitimised, provided it has been consented to within the context of particular discursive practices. Ultimately, communicative rationality assumes an Archimedean vantage point by positing a specific lifeworld and tradition, that of Western culture, as a “transcendental structure for every possible lifeworld”.

This problematic ideal has encountered an even more explicit criticism in the discussions of scholars. Haridimos Tsoukas has noted that smuggling the socio-philosophical suppositions into research and practice, means ignoring the distinction between

---

1 Ibid, 19.
philosophical and scientific discourse\(^1\). Moreover, he argues that the allocation of an indisputable status to rationality projects an immutable image of man and consequently a distorted view of historicity\(^2\). He also casts doubt on the tenet that the ‘liberating’ techniques that psychoanalysis seeks to deploy on individuals can be transferred to categories like ‘organisation’ and ‘society’\(^3\). Power is conceived of in a one-dimensional fashion, in that it is only coercive, while within the utopian setting of emancipation, since there are no unequal relations, politics is non-extant\(^4\). All these elements can be summed up as a totalising discourse in that rationality is hypostasised, with the consequence that all other tenets, including the ‘ideal speech situation’ do not require justification, and the dissolution of all distinctions in that ideal\(^5\).

In the domain of information systems development, as observed by Francis Wilson, the meta-narrative of communicative rationality eventuates the privileging of experts, despite the claim of its proponents to further “an emancipatory alternative [to] traditional design methodologies”\(^6\). In brief, these design methods purport to bring forth systems that support the ideal speech situation through consensual development\(^7\). Rationality in the deployment of organisational information system is argued for by claiming that the ‘emancipatory’ methodologies are “suitable tools for understanding the complexities of the modern organization”\(^8\). The ideal speech situation, likewise, is operationalised as the objective against which an information system can be evaluated, and its installation justified\(^9\). Francis Wilson suggests that due to the elusiveness of that ideal, aims can be postulated and legitimised ad libitum, while actually obscuring the dilemma that an information system, due to its selective objectification is never in the state that it would be possible to accommodate comprehensively forms of human action\(^10\). With this dilemma, the assumed legitimacy of emancipatory designers collapses by default, since they cannot sustain credibly the assertion that they do not follow a particular interest, rather than striving for the humanitarian benefit\(^11\). Since, within this perspective on

---

\(^1\) Haridimos Tsoukas, “Panoptic reason and the search for totality: a critical assessment of the critical systems perspective,” *Human relations* 45, no. 7 (1992). See also footnote 6 on page 53.

\(^2\) Ibid.

\(^3\) Ibid.

\(^4\) Ibid.

\(^5\) Ibid.


\(^7\) Ibid, 193-195.

\(^8\) Ibid, 194.

\(^9\) Ibid, 196.

\(^10\) Ibid.

\(^11\) Ibid.
systems development, emancipation finds its legitimacy in a final consensus “information systems design becomes the search for some sort of consensual truth which is always “out there” just waiting to be discovered”\(^1\). To this avail, the emancipatory developers need to take recourse to repressive means, since it cannot be precluded that everyone involved in their project conforms to the consensual process, and consequently dissent or uncooperative individuals have to be aligned\(^2\). Francis Wilson hence concludes that emancipatory design “remains instrumental in that the designer is the subject the client/user is the object; the designer reasons, the client/user acts rationally”. The liberating methodologies brought to bear on mainstream techno-organisational projects, such as business process re-engineering\(^3\) cannot but follow the original intent of those ventures. Thus, these methods

may be understood as an attempt at further extending the technocratic mode of organisational control, where theorists and practitioners proclaiming themselves proponents and purveyors of ‘emancipatory methodologies’ identify organisational ‘problems’ so that they can be ‘treated’ through the deployment of spurious socio-technical design techniques which are being promoted as liberatory.\(^4\)

The application of the theory of communicative rationality into the domain of the acme of techno-science illustrates poignantly that the assumed reconciliation between the rationality of science with the rationality of life-world cannot be anything else but apologetic at best, if not cynical at worst. It shares with all other meta-narratives or metaphysical schemes the ignorance of its own historicity and the denial of the consequences that this insight has for the comportment towards modernity.

It has been Martin Heidegger’s determinative move to carry through the endeavour to understand modernity as the completion of metaphysics. This project has spanned his work from Being and Time to the later texts and is briefly summarised as follows:

Once the transition from the world as a common structure of Dasein to worlds as historical openings of Being has been accomplished, the premises of a different attitude towards science are also set forth: no longer (only) a defence of the \textit{Lebenswelt} against colonization of specialist branches of knowledge and the application of technology, but an attentiveness to the

\(^1\) Ibid, 200.
\(^2\) Ibid, 200-201.
\(^3\) Ibid, 194.
\(^4\) Ibid, 202.
transformations that science and technology, as determinant factors, ‘bring’
to the meaning of Being.¹

The insight into the temporality of social scientific activity, alongside the recognition
that any such activity cannot be separated from an actual interference with the domain of
inquiry, according to Gianni Vattimo, has already been heeded within the social
sciences. In inquiry into human affairs any understanding and interpretation is at the
same time, acting upon and thus changing of pre-given relations. Concurrently, the
doctrine of communicative rationality could be seen as not having performed the self-
reflective move, which is a distinguishing feature of the social sciences at present. It is
the insight into their:

intrahistorical character, which keeps the human sciences from seeing
themselves as entirely reflexive, that is, as capable of reflecting reality inde-
pendently of interpretative schemes that are themselves historical, and there-
fore neither innovative nor a pure mirror for that which is to be objectively
known. This hermeneutic taking stock, as it were, has led the human
sciences to recognize this historical, limited and ultimately ideological
character of the ideal of self-transparency, no less than that of universal
history mentioned earlier.²

The doctrine of communicative rationality, by contrast, appears still loyal to the ideal of
the objective experimenter and his community of experts, without acknowledging that
this ideal is in opposition to the conditions of techno-science, and as an ideal not
befitting the suggested emancipatory project.

To a large degree, the self-reflective move is actualised within the debates about what
makes a science, that is—contention about method. Gianni Vattimo holds that these
discussions are “not merely instrumental and preliminary, but represent a central and
substantial moment of these sciences”. Even if the discourses about method appear to be
vain, their very presence results in dissolution of dogma and of the social sciences’ claim
for authority. According to Gianni Vattimo, the explicit turn towards narrative as a
“form of knowledge” for the social sciences “critically eliminates the myth of
transparency in favour [...] of a less ideological openness to experience of the world”³.

¹ Vattimo, Beyond interpretation [Oltre l'interpretazione, English]: the meaning of hermeneutics for
philosophy, 24.
² Vattimo, The transparent society [La società trasparente, English], 24.
³ Ibid, 25.
Qualitative Social Research—Understanding as Scientific Method

Obviously, the debate on method in the social sciences is manifest in the breadth of approaches that are categorised as ‘qualitative’ research and the articulation of interpretative endeavours appears to indicate a weakening of the methodological creed by reflecting on research and the researcher. Exemplary for the diminished the standing of researcher and method is the introduction of the notions of *bricoleur* for the inquirer pursuing the ‘qualitative’ way, and of the notion of *bricolage* for the set of implements used—a adopted from the anthropologist Claude Levi-Strauss. Similarly, Barbara Czarniawska advises that the student of organisations should “concoct a device”. The inquiring *bricoleur* is someone who is defiant of the constraints of a particular method, and who applies within an emerging project whatever is available and suitable to address the questions that might be prompted by the context. The *bricolage* is, as a matter of course, an assemblage of a variety of research techniques, which is not applied to validate hypotheses in the light of different perspectives, but as a means to expand and extend the scope and profundity of the project. *Bricolage* cannot result in a deliberate blend of research approaches that contradict each other due to their incommensurable theoretical assumptions; to avoid this, the *bricoleur* needs to be cognisant of the implications of the different approaches and their bases. Norman Denzin and Yvonna Lincoln further stress the reflective nature of the research-as-*bricolage* endeavour: reflexivity applies to the participants in the project (namely the person of the inquirer), and the people in the field, which means that the inquiry is always set against their background that has shaped their pre-conceptions. They point to the awareness of the always political dimension of inquiries, especially regarding the findings, and that traditions of theorising and reporting frame the entire endeavour, linking inextricably what has been projected and what has been brought forth.

Without question, some hermeneutic elements within these tenets for ‘qualitative’ research are discernible. Hermeneutic philosophy, as being represented by Martin Heideg-

---

4 Denzin and Lincoln, *Handbook of qualitative research*, 2.
5 Ibid.
ger and Hans-Georg Gadamer, has demonstrated that understanding is a very condition of being human. In philosophical hermeneutics, understanding and interpretation became existential, while it was previously exegetical. Understanding and interpretation were shown as a pertaining to human existence, or ontological, in contrast to being ways of establishing the meaning of speech and text, or epistemological. Thus, a researching endeavour evolves within the basic structure of human understanding denoted as *Vor-habe Vor-sicht*, and *Vor-griff*. This Heideggerian terminology has been explained as follows: *Vor-habe* refers to the ensemble of cultural practices that condition our being, *Vor-sicht* to the particular perspective that is taken, based on vernacular, theoretical framework, and paradigm, *Vor-griff* – the envisioned objective, or hypothesis. Within traditional humanist and scientific research, the *Vor-habe* never becomes thematically aware. In contrast, it is made explicit that it is not possible to abstract from ourselves, and that the tradition and prejudices that have shaped us cannot be put aside, or kept under control. This “does not mean that we merely re-enact our biases of our tradition in our interpretation”, instead these biases or prejudices have to be dealt with productively and put at risk in order to accomplish understanding. Thus, hermeneutic disposition entails critical reflection on the shared background, as well of the researcher’s background. It not possible to pick up a method like a tool in a disengaged fashion, appropriate to the task at hand, that can put aside again when the job is done.

Yet, in dealing with interpretative inquiry as ‘qualitative’ research, Norman Denzin and Yvonna Lincoln are grappling with the issue offering a definition of research that accommodates the plurality of investigative approaches to be found in the social sciences. It appears though, that it is a conceptual fallacy to account for a plethora of “belief systems and world views”, “ontologies, epistemologies and methodologies” in the name of research and for the sake of method. Their suggestion of viewing the researcher as

---

2. See also the section *Hermeneutics—From Exegesis to Existence* for the changeover of hermeneutics from exegetical method to philosophy.
4. Heidegger, *Being and time* [Sein und Zeit, English].
6. Ibid.
bricoleur and his accomplishment as bricolage apparently relativises the grip that method has on the conduct and outcome of an inquiry. By including reflexivity as a constituent of the notion of bricoleur, a certain distanciation from the scientific enterprise is performed. This fails however still to agonal tension, which Gianni Vattimo⁠¹ has observed: equivocally, this move of acknowledges the fictional character of the social sciences, yet is forming them at present nevertheless. In consequence, hence, neither the objective of doing research, albeit with the awareness of its inherent limitations, has been abandoned, nor attempts to assume scientific authority by defining method and consequently research have been forsaken. The establishment of criteria for research is clearly an attempt to define what research is⁠², and thus an attempt of establishing a relation of domination. Disciplinary structures are sustained in that “those who engage in research choose their paradigm and adhere to its rule and law if they wish to be seen as competent members of their discipline community”⁠³. Thus, notwithstanding the re-orientation towards interpretation, there appears to be ardent efforts to carve up differing strands of method within the broader ‘qualitative’ research movement, sanctioning particular ways of knowledge creation based on prescriptions of what constitutes good ‘qualitative’ research practice⁠⁴. Ultimately, these definitions do not fail to resemble in their wording as well as in their intent those that are used within the rationalist tradition.⁠⁵ The orderliness of ‘qualitative’ research is completed by doctrines,

¹ See above.
² Dean Garratt, “Can there be criteria for selecting research criteria?--a hermeneutical analysis of an inescapable dilemma,” Qualitative inquiry 4, no. 4 (1998).
³ Carol Jean Steiner, “The technicity paradigm and scientism in qualitative research,” The qualitative report 7, no. 2 (2002).
⁴ Ibid.
⁵ Garratt, “Can there be criteria for selecting research criteria?--a hermeneutical analysis of an inescapable dilemma.”. According to Dean Garratt, criteria for evaluating reports of interpretative inquiries are actually counterproductive. The situation of application of criteria, i.e., reading of the report is a process of understanding and experience, in which the reader’s pre-understanding comes into play: firstly, the reader already encounters the text with his pre-dispositions, e.g. a particular purpose, expectations, etc.; secondly, part of this disposition is the reader’s opinion about the quality of research in general; this is however mostly not entirely within the horizon of awareness and merges with the disposition into the reader’s horizon of understanding; in most cases, the criteria checklist is not applied. If criteria would be used consciously, this required a higher reflexivity on part of the reader, and demanding that he put his pre-understanding at risk. However, the way the reader interacts with the text would not differ between an approach that explicitly uses a checklist and an approach that does not, since in any case, criteria are brought against the text, whether reflectively or not, since interpretation shaped by the pre-disposition and the by temporally and culturally situated interaction. Using criteria does not make the process of judgment ‘objective’; the problem is however that recommending criteria to be followed denies that pre-judices are always there, necessarily and unavoidably. Yet, from this does not follow that researchers should not communicate about the way they work, and that the way judgements are made should not be made explicit; it rather means that conceptions of how to evaluate research are part of the tradition, a collective pre-understanding, which must be constantly put at risk in order to be productive. Setting up standards, on the other hand, has as a consequence that possibilities for new understanding are closed off.
commonly called ‘ontologies’—such as semiotics, transcendental phenomenology, grounded theory, realism and social constructivism—which pre-configure the ‘problems’ that are researchable, and thus closing-off all other realms of experience and exploration.

1Steiner, “The technicity paradigm and scientism in qualitative research.”. Heinz K Klein and Michael D Myers, “A set of principles for conducting and evaluating interpretive field studies in information systems,” MIS quarterly 23, no. 1 (1999). have demonstrated with their set of principles for field studies that a search for grounding and methodological regulation may also be pursued with the claim that precepts may be derived from philosophical hermeneutics. Principles are basic generalizations that are accepted as true and can be used as a basis for reasoning or conduct, and thus set standards of good behaviour. Heinz Klein and Michael Myers perceive hermeneutics as an ossified tradition, and therefore as a quarry for constructing research implements; for them, hermeneutics “has a relatively settled philosophical base and therefore lends itself to being used as a ‘bridgehead’ for making a contribution to interpretive research methodology” (Ibid, 70). In their view this can be performed analogously to “principles and guidelines for case studies” based on positivism (Ibid, 68). Thus the “general principles” they propose are offered in the spirit of being fundamental ideas that may be helpful to authors and reviewers and comprise of the hermeneutic circle, contextualisation, interaction between researchers and the subjects, abstraction and generalisation, dialogical reasoning, multiple interpretations, and suspicion (Ibid, 72). Heinz Klein and Michael Myers, in their attempt to exercise ‘ontological’ power, understand that this requires more than compliance on the part of those who are supposed to take heed of them; hence “the principles are not like bureaucratic rules of conduct, because the application of one or more of them still requires considerable creative thought” (Ibid, 71). In a deductive fashion the ‘hermeneutic circle’ is held as “foundational to all interpretive work of a hermeneutic nature and is in effect a metaprinciple upon which the following six principles expand” (Ibid, 70). Although, originally, the hermeneutic circle is a metaphor that originates from rhetoric, where it signifies that the entirety of a text must be understood from its components, and the components from the entirety, philosophical hermeneutics, upon which Heinz Klein and Michael Myers seek their grounding, conceives of the circle rather as a metaphor for the ontological structure of Dasein, denoting the understanding of the world and the self, that always is bound to a pre-understanding. Moreover, the circle is also a metaphor for the performance of the understanding of a text against a projected meaning that is put at risk in the process of interpretation. It is further a metaphor for the fact that knowing is always bound to pre-conditions and at the same time provisional. Heinz Klein and Michael Myers however, predominantly explicate the hermeneutic circle in terms of a methodological device or a reasoning structure. For Heinz Klein and Michael Myers, contextualisation refers to the explication of the subject matter within its social, temporal and local context, in order to shed light on the emergence of the particular situation under investigation; the context is unique and the researcher through his involvement becomes part of it. This principle, with its emphasis on historical background and process does not establish any significant difference to exegetical research, which demands also to account for the circumstances of a setting in the process of interpretation. Heinz Klein’s and Michael Myers’ principle of interaction states that the matter at hand is constituted and interpreted within the interchange between researcher and participants, from which new understandings and different ways of acting may emerge by challenging pre-understanding and requiring a process of interpretation. This commonplace of the researcher’s being part of the endeavour might instil some reflexivity, it lacks however any ethical reflection, since it is mute about how to interact. Heinz Klein and Michael Myers claim that abstraction and generalisation are not precluded in interpretative research, although it heeds to the socio-historical uniqueness of a setting under investigation, and does not build theory on the assumption that humans act as if subjected to natural laws. They posit that firstly, phenomenology “articulate[d] the essence (the most basic characteristics) of the human condition in terms of a number of elementary categories. Examples of such categories, which have been used in information systems research, are ‘embodiment’ or ‘breakdown’” (Ibid, 75). Within this lemma phenomenologists become construed as having established universals, and having in this way provided elements for theoretical constructs, which completely denies the contention with metaphysics as carried out by Martin Heidegger. Secondly, according to Heinz Klein and Michael Myers, interpretative sociology has opened the possibility to disclose the social world from the vantage point of theoretical discourse. By intermingling different traditions that are called phenomenology, Heinz Klein and Michael Myers, aim to demonstrate that hermeneutics can
Conspicuously, these efforts of grounding research and hence truth via method and discipline become preposterous, when they are made with reference to philosophical hermeneutics, which cannot be at the service of the business of research\(^1\). The implications of philosophical hermeneutics for social inquiry are foremost ontological and thus existential, but neither paradigmatic nor methodical\(^2\). The task of philosophical hermeneutics is laying out the conditions of understanding, to come to an understanding of understanding itself. These conditions should not be mistaken as an alternative episteme or even worse as a device, that has to be applied in disclosing meaning from acting, speech, and text. Correspondingly, as argued by Thomas Schwandt, a commitment to philosophical hermeneutics cannot be conceived of as something that can be performed for the sake of discernment between approaches, since “philosoph[y] forestructure[s] our efforts to understand what it means to ‘do’ […] inquiry”; thus, determining and explicating a philosophical point of reference does not imply a choice of which label—interpretative, constructivist, hermeneuticist, or something else” might suit the researcher’s liking. This decision is conse-

---

\(^1\) Although Hans-Georg Gadamer in *Truth and Method* extensively dealt with the human and social sciences, he made it clear from the outset, that this was not meant to establish a methodological grounding for these fields of knowledge as emphasised by Hekman, *Hermeneutics and the sociology of knowledge*. and Grondin, *Introduction to philosophical hermeneutics* [Einführung in die philosophische Hermeneutik, English].

\(^2\) Schwandt, “Three epistemological stances for qualitative inquiry: interpretivism, hermeneutics, and social constructionism.”
quential as it shows how that person “wants to live the life of a social in-
quirer.”

Still, the resolve to substitute lifeworld and its experiential constitution for the projection of problem domains and rigid methods, as done by research approaches that build on the phenomenology of Alfred Schütz (such as phenomenology, ethnography, ethnomethodology, etc.), may linger within the double bind of social inquiry at the end of modernity. Their purport of doing research makes them “cling to objectivising approaches in investigating lived reality”\(^2\). These approaches lack reflexivity in holding on to the “third-person point of view”\(^3\). Moreover, being still committed to inquiring on social acting and theorising about it, this kind of research abstains from ethical criticism since their turn towards the lifeworld is merely a methodical twist\(^4\).

By contrast, a turn towards hermeneutics in social inquiry must be articulated as a critical and a practical one. It is critical in pointing towards its own limitations. Since the object of inquiry is constituted socially and lingually, and being expressed within a particular discourse, it is partially produced by it. The search for knowledge stands within a tradition that implicates ethical and political views and interests. It is practical in discarding rationalist approaches emulating methods of the natural science, and moves towards “social practice and practical philosophy” instead. Again, social inquiry cannot separate these practices from the ethical and political values and interests that guide them, since human acting is both an enactment of habits and convention, and inherently within the public realm or political. Finally, this turn does not claim the superiority of scientific reasoning; instead it stresses what the practices and reasoning of everyday life have in common with social science practice and discourse—both are “intrinsically dialogical and communicative”\(^5\).

**Interpretation Beyond Method—Dismantlement and Dialogue**

Yet, I arrogate that even reflexivity towards relativising knowledge claims about human affairs, with all its implications does not accomplish the full articulation of social inquiry as practical philosophy. Indeed, conceptualisations of inquiry inspired by hermeneutics have commonly stressed the dialogical or linguistic region of this school of thought, to-

---

1. Ibid, 205.
3. Ibid, 63.
4. Ibid.
5. Ibid, 62.
gether with the lifeworld and its experience\(^1\). Thus, these formulations come along as alternative to scientifically inspired research, mirroring the ‘one-track-thinking’ of their counterparts. An attempt to surmount this limitation must be made for the sake of matching hermeneutics’ claim of being the response to modernity. Sustaining that claim cannot be achieved while forfeiting hermeneutics’ potentiality by re-iterating the unobjectionable and averting anything contentious. Following Gianni Vattimo, I will argue that a one-dimensional appropriation of hermeneutics is rather a letdown that only by heeding to its historicity can be gotten out of.\(^2\)

Gianni Vattimo has specified “hermeneutics as that philosophy developed along the Heidegger-Gadamer axis” in the sense that “these authors represent the poles of a tension, the extreme limits of a picture”\(^3\). Within these limits, the essential moments of hermeneutics can be found and are “ontology and Sprachlichkeit, linguisticality”, meaning that Martin Heidegger considered interpretation “primarily from the point of view of the meaning of Being”; by contrast, Hans-Georg Gadamer focused on “interpretation primarily from the point of view of language”\(^4\). These limits have also been described as “Destruktion” and “Hermeneutik”\(^5\). The orientation towards the linguistic side of hermeneutics provides some guidance on the ethical aspects of inquiry in terms of an existential involvement of the fieldworker with his participants and a sharp critique of representational thinking and scientific reasoning. Combined with a turn towards practical philosophy, it remains rather focused on the individual context, rather than aiming at articulating themes of ethical criticism and sketching the political or historical dimension of inquiry\(^6\). It appears as if the implications of Martin Heidegger’s critique of metaphysics has faded, although it contributed to the emergence of the linguistical ‘pole’ of hermeneutics, while the criticism performed by the latter of “scientism and modern methodologism” has found wide acceptance in the thought of the

---


2 See also *Response to the End of Metaphysics—Overcoming or Negation in Chapter 1: The Question of Knowledge and Technology in Modern Organisations*.


6 Schwandt, “Farewell to criteriology.”, Schwandt, “Three epistemological stances for qualitative inquiry: interpretivism, hermeneutics, and social constructionism.”
last century. This has been to the effect that the conception “[t]hat each experience of truth is an experience of interpretation is almost a truism in today’s culture.” Gianni Vattimo therefore believes that hermeneutics has lost its critical potential, since “it can appear so acceptable, urbane and harmless only because it lacks philosophical precision.” This loss of strength he attributes to a reversal to metaphysics, which consists in positing, mostly even inexplicitly, that hermeneutics is the ultimate analysis of the “interpretative structure” of man’s beingness. Against the deprivation resulting from the restoration of a tradition it once set out to surpass, he proposes to consider the “historicity of hermeneutics in both senses of the genitive” which means, that “[h]ermeneutics is not only a theory of the historicity (horizons) of truth: it is itself a radically historical truth.” In this sense, Gianni Vattimo contends that there is no alternative to maintain the original and genuine criticism of metaphysics by hermeneutics, other than to exhibit that it is the most compelling account of modernity, and that it is rooted in it. Hermeneutics cannot provide any grounding for itself, except by pointing out that it stands within a development that moves towards a destined consequence. Thus, the “truth” of hermeneutics as the philosophy of modernity “may be wholly summed up in the claim to be the most persuasive philosophical interpretation of that course of events of which it feels to be the outcome.”

Paradoxically, *Being and Time*, while misconstrued as the essential truth about human existence as understanding and interpretation, is rather the point at which phenomenology becomes hermeneutical through turning towards historicity and destruction. Destruction (*Destruktion*) is the critique of metaphysics, including modern thought. It is one of the constituents of the phenomenological method, the other two being reduction, and construction. Sean Nelson describes the turn of phenomenology towards hermeneutics as occurring precisely when the destruction of history sets out. This:

---

1 Vattimo, *Beyond interpretation* [Oltre l'interpretazione, English]: the meaning of hermeneutics for philosophy, 3.
2 Ibid, 5.
3 Ibid, 2.
5 Ibid.
6 Ibid, 10.
7 Ibid, 11.
8 Heidegger, *Being and time* [Sein und Zeit, English].
9 Heidegger, *The basic problems of phenomenology* [Die Grundprobleme der Phänomenologie, English]: translation, introduction and lexicon by Albert Hofstadter. See also Chapter 4: Recalling Knowledge with the Phenomenology of Science and Technology: Projecting, Representing, Ge-stell.
is an unfolding of possibility for confronting one’s own historicity. If phenomenology is necessarily concerned with the generative and historical sources that it encounters in formalization, and if it is susceptible to the event of what is other than itself and its own project of uncanniness then it is already hermeneutical.¹

Sean Nelson accentuates that in Being and Time phenomenology’s motion towards history was threefold: it was “genealogical” [i.e. inquiring into “historical possible ways of Being”²], “generative” [i.e., heeding to the contingencies that determine the future³], and “destructive” [i.e., seeking critically out the positive possibilities of tradition⁴]. Thus, phenomenology becomes hermeneutical in acknowledging that it stands within its time, as the intersection between past and future, and that the present is a “non-transparent situation”⁶.

 Destruction may be firstly seen as the move of challenging influential ways of theorising, but not of seeking to obviate the past⁷. It signifies the hermeneutical task “of criticising a present theory or worldview by an analysis of its presuppositions”⁸. As an interpretative act in its temporality, destruction strives neither to produce conclusive solutions, nor to substitute a traditional perspective deliberately with a novel one. It calls for an appraisal of handed-down theories and practices and their conceptual inventories within their constraints, and, eventually to “question the questions themselves”⁹. Sean Nelson provides a compelling argument for the necessity of destruction. Destruction, or “the dismantling of history” provides the opening within which the times past may be encountered, and a response might be sought to what remained unvoiced¹⁰. It is the very situation of modernity, with its “discontinuity of meaning and experience”, irrespective of its affecting either praxis or theory, that obviates mere “description” and calls for destruction¹¹.

² Heidegger, Being and time [Sein und Zeit, English], 31.
³ Ibid, 41.
⁴ Ibid, 44.
⁶ Ibid. The same is put forward by Vattimo, The adventure of difference [Le avventure della differenza, English]: philosophy after Nietzsche and Heidegger, 170., who regards Ge·stell as the condition from which the question of Being could be raised again by Martin Heidegger.
⁷ Heidegger, Being and time [Sein und Zeit, English], Heidegger, The basic problems of phenomenology [Die Grundprobleme der Phänomenologie, English]; translation, introduction and lexicon by Albert Hofstadter.
⁹ Ibid, 366.
¹¹ Ibid.
Secondly, Sean Nelson claims that destruction is simultaneously directed against mundane practices. The individual is bound to a particular local and temporal context, from which it is interpellated to respond. This implies that an opening has to be found within which different practices become conceivable, other than those that happen in “habitual repetition of what is held to be true usually and for most of the part”\(^1\). This structure of the mundane “—repetitive custom and habit—and the intimidation of the questionability that discloses other possibilities” needs to be dismantled in responding to the hermeneutic situation\(^2\).

This destruction—of worldviews, theories, and concepts, and of everyday language, practice and symbols—finds its elaboration within the archaeological and genealogical writings of Michel Foucault:

> What lies implicit in Heidegger’s analysis of Dasein is brought out and developed by Foucault’s explorations into the possibility of resistance to the practices of normalizing and disciplining the body.\(^3\)

Michel Foucault has referred to his investigations as genealogy in the sense of a “critical ontology of ourselves”\(^4\), or simply to inquire into how we have become what we still are. Michel Foucault called his analyses archaeological, in that they did not seek to find universal structures of knowledge or action, but acknowledge continuity as well as discontinuity in history, and focus on cases of discourse and acting as events. Simultaneously, these analyses were genealogical in that they sought to establish out of the contingencies of the present condition, not ways of knowing and acting that are closed-off, but possibilities for the emergence of a different condition and consequently of ‘identities’\(^5\). Phenomenological *Destruktion* can thus be seen as way of questioning modernity, which thinking that has determined modernity cannot perform. It recalls the contingencies of the present, and encourages thinking beyond them by recognising new openings.

The dialogical and ethical pole of hermeneutic thought is, according to Gianni Vattimo, most distinctly represented by Hans-Georg Gadamer\(^6\), whose concept of language is delimited by his ethical interest\(^7\). For Hans-Georg Gadamer, in language the “total media-

---

\(^1\) Ibid.
\(^2\) Ibid.
\(^3\) Ziarek, “Powers to be: art and technology in Heidegger and Foucault,” 170.
\(^6\) Vattimo, *The end of modernity [La fine della modernità, English]: nihilism and hermeneutics in post-modern culture*, 130.
\(^7\) Ibid, 131.
tion of every experience of the world and every occurrence of Being” is realised. Language is neither the faculty of speech, nor the specific way of linguistic expression of a person. It is rather the reverse; language is what comes to pass through the individual. It is the sharing of world, which encompasses past and present, and which finds its “articulation in discourse” by men being involved in dialogue or, where the “concrete realization of the collective ethos of a historically determined society” takes place. It is within a concrete socio-historical ensemble where language “functions as a total mediation of the experience of world”. Brought into correlation with lógos “understood as the language and the rationality of the real”, language being conceived as the “living lógos” is suffused with rationality, inheriting the concepts of both “rationality in nature” and of “reason in history”. The socio-historical dimension of language correlates directly to its ethical one in that “language is precisely this kind of reason that lives in the collective belonging to a web of living tradition or an ethos”. Thus, language is in a “constitutive nexus with the good” where both are not subject to any other end, and beauty is the appearance of the “idea of the good”. Rationality can only be experienced within the nexus to language, while it “is dialectical insofar it lives in the always finite and qualified dialogue of historical human beings”; this lógos is called social consciousness or social understanding.

Consequently, truth, as experienced, rests on the “belonging to language as the place of a total mediation of existence in the living collective consciousness”. How truth comes to pass is through that mediation, which takes place in discourse. Thus the force of conviction by which the collective consciousness is established, is rhetorical. Therefore, “[h]ermeneutic truth, which is the experience of truth to which hermeneutics refers […], is essentially rhetorical”. Rhetorical or hermeneutic truth is not something distinct of, and at the same time parallel to, scientific truth in the sense of certainty, proof, demonstrativity, but “rhetorical persuasion” is in fact dominant over the latter. Rhetoric and hermeneutic is the way in which science and technology obtain their socio-political relevance; this is not only because of the popularisation of scientific endeavours into

---

1 Ibid.  
2 Ibid.  
3 Ibid.  
4 Ibid, 133.  
5 Ibid.  
6 Ibid.  
7 Ibid, 134.  
8 Ibid, 135.  
9 Ibid.  
10 Ibid.
laymen’s language. Rather, Hans-Georg Gadamer holds that the collective consciousness takes “an ethical stance toward the use and development of the results of scientific research.” The utility of science and technology is never sufficient in itself to make them socially relevant in terms of use; they have to be integrated into an ethos. As Gianni Vattimo emphasises, this is not only the coming to pass of language, but primarily and foremost an ethical event. He further stresses that this ethical event is the moment of truth for science and technology, as opposed to validation, and performativity, as commonly assumed. Thus, within this conception science is essentially rhetorical, meaning that there is no division between the humanities and the natural sciences at all.

The truth of a scientific proposition is not its verificability, which is controllable in terms of publicly stipulated rules, which ideally may be employed by all; this would be a way of reducing the link between logic and rhetoric to a purely formal meaning. It is rather the reconnection of the governing rules of verification in the different scientific disciplines to a public domain that is the lógos/common language, continually woven and rewoven in rhetorical and hermeneutical terms because its substance is the continuity of a tradition that is sustained and renewed through a process of reappropriation (of the object-tradition on the part of the subject, and vice-versa) which occurs on the basis of ‘evidence’ of a rhetorical kind.

Truth or knowledge is thus fundamentally shared. Its experience is related to working of “explicitly thematized linguistic procedures”, which refer back to ways of practical control, which, by necessity, are also public in nature. Gianni Vattimo holds that giving in this way to the experience of truth an “external” meaning, instead of positing it as an intuitive act of the individual consciousness is an important insight. It also illuminates Martin Heidegger’s antihumanism with his rejection of the modern subject as set up by metaphysics, and the pertaining notion of consciousness. Gianni Vattimo also considers Hans-Georg Gadamer’s approach not unproblematic, since the experience of truth rests on the common consciousness that can never be thematised, except in hindsight as a historical occurrence. There is the peril that knowledge claims can find their legitimacy only in the context of tradition. Thus, in his view, there is a tendency towards an apologetic character of truth, which on the other side diminishes the rights of critical,

---

1 Ibid.  
2 Ibid, 136.  
3 Ibid.  
4 Ibid.  
5 Ibid.  
7 Ibid, 139.  
8 Ibid, 139-140.  
9 Ibid, 140.
dissident, prophetic, or revolutionary views, even if they may turn up only in science. In conclusion, Gianni Vattimo favours the destructive side of hermeneutics that seeks a critical appropriation of the Western metaphysical tradition, rather than putting itself into little questioned continuity with it.

However, following Gianni Vattimo, it could be claimed that the two sides of hermeneutics, the ontological and the linguistic, carry the possibility of seeking answers to the questions what is the meaning of the present situation? And what is rationality in a rationalised world? In his view:

[The relation of hermeneutics to modern scientism or to the world of technical rationality cannot be simply or even primarily, that of polemical rejection – as if it were a matter yet again of opposing a truer knowledge and a vision of more authentic existence to the theoretical and practical vagaries of modernity. Rather it is a matter of recognizing and demonstrating that hermeneutics is a ‘consequence’ of modernity and a confutation of it.]

The possibility of grasping the present situation is given by heeding Martin Heidegger’s “controversial […] conception of the Ge-stell – an ontological concept – which entails both the completion of metaphysics, as well as an indication of its potential overcoming.

In this sense hermeneutics is “rather a theory that tries to grasp the meaning of the transformation (of the idea) of Being that has been produced as a consequence of the scientific rationalization of our world.

According to Gianni Vattimo, the recovery of rationality is given in that the positive sciences are not only seen as those forces, which “push the metaphysical oblivion into its extreme”. The ceaseless proliferation of images of man and world produced by science gives rise to condition in which any claim of objectivity becomes untenable, effecting the dissolution of the metaphysical constitution of Being. Hermeneutics may likewise retrieve rationality in the understanding of history; once the universal concept of history is weakened, it becomes clear that the past can only be appropriated by different interpretations. These can establish their truth only within dialogue, which in turn “leads to a modification of the actual situation”. The rational and hence argumentative

---

1 Ibid, 141-143.
2 Ibid.
3 Vattimo, Beyond interpretation [Oltre l'interpretazione, English]: the meaning of hermeneutics for philosophy, 109.
4 Ibid.
5 Ibid, 110.
6 Ibid.
7 Ibid.
appropriation of history evinces truth that is neither scientific in the sense of positivism, nor purely aesthetic.

It is thus entirely incongruous with the historical essence of hermeneutics to regard it as an ontologically founded exegesis only. To treat it as another source for ‘interpretivism’ also denies it its claim for universality, and its only truth claim, which is rhetorical. Social inquiry oriented by philosophical hermeneutics is thus not another way of doing interpretative research, or upholding the lifeworld against the threat of being colonised by technology and expert knowledges. It must firstly commit itself to its own historicity and take heed to the claim that hermeneutics has something to do with the truth of the era we are living in, which is modernity, nothing more and nothing less.

Gianni Vattimo criticises that hermeneutics has become koinê at the end of the 20th century, in that for instance the belonging together of truth and interpretation is commonplace⁴, yet the criticism of modernity has equally become a common trope. As the preceding brief description of the linguistical side of hermeneutics has tried to show, the distinction between criticism and apology may be fluid. Thus, being destructive or critical may blend very well into current discourses, while under the veil of seathing analysis the reversal to metaphysical thought is promoted. Within the sociology of knowledge an approach to science studies has taken hold,—usually called actor-network theory—that has gained influence in domains concerned with organisational knowledge such as information systems and organisation theory, espousing a radical refutation of features of modernism. Its claim of proffering convincing accounts of knowledge and technology making in our time warrants careful inspection of its rhetoric and philosophical references.

The Destruktion of Symmetrical Anthropology

Since the mid-1990s, within organisation theory and information systems research, an approach that appears to perform a destructive move has been gaining considerable ground⁵. Information systems research—commonly understood as the study of informa-

---

1 Ibid, 5.
tion systems in organisational contexts and thus concerned with large-scale innovation that involves significant political, economic and social elements—is problem-oriented and interdisciplinary and needs to bridge the divisions between technological, economic and socio-political positioning of its problems. The popularity of an approach that claims to do just this in this domain is might not be entirely unexpected. This approach has become known under a variety of labels such as Sociology of Translation, Modest Sociology, Symmetrical Anthropology, or Relational Sociology. The name that became most prevalent, and yet the most dubious one is actor-network theory (ANT). This approach strives to articulate a way of questioning and investigating and takes up the challenge of transgressing disciplinary boundaries and conceptual binary oppositions. It has been described as having as “[a] key feature […] its resistance to the modern reification of boundaries which prevent us from seeing the ways in which the ‘social’, the ‘technical’ and the ‘natural’ are intermingled in a seamless web”. It is thus the way of speaking about things, and pointing at them in their interrelatedness which, when formulated as a critique, is supposed to prevent re-committing the mistakes of the past, or “… heterogenous networks are powerful ways of avoiding essences, arbitrary dichotomies, and to fight structures”.

2 Bruno Latour, “On recalling ANT,” in Actor network theory and after, ed. John Law and John Hassard, Sociological review monographs (Oxford: Blackwell, 1999). Thus cautiousness towards simplification and labelling makes Latour, “On recalling ANT,” 3. argue that the use of the very name ‘actor-network theory’ or the abbreviation ANT is an “irony” and a “paradox”. Similarly John Hassard, John Law, and Nick Lee, “Preface,” Organization 6, no. 3 (1999): 388. dismiss labels, since they tend to be taken as programmatic statements, thus establishing a fixed standpoint that has to be defended against critics; on the other hand, they are needed to communicate easily and quickly. Moreover, paradox and irony may even be ascribed as inherent to the phrase actor network, as it could be seen as “purposively oxymoronic term”. Law, “After ANT: complexity, naming and topology,” 5. has explicated this trope as conveying “a tension which lies between the centred ‘actor’ on the one hand and the decentred ‘network’ on the other”; According to Latour, “On recalling ANT,” 21. this points to the sociological conundrum of ‘agency’ and ‘structure’, a “debate into which [ANT] never wanted to enter”.
A discussion in thematising *Destruktion* of actor-network theory will be conducted in the double sense of the genitive: firstly, it will be shown what criticism of modern knowledge and technology making has been performed by this approach; and secondly the presuppositions of this criticism will be questioned. This is necessary and beneficial under various aspects for actor-network theory, in its rejection of binary thinking, bears some similitude to Heidegger’s criticism of modern science and technology\(^1\), while its proponents tend to be rather dismissive of hermeneutic ontology\(^2\). There is also the tendency to be dismissive of the philosophical ambitions of ANT, since these are ineffective for the business of research, and to propose and pursue ‘lite’ versions of actor-network theory. By intermingling some of its concepts with incompatible other approaches, actor-network theory is potentially deprived of its critical potential and promoting distorted concepts\(^3\). There are also adaptations that refer simultaneously to both hermeneutical ontology and actor-network theory, but leave their relationship completely unthematised\(^4\).

**The Presumed Lineage of Symmetrical Anthropology**

In general, there appears to be a certain affinity of some strands of studies into science and technology (including ANT) towards an existential conception of “knowledge- and technology-making”; the pertinence of this for the understanding of organisational knowledge and innovation requires further clarification\(^5\). It should however be kept in mind that ANT is not a body of theory but rather a way of articulating sociological discourse, and that it is a pastiche. Its ingredients have been summarised by Marta Calás and Linda Smircich in a kind of lineage:

ANT’s origins are mixed, including semiotics, structuralism, phenomenology, and ethnomethodology […] but one may find now in ANT some similarities with Foucault’s notion of power/knowledge as power relations are produced through actants who perform the available discourses and practices. Even the notion of author function may be invoked, except that in this case the ‘authors’ are both human and non-human. Concurrently, such no-

---

1. See Chapter 4: Recalling Knowledge with the Phenomenology of Science and Technology: Projecting, Representing, *G*e-stell for a sketch of the concepts of Martin Heidegger’s criticism.
2. Latour, Pandora’s hope: essays on the reality of science studies.
5. Steiner, “Constructive science and technology studies: On the path to being?.”
tions as rhizomes, deterritorialization, nomadism, and the like can be associated with the idea of ‘network’ as a very dispersed and decentered chain of ongoing and mutant activities.¹

In this way, the actor-network approach appears to have taken up different strands of contemporary thought, which places it in a web difficult to untangle, since only cursory reference is made to its points of departure.

For the sake of convenience, current studies of science and technology and especially ANT, can be conceived as drawing a prototypical image of knowledge and technology production, where the scientist’s action is extended into the outside world². These studies focus on science as practice, which determines everything from the setup of the laboratory through to the establishment of facts³. What becomes known in this way is the outcome of “interactive stabilization” of all the elements that make up the work in the laboratory⁴. What happens in the laboratory is construction⁵. For this construction to become effective requires it to be reproduced beyond the confines of the laboratory, which can only be accomplished by the scientist being able to include different actors in the social world in the extension of his realm. The success of these extensions necessitates that all the different elements within and outside the laboratory are aligned. These elements are heterogenous and include aspects such as people, animals, artefacts, and documents. In the event of a favourable outcome of the scientist’s efforts, this so-called ‘actor-network’⁶ establishes new actuality and truth and has also been called epistemic alignment. Due to the different ‘types’ of actors involved, the formation of the actor-network has been called ‘hybridization’. This is paralleled by the removal of the social nature of accomplishment that has taken place, called “purification” with the effect that the new actuality and truth appear as mere facts, merely natural, objective and neutral⁷.

⁴ Ibid.
⁶ Latour, *The pasteurization of France*.
Describing Knowledge and Technology Making Beyond Disciplinary Projections

The basic tenets of a scholarly endeavour that claims to practice “modest sociology”—social inquiry without strong claims on theoretical explanations or methodical rigour—have been rendered as symmetry, non-reduction, recursiveness and reflexivity¹. Although the connotation of symmetry has shifted towards a more general meaning, initially it was equated with non-suppositional analysis. John Law recapitulates how symmetry entered the sociological discourse and evolved into questioning ontic distinctions, as well as social scientific analytical categories: The concept of symmetry, within its present use in sociology, originates from the study of science. It challenged the belief that true scientific knowledge did not have to be accounted for in social terms, simply because it was true, while false scientific knowledge had to be explained in social terms, because its falseness was due to distortion by social factors. By contrast, symmetry posits that both true and false knowledge deserve analysis, and that this analysis needs to be done under the same conditions and presupposition. Symmetrical treatment of true and false scientific knowledge is not only necessary since both are the outcomes of social action, but moreover, the concept of what is held to be true and false is determined socially, and varies between communities and over time. Exclusion from, or differentiation in analysis, by taking for given that knowledge is true or false, would actually close off the possibility to find how demarcations are drawn and knowledge is constituted. In this context, symmetry strongly undergirds that knowledge is socially constituted, and not the result of objective cognition, thus questions the supremacy of knowledge based on natural science². Alternatively, the pioneers of ANT believed that social studies of science and technology suffered from the shortcoming of not being able to sufficiently elucidate the potency of science, since they seek to ground it not within the scientific and engineering efforts but rather than in the social realm. Therefore, Michel Callon pointed out that “the development of scientific knowledge and technical systems cannot be understood unless the simultaneous reconstruction of the social contexts of which they form a part is also studied”³ [emphasis added].

² Ibid, 10.
The multi-faceted meaning of symmetry within this approach is indicated by it having been applied from the outset to characterise also the attempt to abandon detached theorising and to question the privileging of experts, especially in the interaction between the researcher and the participants in the field. Symmetry is subsequently carried forward into the reporting of the research that does not purport to convey exclusive knowledge either\(^1\). Eventually, for the reflecting stance to be effective, it must become explicit for the audience: “Reflexivity is [...] a way of reminding the reader that all texts are stories”\(^2\).

This claim of being resistant to projection, rigour and fitting into the specialisation of research has been reiterated by Nick Lee and John Hassard, who point to the avoidance of specification of ontical commitments and key concepts, and stress, “ANT is characterised by an antipathy to self-definition”\(^3\). This concurs with its wanting to be seen as an “anti-essentialist movement”\(^4\). Proponents of ANT seem to be also well aware of the knowledge-as-information conception that holds sway in academic practice through naming, categorising and simplifying. Thus, John Law very explicitly cautions against their perils that arise from the desire to communicate unambiguously and quickly; he maintains, “complexities … are lost in labelling”\(^5\). Science as research has brought forth an unquestioned goal to reduce subtlety, for avoiding opacity, and favouring particularity and formularisation as the dominant mode of knowing instead. Yet this tendency is to be found in, “single-line versions of actor-network theory, the ‘have theory, will travel’, which have proliferated”\(^6\).

The investigations into the production of scientific facts effected also a reflection on the question of power, which eventuated into questioning of agency as being attributable only to human beings. Initially, Bruno Latour has sought to argue in principle against the traditional assumptions about power and knowledge in scientific ventures, since he holds that “empirical studies would never do more than scratch the surface of beliefs about

\(^1\) Latour and Woolgar, Laboratory life: the construction of scientific facts; introduction by Jonas Salk; with a new postscript and index by the authors, 153.
\(^2\) Ibid.
\(^4\) Grint and Woolgar, The machine at work: technology, work and organization, Latour, “On recalling ANT.”
\(^6\) Ibid, 10.
science”\(^1\). He summarised these beliefs as “force is different in kind to reason; right can never be reduced to might”\(^2\), which undergird all epistemology. With reference to the thinking of Michel Foucault, who regarded agency as a product or effect, John Law has posited that it is henceforth possible to question agency as a given property of human beings and thus open up the possibility of investigating what constitutes agency and what makes up an agent\(^3\). The ensuing attribution of agency to the so-called non-humans and the seamless network could be seen as the consequence of this conceptualisation of the questions of knowledge and power.

On the Way to Being, or Updating the Sociologists’ Knowledge of the Sciences?

Due to the abandonment of the disciplinary sociological projection in favour of “heterogeneous agency and decentring the subject”, Carol Steiner has pondered the question whether science and technology studies, including ANT, would encompass an opening for an appropriation of hermeneutical ontology, and especially a receptiveness for the question of Being as it had been posed by Martin Heidegger\(^4\). She locates the possibility of that opening in the situation that “these scholars question in their own ways their mode of access to what they know (where knowledge comes from, how they know) and as they seek some foundation for their knowledge other than human subjectivity […]”\(^5\). Carol Steiner has attempted to demonstrate that Martin Heidegger had already addressed certain suppositions and problems of science and technology studies in his ontological efforts, albeit without the costs incurred and concessions being made in attributing agency to matter or artefacts or to endow them with meaning. In juxtaposing the conundrum of science and technology studies with Martin Heidegger’s philosophy, she concludes that his:

> ‘performative’ account of essence shifts attention from apparent things (the ontic) to thinking about the truth of Being (the ontological), and from the obvious or given to the possibility of Being granting and withholding. These shifts destabilize claims about the truth, correctness or completeness of any knowledge, and about the superiority of scientific (or any) methods of knowing. But they do so without re-centring the subject, without endowing things with agency, without denying history its role, and without trivializing

---

\(^1\) Latour, *The pasteurization of France*, 153.
\(^2\) Ibid.
\(^4\) Steiner, “Constructive science and technology studies: On the path to being?,” 588.
\(^5\) Ibid.
epistemic efforts or making seeming epistemic success a miracle. Heidegger’s account of essence also undermines orthodox ontic essentialism (the foundation of realism), which also seems to be the aim of constructive S&TS.¹

As much as I would welcome the possibility of an opening where Martin Heidegger’s thinking can be offered as an alternative to the current discourse in science and technology studies and especially with regards to ANT, I am however concerned, whether this possibility in the particular case of ANT might actually be extant. To pursue this question, I suggest that beginning with Gianni Vattimo’s characterisation of hermeneutics as a response to the conditions of modernity; it should be inquired simply which kind of reading of modernity is offered by ANT. In particular, how its scholars attend to the transformations brought forth by modern science and technology. In doing so ANT must be subject to the same scrutiny as the discourses and practices of knowledge and technology making that it set out to criticise. In thus applying Martin Heidegger’s phenomenology of science and technology on the endeavour of relational sociology, it might be possible to show whether the apparent ambiguity of its approach entails the possibility of a dialogue with hermeneutics—alternatively, whether it is rather a refashioning of the modernist discourse against its critics, or something entirely different. This kind of questioning of ANT is vindicated by the circumstance that it is an academic endeavour and has not defined itself as philosophy or thinking.² Therefore, the constituting moments of the essence of science as research—of modern science as practice and knowing—may become visible within its articulation, or it might become apprehensible as a worldview, accompanying certain scholarly practices.

At first sight, it appears to be compelling to assume some affinity between science and technology studies and Martin Heidegger’s criticism of modernity. As stressed by Carol Steiner, his depiction of science as research³ resembles that of current students of science and technology, albeit with the difference that for Martin Heidegger scientific construction is a derivative mode of knowing. He further questions why are scientists operating

¹ Ibid, 608.
² Lee and Hassard, “Organization unbound: actor-network theory, research strategy and institutional flexibility.”, have referred to ANT as socio-philosophical approach, which might indicate a somehow ‘hybrid’ status, which might be undergirded by the circumstance that its major proponent has tried himself in philosophical ventures repeatedly; see: Bruno Latour, We have never been modern, trans. Catherine Porter, 4th printing ed. (Cambridge, MA: Harvard University Press, 1991/1997), Latour, Pandora’s hope: essays on the reality of science studies.
³ See Chapter 4: Recalling Knowledge with the Phenomenology of Science and Technology: Projecting, Representing, Ge-stell.
in this way and “What makes their constructing of this derivative sphere of objects possible”\textsuperscript{1}.

The Problem of Agency—Deconstructing Humanism?

It is also puzzling that some regard phenomenology as one of the origins or ‘ingredients’ of ANT\textsuperscript{2}, and that themes that are relevant to phenomenology surface in the discussions of ANT—such as reflexivity, modesty, critical questioning of traditional concepts—and the vehement rejection of Martin Heidegger’s thought on modernity\textsuperscript{3}. Moreover, Nick Lee and Steve Brown have drawn a parallel between Martin Heidegger’s reflections on causality viz responsibility\textsuperscript{4} and the approach taken by ANT in questioning human agency, and have assumed that there is a shared anti-humanist stance in speaking of technology. This also implicitly indicates that what ANT calls hybridity and heterogeneity, or the transgressing of boundaries between human affairs and nature, or technology, as it has been so ferociously touted by ANT, is neither its discovery, nor is it a novelty.

The plea for overcoming of “binary oppositions” that have prevailed in Western thinking since ancient times, and which are constitutive of “exclusion and repression” as functions of “hierarchico-teleological systems” appears to be a theme that is rather widely shared. It has been interpreted as requiring an ethical involvement in the form of “an entirely different Seinsgeschick, or sociology, which claims that no one is a means, that everyone is an end-in-itself, and which does not define people ‘functionally’”\textsuperscript{5}.

That action has been transferred from the realm of human affairs into the dealing with nature had already been noted by Hannah Arendt\textsuperscript{6} and that this is a significant transgression of the boundary between man and nature. However, this does not mean that action is reciprocally being attributed to artefacts or living organisms, but that it is a dimension of humans living together. She holds that “[a]ction alone is the exclusive prerogative of

\textsuperscript{1} Steiner, “Constructive science and technology studies: On the path to being?,” 585.
\textsuperscript{2} Calás and Smircich, “Past post modernism: Reflections and tentative directions.”
\textsuperscript{3} Latour, We have never been modern, Latour, Pandora's hope: essays on the reality of science studies.
\textsuperscript{4} Nick Lee and Steven D Brown, “Otherness and the actor network,” American behavioral scientist 37, no. 6 (1994). See Chapter 4: Recalling Knowledge with the Phenomenology of Science and Technology: Projecting, Representing, Ge-stell.
\textsuperscript{5} John D Caputo, Radical hermeneutics: repetition, deconstruction and the hermeneutic project, Studies in phenomenology and existential philosophy (Bloomington, IN: Indiana University Press, 1987), 254.
\textsuperscript{6} See Chapter 5: Social Sciences and Governmentality — Power/Knowledge in Modernity.
man; neither a beast nor a god are capable of it, and only action is entirely dependent upon the constant presence of others.\(^1\)

Martin Heidegger’s criticism of insufficiency of the instrumental-anthropological definition of technology meant that the dichotomy between technology and humans had already been transcended, and his account of technology as a way of disclosure rather than either instrument or master made this even more apparent. Likewise, the idea of ‘hybrid engineering’ is pre-empted in the discussion of the replacement of the scholar by the technologist in the research institution, who rather acts like a manager than being devoted to pure knowledge.

Babette Babich has pointed out that even the use of tools is not merely means to ends, but it is that these implements impose constraints on the user, which with growing complicatedness and complexity of technologies configure human life. Man has to accommodate himself to the instruments he fabricates, be they as innocuous as books or compact discs, more intrusive like email or the internet, or perceived as threatening like genetic engineering; Actually:

\[
\text{we are ourselves transformed into the instruments of our own technologies, information and otherwise. Indeed, one way to regard modern humanity is as the practical and literal means of technology today: that is as the agency of all technological reproduction, mechanical reproduction and electronic reproduction.}^2
\]

That technology is something that could reasonably be singled out and separated as pure objects from both the people making and tending it, and its contexts of use, has already been shown to be either a commonplace view or an ultimately untenable heuristic approach to inquiry into the technical world, by Martin Heidegger as well. Moreover, the condition of Ge-stell as the reciprocal challenging of man and Being, is in part reliant upon that entire technicality, turns up as entities in everyday involvements. “This is what Heidegger in Sein und Zeit referred to as equipmental totality”\(^3\). The involvement with equipment is transferred upon modern technology, determining the ambiguity of technicality. It appears as tools, while at the same time being the material correlate of the challenging disclosure\(^4\). Thus, the phenomenon of the special kind of revealing that occurs in technology is founded on the condition of being human, Dasein, and being-in-the-world,

---

1 Arendt, The human condition. Introduction by Margaret Canovan, 22-23.
3 Ibid, 108.
4 Capurro, “Informatics and hermeneutics,” 372-373.
however only in part. Humanism construes man as the one who creates whatever there is and therefore holds that “Technology, according to its instrumental, humanist ideal, is neutral” and consequently “nuclear energy can destroy or else it can yield life”¹. To criticise this humanism, it is however infelicitous to posit that this can only be done by construing reduction within a symmetry within which man, nature, and technicality are all actants in a network.² It also seems to be also inappropriate to establish some sort of analogy between that symmetry, and phenomenological reduction. This reminds us not to succumb to the attraction of assuming affinity based on premature judgements.³

The End of Metaphysics and its *Ersatz* in Cybernetics

It is therefore necessary to take a step back and question what kind of discourse on modernity is possible within the ANT framework. This can be disclosed by inquiring into its philosophical lineage and aspirations and into the vernacular, it has sought to establish. Earlier, I have pointed to the significance of language to grasp the way of knowing in the era of technology. To illuminate the philosophical lineage of ANT, it is necessary to follow Martin Heidegger in his determination of the relation between science and philosophy at the end of modernity. He holds that philosophy in our era has come to an end in the sense of completion⁴. This is based on the identification of philosophy with metaphysics. The business of metaphysics is to think “beings as a whole—the world, man, God—with respect to being, with respect to the belonging together of beings in Being⁵. In this way, beings are thought of representationally and provided with foundations. In the course of the history of philosophy, foundations have been rendered corresponding to the way beings became present, thus:

the ground has the character of grounding as the ontic causation of the real, as the transcendental making possible of the objectivity of objects, as the

---

¹ Babich, “The essence of questioning after technology: techne as constraint and the saving power,” 115.
² It appears to be rather an example of a double academic cynicism that some scholars believe that a criticism of humanism implies the denial of distinctions between humans, nature and artefacts. For a brief interlude on this problem see the section The Historicity of Hermeneutics—Technology and Humanism in Chapter 3: Problematising Knowledge in Organisations.
³ The technologist’s vision appears to be however well represented within the bounds of ANT by Wynn, “Möbius transitions in the dilemma of legitimacy,” and Antonio Cordella and Maha Shaikh, “Actor network theory and after: what’s new for IS research?,” in 11th European Conference on Information Systems (Napoli: 2003), namely that it is a good thing not to have to differentiate between humans and machines anymore.
⁵ Ibid, 55-56.
dialectical mediation of the movement of the absolute Spirit and of the historical process of production, as the will to power positing values.¹

For Martin Heidegger, the philosophy of Karl Marx signifies the attainment of the utmost potential of metaphysics, because Marx turned metaphysics around.² Thereafter, philosophy is in its last phase, and endures merely in the mode of “an epigonal renaissance and variations of that renaissance”³. The withering away of philosophy after the end of the 19th century is an outcome that was already present in its origin, namely the emergence of sciences within philosophy and their successive separation from it. Martin Heidegger holds that this change appears to be “the mere dissolution of philosophy”, whereas actually it is “its completion”⁴. Philosophy changes over into “the empirical science of man” in the double sense of the genitive. Concerning man himself, Martin Heidegger mentions the disciplines of “psychology, sociology, anthropology as cultural anthropology” as well as the establishment of “logic as symbolic logic and semantics”⁵. Eventually, everything that is turns for man into:

the experiential object of his technology, the technology by which he establishes himself in the world by working on it in the manifold modes of making and shaping. All of this happens everywhere on the basis of and according to the criterion of the scientific discovery of the individual areas of beings.⁶

Besides mathematics, a new fundamental or structural science has emerged that moulds and directs the other sciences—this is cybernetics. For Martin Heidegger, cybernetics is, to put it in Marxist terms, the science of mankind’s metabolism with nature. Cybernetics is founded on “the determination of man as an acting social being. […] it is the theory of the steering of the possible planning and arrangement of human labor”⁷. In this constellation, “[c]ybernetics transforms language into an exchange of news”⁸. Babette Babich considers that Martin Heidegger has identified cybernetics as *Ersatz* for philosophy and poetry. Consequently, those domains with a close affinity to cybernetics (like computer

---

¹ Ibid.
² Karl Marx’s reversal of metaphysics entails his redefinition of man as belonging to the species of humankind, and the integration of human history into the process of natural history, and the inversion of Hegelian dialectics Arendt, *The human condition. Introduction by Margaret Canovan*, 116 and 293.
³ Heidegger, “The end of philosophy and the task of thinking,” ⁵⁷.
⁴ Ibid.
⁵ Ibid.
⁶ Ibid.
⁷ Ibid.
⁸ Ibid.
or information technology) are in their essence *Ersatz*—a substitute, a surrogate, a transposition\(^1\).

Since everything has become an object of the empirical sciences, which gives rise to enormous interdisciplinary communication and activity, the end of philosophy means that “[i]t has found its place in the scientific attitude of socially active humanity”, “the fundamental characteristic” of which “is its cybernetic, that is, technological character”\(^2\). The cybernetic character of the sciences takes hold because, within scientific disciplines, even that which has remained from their genesis out of philosophy becomes reinterpreted in the sense of techno-science\(^3\). The projections of the domains of science, or the “categories” for their “articulation and delineation”, appear now as “working hypotheses”. Whether these fundamental hypotheses are considered true depends firstly on how effective they can promote research, but secondly and more importantly, “[s]cientific truth is equated with the efficiency of these effects”\(^4\). Theory becomes identical with conjecturing these fundamental categories that, due to their deprived truth character, are reduced to a “cybernetic function” void of “any ontological meaning”\(^5\). These scientific theories composed of working hypotheses and fundamental categories are regional ontologies, meaning that “[t]he sciences are now taking over as their own task what philosophy in the course of its history tried to present in certain places and even there only inadequately”\(^6\). This does not imply that philosophy as metaphysics has been nullified or overridden by cybernetic techno-science, since “the sciences still speak about the Being of beings in the unavoidable supposition of their regional categories”.

The origin of the sciences in philosophy is rather stored within the “scientific attitude of the sciences”\(^7\). Martin Heidegger summarises the significance of the completion of philosophy as “the triumph of the manipulable arrangement of a scientific-technological world and of the social order proper to this world. The end of philosophy means the beginning of the world civilization based upon Western European thinking”\(^8\). Due to the pervasiveness of the “operational and model character of representational-calculative thinking” and the ensuing determination and regulation of the “appearance of the totality

\(^1\) Babich, “The essence of questioning after technology: techne as constraint and the saving power,” 112.
\(^2\) Heidegger, “The end of philosophy and the task of thinking,” 58.
\(^3\) Ibid.
\(^4\) Ibid.
\(^5\) Ibid.
\(^6\) Ibid.
\(^7\) Ibid.
\(^8\) Ibid, 59.
of the world and the position of man in it”, the motive to question modern science and technology will disappear simultaneously¹.

LineageRecovered—Philosophy of Science

The dominance of information and systems theory in all kinds of scientific and technological knowledge suggests that during the last half of the 20th century, these kinds of knowledges have changed their mode or epistemology leading to the assumption that our age is now characterised by post-modern knowledge². This highlights the question regarding to what extent does ANT perform “[t]he task of putting science in question, of questioning both the ‘new’ science (replete with chaos, indeterminism, and what not) and the good old ‘old’ science (garden-variety explanation, prediction, and control)”³. Since Martin Heidegger has pointed out the completion of philosophy, it should be possible to ask what character the philosophical ambitions are that have been advanced within ANT. Lastly, a means to scrutinise this approach against its own claims is to question the language within the perspective afforded by ANT.

The preceding section has alluded to the affinity between science and technology studies and actor-network theory. The latter has launched its criticism of modernist thought with the claim that the subject-object dualism still persists, despite the constant transgressions of the boundaries between man, nature and technology. From the preceding elaborations, it is evident that the dissolution of the man-nature-technology divides is something inherent of the technological era, and that it has been described by Martin Heidegger as one of the phenomena within which Ge-stell occurs. The new structural sciences of information and systems theory that have emerged after the Second World War have evolved both as the knowledges of information technology, and as a new transdisciplinarity. Due to the striking parallels between information theory and cybernetics and actor-network theory, it might therefore appear to be legitimate to ask whether the latter is not actually performing an affirmation or apology for the former, which comes under the guise of a criticism of modernism. The question becomes even more pressing when it is taken into account that cybernetics and the like are Ersatz philosophy, and that the philosophical ambitions of actor-network theory are presumably more a sequel than a distanciation from technological thought. For the context of the cur-

¹ Ibid, 58.
² Lyotard, The postmodern condition [La condition postmoderne, English]: a report on knowledge.
rent investigation, it follows that if actor-network theory does not stand out critically against science and technology, its claim to give an account of knowledge in the modern world is not essentially distinct from the epistemologies it rejects.

While ANT has become to be seen as the most innovative branch of science and technology studies, its major philosophical lineage rarely has been thematised. Actually:

Michel Serres has been a crucial figure in the development of ANT. Indeed, after immersing oneself into the literature on ANT, to read his work is to be rocked by the shock of recognition (but it is also, alas, to read his work through ANT).¹

Michel Serres’ formative influences have been changes in mathematics, physics and the rise of information theory: “the transformation from infinitesimal calculus or geometry to algebraic and topological structures”; the appearance of “quantum mechanics”; and “especially information theory from which we emerged with a completely new world”.² He detests phenomenology “for reasons of taste and economy”, and eschews what he calls the “Heideggerian tradition”, including Michel Foucault.³ The rendering of ANT’s roots being in the humanities and in phenomenology and Michel Foucault’s thought seems to be difficult to vindicate.⁴ Michel Serres draws heavily on mathematics and the sciences, emulates their manner and procedure, and consequently heeds to their vernacular.⁵ He is dismissive of philosophy that is critical of science, while at the same time favouring analytical philosophy⁶. Correspondingly, language must give way to materiality and logic⁷. Philosophy of science seems to be philosophy belonging to science, i.e., in favour of it and approved by scientists. Science and criticism of science is denied to those who do not get their hands dirty, and Serres commissions new tasks to philosophy, namely “to create, to invent, to produce what will foster production, to invent or express a system of laws, to understand and apply a science”⁸. Science, in Michel Serres’ words: is neither absolute good nor absolute evil, neither total reason nor the forgetting of the human being, neither the Devil nor God, as preceding generations seemed to say. Science remains a means—no more, no less—but a system of

³ Ibid, 9.
⁴ Ibid, 38.
⁵ See the summary above by Marta Calás and Linda Smircich.
⁶ Serres and Latour, Conversations on science, culture, and time [Eclaircissements, English], 129.
⁷ Ibid, 131-134.
⁸ Ibid, 132.
⁹ Ibid, 137.
means that has taken on so much social weight and importance that it is the only historical project remaining in the West.\(^1\)

This is an affirmation of “the continuing and unchallenged position of science, from its inception and throughout modern culture”, ascribing to it “a status […] akin to that of religion in premodern societies”\(^2\). In the name of its perceived instrumentality and significance for the subsistence of the Western world, science is neutral, but it also brings up some ethical issues. Thus Michel Serres’ position appears to be an instantiation of what Babette Babich describes as the trend that “[p]hilosophy does in general seek to model itself on the image of science, and physics now has adopted the pose (for the media, anyway) of wisdom”\(^3\). This is the case despite that practitioners of science “generally have very simple notions of reality, truth, and objectivity, and (as social and historical studies of science attest) they are notoriously unreliable witnesses to their own practice. They are in a word, incompetent philosophers of science”\(^4\). Babette Babich points out that this is due firstly to an “ordinary self-reflexive limit”; that “science is practical” in terms of “the production of effects, within limits, for the sake of appearances”\(^5\); and that self-reflection is not required from science “because it is the only epistememe in town”\(^6\).

Michel Serres actually denounces philosophy just because of its lateral position towards science as something utterly useless: “Science is founded on itself and therefore, has no need of external philosophy; it contains its own endo-epistemology […]”\(^7\). This pro-science sensibility also illuminates the claim of actor-network theorists of being reflexive. With the same trust into the reflective potential of modern science, a proponent of this approach asserts that the scientific attitude (of sociologists) has enabled them to overcome the subject-object dualism that stood at the origin of modern science. “By extending the scientific gaze to the point where it is liable to undermine its own foundations, sociology brought us closer to the critical point of this contradiction in Western culture”\(^8\). Equally, realism/empiricism is posited as a remedy against the Cartesian divide, as well as rendering void any discourse outside the discipline about Being. In this way, ANT wants to:

\(^{1}\) Ibid, 129.
\(^{2}\) Babich, “The hermeneutics of a hoax: on the mismatch of physics and cultural criticism,” 27.
\(^{3}\) Ibid, 32.
\(^{4}\) Ibid.
\(^{5}\) Ibid.
\(^{6}\) Ibid, 31.
\(^{7}\) Serres and Latour, Conversations on science, culture, and time [Eclaircissements, English ], 128.
free [itself] of prejudices regarding the fundamental constituents of reality, and to allow [its] efforts to explain its objects of study to determine what must be regarded as real. Bracketing is a rejection of metaphysics, or any autonomous discourse on ontology, and the recognition that we do not need an ontological discourse that is distinct from sociology proper.¹

New Science—New Knowledge?

What is meant by ‘sociology proper’ cannot be given consideration here, but the “autonomous discourse”, or rather a dominating one that has its roots in cybernetics, will be discussed in the following section. For Bruno Latour, there appears to be something radically new in science that has turned into research, in that there happened to be:

a huge shift from Science to what we could call Research […]. While Science had certainty, coldness, aloofness, objectivity, distance, and necessity, Research appears to have all the opposite characteristics: it is uncertain; open-ended; immersed in many lowly problems of money, instruments and know-how; unable to differentiate as yet between hot and cold, subjective and objective, human and non-human.²

Thus, for the sake of leaving science-as-research as Martin Heidegger has called it, beyond any doubt, the prop of old science has to be used. This can be identified with modernity and the Cartesian divide, while ‘Research’ presumably has originated with the “three revolutions” in science as identified by Michel Serres.³ Babette Babich attributes this kind of argument to a special disposition; she characterises “[t]he belief in an openness to radical questions within such disciplines as physics and information science, which has been explicitly asserted by Lyotard and many others, depends upon a plain optimism that betrays an ordinal and ordinarily modernist - a pro-science – sensibility”⁴. The most popularised of these revolutions—the emergence quantum mechanics—had already been characterised by Martin Heidegger as an event that did not fundamentally change the essence of physics. Trish Glazebrook argues that Martin Heidegger was well aware of the differences between quantum mechanics and Newtonian physics, but he maintained that both relied on the same projection of nature as a “calculable coherence of forces”⁵. She points out that, for the philosopher, nuclear physics is just the latest instantiation within which the essence of modern technology occurs; based on the technological essence of science, quantum mechanics is merely an intensification of that

¹ Ibid, 239.
² Latour, Pandora's hope: essays on the reality of science studies, 20.
³ See above.
⁵ Glazebrook, Heidegger's philosophy of science, 249.
sameness\textsuperscript{1}. More specifically, Newtonian physics and quantum mechanics share the same approach to method, that is “to secure the object in measurement”\textsuperscript{2}. The only difference is that in classical physics the motion of an object can be precisely determined in advance, while quantum physics can get hold of the object by means of probability\textsuperscript{3}. The “new world” made accessible through cybernetics was opened by reconceptualising nature and society into engineering models, and by making them manageable in mathematical terms\textsuperscript{4}. For the pioneer(s), the calculations that provided guidance for flak and the problems of battlefield noise for the transmission of signals were paradigmatic; both were reliant on transmission of information and feedback\textsuperscript{5}. This technologisation of the scientists’ approach to nature and society had also received critical comment from Martin Heidegger\textsuperscript{6}.

Fusing the Grand Narratives: Projection and Power—Cybernetics and Liberal Discourse

Actor-network theorists have no qualms about applying the technological/cybernetic projections upon themselves. For example, Bruno Latour’s concept of time and the human being is determined by information theory and microbiology; he conceives of himself as an assemblage of genetic and habitual information and that time is conceived of as the lifespan of that information which is housed in his body\textsuperscript{7}. Consequently, Bruno Latour is something measurable, and his makeup can be determined by looking at his genome sequences and his neural synapses. In that he applies the reductionist view of science on himself, Bruno Latour sets himself up, he is ge-stellt. His polemic against hermeneutics is pre-configured by that point of view and eventually indistinguishable from the realists’ one\textsuperscript{8}.

Another indication of the adoption into ANT of thinking permeated by cybernetics is its concept of causality. Prior technoscientific thinking held the Aristotelian causa efficiens (the effecting cause) as the only one “ever ‘really’ able to cause anything in the first

\textsuperscript{1} Ibid.
\textsuperscript{2} Ibid.
\textsuperscript{3} Ibid, 251.
\textsuperscript{4} Norbert Wiener, Cybernetics: or control and communication in the animal and the machine, 2nd ed. (Cambridge, MA: MIT Press, 1961).
\textsuperscript{5} Ibid.
\textsuperscript{6} Martin Heidegger, Zollikoner Seminare: Protokolle - Zwiegespräche - Briefe [Zollikon seminars], 2nd ed. (Frankfurt am Main: Klostermann, 1994). See also Chapter 4: Recalling Knowledge with the Phenomenology of Science and Technology: Projecting, Representing, Ge-stell
\textsuperscript{7} Latour, We have never been modern.
\textsuperscript{8} Ibid, Latour, Pandora’s hope: essays on the reality of science studies.
place". ANT reconceptualises causality within its explanatory efforts as that of mere presence, which has been characterised as:

leaving only a kind of narrative account of the composition of entities, what Aristotle called “material causes,” as the only possibility. The explanation consists of the list of actors enrolled in the network. Thus, the reader of actor-network studies who expects to find diagrams of networks with a point labelled “Pasteur” and a discussion relating Pasteur’s actions to this will be disappointed. 

This reporting of presence or extantness of an ‘actant’ matches what Rafael Capurro has suggested as the new concept of causality reduced to reporting of what is available as stock. 

Some discussions have limited themselves to the aspect of ANT as research, and thus have failed to take claims about ANT’s transdisciplinarity seriously. For example, organisational theorists have—after enumerating ANT’s expansion into fields such as sociology, psychology, anthropology, politics and economics—commented bemusedly that “Latour even holds out that it might yet bring something to theology”. I would like to argue that the reference to theology does not spring out of an erratic overconfidence that might look like a prank, but that is has to be taken seriously as determinant of the approach pursued by ANT. Both the philosophical mentor of actor-network theory, Michel Serres, and its foremost proponent, Bruno Latour have indeed demonstrated ontological ambitions that have largely gone unnoticed. It appears as if the perceived novelty, flexibility, unboundedness, together with the assumed utility for investigations into complex environs, has superseded a questioning stance towards conceptual imports. We might be left short-changed, if we assume that actor-network theory “is both a theory and methodology combined”. Certainly, it has been observed that:

actor-network theorists have been uncompromising in their rejection of those dualisms which have long served as means of defining and delimiting

1 Babich, “The essence of questioning after technology: techne as constraint and the saving power,” 110.
2 Breslau, “Sociology after humanism: a lesson from contemporary science studies,” 301.
3 See the section Information as Representing Nature—Challenging Disclosure and Sufficient Reason.
5 Lee and Hassard, “Organization unbound: actor-network theory, research strategy and institutional flexibility.”
the space of social scientific discourse—such as inside/outside, same/other, nature/artifice, technology/society, subjectivity/objectivity, etc.\(^1\)

Rejection of established tropes in scientific discourse is, however, an ontic endeavour, as is the definition of theory and method. It should be taken as such, namely and especially within the social sciences, as an exercise of power. ANT is yet presented by one of its leading proponents in a significantly more moderate fashion:

Far from being a theory of the social or even worse an explanation what makes society exert pressure on actors, it always was, and this from its very inception […], a very crude method to learn from the actors without imposing on them an \textit{a priori} definition on their world-building capabilities\(^2\)

He stresses that ANT never pursued the ambition “to open yet another space for interpretive sociology“, but wanted to provide “simply a way for the social scientists to access sites, a method and not a theory, … not an interpretation of what actors do simply glossed in a different more palatable and more universalist language”\(^3\). ANT is supposedly striving to merely “find the procedures which render actors able to negotiate their ways through one another’s world-building activity”\(^4\). In this picture, ANT is just an innocent technique that is cautious not to impose anything on the people in the ‘field’, nor on the community to which its researchers belong. This is indeed in stark contrast with a claim made in the very same speech, namely that:

[…] ANT […] took to task all of the components of what could be called the modernist predicament simultaneously. The reason why it could not stick to a theory of social order is that the whole theory of society soon appeared to be enmeshed in a much more complex struggle to define an epistemological settlement about (a) what the world is like outside without human intervention; (b) a psychology inside—an isolated subjectivity still able to also comprehend the word out there; (c) a political theory of how to keep the crowds at bay without them intervening with their unruly passions and ruining the social order; and finally (d) a rather repressed but very present theology that is the only way to guarantee the differences and connections between those three other domains of reality\(^5\).

I will return to the theological implications of this statement later, while first showing that the notions of symmetry and reflexivity, being crucial to the endeavour of ANT, must be approached with caution as they have been deployed discursively in an ambiguous fashion. While they are methodological implements to conduct ‘empirical’

---


\(^3\) Ibid.

\(^4\) Ibid, 21.

\(^5\) Ibid, 21-22.
research, they also ground the ‘ontological’ aspirations of that approach. Concerning the latter, symmetry and its associated notion of reflexivity have been denotatively used for naming the destructive move of unravelling the “modernist settlement”1, extricating from the “modernist predicament”2, and spoiling the “ideal modernist dream”3. Essentially, this destruction appears to consist of the attempt to forsake an a priori of the matters to be investigated and to try to avoid traditional presuppositions that build on dichotomising thinking. Together with the a priori, disciplinary delimitations have also become questionable, since the destruction performed by the actor-network approach has been directed primarily against the different strands within the sociology of scientific knowledge4 and has been unfolded by “topicalizing social sciences’ own controversies”5. Thus ANT asserts, “to have developed science studies that entirely bypasses the question of ‘social construction’ and the ‘realist/relativist debate’”6. Consequently, strong objections against actor-network theory originated from within the social shaping/construction camp7. In the same way, reflexivity in social science reporting is criticised for being largely a literary, superfluous, and hence annoying gesture (a metalinguistic attitude of observers observing observers). The reflexivity that ANT seeks to achieve is connected to the transdisciplinary ambitions, meaning that the spread of the message across disciplinary boundaries, as well as beyond the confines of academic discussion, has been projected as the goal of a “new politics of explanation”8. It might be regarded as a necessary consequence only that contemplating accomplishments and errors of the past is inappropriate for such a vigorous and vivid approach as ANT.

4 Michael, *Constructing identities: the social, the nonhuman and change*, Michael, *Reconnecting culture, technology and nature : from society to heterogeneity*. It appears therefore rather infelicitous to categorise ANT into the context of social research approaches by positing that it belongs “to the wider school of thought on the social construction of knowledge” as done in Walsham, “Actor-network theory and IS research: current status and future prospects,” 466. or subsume it under the “general label” known as social shaping of technology (STS), as done by Monteiro, “Actor-network theory and information infrastructure,” 74. It seems to be rather the case that ANT, as argued by Michael, *Constructing identities: the social, the nonhuman and change*, 52., shares some “roots” with the constructionist approach. Yet, as explicated by Michael, *Reconnecting culture, technology and nature : from society to heterogeneity*, 20., ANT “departs markedly from the latter’s concerns”, since it is not content with a purely sociological explanation of techno-scientific endeavours.
6 Ibid, 22.
because “[o]nly dead theories and dead practices seek to reflect, in every detail, the practices which came before”\(^1\). Richard Hull has aptly commented on this habitus as an unthematised strive for domination, because in this way ANT:

$$\ldots$$ is blind to its own conditions of possibility. People who write about the theory of ANT appear to insist on placing themselves in distinct opposition to those who have come before them, and yet they deny that they conduct critique. This is one form of the ‘unarticulated characterization’ of power, in the sense of ‘complaining’ about the power of ‘those who have come before them’, and yet not acknowledging what place ANT may be playing in any reconfigurations of power.\(^2\)

Hence, ANT is caught up in a vicious circle founded in the peculiar relation between knowledge and power. If theory is to be established and sustained, this is only possible by interfering with pre-existing relations, and by fending off competing approaches. Cynthia Hardy and Stewart Clegg describe this conundrum:

A theory of power does not, and cannot, exist other than as an act of power in itself – in attempting to rule out other understandings of phenomena in favour of a universalistic explanation […] Such a power theory of power is unreflexive: it cannot account for itself, and any theory of power that cannot account for its own power cannot account for very much at all.\(^3\)

Cynthia Hardy and Stewart Clegg propose to understand this situation, not as a vicious circle, but a hermeneutical one that means to critically approach both the situation in the ‘field’ as well that of as the researcher and also include an assessment of the genealogy of the work he is involved in. Thus, there seems to be no other way out of the dilemma except the one that ANT scholars have decided not to pursue.\(^4\)

It also belongs to the many paradoxa or ambiguities that dissociate ANT that its proponents appear to have furnished expositions; in turn, these have been discounted by their epigones holding, for instance, that “ANT is centrally concerned with issues of power”\(^5\). Previously, it had been suggested that in order to bypass traditional sociological categories, such as society and power, practices should be studied that would make possible “to

---

\(^1\) Law, “After ANT: complexity, naming and topology,” 10.


\(^4\) The rejection of the hermeneutic circle denoted as reflexivity appears to coincide naturally with the rejection of hermeneutics in general by ANT scholars, which will be detailed in the following.

do away with the notion of power”\(^1\). Following the motto “the notion of power should be abandoned”, by the study of “associations”, sociology would eventually find and respond to its mission\(^2\).

Another paradox arises from the conceptualisation of ‘reflexivity’. This is commonly understood in the sense of pointing to the limits of social science expertise, the disintegration of the expert/lay knowledge boundary through the increase of other forms of expertise, and the common-sense connotation of social scientific knowledge\(^3\). The distinction between “ostensive” and “performative” definitions\(^4\), within which the levelling of the sociologist/practitioner knowledges has been couched in the ANT community, turns reflexivity into a mode of academic self-castigation. It purports that, in the past, sociologists have always attempted to claim the ability to explain society in principle, or ostentatively. Simultaneously, by confronting the real world with their pre-defined categories, while their inability to account for that ‘reality’ was always held to be a practical problem, meaning it could be ultimately successfully addressed by better research practices. The notion of the performative definition consists of the direct denial of the possibility and usefulness of a definition in principle, while insisting that a practical definition of what makes up society is possible, and that it is rendered by the actors themselves. This ‘symmetry’ means that “[s]ocial scientists raise the same questions as any actors […] and find different ways of enforcing their definition of what society is about”\(^5\). The emphasis on the actors’ practices and their rationalities seems to demonstrate a reflexive humility by implying coexistence between the real world and the academic world, while controversies about the conditions of the social are carried out in each sphere. In this way, definitions become the rhetorical tokens of contention between actors. By determining definitions as ‘performative’ by relating them merely to practice, they become simply formal—what matters is in any case their success. The performative definition is therefore reminiscent of Martin Heidegger’s description of the current way in which scientific projections are established, namely as preliminary hypotheses, and what counts as truth, the efficiency and the effectiveness of concepts. Performative definitions just stipulate that truth is what works well, both in the academic as in the real

---

2 Ibid, 277-278.
world. They virtually disallow distanciation from theories and practices because of the
demand of performance. Performance is hard to reconcile with questioning and criticism.
Thus, social researchers may neither subject their theory to scrutiny, nor should they take
a critical stance towards the everydayness of social practice.¹

The privileging of the prop of the ‘performative definitions’ means that concepts are no
longer disclosive, but only based on acting.² Thus, language within the ANT perspective
has a political dimension only. Nick Lee and Steven Brown aptly comment on this
reduction that “[t]o transgress the natural/social boundary and to avoid dualistic thinking,
ANT authors have found it necessary to make everything political, and then to think
politically about everything”³. They posit that the political (and conceptual)
transgression of boundaries are rooted in a worldview that sees all categorisation of
things in the world as being based on man’s activities; from this follows that the
conceptual inventory to comprehend this state of affairs is one that accommodates
relations in terms of an orbit of forces, of volition and resistance⁴. According to Nick Lee
and Steven Brown, this is the vernacular and “discourse of liberal democracy”, which
purports to ensure protection of rights through proper representation⁵. The liberalising
and totalising perspective opened by this discourse allows ANT to lay claim to any field
of knowledge to become articulated in its terms.⁶ Therefore, Nick Lee and Steven Brown
cautions against the peril that ANT sets up another “ahistorical grand narrative and the
concomitant reproduction of the right to speak for all”⁷. The favoured use of this
discourse in originative works⁸ is “neither arbitrary nor inconsequential”, despite claims
made by ANT’s proponents to the contrary⁹. Nick Lee and Steven Brown hold that in
this move ANT “pushes two tools of post-Enlightenment thought, liberal democracy and
power, to their absolute limits”¹⁰. Tending to fall into oblivion in this move in Nick

¹ Examples of performative definitions are the ‘working definitions’ of knowledge, which have been
presented in Chapter 3: Problematising Knowledge in Organisations.
² Note the affinity to Peter Drucker’s conceptualisation of knowledge as information in action. See
section Knowledge as Object.
³ Lee and Brown, “Otherness and the actor network,” 780.
⁴ Ibid, 774.
⁵ Ibid.
⁶ This appears to be analogous to the claim of neo-liberal economics, which claims that any social
phenomenon can be explained out of the category of the homo oeconomicus. See the section The
Market—homo oeconomicus and Allocative Efficiency.
⁸ Michel Callon, “Some elements of a sociology of translation: domestication of the scallops and the
fishermen of St Brieuc Bay,” in Power, action, and belief: a new sociology of knowledge?, ed. John
pasteurization of France.
⁹ Lee and Brown, “Otherness and the actor network,” 775.
¹⁰ Ibid, 778.
Lee’s and Steven Brown’s argument, is that the discourse of liberation directed at the disenfranchised at the fringes of the Western world (both inside and outside) was also a self-commissioning to change those masses, allegedly for their own betterment. Instead, this project, although not entirely malign in its consequences, nevertheless established new order based on disciplinary power. Moreover, Nick Lee and Steven Brown note that the vernacular of ANT “is also prophetic because it is designed for technological developments”\(^1\). Thus, the liberal-democratic portion of the conceptual inventory of ANT is “a system of thought that can colonize all areas” under the guise of “radical fairness”\(^2\).

As applied within ANT, the concept of power is the necessary complement to the conceptual inventory of liberal democracy. Nick Lee and Steven Brown point out that in ANT power is the “reality principle”\(^3\), illustrating their claim with some wisdom gleaned from one of its major works, such as: “There are only trials of strength, of weakness. More simply, there are only trials”\(^4\) and “Whatever resists trials is real”\(^5\). From this principle of reality, knowledge can only be an outcome of the play of force, only that is real and can be known that withstands trials, or “Nothing is known—only realized”\(^6\).

According to Nick Lee and Steven Brown, this presumably adds up to a worldview that conceives of everything that is in terms of “domination and power” and that interprets world within the “formulaic circle of expansion, domination and collapse”\(^7\). They equate its political vocabulary with “a metalinguistics formulation—inscribed as problematization, interessement, enrolment, mobilization, and dissidence […]”—into which any sequence of human or nonhuman actions an be encoded\(^8\). The fusion of the liberal-democratic discourse and the power discourse establish a hermetical conceptual sphere that precludes contradiction or alternative by its claims of “total democracy”\(^9\). ANT is thus reluctant for any criticism of the world that it describes, and also forestalls any consideration of alternatives.

A similar problematic of ANT, reported by Nick Lee and Steve Brown, arises out of its position to systems theory. By analysing systems from within, or tracing the nodes in a

---

\(^1\) Ibid, 780.
\(^2\) Ibid.
\(^3\) Ibid, 781.
\(^4\) Latour, *The pasteurization of France*, 158.
\(^5\) Ibid.
\(^6\) Ibid, 159.
\(^7\) Lee and Brown, “Otherness and the actor network,” 781.
\(^8\) Ibid.
\(^9\) Ibid.
network, it seems to pursue a “bottom-up” approach. It does however, only describe systematisation and ordering, rather than questioning it. In this way, it renders a description of the enchained ordering and makes visible its foundation on dominance. Yet, ANT’s only ‘criticism’ of systems is put forward by pointing out that so much hard labour is required to make the system work and stabilise it¹, and that this labour tends to become forgotten too quickly².

Nick Lee’s and Steve Brown’s criticism of actor-network theory highlights its totalising liberal democratic discourse, its positing of power as reality principle, and its systemic perspective on systems as networks of networks. They suggest that the latter feature is an “isomorphism with systematization”³. It should be kept in mind that ANT not only uses the vernacular of liberal democracy, but also that of science. According to Martin Heidegger, science and technology are permeated by cybernetics, this therefore suggests that ANT’s worldview is not only isomorphic, or better homologous with the ordering of techno-science, but rather integrated into it. In the ANT view everything that is, is viewed within the scientific projection of a “calculable coherence of forces”⁴, which obviates the concept of the “social” and illustrates the statement that ANT is not an extension of or contribution to interpretative sociology⁵. “Actor, Actant”, “Network”, “Black box”, “Envelope”, “Inscription”, and “Translation” are all concepts that are not borrowed and adopted from science, but an ensemble of significances that are thrown over phenomena for the sake of that integrated view⁶. This can be illustrated with the depiction of the modern condition in the mode of microbiological notation:

We are never faced with objects or social relations; we are faced with chains, which are associations of humans (H) and nonhumans (NH). No-one has ever seen a social relation by itself . . . nor a technical relation . . . Instead we are always faced with chains, which look like this H-NH-H-NH-H-NH . . . ⁷

Thus, everything that is, is conceived as a concatenation, similar to the chains of proteins in the laboratory. Laboratory practice has also spawned the notion of Actor, Actant. In

---

¹ Ibid, 784.
² Bowers, “The politics of formalism.”
³ Lee and Brown, “Otherness and the actor network,” 784.
⁴ Glazebrook, Heidegger’s philosophy of science, 249.
⁶ This appears to render the earlier notion of heterogenous engineering invalid, since there is no unity of different elements, but everything is an element in one and the same system.
microbiology, agents or actors are identified originally by their effects. ANT duplicates this practice:

ANT focuses on the complex and controversial nature of what it is for an actor to come into existence. The key is to define the actor by what it does—its performances—under laboratory trials. Later its competence is deduced and made part of an institution.2

This means nothing but the complete adoption of the selective objectification of man performed in biology, since in the scientific context “what there is, is what counts as the makeup of the human being, mind and body/body and soul, there will be assayable, measurable nucleotide sequences”3. Conversely, power can be everywhere, because in the scientific view it is equated with effecting relations, and thus becomes always bound up with materiality:

[…] an agent is a structured set of relations with a series of (power) effects. […] those relations are embodied in a series of different materials. […] they are in some measure strategically (or multi-strategically) organised.4

The conceptualisations of physics also help to render the identity of actor and network comprehensible, namely “[a]ctor and network […] designates two faces of the same phenomenon, like waves and particles […]”5. The notion of “Black box” appears to be entirely equal to its use in systems theory, in that it is that part of a system that is only considered in terms of its inputs and outputs, rather than in terms of its internal workings6. The characterisation of a network becomes possible by applying the cybernetic notion of “Envelope” which is claimed to be “invented”. In it, every attribute collapses into performance:

Instead of opposing entities and history, content and context, one can describe an actor’s envelope, that is, its performances in space and time. There are thus not three words, one for the properties of an entity, another for its history, and a third for the act of knowing it, but only one continuous network.7

1 Latour, Science in action : how to follow scientists and engineers through society.
2 Latour, Pandora's hope: essays on the reality of science studies, 303.
7 Latour, Pandora's hope: essays on the reality of science studies, 304.
This continuous network is the central notion on which science studies found their new ‘ontology’ that is, however, not placed within a philosophical discourse, but takes on mathematical conceptualisations, especially of geometry:

[…] actor-network theory has indeed helped to destabilize Euclideanism: it has shown that what appears to be topographically natural, given in the order of the world, is in fact produced in networks, which perform a quite different kind of spatiality.¹

The notion of ‘Inscription’ “refers to all the types of transformations through which an entity becomes materialised into a sign, an archive, a document, a piece of paper, a trace”². With its entire abstraction from any meaning, it captures the events in the laboratory when something can be measured, or in Martin Heidegger’s words, when nature shows itself as information³.

‘Translation’ in ANT parlance has both a political and a mathematical connotation. It may stand for the modes in which domination is achieved by:

(a) the definition of roles, their distribution, and the delineation of a scenario;

(b) the strategies in which an actor-world renders itself indispensable to others by creating a geography of obligatory passage points; and

(c) the displacement imposed upon others as they are forced to follow the itinerary that has been imposed.⁴

It is analogous to operations on functions as “[…] the process or the work of making two things that are not the same, equivalent”⁵.

The pastiche of ANT comprising liberal democratic discourse and scientific terminology establishes thus the world-as-picture, and takes the position of the grand narrator. This mode of modern thinking has been criticised earlier by Hannah Arendt, showing how the world becomes to be known as picture. This occurs initially by gazing at nature through the perspective of the sciences and subsequently society through the social sciences, and this picture is constituted by applying the same view on man and society as on nature and the universe. Within this picture, man is “developing into that animal species from

² Latour, Pandora’s hope: essays on the reality of science studies, 306.
⁴ Latour, Pandora’s hope: essays on the reality of science studies, 306.
⁵ Law, “After ANT: complexity, naming and topology,” 8. The scientific approach that ANT is imbued with, is illustrated by its keeping with the cybernetic tradition, in that Latour, Pandora's hope: essays on the reality of science studies, 193. visualises the interplay between society and technology in the form of a graph showing the trajectory of projectiles.
which, since Darwin, he imagines he has come”\(^1\). This picture becomes possible by assuming an “Archimedean point and apply it […] to man himself and what he is doing on this earth”\(^2\). The consequence is that all human activities perceived from a sufficiently remote position become mere processes. Thus:

modern motorization would appear like a process of biological mutation in which human bodies gradually begin to be covered by shells of steel. For the watcher from the universe, this mutation would be no more or less mysterious than the mutation which now goes on before our eyes in those small living organisms which we fought with antibiotics and which mysteriously have developed new strains to resist us. How deep-rooted this usage of the Archimedean point against ourselves is can be seen in the very metaphors that dominate scientific thought today. The reason why scientists tell us about ‘life’ in the atom—where apparently every particle is ‘free’ to behave as it wants and the laws ruling the movements are the same statistical laws which, according the social scientist, rule human behaviour and make the multitude behave as it must, no matter how ‘free’ the individual particle may appear to be in its choices—the reason, in other words, why the behaviour of the infinitely small particle is not only similar in pattern to the planetary system as it appears to us but resembles the life and behaviour patterns in human society is, of course, that we look and live in this society as though we were as far removed from our own human existence as we are from the infinitely small and the immensely large which, even if they could be perceived by the finest instruments, are too far away from us to be experienced.\(^3\)

Hence, ANT poses the problem that it takes on the modern worldview in its entirety and literally, both in terms of its political and scientific ramifications, including language and metaphors. It is also claiming to do away with the fundamental modernist thought. Its uncritical approach to issues of power, science and language make it therefore doubtful, whether ANT qualifies as an approach to do:

… research […] involv[ing] the exploration of the use of language, linked to the exercise of power, to create and sustain organizations and organizational arrangements, containing particular technological artifacts that reflect the translations and inscriptions of various stakeholder interests and rationalities.\(^4\)

Due to its self-identification with science, which is obvious in its terminology, its potential to deal with knowledge in modernity must be questioned. This provides a point of departure to probe the philosophical groundings of ANT that suggests that they are determined in terms of a philosophy that has “defined itself as the discipline of the

---

\(^1\) Arendt, *The human condition. Introduction by Margaret Canovan*, 322.

\(^2\) Ibid.

\(^3\) Ibid, 322-323.

rational, the science of science”¹. Babette Babich has stressed that thinking about science should not consistently seek truth devotionally but critically. It should therefore be feasible also “to ask ‘Why truth?’”, and thus “the philosophy of science cannot use the value of science but must first raise the question of science, […] as problematic, and questionable”².

Another ambiguity arises of ANT subscribing to the latest parlance of contemporary science and technology, and translating it into the human realm—making it palatable for sociologists. At the same time it is putting forward a criticism of modernism that resembles the denial of the specific historical formation (era) of modernity altogether³. Clearing up this ambiguity will also assist in clarifying the misinterpretation of Martin Heidegger’s thought as noted by Carol Steiner including pejorative remarks.⁴

**Modernity—Disavowal of a Trinity**

This puzzle can only be solved when due attention is given to the metaphysical, cosmological and religious inclinations purported by actor-network theory, or science studies. This means taking seriously the claims that their scholars are making, rather than merely discussing questions of agency, or simply taking it as a research approach.

For science studies there are no projections within which science developed, therefore the whole gamut of modernity could also be unravelled by a humble scientific and empirical research by “[…] simply following practice, not theory”⁵. Thus, we have the claim of being able to dissolve practically theoretical divisions, or the fact that science works can be turned against its own self-understanding. This contrast with the proposition that all these practical labours have eventuated the conclusion that “[…] there exists only one settlement, which connects the questions of ontology, epistemology, ethics, politics, and theology”⁶. This is clearly a metaphysical statement. According to Martin Heidegger, philosophy as metaphysics provides a foundation to think about the totality of beings in Being, including God.

---

² Ibid.
³ Latour, *We have never been modern*.
⁴ Steiner, “Constructive science and technology studies: On the path to being?,” 588. The dismay of hermeneutics is extended by Latour, *We have never been modern*, 123. also to other philosophers in the hermeneutic tradition, like Gianni Vattimo.
⁶ Ibid, 293.
While for Martin Heidegger the modern era is described by phenomena such as science, technology, the changeover from art into aesthetics, the conceptualisation of human activity as culture and the death of the gods— all this does not hold true for science studies at all. On the contrary, “[…] modernity has nothing to do with the invention of humanism, with the emergence of the sciences, with the secularization of society, or with the mechanization of the world”\(^2\). The central tenet of modernity, for science studies, is rather the separation of science, politics and faith. This separation is rather fictitious, a delusion, since:

> the moderns can mobilize nature, objectify the social, and feel the spiritual presence of God, even while firmly maintaining that nature escapes us, that society is our own work, and that God no longer intervenes.\(^3\)

The charge against the modernists to have pulled apart science, politics and faith comes beyond the empirical analyses of the ethnographic observer in the microbiological laboratory. Modernism is not only a charge brought forward against science and society for deluding themselves in their doings with nature and God; it is a heresy. It has been identified by the Vatican as such at the beginning of the 20\(^{th}\) century.

Modernism, for the Vatican, is the heretical belief that faith has not to be supported by reason for man to live according to principles of the Catholic Church. Its two sides are rationalism and fideism. The former is the belief that based on reason alone, without divine revelation, man can live a good life, while fideism holds that that religion consists entirely of personal and collective experience. These two sides combined equate the denial of the objective revelation from God to humankind, or the modernist heresy contradicts the Catholic faith in claiming that belief in, and knowledge of, God are detached from reality as man’s imagination only.

Thus science studies argue that within what it calls the “modern constitution” the separation of nature/science from society/politics was performed, followed by the endeavour “[t]o settle the question of God by removing Him for ever from the dual social and natural construction, while leaving him presentable and usable nevertheless\(^4\). The secularisation of Western society for science studies is a historical errancy, brought about out deliberately, and that will undergo its reversal in the future:

---

\(^1\) Heidegger, “The age of the world picture [Die Zeit des Weltbildes, English].”

\(^2\) Latour, *We have never been modern*, 34.

\(^3\) Ibid.

\(^4\) Ibid, 32-33.
That religion too was seized by modernists as oil for their political war machine, that theology debased itself by agreeing to play a role in the modernist settlement and betrayed itself even to the point of talking about nature “out there”, the soul “in there”, and society “down there”, will, I hope as a source of bewilderment for the next generation.¹

With theology, Bruno Latour could not have had in mind the Vatican, who claimed the illegitimacy of the separation of religion and science and religion and public life. The Catholic Church vehemently opposes the claim that “science is to be entirely independent of faith, while on the other hand, and notwithstanding that they are supposed to be strangers to each other, faith is made subject to science”². Concurrently, the Vatican also objects and condemns the secularisation that springs from the division between religious and public life, which is characterised as follows:

The state must, therefore, be separated from the Church, and the Catholic from the citizen. Every Catholic, from the fact that he is also a citizen, has the right and the duty to work for the common good in the way he thinks best, without troubling himself about the authority of the Church, without paying any heed to its wishes, its counsels, its orders—nay, even in spite of its rebukes. For the Church to trace out and prescribe for the citizen any line of action, on any pretext whatsoever, is to be guilty of an abuse of authority, against which one is bound to protest with all one’s might.³

Some 80 years later this fallacy is scantly described as: “No one is truly modern who does not agree to keep God from interfering with Natural Law as well as with the Laws of the Republic”⁴. Nevertheless, the explanations of the event that brought about the fateful separations are quite similar. For Bruno Latour, one aspect of the modernist attitude to religion is that God becomes immanent, which is explained as “Spirituality was re-invented: the all powerful God could descend into men’s heart of hearts without in any way intervening in their external affairs”⁵. For the Vatican, the origin of the internalisation of faith is even more clearly attributable, since it was “[t]he philosopher [who] has declared: The principle of faith is immanent; the believer has added: This principle is God; and the theologian draws the conclusion: God is immanent in man. Thus we have theological immanence”⁶. The other side of the divisive event is coined the transcendence of God (being inaccessible to man) by Bruno Latour: “His

¹ Latour, Pandora’s hope: essays on the reality of science studies, 298.
³ Ibid.(accessed).
⁴ Latour, We have never been modern, 33.
⁵ Ibid.
⁶ Pope Pius X., On the doctrine of the modernists [Pascendi dominici gregis, English]: encyclica promulgated on 8 September 1907(accessed).
transcendence distanced him infinitely, so that he disturbed neither the free play of nature nor of that society [...]"\(^{1}\). For the Church, the externalisation of God from worldly affairs is founded in the modernist conception of reason, which:

> is confined entirely within the field of phenomena, that is to say, to things that appear, and in the manner in which they appear: it has neither the right nor the power to overstep these limits. [...] From this, it is inferred that God can never be the direct object of science, and that, as regards history, He must not be considered as an historical subject.\(^{2}\)

Hence, as Bruno Latour identifies modernism as the separation of nature/science, society/politics and faith/church\(^{3}\), this “powerful mechanism” did not have to be “weakened” by “exceptional events”, nor did it require a cunning “ethnologist’s detachment” to “describe it today”\(^{4}\). Significant intellectual labours had already been expended by the oldest institution of the Western world many decades before things could appear ‘weak’ and ethnologists entered laboratories, to sort out the threat of secularisation to itself and to make its officials toe the line. Thus, it might be that the commitment to that institution helped significantly in the retrieval of that explanation and condemnation, rather than the meticulous observation of the construction of air pumps and the stratagems of their builders in the 17\(^{th}\) century.

To expound the narrative of the separation of reason and faith as preventing man from salvation, it would have not been necessary to attend to the pontificate’s doctrines from the beginning of the 20\(^{th}\) century. Even nowadays, philosophers are the culprits—particular those of an “existential, hermeneutical or linguistic” orientation who “ignore the radical question of the truth about personal existence, about being and about God”\(^{5}\). These people, only not have abandoned faith, they also undermine human reason and promote “attitudes of widespread distrust of the human being’s great capacity for knowledge”\(^{6}\). This is a consequence of that modernist fallacy discussed above, since,

\(^{1}\) Latour, *We have never been modern*, 33.


\(^{4}\) Latour, *We have never been modern*, 34-35.


\(^{6}\) Ibid.(accessed).
of all things: the Creator. But because of the disobedience by which man and woman chose to set themselves in full and absolute autonomy in relation to the One who had created them, this ready access to God the Creator diminished.\(^1\)

However, for the Catholic faith God is extant objectively, and is potentially accessible to human reason, the Church must therefore defend metaphysical rationality against a “deep-seated distrust of reason which has surfaced in the most recent developments of much of philosophical research, to the point where there is talk at times of the end of metaphysics”\(^2\).

This shows firstly a parallel between the disdain for hermeneutics expounded by science studies and its mentor Michel Serres, who also clearly wants to return to an era where there was no separation between faith and reason: “[…] we are living at the end of a cycle that began, to my knowledge with Leibniz’s Theodicy”\(^3\). Moreover, the crisis of the subject can also be remedied by the return to pre-modern faith:

The ego was first of all the subject of the verb credo, in the sense given it by Roman law and the by Christian theology, which is the source of the usage by Saint Augustine, from whom Descartes sprang. It remains a good legal and theological concept.\(^4\)

Ethical problems are best attended to in the hands of the scientists, since

[…] the problem of evil […] becomes a scientific problem—universal, once again objective, stable and recurrent in history—thus capable of being solved with neither individual nor collective subjectivity, but objectively.\(^5\)

This is legitimised because “[…] the foundation of morality is no different from that of physics […]”\(^6\). When everything that is, becomes a technical question, an issue for science and technology, and only for them, can we still speak of science studies being life philosophy or philosophical anthropology?\(^7\)

The hermeneutic perspective on techno-science is diametrically opposed to that taken by science studies. Gianni Vattimo stresses that hermeneutics renounces all metaphysical and humanist affiliations since it comprehends science as a defining moment of the constellation between man and Being in our era, and identifies the ultimate nihilism that is inherent to science as its condition and end. Thus:

\(^1\) Ibid.(accessed).
\(^2\) Ibid.(accessed).
\(^3\) Serres and Latour, *Conversations on science, culture, and time* [Eclaircissements, English ], 189.
\(^4\) Ibid, 200.
\(^5\) Ibid, 192.
\(^6\) Ibid, 199.
\(^7\) Steiner, “Constructive science and technology studies: On the path to being?,” 599.
[t]he world as a conflict of interpretations and nothing more is not an image of the world that has to be defended against the realism and positivism of science. It is modern science, heir and completion of metaphysics, that turns the world into a place where there are no (longer) facts, only interpretations. It is not a matter for hermeneutics, of setting limits to scientism, of resisting the triumph of science and technology in the name of a humanist culture, of standing up for the lifeworld against calculation, planning and total organization. The critique that hermeneutics can and must move against the techno-scientific world is aimed, if anything, to aid it in a recognition of its own nihilistic meaning and to take it up as a guiding thread for judgements, choices and the orientation of individual and collective life.¹

For science studies, science is not the completion of metaphysics, nor nihilistic. Science studies are in denial of any nihilistic situation at all and are affirmative of the positive meaning of metaphysics as onto-theology, and the re-establishment of values (or morality) by setting up the proper relations between God, humans, and universe. Their belief in science prevents them to recognise that:

nihilism and the dissolution of the principle of reality, is the approach of science to situations in which the idea of proving a scientific hypothesis as the apprehension of a fact accessible to the senses is no longer intelligible[.].²

What has disseminated from the scientific laboratory into the everyday world by the inflation of images created by the sciences and the media is indeed an indication “of the corrosive effect that science and technology exerts on every principle of reality”³. What sense does it make then to pursue a “realist realism”⁴? This realist realism is in complete denial of the nihilistic situation, since for science studies it is still decisive that science works, that science as research establishes the theory of the real. The success of science is proof that it cannot be wrong, and the fact that man makes nature, that the scientist who is most strongly connected to institutions, be they academic, political, or economic, is the one who is most effective in producing new truth⁵ elevates it beyond reproach. For science studies, nihilism is not something that is linked to the modern condition, but rather an insult of science that must be returned as an accusation to those daring to mention it⁶.

In contrast, hermeneutics is neither in denial of the conditions of modernity, nor apologetic of them. Hermeneutics holds that the past cannot be left behind like a garment that

---
² Ibid.
³ Ibid.
⁵ Ibid, 97.
⁶ Latour, *We have never been modern*, 66.
is no longer usable. As pointed out repeatedly by Gianni Vattimo, what Martin Heidegger urges us to think of is that metaphysics and its completion in Ge-stell may be overcome, in the sense of a twisting or distortion, and that the present may change while still retaining traces of the past in an altered mode. This entails that:

metaphysics can never be simply accepted without reservation, since it is the system of technological domination. Metaphysics and the Ge-stell may be lived as an opportunity or as the possibility of a change by virtue of which both metaphysics and the Ge-stell are twisted in a direction, which is not foreseen by their own essence, and yet is connected to it.¹

Michel Serres, as the mentor of science studies, manages to turn around information and systems theory in such a way that it is an apology of Catholicism². Science studies put itself into a tradition that began in the 1920s and later became known as process philosophy that has its mission to fuse the scientific world picture with Christianity³. If this is added to the political discourse of science studies, which is that of liberal democracy, then at least verbally, science studies seek to bring all the powers that the so-called modernists have allegedly separated—the Church, the nation-state, and science—together. This can be achieved by adopting the discourses of Western democracy, cybernetics and information theory, and that of the Pontiff. Its truth claims are veritably universal: cybernetics affirms transdisciplinary truth in science; liberal democracy is the only legitimate form of the public world, and who wants to object to faith …? Thus performing the difficult task of ‘translating’ an apology for science, especially in its mathematical-cybernetic mode and an apology for Catholicism, we may ask science studies, in their own language, who has ‘enrolled’ them, and for what do they want to ‘enrol’ their audience? That the message of science studies was to some degree ‘translated’ (i.e. transformed) is indicated by the fact that those who have been enrolled were indeed quite a number of interpretative sociologists who have read science studies as interpretative sociology⁴, trying to accommodate its projection, rigour and method

¹ Vattimo, The end of modernity [La fine della modernità, English]: nihilism and hermeneutics in post-modern culture, 173.
² Capurro, “On the genealogy of information.”, Serres and Latour, Conversations on science, culture, and time [Eclaircissements, English ].
³ Latour, Pandora’s hope: essays on the reality of science studies, 283. Science studies’ onto-theological endeavours have their pendant on the other side of the Atlantic, in dreams of immortality, eternity, unity with God and the like, that envision disembodied minds, the colonisation of the whole universe, and the like as the human destiny that needs to be striven to; see: Hans P Moravec, Mind children: the future of robot and human intelligence (Cambridge, MA: Harvard University Press, 1990), Frank J Tipler, The physics of immortality (Garden City, NY: Anchor Books/Doubleday, 1994).
⁴ Cordella and Shaikh, “Actor network theory and after: what’s new for IS research?”
into their horizon.\textsuperscript{1} Maybe, in these instances, the interpretation betrayed the interpreter, since it would have been much easier to take science studies literally, rather than trying to read the latest (and therefore most appropriate) method into it.

When following Martin Heidegger’s statement that metaphysics is complete, and that any resurgence of its kind is merely an emulation of earlier ideas, it might be possible to qualify science studies as what Gianni Vattimo has called “reactive nihilism”, namely, an “attempt to establish something proper in the face of [...] dissolution\textsuperscript{2}”. Science studies are a way to bridge the abyss between the dispersion of meaning in modernity and pre-modern Western tradition. This archaic move seems to be backed by powerful allies, removing the need to be self-critical and making comprehensible the confidence with which their arguments are furthered. Despite all their rhetorical force and shrewd stratagems, science studies are meaningless since “[a] meaning for history can only reappropriated insofar we accept that it has no metaphysical and theological weight and ‘essential’ value”\textsuperscript{3}.

Nevertheless, the preceding discussion of the investigations as carried out in the name of science studies hint at an important phenomenon. This is the impossibility of positing a ‘realist’ definition of knowledge and truth. The common rendering of knowledge is, as recalled so far—knowledge is information, definitions (hypotheses, theories, truth) are performative, and knowledge is oriented towards results (i.e., effectiveness, efficiency, success). Firstly, this shows that giving a definition of knowledge as performative is in itself an ostensive definition. This is not a vicious circle, but it points to something else. It is foremost an instrumental definition of knowledge. It is therefore the way in which everything appears to us under the conditions of technicality and Ge-stell, as a resource and instrument at our disposal. Under the conditions of modernity, knowledge is defined technologically. This is correct, but as in the case of the essence of technology, it is not its totality; the technological definition of knowledge conceals entirely its socio-political dimension. The promotion of science studies and their adoption—just the locus where a reflection on knowledge is supposedly to come to pass—gives clear evidence of that. Precisely the approach that has been most vigorously stressed that all that matters is performance in the interplay of material forces has actually been carried by staunch onto-theological commitments. Its performative definition of knowledge has been taken liter-

\textsuperscript{1} The author is himself culpable for having succumbed to this errancy for some time.

\textsuperscript{2} Vattimo, The end of modernity [La fine della modernità, English]: nihilism and hermeneutics in post-modern culture, 26-27.

\textsuperscript{3} Ibid, 28.
ally, that is in terms of method, which is also a technical understanding of knowledge making. Thus separated from its onto-theological projection, science studies could be conceived as an interpretative method. Moreover, since the academic perspective on interpretation is largely methodical or exegetical rather than existential, the underlying ambiguity could remain below the surface. The perception of a research ‘tool’ pushed its political and ethical implications into concealment. The technical, the methodological perspective on science studies that was promoted by its proponents, made its ‘philosophical’ ambitions appear superfluous or dubious at most. Thus, when knowledge is defined technologically, it is concealed that it is a derived form of knowledge, and there is the danger that the hidden dimensions of knowledge may trigger consequences that cannot be anticipated.

**Thinking and Telling**

The preceding elaborations have sought to show that the notions of technology, power, and knowledge are not something external that have to be accounted for, or to be used as distinct categories in analytical efforts, but that they signify problems that are at the very core of any social inquiry itself. Problems of knowledge, technology, and power are at the same time practical or ethical problems, as evidenced by the discussion of social science knowledge, its projections, and methods.

In particular, this discussion has pointed towards the inherent interrelatedness of social science and information technology; it has hinted at the limited potential for reflexivity of the social sciences (which they have in common with any other endeavour of knowledge creation). However in principle, there appears to be an awareness of the hermeneutic situation of these disciplines that becomes evident in the debate on method as a way of questioning themselves, as well as in the preference for ‘non-scientific’ reporting in narrative mode. These corrosive tendencies are continuously counteracted by retreating into attempts to establish genuine social scientific knowledge in the form of understanding as method. This might be supplemented by a lack of reflection on the ongoing involvement of social theory in the shaping of technology and dominance, especially by methodologically ‘advanced’ approaches in establishing and maintaining the reciprocity of technologies and formal organisations in an increasingly sophisticated fashion. Accordingly, the disciplinary background of the social sciences, their normative and prescriptive thrust, their shaping of the image of man, and thus the creation of self-knowledge, also appear to disqualify attempts to attribute to social scientific rationality a
liberating potential. Criticism of the social sciences is performed in the quest of describing knowledge by science studies (actor-network theory) in the name and for the sake of natural science, by furthering a concealed translation of cybernetics and Catholicism into the domain of sociology. This suggests an openness of the social scientific discourse towards onto-theological endeavours, as well as showing in which ways technological thinking occurs.

The Hermeneutic Situation of the Social Sciences

Taking the problematic and hermeneutic situation of the social sciences soberly means to find a different mode of speech than the one transmitted by the metaphysical tradition, in order to perform a criticism of modern knowledge as being determined by Ge-stell. It has to try to abandon the propositional form of knowledge and of speech in favour of ways of reasoning and communicating that allow for truth and meaning to emerge. Simultaneously, these ways do not seek to supplant scholarship and research, but point towards the contingent and perilous nature of modern knowledge. This is even more necessary because the knowledge-as-information conception suggests that knowledge is independent of spatiotemporal and experiential constraints, or even more that they are an obstacle to its validity (knowledge must be universally valid).

This mode of speech is not to be found in a descriptive mode that takes the recording and reporting of events and their interrelatedness as a respectable way to seize reality. This approach is indifferent towards the issue of meaning of knowledge, and is content with reproducing the significations and performances that are part of the techno-scientific world, be they linguistic or demonstrative. Ultimately, in its indifference towards the linguistic nature of Being, this approach becomes indistinguishable from the proponents of commodification and objectification of knowledge, while also espousing strong metaphysical and religious-cosmological commitments. In straddling this gap, which appears to have arisen out of the ambition to bypass the subject-object dualism, instead of taking it as a tradition that has to be overcome (verwunden), the nihilistic nature of this approach becomes obscured—which consists in just that, namely the replication and amalgamation of the onto-theologies of science and institutionalised religion. This approach in failing to acknowledge its own nihilism is not therefore capable of addressing the question of knowledge in modernity in general, nor is it able to give information about knowledge in organisations in particular.
The implications of the hermeneutic situation proffer some guidance towards the way in which this mode of speech may evolve. Reflexivity, in its multifarious manifestations, may be regarded as a widely accepted trope for inquirers to bring their self-understanding into play as both a productive and limiting dimension within their endeavours. This should not be seen as either a way to increase the ‘validity’ of the investigation or as a step towards making the background explicit, so that it can be taken for granted at some point in time. The narrative mode of reporting, which seems to be accepted likewise, is certainly an indication of the weakening of the idea that the social sciences need to define themselves in emulating the mode of the natural sciences. This does not yet mean that knowledge production in the form of science as research has been denied; it could rather mean that these sciences are reminding themselves of their own rigour, as conceived by Martin Heidegger—namely that these sciences must remain inexact in order to attach themselves to their domain.

The plethora and contentiousness of social scientific methods, from a broad perspective, is certainly a relativisation of truth claims, and therefore also a weakening of the idea to be able to identify the true nature of human affairs. The reverse side of this phenomenon is that the graveness of the debates also points towards the efforts being made to define science as research qua method, and secure it in this way. This hermeneutic situation of the social sciences needs to be acknowledged in its ambiguity and not as something that could be changed ad libitum. Its consequences have to be considered in explicating the contingencies and limitations of inquiry.

These contingencies and limitations may be rendered according to the basic structure of understanding, summarised as Vor-habe, Vor-sicht and Vor-griff. Concerning Vor-habe, this means foremost that the conditioning by Ge-stell needs to become transparent to some extent. Gianni Vattimo’s claim that hermeneutics should be understood as the most conclusive response to the conditions of modernity must then direct the articulation of the Vor-sicht—the envisaging of the possibilities of inquiry that entails the mode of speech to be sought. From this follows the enunciation of Vor-griff or what can be accomplished by the inquiry.

Knowledge production can only proceed and succeed by discriminating according to a particular projection and adhering to it. With increasing specialisation, this necessarily restricts the perspective further, leaving vast portions of its vicinity unconsidered; striving for useful results necessitates closing off exploration of meaning in order to
establish representations that fulfill their purposes and are controllable. This suggests that we might learn very little by an approach to arrive at knowledge about knowledge. Unfolding of the concept of knowledge, therefore cannot be itself a contribution to knowledge. To what it may contribute and how will be the matter to be evolved in the following.

A brief recapitulation of how knowledge has been determined so far appears to be appropriate. Knowledge in modernity is determined by the mode of scientific knowledge. Scientific knowledge, as shown by Martin Heidegger cannot account for itself, since its own possibilities also constitutes its limits, in that scientific knowledge cannot recognise its essence, or its limitations. Science rests in the last instance on truths that are beyond its boundaries (e.g., projections of nature, man, *homo oeconomicus*, etc.). Traditionally, ontology (or metaphysics: what is the Being of beings?) and epistemology (how do we come to know?) have taken care of the subject matter of knowledge. Knowledge became an object of scientific interest with the evolution of information technology in disciplines, such as cognitive science, artificial intelligence and the like. Knowledge became also an object for social scientific interest in disciplines such as organisation theory and management and the sociology of knowledge.

These social scientific objectifications of knowledge certainly concern a human faculty. The areas of knowledge about man cannot do otherwise, but in doing so, they are normative and prescriptive, and reconstitute the knower as epistemic subject. However, in order to surmount this restriction, it has to be admitted that asking about knowledge necessarily implies the question of who we are—which is an ontological one, since knowledge cannot be conceived of without a knower. This is also an ethical question, since it requires a position towards the pursuit of objectification of human beings, the notions of subjectivity and identity. This suggests at the outset that the dialogical

---

1 See Chapter 4: Recalling Knowledge with the Phenomenology of Science and Technology: *Projecting, Representing, Ge-stell.*
2 Note the objectifications performed concerning technology, society, and the scientific communities.
3 See the section *The Knowledge of Technologies of Power—Social Sciences*
4 Previous studies into knowledge making in relation to organisations and their information systems, such as Brian P Bloomfield, “Power, machines and social relations,” *Organization* 2, no. 3/4 (1995), Bloomfield and Best, “Management consultants: systems development, power and the translation of problems.”, Bloomfield and Vurdubakis, “Boundary disputes: negotiating the boundary between the technical and the social in the development of IT systems.”, Bloomfield and Vurdubakis, “Visions of organization and organizations of vision: the representational practices of information systems development.”, Christopher Westrup, “Knowledge, legitimacy and progress? Requirements as inscriptions in information systems development,” *Information systems journal* 9 (1999). have rendered an account in terms of a power struggle between contending interpretations of ‘reality’, such as in requirements analysis. These studies have addressed the issue of the knower that is the identity
surmounting of the objectification of participants, as suggested by Thomas Schwandt
requires foremost acknowledging (and criticising) to which objectifications they are
subjected and subjugate themselves. The inquirer has to take into account that this kind
of knowledge about the self is thus imbued and that it might be difficult to thematise it in
the first place due to its proximity to the participants in the field. Alternatively, the very
same objectification as knowledge-as-information conceptually separates the knower
from the knowledge and restricts the possibility to ask the question of meaning of
knowledge. In fact, when meaning is related to experience—and in our present
condition, experience is reformatted by technological power—what is there left to
inquire into when there is no life-world that is indefensible anyway?

Modern Research—Narrativity

The inquirer’s reflexivity—narrativity, and ‘right’ interpretative methods—therefore
seem as mere implements in that they offer no hint of what the possibilities of inquiry
are. Their inherent ambiguity making them suitable to be used as reference points in
contentious debates prevents envisaging and articulating the possibilities and
accomplishments of inquiry. This lends further weight to Thomas Schwandt’s argument
that the hermeneutic approach requires an existential decision rather than one concerning
paradigm or technique.

Narrativity in terms of narrative knowledge in the field, as research referent, as well as a
mode of reporting, has been widely discussed in relation to organisational knowledge
and change. This mode of inquiry may therefore serve very well as the backdrop against
which the elements of the destructive narrative shall be sketched. Narrative is an object
of interest for social science, being defined as a mode of knowing that should
supplement the paradigmatic mode, since it was held that narrative form shapes the
memory of individuals and is the way in which meaning becomes socially constituted.

construction that takes place in the course of these endeavours of reorganisation in information
systems effectuation to a limited extent only.

1 Schwandt, “Three epistemological stances for qualitative inquiry: interpretivism, hermeneutics, and
social constructionism.”
2 Jerome S Bruner, Actual minds, possible worlds (Cambridge, MA: Harvard University Press, 1986),
University Press, 1990), Donald E Polkinghorne, Narrative knowing and the human sciences, ed.
Lenore Langsdorf, SUNY series in philosophy of the social sciences (Albany, NY: State University of
3 Bruner, Acts of meaning.
4 Karl E Weick, Sensemaking in organizations, Foundations for organizational science (Thousand
The latter insight that groups can be distinguished by their specific ways of interpreting eventuated in the concept of “communities of knowing”\(^1\). Thus, “social epistemology” became accessible to the researcher, since it is explicit in narrative on action and in rationalisation, and thus helped in “understanding processes of sense-making, learning and change in organisations”\(^2\). The enhanced understanding of organisational groups of actors is held to be possible because narratives are “particularly sensitive to linguistically (socially) constituted reality”\(^3\), and allowing for that constitution in “carry[ing] a load of ambiguity and therefore leave openings for negotiation of meaning”\(^4\). The social constitution of meaning is not without ambiguity, as it takes place within a particular social order where it might as well function in the sense of reconciliation with the experience of ‘reality’: “It is a process of narrativizing our experience in a way that makes it believable and liveable within the canons of significance, legitimation, and domination that are our culture”\(^5\). Narratives also allow the student of organisations to distinguish what is legitimate and what is illegitimate, since multiple narratives from an organisation can reveal, “what is canonical […] and what is non-canonical”\(^6\). Since acting is made rational and is not merely giving account of what has been done, but entails the securing of comprehensibility and cohesion of actions, narrative could thus be seen as instrumental for innovation, since narratives are a crucial way of communication within “communities of knowing” of an organisation\(^7\). Thus, narrative appears as the panacea to a number of issues that have plagued the business of research—as a valid source of knowledge, as a suitable complement to calculative reasoning, as a way of reporting that puts the scholar at par with the people in the field, and as a way of securing practical relevance for research:

[O]rganizational narratives, as the main mode of knowing and communicating in organizations, are an important focus for organization researchers.


\(^3\) Czarniawska-Joerges, *A narrative approach to organization studies*, 5.

\(^4\) Ibid, 3.

\(^5\) Tenkasi and Boland, “Locating meaning making in organizational learning: the narrative basis of cognition,” 92.

\(^6\) Ibid, 98.

Their construction and production must be documented and their contents must be interpreted. Narrative forms of reporting will enrich organization studies themselves, complementing, illustrating, and scrutinising logico-scientific forms of reporting. By relinquishing some aspirations to power through the claim of factuality and one-to-one correspondence of theory and world, organization studies can open their texts for negotiation and thus enter in a dialogical relationship with organisational practice.¹

Research needs to be useful for the ‘real world’, which can be supported by the rhetorical utility of “narratives being loose flexible frameworks, are close to the reality of practitioners, are richer in content, and have high mnemonic value”².

Narrativity—Tempered Irrationalism

This reasoning is related to a form of resurgence of myth, which has been called “tempered irrationalism or the theory of limited rationality” by Gianni Vattimo³. Within the theory of limited rationality, myth is strongly related to “the original etymological sense of the word”, meaning narration⁴. The structure of narration is held to be not only juxtaposed to scientific knowledge, but rather a “positive feature” in itself, making mythical or narrative knowledge proper to particular experiential domains, without putting the status of “positive-scientific knowledge into question in others”⁵. Gianni Vattimo relates the division between experiential domains into those that should be dealt with by “demonstrative reason or scientific method” and those that are apprehended by narrative knowledge to assumptions that date back as far as Plato⁶. The implicit carrying over of these assumptions could be seen as one indication that dealing with narrative knowledge in the sense of limited rationality does not heed to its own temporal conditioning. Another indication of the obliviousness to its historicity of the theory of limited rationality is that it is correspondingly still founded on the:

tacit acceptance of the distinction between Natur- and Geisteswissenschaften […] which has become increasingly problematic with the recognition that exact science is itself a social enterprise, and that the objectifying methods of the natural sciences themselves, therefore, are entirely within the field of the socio-historical sciences.⁷

¹ Czarniawska-Joerges, A narrative approach to organization studies, 16-17.
³ Vattimo, The end of modernity [La fine della modernità, English]: nihilism and hermeneutics in post-modern culture, 35.
⁴ Ibid.
⁵ Ibid.
⁶ Ibid, 36-37.
According to Gianni Vattimo, another indication of the oblivion of its “own historical contextualisation” by the theory of limited rationality is its neglect to posit itself as theoretic standpoint, and its inability to convincingly set up a distinction between domains of narrative knowledge and “scientific rationality”¹.

The resurgence and rehabilitation of myth or narrative has to be contextualised as a consequence of the secularisation of the Western world and the universalisation of Western thought, which undermined the teleological belief that history is unilinear and directed towards reason and transparency². Instead, Gianni Vattimo holds that:

> [t]he realization of the universality of history has made universal history impossible. Consequently, the idea that the course of history could be thought of as enlightenment, as the liberation of reason from the shadows of mythical knowledge, has lost its legitimacy. Demythologisation has itself come to be seen as a myth.³

This results into a distortion that, according to Gianni Vattimo has to be acknowledged as part of “our historical experience”⁴. It means that myth or narration does not regain its earlier legitimacy, since it is no longer possible to relate to it as “naïve as before”⁵. It has to be recognised that the secularisation of modernity has not eradicated “the errors of religion”, but that these persist in variant, reduced, and impure modes⁶. Gianni Vattimo concludes that the authenticity and veracity of narrative knowledge must now be seen only “within the frame of a generally weakened experience of truth”; since the weakening of truth in general has occurred in modernisation, he holds that the current status of narrative knowledge does not equate to “an alternative or opposing movement to modernization, but is rather its natural outcome, its destination, at least thus far”⁷.

This should alert us to the phenomenon that the problems of narrative knowledge for social inquiry are indeed more complex than the common narration on narrative knowledge suggests. The recognition of the historicity of the current status of narrative knowledge lets it appear far more problematic to argue for its legitimacy than its proponents in organisational and information systems theory have proposed. The universality of hermeneutics means that, due to the affinity between human and natural sciences, a claim for a special kind of knowledge cannot be upheld any more. Narrative knowledge

---

¹ Ibid, 39.
³ Ibid, 39.
⁴ Ibid, 40.
⁵ Ibid.
⁶ Ibid.
⁷ Ibid, 42.
does not coexist happily with logico-scientific reasoning, but is subject to the very same structure of interpretation as are the sciences. It is neither juxtaposed nor complimentary to scientific reasoning, nor can it claim superiority in some areas due to its structural features, or as “textual strategy”\(^1\). Moreover, the claim for disclosive and communicative utility\(^2\) is likewise founded in interpretation as opposed to a scientifically warranted mode of cognition that the researcher is obliged to heed to for disclosing meaning from experience\(^3\). Rather than resting the truth of narrativity on an ‘alternative strong epistemology’, such as the claim for a special kind of knowledge befitting social reasoning and research, the argument for it needs to comply with the overall weakening of truth.

It seems that in being attached to what Gianni Vattimo has called the theory of limited rationality, conceptualisations of narrative as constituent of social inquiry have succumbed to two fallacies, namely the atemporal perspective on narration, and the loss of the distinction between meaning and knowledge. The atemporal perspective on narration is not only evidenced in that it is considered to be a fundamental form of human cognition, unaffected by historical conditions, it also fails to take heed of the concept of history itself that determines in which way events can appear to us. It also seems that narration is supposed to make accessible a form of knowledge, rather than conveying meaning. This entails that the question of how meaning becomes constituted, has also not been well addressed. It appears as if the weakening of truth, which has given rise to the acceptance of narrative, has been seized as an opportunity to twist it back into the secure area of research, in that eliciting meaning becomes a way of knowledge making, rather than a mental activity in its own right.

**Modern History and the Possibility of Meaning**

Hannah Arendt’s analyses of the modern concept of history, of the possibility of stories and of the role of thought in their making, may help to reflect on the problem of narrative in social inquiry, also shedding some light on the shape of knowledge in our time. For Hannah Arendt, “history [is] a category of human existence”, and the

1. Barbara Czarniawska-Joerges, “Narration or science?: collapsing the division in organization studies,” *Organization* 2, no. 1 (1995). ascribes to hermeneutics the conventional connotation of being a method of interpretation for the humanities, which it is not, and which disregards entirely the hermeneutic analyses of modern knowledge and the ensuing claim of universality by hermeneutics by Gadamer, “The universality of the hermeneutical problem.\(^*\)”, as alluded to in Chapter 4: *Recalling Knowledge with the Phenomenology of Science and Technology: Projecting, Representing, Ge-stell*.

2. Tsoukas, “Refining common sense: types of knowledge in management studies.”

historiographer [or storyteller] is originally the one who effects that something endures by being remembered, and by finally being written down in due time. Fleeting “action and speech”, “single events” and “sheer occurrence” are turned into the story or history. She claims that the concept of history is correlated to that of nature, and contrasts the ancient Greek conception with the modern one. In ancient Greek thinking, human affairs were fragile, and threatened by mortality, while nature was considered eternal through permanent recurrence. Humans should strive for immortality through great deeds, and through their fame remain within the world, despite their mortality. Despite the scientific-technical world being very distinct of that of antiquity, the interrelatedness of the ideas history and nature remains, albeit in a different mode: “Our modern concept of history is in no less intimately connected with our modern concept of nature than the corresponding and very different concepts, which stand at the beginning of our history.”

The connection between the concept of nature and that of history is represented in the relation between the sciences and historiography. Notwithstanding the debates concerning the objectivity of the sciences, and the subjectivity of historiography, based on the neutrality and precision of the former, this distinction has been rendered obsolete by the recognition that in modern science man sets up nature, and that nature can only respond to this set up. In historiography, however, lagging behind in its conceptualisation of its domain, the idea of objectivity persisted, although it would have made sense only under the condition that history “could be grasped as a whole”, either as a cyclical movement, or as the history of salvation. The futile insistence on objectivity concealed in Hannah Arendt’s view however, that for historiography is constitutive rather the impartiality of the writer and his admission of multiple standpoints into his treatment of events.

At the beginning of modernity it was understood that there was a realm that was not man-made (namely nature) as opposed to the realm of human affairs: by releasing the unpredictability of action into that sphere previously perceived as being ruled by iron laws, the relation between nature and history was altered in the sense that both could now be seen as being made. This acting into nature, triggering processes, has been made

1 Arendt, Between past and future: eight exercises in political thought, 45.
2 Ibid.
5 Ibid, 48-49.
6 Ibid, 50.
7 Ibid, 51.
possible by technology. Thus, Hannah Arendt regards “technology […] as the meeting ground of the natural and historical sciences”\textsuperscript{1}. It is the notion of process that connects both realms; in her view, it is comparable to the notion of immortality in antiquity, and it also brings out the contrast between these entirely different concepts of history\textsuperscript{2}.

To our modern way of thinking nothing is meaningful in and by itself, not even history of nature each taken as a whole, and certainly not particular occurrences in the physical order or specific historical events. There is a fateful enormity in this state of affairs. Invisible processes have engulfed every tangible thing, every individual entity that is visible to us, degrading them into functions in an overall process. The enormity of this change is likely to escape us if we allow ourselves to be misled by such generalities as the disenchantment of the world or the alienation of man, generalities that often involve a romanticized notion of the past. What the concept of process implies is that the concrete and the general, the single thing or event and the universal meaning have parted company. The process, which alone makes meaningful whatever it happens to carry along, has thus acquired as monopoly of universality and significance\textsuperscript{3}.

However, since pragmatist and utilitarian thinking turns meaning into something that is “pursued with the same machinery of intentions and of organized means as were the particular direct aims of concrete action“, this left human affairs “with nothing but an unending chain of purposes in whose progress the meaningfulness of all past achievements was constantly cancelled out by future goals and intentions”\textsuperscript{4}. Correspondingly, in historiography single events cannot have any meaning, except by being part of a larger historical narrative, or pattern, which also bestows “upon mere time-sequence an importance and dignity it had never before”\textsuperscript{5}. Yet, the significance of patterns to conceive of history is already outdated, since the notion that “meaning is contained in the process as a whole, from which the particular occurrence derives its intelligibility”\textsuperscript{6} bears in itself its own cancelling out. Hannah Arendt claims that in this framework it is possible to establish proof for any proposition by “consistent deduction”\textsuperscript{7}. This is however not only a logical and rhetorical exercise; in fact:

we can take almost any hypothesis and act upon it, with a sequence of results in reality, which not only make sense but work. This means quite literally that everything is possible not only in the realm of ideas but also in

\begin{footnotesize}
\textsuperscript{1} Ibid, 58.
\textsuperscript{2} Ibid, 63.
\textsuperscript{3} Ibid, 63-64.
\textsuperscript{4} Ibid, 78.
\textsuperscript{5} Ibid, 65.
\textsuperscript{6} Ibid, 87.
\textsuperscript{7} Ibid.
\end{footnotesize}
the field of reality itself. This means that quite literally that everything is possible not only in the realm of ideas but in the field of reality itself.\textsuperscript{1}

This nihilistic principle has been paradigmatically put into use in political totalism, which through “consistently guided” action could render true its pre-defined propositions and objectives, and turn them into “factual reality”\textsuperscript{2}. Neither does action oriented on the principle of process need to be reliant on “self-evident truth”, nor be in accord with the state of affairs that is extant at the moment the action sets out. The consistency of the process will “create a world in which the assumption becomes axiomatic and self-evident”\textsuperscript{3}. Thus, the concept of process in both nature and history (human affairs) eventuates “complete meaninglessness”, because any kind of action will result in some meaning\textsuperscript{4}. “However, if any arbitrary hypothesis can provide meaning than none can be said to be providing the most accurate sense of meaning to an event”\textsuperscript{5}. As the “particular incident, the observable fact or single occurrence of nature, or the reported deed and event of history” is only significant within a “universal process” to which they belong, the historian or scientist, or layman is always referred back to that process:

yet the moment man approaches this process in order to escape the haphazard character of the particular, in order to find meaning—order and necessity—this effort is rebutted by the answer from all sides: Any order, any necessity, you wish to impose will do. This is the clearest possible demonstration that under these conditions there is neither necessity nor meaning.\textsuperscript{6}

In Hannah Arendt’s view, the functioning of technology is grounded on “these principles” and the application of “social technique” is only lagging behind in accomplishing an analogous state of social affairs, as it has already been actualised in the fabrication and application of objects\textsuperscript{7}.

Hannah Arendt’s analysis of the modern concept of history has significant implications for social inquiry, and it appears especially for inquiry in those environs that are heavily defined by technologisation. The understanding that history is an entirely man-made process that universally encompasses the entire humanity has ultimately effected a “decline of interest in the humanities, and especially in the study of history […] in all com-

\begin{itemize}
\item\textsuperscript{1} Ibid.
\item\textsuperscript{2} Ibid.
\item\textsuperscript{3} Ibid, 88.
\item\textsuperscript{4} Ibid.
\item\textsuperscript{5} Mark Redhead, “Making the past useful for a pluralistic present: Taylor, Arendt, and a problem for historical reasoning.” American journal of political science 46, no. 4 (2002): 811.
\item\textsuperscript{6} Arendt, Between past and future: eight exercises in political thought, 88-89.
\item\textsuperscript{7} Ibid, 89.
\end{itemize}
pletely modernized countries”1. The obviating of meaning and the disregard of past events represent a challenge for social inquiry, which cannot be averted.2 It is appears unlikely that a response to this dilemma can be found in a formal fashion, as occasionally suggested, by being attentive to genre—the ways of reading, questions of gender, considering narratives as “enacted”3. Gianni Vattimo’s criticism of the theory of limited rationality and Hannah Arendt’s analysis of the concept of history simply preclude the rehabilitation of story telling as means to an end, and to regard their success as the criterion for truth. This would mean treating narration analogous to modern knowledge that does not have meaning in itself, beyond the truth criteria of utility and success.

The void that occurs by the technologisation of knowledge—both in terms of making objects and making social relations, encapsulated in the notion of process—represents a further challenge that has to be responded to by a social inquiry into organisational knowledge. This void is “[t]he fact that knowledge has been abandoned to its inner logic”, which in turn has led Hannah Arendt to the suggestion to deal with “knowledge from the perspective of reason in order to arrest this process”4. Since modern knowledge is not meaningful by itself, it has to be counterbalanced5.

This counterbalance of knowledge by reason, the retrieval of truth from “transformation into mere verity results”6 is established by Hannah Arendt through distinguishing between reason and intellect, or between the “faculty of thinking” and the “faculty of intellect”7. The intellect apprehends, while the reason conceives. “In other words, the intellect (Verstand) desires to grasp what is given to the senses, but reason (Vernunft) wishes to understand its meaning”8. Truth is what the intellect and knowing seek to achieve, which is always referred back to the sense perception—what is evident to the senses however, is no problem for reason at all, “it is always taken for granted”; what matters for reason is “what it means for it to be”9. Thinking emerges out of experience,

---

1 Ibid, 58.
2 The author experienced that some participants in the field were quite perplexed that someone could take an interest in what they had been doing in the past years and seemed to doubt that my investigations would have any relevance at all.
3 Czarniawska-Joerges, “Narration or science?: collapsing the division in organization studies,” 27-28.
5 Ibid, 313.
7 Ibid, 57. The context at hand does not allow for expanding on Hannah Arendt’s distinction in terms of its grounding in the phenomenal nature of world and its origin in Immanuel Kant’s philosophy.
8 Ibid.
9 Ibid.
but experience itself does not establish meaning by itself, but for that end must be always undergoing a de-sensing in the mode of imagining and thinking in order to arrive at meaning\(^1\). This creates a distance between thinking and everyday involvements, which, from the point of view of thinking, makes “life in its sheer thereness […] meaningless”, while the alternate view of thinking amounts to withdrawal comparable to death\(^2\).

Thinking pursues questions, “questions of meaning [which] are all unanswerable by common sense and the refinement we call science”\(^3\). Thinking thus pursues questions, the answers of which are strictly unknowable, since not to be verifiable by the senses and not subjectable to the rules of truth. The search for meaning is therefore also from the common-sense perspective something that does not fit into everyday involvements and is utterly useless—moreover, Hannah Arendt holds that “thinking is also somehow self-destructive”\(^4\). It can never settle to “definite insights” and be content with its results, since then it would cease as an activity for good, and must therefore return to the same questions over and over again\(^5\). Thinking is also invisible—although the producing of artefacts does not require the activity to be visible but becomes manifest in its outcome, speech and action need a space of appearance as a precondition, while on the contrary thinking, “remains non-manifest in full actuality”\(^6\). Thinking, as a mental activity is also reflexive, which means that it “testif\[ies\] to a duality inherent in consciousness”; it establishes identity of the self\(^7\). Thinking is dialogical; Hannah Arendt maintains that language as communication is only needed because men think, while “thoughts do not need to be communicated to occur, but they cannot occur without being spoken—silently or sounding out in dialogue”\(^8\). Eventually, the “duality” of thinking contained in its reflexivity and its dialogicality constitute it as “a true activity”; it is asking and answering by one and the same person—herein lies the critical and dialectical potential of thinking, it is a dialogue, the structure of which “is difficult to detect”\(^9\). While knowing is interested in truth, this does not apply to thinking; thinking neither is subjected to the compelling “force of sense evidence”, nor is it compelled by the structural

---

1 Ibid, 87.
2 Ibid.
4 Arendt, The life of the mind, 88.
5 Ibid.
6 Ibid, 72.
7 Ibid, 74.
8 Ibid, 99.
9 Ibid, 185.
power of “mathematical or logical reasoning” – the criterion for thinking is “to be consistent with oneself”1.

Thinking is not only characterised by its apparent futility, and its self-destructiveness, but it is also dangerous: “The quest for meaning which relentlessly dissolves and examines all accepted doctrines and rules can at any moment turn against itself, produce a reversal of the old values, and declare these contraries to be ‘new values’”2. These values may then enter the world and become applied in an unreflective way; Hannah Arendt insists that thoughts are not dangerous, but rather the activity of “thinking itself is dangerous”3. This is due to the necessary step of “at least hypothetically negating accepted opinions and ‘values’ by searching out their implications and tacit assumptions”4.

The quest for meaning and therefore for thought arises out of the very condition of modern knowledge, namely that it is selective, representational, and calculative.5 The subject-object dualism is at the same time the source of doubt whether there can be knowledge at all and of the drive to secure knowledge in its successful mastery. Modern knowledge is also the source for the tendency to denigrate and obviate thinking, since the former stresses results and utility. Modern knowledge also tends to cut off thinking from its source, which is experience, as it is not only based on the doubt in sense perception, but also on the latter being discarded as detrimental to establishing truth. Hence, the source of experience, what gives rise to the de-sensing that takes place in construing objects of thought in imagination, tends to be cut off.

In social inquiry, thinking is the only way to avoid applying an objectifying stance towards the participants in the field. Its nature simply precludes any privileging of special truth claims, since its outcome is meaning and since what emerges from the inquiry is not knowledge:

Thinking in its non-cognitive, non-specialized sense as a natural need of human life, the actualization of the difference given in consciousness, is not the prerogative of a few but an ever-present faculty in everybody; by the

1 Ibid, 185-186.
2 Ibid, 176.
3 Ibid.
4 Ibid.
5 An “anti-representational epistemology” as argued for by Tsoukas, “The word and the world : a critique of representationalism in management,” 801. is therefore a contradiction in terms, since epistemology is concerned with knowledge in the scientific sense, and modern knowledge is representational; it seems to be rather infelicitous to posit an anti-representational model of knowledge as an alternative.
same token, inability to think is not a failing of the many who lack brain power but an ever-present possibility for everybody—scientists, scholars, and other specialists in mental enterprises not excluded. Everybody may come and shun that intercourse with oneself whose feasibility and importance Socrates first discovered. Thinking accompanies life and is itself the de-materialized quintessence of being alive; and since life is a process, its quintessence can only lie in the actual thinking process and not in any solid results or specific thoughts.¹

Likewise, Michel Foucault’s thought, being concerned with the social sciences and being rooted in Martin Heidegger’s phenomenology, points towards a positive answer to the dilemma that arises out of the objectification of man performed by the social and human sciences and permeating all walks of life, as emphasised by Daniel Palmer². In brief, Michel Foucault’s response is to abandon the epistemic subject, that is to seek to quit from that position that modernity in the setting-up of the image of man by the social sciences has bestowed upon him “as an object of knowledge and as a subject that knows”³. Creating knowledge of man is “both theoretically dubious and socially perilous”⁴. The claim of the theoretical dubiousness of positive knowledge about men derives from Martin Heidegger’s Daseinsanalyse. Dasein can never have a complete understanding of itself, because of the always already extantness of involvements, which never can be made fully explicit. Moreover, Daseins understanding and interpretation is disclosive of world and itself; because of the latter there can only be (self)interpretations of man, which are bound spatiotemporally, or culturally, as it were⁵. To accomplish ‘objective’ knowledge comparable to that of the sciences, the ambiguity would have to be dissolved that consists in that “[m]an is that which is both represented and representing”⁶. Consequently, within the project of the human sciences, the subject-object dualism occurs, in that knowledge making is always bound to recede to either of these poles. Either the “purely empirical analysis of the knowing subject” becomes questionable, “since the investigators are themselves situated within the empirical field”; or approaches informed by transcendental phenomenology place all the emphasis on the experiencing subject (the investigator), but this implies that it has to abstract from its own involvement⁷.

The social perilousness of the human sciences derives from men being self-interpreting; thus any projections always already impinge on their acting and thinking and conse-

¹ Arendt, The life of the mind, 191.
² Palmer, “On refusing who we are: Foucault’s critique of the epistemic subject.”
³ Ibid, 404.
⁴ Ibid, 402.
⁵ Ibid, 403.
⁶ Ibid, 404.
⁷ Ibid.
quently, the investigation always alters what it seeks to analyse. It is possible to trace
these changes; however, this is not a kind of positive knowledge, nor is it in any way dis-
interested. Social science knowledge is always directed towards “practical efforts” to
change what humans are. Michel Foucault has described the interaction between the self-
knowledge created by the social sciences and the adaptation of acting according to it nor-
malisation: “We adjust our behavior to conform to the knowledge that has been
produced concerning us. In doing so, a human being becomes, as he puts it ‘the principle
of his own subjection’”1.

Thus knowledge about men, rendered by the social sciences, always already objectifies,
it is prescriptive and cannot rid itself from the disciplinary practices from which it
historically evolved, and is therefore already implying the exercise of power. This
dealing with knowledge and its acceptance is so imbued that the power relation inherent
in it is not perceived as such—it is seen as a revelation of previously hidden truth2.

In seeking to respond to the imposing mode that is inherent in establishing knowledge
about others and about ourselves, Michel Foucault conceived of the “philosophical pro-
ject” as “historical or critical ontology”. It is ontological in the sense that it continuously
asks ‘who or what is man?’; it is historical in positing that there is no universal truth
about man, but only a succession of different interpretations. These have been
historically constituted, and in this, it needs to be critical by demonstrating that the
prevailing images of man are not universal and timeless truths3. It has to show the
contingencies of social scientific connotations, envisage the power structures that
support them, and eventually counteract by opening the possibility of a creative
reconstitution of ourselves4.

The insidious nature of the social sciences shows that dealing with questions of
knowledge is not only a task of philosophy, but also a political issue. This is certainly the
case because modern knowledge of man always sits within a matrix of power that has to
be critically seen in its historical contingency. Moreover, as a scientific endeavour, the

1 Ibid, 405.
2 Ibid, 406.
3 Ibid, 407. Michel Foucault’s project of genealogy as opening new possibilities has however also
been subjected to strong scepticism and criticism. Timothy H Wilson, “Foucault, genealogy, history,”
*Philosophy today* 39, no. 2 (1995). argues that power/knowledge sets up a metaphysical principle, and
that the appropriation of history following this scheme equals the “superpanoptic” view out of *Ge-
stell*, a meticulous representation of details of the past, which resembles a simulation, without
allowing to let the past appear as different.
4 Palmer, “On refusing who we are: Foucault's critique of the epistemic subject,” 407. A further
elaboration of Michel Foucault’s project of the technologies of the self and care of the self is beyond
the scope of this discussion.
nature of which is always to pursue its once chosen path to its very end (as stressed by Hannah Arendt), the problem of the application of that knowledge cannot be answered within a scientific framework itself:

Whether or not and how we wish to put knowledge to work cannot be decided by scientific means; it is a political question of the first order and therefore can hardly be left to the decision of professional scientists of professional politicians.\(^1\)

The question of how technological and organisational knowledge is put to work is however, hardly ever seen as not belonging in the hands of experts and decision makers, let alone as a matter requiring reflection and political deliberation. Avoiding the risks of thinking may, however, often incur very high ‘costs’ and should be seen as an ethical dilemma as Claudia Drucker has pointed out:

Being always out of order, thinking is always a subversive, nonconformist activity. On the other hand, when we do not let ourselves be disturbed by thinking, we suffocate any possibility of a dialogue with ourselves about the meaning of our actions and embrace conventional options uncritically. Just as thinking is always subversive regarding all sanctioned codes, the refusal to think is always conducive to their maintenance. Refusing to think is sanctioning the status quo and it is very dangerous when the latter is a perverse one.\(^2\)

Narrative and Meaning

_Vor-habe_ has already been extensively dealt with, by default, and _Vor-habe_ is the condition of _Ge-stell_. If hermeneutics is understood as a response to the conditions of modernity, then the consequences of _Ge-stell_ for conducting social inquiry and reporting on it need to become explicit. Earlier, I have pointed out that the approach to the conditions of modernity can only be that of _Destruktion_, directed at both conceptual presuppositions, as well as everyday practices. However, since an inquiry must produce something, it also has to construct, the mode of this construction also needs to correspond to that critical appropriation of the past. Since in social inquiry, what comes into view is the past, it is necessarily historical; since it is concerned with speech and action, it is necessarily political. The possibility of inquiry or _Vor-sicht_ needs to evolve in terms of narrating and reflexivity, beyond method but seeking by thinking to restore rationality without a grand scheme.

---

\(^1\) Arendt, _The human condition. Introduction by Margaret Canovan_, 3.

\(^2\) Drucker, “Hannah Arendt on the need for a public debate on science,” 315.
The mode of constructing an account of political-historical events is the story or narrative. In *The Human Condition*, Hannah Arendt explained the primordial relationship between acting and speech and narrative. Acting and speech are immediately directed towards the realm of the being-together of humans. In this realm, the person who is acting and speaking is brought into play and discloses himself, even if the contents of acting and speaking are objective and concerned with the matters and things within the common shared world (within the realm where humans exist and pursue their mundane interests). According to Hannah Arendt, these interests constitute the relations between humans, connecting them and simultaneously differentiating them. Most of acting and speech is concerned with this in-between, which means that we always talk about something and communicate the evidently tangible. Thus, the fact that within this speech the speaker is also disclosed appears to be of secondary significance only. However, this unintended disclosure of who is acting and speaking constitutes an integral element of all being-together. Hannah Arendt posits that this forms a system of human relations consisting of acting and speaking itself, beyond the objective realm and its inherent interests. This secondary in-between, so Hannah Arendt asserts, is intangible since it does not consist of anything substantial, and cannot be reified or objectified, since acting and speech as such do not render tangible results and products by themselves. Yet, this in-between is nevertheless as real as the things that surround us. Hannah Arendt calls this metaphorically the network of human affairs, trying to capture the physical intangibility of this phenomenon. This network of human affairs precedes all acting and speaking of the individual, since people are born into an already existing human world. As this network of relations, with its manifold and contradictory intents and objectives is already there, prior to any acting, the actor can hardly ever achieve his objectives as envisaged. Since acting entails integrating oneself into the pre-existing network, it coincidently generates stories or narratives, claims Hannah Arendt, in the same matter of course as things are produced through work. She concludes that the primordial result of acting is not the achievement of preconceived goals and objectives, but those unintended stories. These stories might appear as an insignificant spin-off to the actor, but they are eventually what remains in the world of his actions, in contrast to the motives that induced these actions. Only these narratives can be recorded, and objectified in texts, documents, can be memorised and recalled afterwards.

---

1 Arendt, *The human condition. Introduction by Margaret Canovan.*
The social inquirer must then be a storyteller. The “theorist as storyteller” is in Hannah Arendt’s project conceived of as a response “to the modern forms of history in which particular events derive their individual meanings from a larger narrative”\(^1\). Based on her interpretation of world as appearances, in which life is oriented towards visibility\(^2\), there is necessarily a reciprocal relation between observer and the actor where the former is:

the one who abstains from involvement so that he may distil the sense from the action that the actors themselves—too busy in their exertions and passion to compete, excel, or prevail—cannot distil. Actors and spectators exist for the sake of each other.\(^3\)

This sense is created through thinking, since for her, “the purpose of thinking, which is the source of stories […] is to generate meaning, or meanings, or meaningfulness”\(^4\). It is the storyteller’s task to expend the “intellectual effort […] to apprehend meaning, which is invisible”, requiring “patience” and “distance”\(^5\).

It could be claimed that for Hannah Arendt, the intent of narrative is mediating experience by letting meaning emerge through reflection, since “thought itself arises out of incidents of living experience and must remain bound to them as the only guideposts by which to take its bearings”\(^6\). This mediation corresponds to the temporality of human existence, since men are born into a pre-existing web of relationship that has no beginning and no end in a spatio-temporal sense and therefore present life stories affecting the future, as the past has had its bearings on the present\(^7\).

Thus, George Kateb locates the source of narration in Hannah Arendt’s exposition; it is the dialogue with oneself:

The key to telling stories […] is to permit the passage of time to withdraw oneself from the experience or achieve ‘alienation’ from it; then one repeats it in an imagination and thereby allows the meaning to emerge for the first time. To repeat in one’s imagination, however is to do much more than strain towards an accurate remembrance. It is to give form or shape to whatever has happened.\(^8\)

---

\(^1\) Redhead, “Making the past useful for a pluralistic present: Taylor, Arendt, and a problem for historical reasoning,” 811.
\(^2\) Arendt, *The life of the mind*.
\(^4\) Ibid, 331.
\(^5\) Ibid, 332.
\(^7\) Redhead, “Making the past useful for a pluralistic present: Taylor, Arendt, and a problem for historical reasoning,” 812.
\(^8\) Kateb, “Ideology and storytelling,” 333.
The dialogue with oneself, as the source of narration and meaning is however under threat.\textsuperscript{1} It is not merely the recording of events that is transforming narration into information; it is the event itself and its experience that are already challenged under the holding sway of information technology as it has been cogently depicted by Krzysztof Ziarek:

[...] in technology the event takes a technological shape: it is not only the event’s content that becomes data or information—and, coinciding with what it means/says, becomes indistinguishable from the informational ‘essence’ of what is—but also its shape. The event’s structure becomes informational, that is digitizable, recognizable, and translatable into its digital version. Playing with computer jargon, we could say that technology functions as a kind of modern formatting of experience. It not only transforms the ‘content’ of experience into information but preformats how experience or being happen. Experience comes preformatted, its happening appears to coincide without remainder with its technological “meaning” as resource and commodity. And even if there is a remainder, it is no longer recognizable within the social sphere; it is no longer “real”.\textsuperscript{2}

This is another hint at the shaping of society through the social sciences and information technology as posited by Gianni Vattimo, which also shows the frailty of thought and meaning and the limits of the narrator as interpreter and mediator.

Mark Redhead has explored the response that Hannah Arendt gives to this nihilistic condition. He emphasises that her goal is not to demonstrate the emergence of today’s way of life within a historical-ontological endeavour. The retrieval of the past is not driven by a cognitive interest, but by the urge to cope with the condition of thinking that has lost its metaphysical grounding, being superseded by technology and social technique while rendering any single instance and event meaningless by ordering them always into the totalising picture of a universal process\textsuperscript{3}. This condition, as Mark Redhead recalls, was described by Hannah Arendt as requiring “to think without a banister”; being without, rules, guidelines and points of reference effects a situation in which “one has to got start thinking as though nobody had thought before”; the consequence is that what has to be exercised is “entirely free thinking, which employs neither history nor coercive logic as crutches”, because anything else would still mean to commit oneself to one or the other metaphysical schemes of the past, or to succumb to the present-day “logical schemata of deduction to discern the meaning or the purpose of

\textsuperscript{1} Most striking examples in this context are the computer-based diary projects, which record any event in one’s life, and supposedly are supporting remembering.

\textsuperscript{2} Ziarek, “Powers to be: art and technology in Heidegger and Foucault,” 176-177.

\textsuperscript{3} Redhead, “Making the past useful for a pluralistic present: Taylor, Arendt, and a problem for historical reasoning.”
our everyday actions, deeds, and sufferings\textsuperscript{1}. The consequences for the way narrative can occur are that it can no longer be construed as an integrated whole that reassures direction and purpose, rather it has to be acknowledged that:

\[\text{What has been lost is the continuity of the past as it seemed to be handed down from generation to generation, developing in the process its own consistency. [...] What you then are left with is still the past, but a fragmented past, which has lost its certainty of evaluation.}^{2}\]

Correspondingly, the meaning of stories cannot be imputed as causality or intent of some kind external to the events and experiences themselves, without reverting over and over again to a state of affairs that is obviated by the present condition. Hence:

\[\text{Of course, Arendt doesn't insist that the meaning or sense that is elicited or distilled should be or even can be neatly formulated [but] “storytelling reveals meaning without committing the error of defining it”.}^{3}\]

Without being neatly definable, arising out of the ambiguous and ephemeral activity of thinking, meaning is "ineffable" and [...] it is ‘slippery’, [...] it refuses to be grasped and always ‘slips away’\textsuperscript{4}. George Kateb sees Hannah Arendt’s conception of meaning as a passage that aesthetically transcends that which is merely given, gathering the plurality of perspectives and actions that constitute the realm of human affairs:

An event or an experience, or a condition, or a whole life, or the world as a whole, can be made to be meaningful if the thinking imagination takes hold of mere thereness or ‘sheer happenings’, that sheer happenings point to or actually fall into a pattern or design, or betray the presence of an intention or purpose that is more than that of the actors or that of human beings altogether. The difference between meaning and meaninglessness is not like the difference between speech and noise, or like the difference between the intelligible and the unintelligible, or even between the interpreted or the uninterpreted. Rather, it is the difference between the aesthetically compelling and the aesthetically disappointing. Or it is the difference between what has been aesthetically enhanced beyond its own powers of self-enhancement, and what is simply accepted as given. All meaning takes the form of a story, whether or not the intellectual mode is a story in the ordinary fictional sense. Perhaps it is only meaning that makes reality felt as reality rather than as a nightmare or hallucination. [...] Arendt is implying that what matters is not fidelity to fact but the plenitude of meaning.\textsuperscript{5}

\textsuperscript{1} Ibid, 811.
\textsuperscript{2} Arendt, \textit{The life of the mind}, 212.
\textsuperscript{3} Kateb, “Ideology and storytelling,” 333.
\textsuperscript{5} Kateb, “Ideology and storytelling,” 334-335.
The opportunity to render that plenitude of meaning rests with the narrator, who can overcome the actors’ limited perspectives as they only interpret out of their individual standpoint, and by that plurality may emerge.

Hannah Arendt’s emphasis on the plenitude of meaning and plurality of perspectives is probably based in her concept of political thought. For her, men only exist in the plural. Thus, any consideration of political acting should, in her view, always seek to adopt as many potential viewpoints and ponder them, as the basis for judgment. For her, political thought is representative in the sense that it takes heed of the views of others by representing them in reflection. This way of thinking:

\[
\text{does not blindly adopt the actual views of those who stand somewhere else, and hence look upon the world from a different perspective; this is a question neither of empathy, as though I tried to feel like somebody else, nor of counting noses and joining a majority, but of being and thinking in my own identity where actually I am not.}^{1}
\]

There is thus a strong affinity between someone who thinks politically and the narrator. The narration also has another relation to politics, which is speech: it is rhetorical, in that criteria of true knowledge are not applicable to it. Narration is judged in the sense of being poetical (i.e., bringing about ‘truth’ in the sense of providing ‘ethical insight’) it further has to appeal to the imagination of the audience, which however must employ factual truth\(^2\). It is not argumentative as is genuine political speech; as Hannah Arendt emphasised, narration is something to be shared, but it is not a vehicle for indoctrination, nor should the narrator expect that his views are accepted\(^3\).

The narration in social inquiry, as it can be derived from Hannah Arendt’s thought (who wanted to find a response to the conditions modernity), is thus of a distinct historical, political nature. It is fundamentally dialogical in that it firstly emerges out of the narrator’s dialogue with himself, and secondly needs to enter into dialogue with its audience. The narrator, in distanciation from the actors and events brings into view a variety of perspectives—the narrator does not rely on the concepts of causality and process, and can therefore only retrieve fragments. Remaining fragmented, the narration indicates meaning, but does not define it. It provides insight of an ethical and political nature without indoctrinating, and without intentionally demanding acceptance.

\(^1\) Arendt, *Between past and future: eight exercises in political thought*, 241.
\(^2\) Kateb, “Ideology and storytelling,” 331.
\(^3\) Redhead, “Making the past useful for a pluralistic present: Taylor, Arendt, and a problem for historical reasoning,” 813.
Not Blueprint But Beacon—Destructive Narrative

Social inquiry is bringing-forth, poietic. Krzysztof Ziarek posits, “[t]echnology [...] has to be the starting point and the framework of a ‘modern’ reflection on poieisis”¹. In this sense, by reflecting on the modern condition of a technological world, I have sought to elaborate what might be a signpost for social inquiry guided by hermeneutics. This signpost may be called the destructive narrative. The signpost is destructive in a double sense—it points onto a dangerous route by firstly urging to heed to the destructive mode of thinking, which pursues the path of questioning and dismantling theoretical presuppositions as well as everyday practices. Secondly, it points towards the destructive or corrosive tendencies of modernity, to make them recognisable without accepting them unconditionally, nor by rejecting them from an archaic vantage point. The fragmentary character of the narrative is testimony to that double destruction, which does not allow for a model or unitary perspective to be (re)constituted. At the same time, hermeneutics reminds us to comprehend these tendencies as an opening that needs to be grasped. One of these possibilities, as pointed out by Gianni Vattimo, is the retrieval of rationality opened by the obviating of any claim of objectivity. Thus, this signpost may point towards a reappropriation of the meaning of history in the form of narration. The modern condition allows for this reappropriation only if no universal truth in history is posited in advance. This means that this reappropriation, as claimed by Gianni Vattimo, is only possible based on different interpretations; this reappropriation must come to pass within dialogue, and it is the dialogue that may eventually trigger a modification of actuality. It is only within dialogue where meaning and truth can have an encounter that bears the potential of a rational and argumentative appropriation of the past, which is neither scientific, nor merely a matter of taste. Bringing forth a different interpretation that emerges out of distance but not from an Archimedean point, is in my view, the task of the destructive narrative.

Reflexivity, in the context of the current investigation, hence means extending the phenomenology of science and technology to other knowledges that are not always seen as scientific—such as accounting, managerial and technological knowledges. This implies taking heed of the nature of knowledge in modernity, especially social scientific knowledge that is always already bound up with interests and thus normative and prescriptive towards the subject, or the knower, who becomes its object. To achieve a distanciation from the matter of inquiry, necessitated when dealing interpretatively with

¹ Ziarek, “Powers to be: art and technology in Heidegger and Foucault,” 172.
it—to be content with an attitude that takes the participants and the way they define their problems and devise their strategies as an entity that is responded to through identification in the double sense of the word—is obviously not feasible. On the contrary, as distanciation is not achievable by empathy of some sort, but rather by taking a leap, and doing what Carol Steiner has called to have the “courage to be incompetent”\(^1\), that is to choose to be a non-expert. This means the inquirer becomes on par with the participants, but not in the way that he acknowledges the expertise of others without question while holding on to his distinct knowledge claims and securing them. This standing on the same footling has nothing to do with the co-existence of diverse knowledges and their various ways of legitimacy. Rather it derives from the demand that it must be possible to deliberate about, to judge, and to sanction, knowledge—be it scientific or other expert knowledge—from a point of view that is not within the boundaries of that specialised knowledge, or any other disciplinary-bound mode of cognition\(^2\).

The direction given by the signpost of the destructive narrative is not the way mapped out by methodical knowledge making or by a “blueprint”\(^3\). Its rigour must be found in its unfolding potential for questioning and interpreting, and eventually disclosing in dialogue where language is not a means of exchanging information, but as Krzysztof Ziarek writes:

\[\text{[\ldots] the very unfolding of world […]}.\] In other words, language for Heidegger constitutes the event (\textit{Ereignis}) into and as which experience unfolds. Taken in this sense, language is the eventuation, the giving of what is. But language is also what is said in words of this event, what communicates itself in signs. This is a broad understanding of language, and it is in this specific sense that Heidegger can claim that ‘language speaks’: it speaks as the event of history that addresses and claims us, as the happening that we call world. And language as human speech, and as the play of signification ‘follows’: it always already responds to this ‘languaging’ of language. What

\(^{1}\) Steiner, “The technicity paradigm and scientism in qualitative research.”

\(^{2}\) It seems to be rather infelicitous to regard theoreticians as “specific intellectuals” to be predestined to perform a critique of “regimes of truth” as done by Chan, “Re-directing critique in postmodern organization studies: the perspective of Foucault.”. Not only are they the ones whose commission is to articulate those truths, and are therefore rather unlikely willing through “heroization and stylization” to put this position at risk. It is at the same time an overestimation of the “impact” and “cumulative effect” they may trigger, and thus appears to reassign to those intellectuals privileges, albeit with a twist. It might be worthwhile to consider as well the notion of ‘regimes of truth’ altogether. If we accept that all knowledge rests on some presuppositions that can neither be proved or verified, these sustained claims of truth rest in the last instance on meaning that has been imposed, as it were. This would also conform on the rhetorical nature of knowledge production that has been discussed earlier.

\(^{3}\) Ibid, 1072.
is ordinarily understood as language is in Heidegger’s account, that into which language as event issues.¹

The Vor-griff, or what can be accomplished by the inquiry geared towards a destructive narrative, cannot be articulated in a way that is preconfigured by representational knowing—such as proving or refuting a hypothesis, or solving a problem. Instead, it can only purport to explore our present in its contingency. Thus, the question formed in the preface ‘what has happened?’ is an ethical question, since it cannot be responded to with a description of actors, events, connections, nor by allocating responsibility veiled as causality between abstractions. It is ethical, in that it reminds by indicating something, which otherwise would have been forgotten, despite its consequences, and despite its meaning. As pointed out by Hannah Arendt, the earliest meaning of history is “to inquire in order to tell how it was”; moreover, the ancient “historian is the judge”, and she concludes: “If judgment is our faculty for dealing with the past, the historian is the inquiring man who by relating it sits in judgment over it”². Hence, the reappropriation of the past is a way, not to refute the significance of what is called history in the modern sense, but to reject the belief that history is “the ultimate judge”, who makes “Success” the only arbiter of meaning and truth³. In this sense, dealing with past events is not a futile endeavour that impedes pursuing promising future goals, but it makes room for enfranchisement and rationality. Or, as Mark Redhead has couched the potential of narration in practical terms:

[Elements of a supposedly collective past cannot simply be conceived of as testifying to an inescapable feature of a shared moral and political reality, but instead need to be seen as alternatives that subjects can possibly consult when confronting the problems of the present world.⁴

¹ Ziarek, “Powers to be: art and technology in Heidegger and Foucault,” 169.
² Arendt, The life of the mind, 216.
³ Ibid.
⁴ Redhead, “Making the past useful for a pluralistic present: Taylor, Arendt, and a problem for historical reasoning,” 817.
Chapter 10: Narrating Modernisation

The preceding sections have attempted to show that knowledge certainly does not come out of detached and neutral observation, and truth is not just a matter of correspondence between statements and reality. The significance of information technology and social science in society in general and in organisational innovation in particular has been discussed. Lastly, the special problematic of inquiry into knowledge in organisations has been raised.

The following narratives report on the modernisation of government by means of the rationality of economics, and the technologies of accounting and information. The narratives are necessarily critical and fragmented. They are critical since they do not proceed from the standpoint of an expert from any of the academic and professional domains involved in the reconstitution of knowledges. They are fragmented since they also cannot proceed from a universal point of view that argues for a pre-conceived set of historical meaning. Lastly, they do not purport to be complete and allow for theorising, since they do not insist on empirical verity and the ensuing explanations. In that these narratives bring together scientific and engineering projections and experiences of knowledge making in their everydayness, they do not represent a novel approach to that matter. They aspire, however, to avoid affirmatory or apologetic objectives and thus establish a new opening. They indicate how new technologies and knowledges emerge from a different point of view, and by that strive to be in-forming.

The narrative has been composed from publicly accessible documents and publications and conversations with innovation actors. The latter had been organised with government managers, who were optimally positioned to recount events, and assist in the clarification that had emerged out of the study of textual matter.

The literary form that corresponds to the fragmented experience of our present and befits its recounting is the collage. Thus, the following story is composed of extracts from conversations that have been slightly edited for readability, and snippets from documents; in addition, where the complexity of the matter required some adherence to the temporal succession, the conventional case study format has been interspersed. Thematical and temporal orientation is afforded by headings, while discourses remain unmodified to allow for unencumbered interpretation by the reader. Chapter 11 offers an explicit interpretation of the story that follows.
Chronology of Reform and Technology

Prior to the ‘confrontation with the evidence’, the scene has to be set for the events and ideas that are reflected on in the following texts. This should ease to concentrate on the reasoning, rather than on the morphing of institutions, and the question whether they have been successful according to their own standards, or those applied by detached observers.

The circumstance that application of computerised financial information systems in Queensland Government actually preceded the influx of managerial principles by a number of years, hints already at the diachronic nature of present-day government reform.

It could be argued that this trajectory was commenced in 1990 with the introduction of program management for departments and agencies. Program management derives from Programming, Planning and Budgeting (PPB). Under the latter label, it originated in the US Department of Defense during the early 1960s under the then Secretary of Defense, Robert McNamara. PPB in this context, was a means of reorganising decision making over armament purchases. Military and traditional career bureaucrats alike were stripped off their previous competence in proposing and legitimising defence programs. Instead, the preparation for (nuclear) war had to be argued for in terms of cost-benefit analysis, for which only the Secretary himself and his central staff possessed the proper means and numbers to conduct it completely. Strategies for weapons of mass destruction were subjected to an economic-rational calculus, relating inputs such as missile systems to military objectives, i.e., destruction of targets, and by that ultimately nuclear war became a resource allocation problem. PPB, by articulating military strategy and linking it to input, output and outcomes established a discourse within which military planning, and eventually political goals were linked in an integrated fashion to budgeting for

---

1 The sequence of events is summarised in the timeline on page 255
2 For acronyms and abbreviations, refer to appendix 4
4 Ibid, 511.
5 Ibid, 512.
6 Ibid, 513.
the appropriate means. This meant that “human concerns” or for that purpose politics, once the strategic objectives were set, had been obviated.¹

Until program management gives way to new public management in Queensland Government, technical groundwork is being delivered by the national accounting regulatory body (Australian Accounting Standards Board, AASB) in developing reporting standards for government departments (AAS29) and governments (AAS31). In terms of information technology, the decision is made to replace the mainframe based financial system with new technology that emerges under the label of ERP.

Finally, governmental innovation becomes articulated in the Financial Management Strategy of June 1994, including financial accounting, cost accounting, devolution of responsibilities, business process re-engineering, and application of corresponding computer systems, setting also ambitious deadlines. It takes however until 1997, that, after a change of government, the basis is finally prepared for the reform to take shape in the form as it is known at the time of writing. In the meantime, the ‘implementation’ of the new financial management system based on SAP R/3 across all departments progresses, albeit with serious difficulties. The reform ardour is being rekindled by the 1996 Report of the Queensland Commission of Audit, which having its counterpart in other Australian states at the same time, presents the first balance-sheet for the state, and on this footing, argues that there is no other option to cope with governmental responsibilities than to adopt the new public management or a “leading edge government management framework” that is supposed to integrate planning budgeting, management and reporting based on accrual accounting. The following year, correspondingly, the government sets the deadline for the new financial management structure to the 1999/2000 budget, with its Strategic Management Framework, and State Strategic Plan. The gamut of new managerial technologies to be introduced is called Managing for Outcomes (MFO), probably elsewhere known as accrual output budgeting (AOB). MFO is claimed to be an evolutionary development out of program management in that it better integrates planning allocation of resources and assessment. Charged with the implementation of the new management structure is a new formed unit, the Strategic Financial Management Directorate (SFMD) that operates out of Treasury, the lead agency for the reform project, established mid 1997. Due to the decentralisation of financial

¹ Ibid.
information systems that coincided with the adoption of SAP R/3, a central budgeting and monitoring system had to be initiated to enable budgeting, monitoring, reporting, and consolidation by Treasury at the ‘whole-of-government’ level. While SFMD eventually focuses on management education on accrual accounting, there is also a push to establish costing. However, due to the lack of regulation as compared to financial accounting, the costing method to be implemented is at the discretion of the departmental management; SFMD, for a while strongly advocates activity-based costing to be adopted\(^1\).

The reform endeavour approaches a temporary completion from the beginning of 1999: the lead agency is restructured with business divisions becoming the successors in Treasury’s directing of departments, of SFMD, whose activities are being wound down; the central budgeting and reporting systems is operational. The Office of Financial Management (OFM) is created, supposedly bringing together financial management and information systems expertise. Finally, in the new financial year, the strategic principles of government are elevated to a quasi-legal status in the Charter for Social and Fiscal Responsibility, and the first accruals-based budget passes parliament. The completion of the SAP R/3 installations for financials across all departments in 1999 means also Y2K compliancy of the government financial management systems. The novel whole-of-government reporting against the principles of the Charter of Social and Fiscal responsibility in Priorities in progress, 1999-2000, suggests integration from governmental rationalities right down to policy outcomes.

In the same year, OFM, assuming dissatisfaction with the ‘productivity’ of the new financial system, seeks to initiate process-reengineering work within departments, finding however only very limited resonance in the administration.\(^2\) Overall dissatisfaction with the accomplishments of the MFO implementation eventuates a centrally guided review and restructuring process, headed by Treasury and Department of the Premier, called Aligning Services and Priorities (ASAP), which among other issues tackles streamlining of internal administration across departments, as well as increasing the economy of business information systems.

---

\(^1\) See the section The true costs of costing — on page 278

\(^2\) See the section The benefits realisation campaign on page 293
Table 1 Timeline of Events

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983, March</td>
<td>Licensing agreement for computerised accounting in Government finalised (MSA, later Dun &amp; Bradstreet)</td>
</tr>
<tr>
<td>1985</td>
<td>Financial Systems Support Group commences operation as a number of departments start using computerised accounting</td>
</tr>
<tr>
<td>1987, December 1</td>
<td>Michael Ahern (National Party) becomes premier, replacing Sir Johannes Bjelke-Petersen (Country/National Party), ending nearly twenty years of rule by the hillbilly dictator</td>
</tr>
<tr>
<td>1989, December 2</td>
<td>Labor Party government under premier Wayne Goss takes office</td>
</tr>
<tr>
<td>1990</td>
<td>All budget sector agencies use the financial management system</td>
</tr>
<tr>
<td>1990</td>
<td>Public Finance Standards 1990 require departments and statutory authorities to operate according to the principles of program management</td>
</tr>
<tr>
<td>1993</td>
<td>User requirements analysis for financial management system determines that systems is insufficient</td>
</tr>
<tr>
<td>1994</td>
<td>Selection process for new system commences</td>
</tr>
<tr>
<td>1994, June</td>
<td>Financial Management Strategy articulates adoption of new public management, including financial accounting, cost accounting, devolution of responsibilities, business process re-engineering, and application of corresponding computer systems, setting also ambitious deadlines</td>
</tr>
<tr>
<td>1995/1996</td>
<td>Department of Families, Youth and Community Care, and Department of Transport and Main Roads implement SAP R/3</td>
</tr>
<tr>
<td>1996, February 20</td>
<td>National Party/Liberal Party coalition government under premier Rob Borbidge takes office</td>
</tr>
<tr>
<td>1996, June</td>
<td>Report of the Queensland Commission of Audit</td>
</tr>
<tr>
<td>1996/1997</td>
<td>Roll-out of SAP R/3 continues with significant troubles</td>
</tr>
<tr>
<td>1997, April 8</td>
<td>Strategic Management Framework including introduction of accrual output budgeting by 1999/2000</td>
</tr>
<tr>
<td>1997, May</td>
<td>Queensland Government releases the State Strategic Plan, which sets out the broad strategic direction for building wealth, social advancement, employment and industrial expansion over the next 10 years.</td>
</tr>
<tr>
<td>1997, mid-year</td>
<td>Establishment of the Strategic Financial Management Directorate (SFMD) in Treasury to direct the introduction of accrual output budgeting across government</td>
</tr>
<tr>
<td>1997, July</td>
<td>Managing for Outcomes in Queensland</td>
</tr>
<tr>
<td>1998</td>
<td>Department of Public Works and Housing trials computerised ABC, Treasury recommends ABC to departments</td>
</tr>
<tr>
<td>1998</td>
<td>Establishment of the Office for Financial Systems and Training (FST)</td>
</tr>
<tr>
<td>1998, June 20</td>
<td>Labor Party government under premier Peter Beattie take office</td>
</tr>
<tr>
<td>1998, June</td>
<td>Revised AAS29</td>
</tr>
<tr>
<td>1999</td>
<td>Completion of the SAP R/3 financial management system across all departments</td>
</tr>
<tr>
<td>1999, January</td>
<td>Treasury restructure, including establishment of business divisions that</td>
</tr>
</tbody>
</table>
act vis-a-vis clusters of departments, and the Office of Financial Management (OFM), which integrates the former Office of Financial Systems and Training (FST).

1999, July 1  The TriData system commences operation to support central government information requirements under MFO.

1999, August  Charter of Social and Fiscal Responsibility released

1999, September 14  Queensland’s first accrual output budget (AOB)

1999-2002  Benefits realisation campaign

2000  Priorities in progress, 1999-2000

2001, August  Aligning Services and Priorities (ASAP) started

2001, October  Charter of Social and Fiscal Responsibility amended

The Coalition of Public Sector Reform and Enterprise Resource Planning

From ideal to the real

There is a set of reforms that the government has implemented with Managing for Outcomes. Presupposing that, is a whole set of financial management techniques that ought to be implemented, if you are going to deliver this. Here is a whole range of accounting theory, and practices and principles. Now let us go and have a look at what are the critical success factors for Managing for Outcomes, and how have they gone along and implemented SAP in support of those principles.\(^1\)

In addition, there are many incredible reasons why that were not going to work: there are departments moving from a cash accounting environment over to an accrual accounting system. They configured SAP to replicate a cash accounting environment, customised it, and built the Treasury module. A lot of processing it was – every transaction was converted from accrual to cash, and everything was managed out of the Treasury. It is not an SAP problem; it is a business process problem. There was a timing issue. The conflict with the Y2K, because they had an imperative to get off the Dunn & Bradstreet and get onto something that was Y2K; but the timing, the implementation of the financial reform meant accrual accounting, and the timing of the implementation of SAP plus the timing of the professional development that was happening at the same time of the public sector’s finance people, who largely drove a lot of the SAP stuff. Timing was just significantly mismatched. So, in answer to question is it an SAP problem, you could probably say, that SAP probably summoned it, but this is limited.\(^2\)

---

\(^1\) Document 6-11

\(^2\) Document 6-11
From rule to transaction

The most common form of government involvement with markets is through direct provision of goods and services. Historically, governments have accepted responsibility for ensuring provision of a range of services such as defence, public order and safety, education and health.¹

… there is widespread recognition that free and competitive markets generally produce the most efficient allocation of resources and the strongest foundation for growth and development²

… essentially the only effective option to State is to develop a management framework capable of delivering efficiency improvements on a continuous basis, noting that the trend slippage in the State’s operating position equates about 2 per cent of the State’s gross cost of services per annum.³

Unlike some other jurisdictions, Queensland has not been forced down a path by economic imperatives. Rather, the government has recognised the inherent management and financial benefits of adopting accrual output budgeting over our traditional cash-based system.⁴

This type of public sector management framework is now the international standard for achieving best performance in delivering quality public services effectively.⁵

Supplementing the reason of the state with economic reason

We developed Queensland’s first Charter of Social and Fiscal Responsibility, which was released in August 1999. The Charter incorporates the Government’s seven key policy priorities and five fiscal principles and provides a framework for affordable, equitable, and sustainable service delivery.⁶

taxes and charges remain competitive with the other States and Territories
the level of service provision is sustainable by maintaining an overall General Government operating surplus
financial assets cover all accruing and expected future liabilities of the General Government sector
capital investments and only where these can be serviced within the operating surplus, consistent with maintaining a AAA credit rating.

maintain and seek to increase Total State Net Worth⁷

In legislation, there is a requirement for the government to document what its charter, its fiscal principles, and social principles are. Essentially I suppose that is almost a contract of the government with the people and that says this is what at the highest level, we are seeking, we have agreed to provide.⁸

² Ibid, 11.
³ Ibid, xi.
⁷ Queensland, Charter of social and fiscal responsibility ([Brisbane, Qld]: 2001).
⁸ Document 11-11
The Queensland accrual output based budgeting model very much looked like the initiatives that happened across a number of jurisdictions at the time. Its features were of course, apart from translating cash to accrual, which goes without our particular model, was looking at the three key processes across government that actually drive the delivery of services, and that was planning, allocation and budgeting and performance review and reporting. The notion was that we could achieve better results at the end of the day if we had better integration of those three processes. We started to talk about whole of government planning rather than single agency planning. We have had since reviews of whole-of-government outcomes. Rather than just describing to you sorts of things that sit at the front of each agency in terms of delivery of services, it is a whole-of-government commitment: these are the aspects the community will aspire to. Collectively, this is what we will try to achieve. Now those outcomes have been reviewed two or three times since ‘97. The government, this current government translated the seven previous priorities, the name was changed from outcomes to priorities, from seven to five.1

From economic reason to business accounting

What happened is, I suppose, when we have moved from the cash to the accruals, is that agencies now have the issue of having both a balance sheet and an operating statement and having to then look after their financial position perhaps more so than they did under a cash environment. Under a cash environment you just got a lump of money, you went and spent it, and that was fine. Now, you have the differentiation between the recurrent or the operating side of the equation, and then maintaining your assets and spending on capital and these sorts of things. There is more responsibility on the accountable officers or the directors general now, because then they have to provide an operating statement and a balance sheet that shows they cannot be actually taking money out of the capital statement to fund their operating activities. Therefore, they cannot put on all these extra teachers and let schools run down, or not build the schools so that they can pay for more teachers. There is that process now in place. It provides the directors general with a greater degree of responsibility for ensuring that they manage the financial position of their agency perhaps not in a better or worse way, I suppose. It is in a more transparent way, I suppose, than under a cash environment.2

The signal was very clear: this is the priority; we are all going to do it effectively. In terms of the internal management within Queensland Treasury, there was no option. Because it was lead from the top, wholehearted embracing of the move from a cash based management system to an accrual output budgeting system by all of Treasury’s senior management. We had purposely in the directorate key policy people that I had drawn from essentially the budget areas of Treasury. They understood the budget context of Queensland government. They

---

1 Document 8-11
2 Document 11-11
were people who had some level of understanding, the skills, and obviously the whole accrual training, because they came through accrual training programs at university. Moreover, they were also people by and large who had excellent communication skills. That was a very powerful combination of skills, because what it meant is that they could very quickly get their head around the conceptual framework, identify policy processes and frameworks that actually we knew would work, in the Treasury context, or in state government budget context, but also probably more importantly, they also became what I called liaison officers. They each had a number of agencies for which they were responsible for managing the interface. We had that working quite effectively. The success on the agency side of the fence, in terms of whether this was well done or not, is probably affected by a couple of things. Obviously, the key factor was the commitment of senior management level in those agencies. I can tell you that we had everything from fantastic agencies, whose senior management absolutely embraced it and drove it, to agencies that were simply in compliance mode, and everything in between. What we attempted to do is where we knew that agencies were absolutely embracing it, is that we tried to use the mechanism whereby a champion would put up on profile, for more conferences and seminars so that it was not just Queensland Treasury saying the story. It was actually peers, colleagues across government who were obviously doing really great stuff as we rolled out the framework and they were actually out there sharing their stories.¹

... to eliminate waste

The public sector committee came along and they did a fairly short, sharp and probably in depth reviews, well as in depth as they could be, of every agency but it was a quiet period of time and there would not more than 18 months or less than that. They had a concerted effort going from agency to agency, reviewing them, looking at their structure, looking at where they thought there might be a surplus capacity in terms of staff, where they might not be addressing the community needs of the Government that would need to be addressed, or whether they were doing things simply because they had done them in the past and they had to question. That was a fairly thorough review process, and it involved people from the public service committee, and also people from agencies. There were teams brought into agencies to work with, to examine the agencies and make recommendations to the CEOs of the agencies about what they thought should be done to make them more efficient, more effective.²

After the Commission of Audit, there was a unit set up, which was the Commission of Audit Implementation Office. They did something reasonably similar to what Leo Kelliher did years before, except however it was more the agencies providing information in document form saying these are all the things that we think need to be laid on the table, rather than going to agencies and having in-depth

¹ Document 28-11
² Document 4-7
reviews. Like going back to Leo Kelliher’s days, the other thing, which was
significant, was that they gave opportunity for all staff in the agencies to
write to the team and express their views about the organisation and departments
as well. And with Kelliher’s and management services at that time and in
education we did a lot of organisational change and recruitment and a number of
people in my unit including myself wrote to the Kelliher’s group.\textsuperscript{1}

Very much, I believe, having been in government for, 20 or 30 years, most of the
initiatives have been driven by government. I remember the efficiency reviews
that happened in the late eighties, a lot of stuff that was happening, the pro-
gram management was driven out of the Department of Finance, were picked up.
Therefore, I think it has been an evolutionary thing that has been happening. I
do not think we have jumped around from one model. I think the same sort of
thinking has been around, that we really do have to be accountable. We really
need to be more collaborative, less siloed; we need to be smarter about using
performance information to get us information about policy direction. Evaluation
grew as a huge industry in the late eighties and nineties, picking up from the
kind of thing that happened in the States. Therefore, I think we have moved from
program management to MFO as a much more collaborative process. However,
generally speaking, I think it has been driven from government. I think we have
recognised that we really need to be good managers particularly if we are
getting smarter out there, globally, we need to be better managers, and we need
to be much more accountable to our much better-informed community.\textsuperscript{2}

It was hard nose change that had to happen...\textsuperscript{3}

Having been around here from a central point of view for a fair few years, I
think every department, no matter which department you go to, they all say, oh
it is different in this department. However, they do not realise how similar
they are. The business processes are in fact, quite similar. There are a lot of
cultural things, but I think things have changed slowly over time as a result of
MFO and things like that. I do not think there has ever been any big bang
approach to change in government. I do not think any big bang has ever worked. I
think there have been slowly small movements.\textsuperscript{4}

\textbf{... from authority to delegation}

With the Dun and Bradstreet system, we had a very centralised model. It was not
just the hardware that was centralised; it was the whole concept that was cen-
tralised. We had what was called a lead agency agreement. We, in Treasury, we
were the lead agency. By 1995, we had a lot of people who were both business
analysts and technical people. I was manager of the operations area, which in-
cluded the help desk and all the technical staff and I think at one stage it was
up to about twenty people just in that area. Huge, quite a large organisation,

\begin{flushleft}
\textsuperscript{1} Document 4-7  \\
\textsuperscript{2} Document 8-11  \\
\textsuperscript{3} Document 4-7  \\
\textsuperscript{4} Document 18-10
\end{flushleft}
because all the skills and all the knowledge resided in this one area, in government. The departments, they could use the system, but they had to use it according to our rules. Every department, they used the one piece of software and multiple sets of files. They had their own data but we controlled the system. We ran the batch processing overnight and we determined virtually when a cheque run was run, and all this sort of stuff.¹

Accounts payable, general ledger, accounts receivable, assets, all those corporate service type applications, and HR Payroll ran on Dun and Bradstreet as well in the HRMS system. So, and that is up until 1995. Before then, that was pretty acceptable, because the departments had come from accounting machines and fairly backward sort of technology. Some did not have any, some departments had computer systems, and then we took them onto the Dun and Bradstreet system, and so we were pretty smart people they thought. And we ran all this mystery for them.²

When we had Dun and Bradstreet, we could sit on the one release of Dun and Bradstreet for ten years, or that type of mainframe application and your upgrades and that are sort of clicks in the wheel. We did two upgrades of Dun and Bradstreet while I was here. We did one, one weekend, and the other one, we employed a contractor for about six weeks, and that was the end of it. The contractor was actually a communications person. Not even a technical one. I mean they were so minor, we thought they were monstrous, but they were so minor.³

There was a common saying ‘let the managers manage’, and the CEOs of agencies were given additional authorities to manage their own organisations because there seemed to be a realisation that there were different types of business and one rule did not fit all. They were given the opportunity to exercise discretion in certain areas to optimise their operations to deliver the outputs that needed to be delivered to the community.⁴

The whole idea of program management, which was about ’89 or something, then led to some changes in thinking. They thought, well, given what we have in the Treasury’s Instructions, that is at complete odds with the concept of program management. How do we actually structure our legislation to support that concept of program management and let the manager’s decide how and why they do the things they do to meet the planning outcomes. Moreover, that has progressed over the last decade. The Public Finance Standards were replaced with the Financial Management Standard in ’97, and over the past few years the Financial Management Standard has been changed a few times, obviously with the introduction of accrual output budgeting and those sorts of issues. You probably could not say that program management led to the change in legislation, but what you could say was that there was a whole range of things happening at the time and one example

¹ Document 18-10
² Document 18-10
³ Document 18-10
⁴ Document 4-7
of that concept of ‘letting the managers manage’ was those changes in legislation, changes in thinking.¹

The Treasurer’s instructions, well, I have never seen one, but they were a great big document like this. They were very prescriptive about how departments had to run themselves. Over time, that Treasurer’s Instructions document was replaced with the Public Finance Standards around about the same time as Program management and that entire sort of stuff came in. The Public Finance Standards reduced that down to that, and it was more a case of giving departments broad guidelines then the departments actually went away and decided how to actually implement those. What systems do they need to manage actually their departments according to their operations? There was not a one-size fits all approach. It was devolved down to departments to decide how they were going to progress things in terms of their systems, their processes, their operations.²

Then as the nineties started to come through, there started to appear a group of people who knew as much as we knew. Smart young people who said they wanted to run their own systems, and they knew just as much as we did about running systems, and not only that, there was more money around. That should not be denied. There was more money around. Money was floating around a lot freer than it had been before. Moreover, people were being told you have to manage. You are in charge; you have to manage. And they said, oh we want run our own systems so we can manage the way we want to. We want to run our own system, if we decide we want to take the system down, it is our decision. If we want to run our cheques, it is our decision. If we want our general ledger to look like this instead of that, that is our decision, and there is more money. There was enough money, and they said, hmm, all right, well let us go out to the market with Y2K coming. We went out to the market and the departments selected SAP because one of the key things was, it could be independent. There was going to be lots of systems, every department had its own system, it would not be centralised. They would make their own decisions, they would support their own system on their own, but the initial thing was every department would have its own piece of hardware so they would run their own systems totally independent of Treasury.³

Consequently, SAP R/3 was selected, because I think, they promised independence and control to every department and that is what the departments wanted, and so they selected SAP. After the contracts were all signed, we realised that the implications, I do not think, because it was not until then that they realised the implications of what they had signed. Because then, we started to cost out, what were the costs to actually put one of these bloody great systems, these ERPs in every department, physically on their own hardware. It was going to be hundreds of millions of dollars, and that is when we went out to this business of shared service provider from CITEC, or facilities management.⁴

¹ Document 4-7
² Document 4-7
³ Document 18-10
⁴ Document 18-10
Sometimes people will listen more to information that is coming at them if it is from someone outside government altogether, if it is like a consultant or someone seen as an expert or whatever. There is the other problem Treasury sometimes has in general is that, information coming from Treasury is sometimes looked at as, okay what is the catch. Cause Treasury is the big central agency. It controls all the purse strings etc and some agencies just have the philosophy that there is always a hidden agenda somewhere.¹

They see themselves as a group of companies who happen to co-exist but they see themselves as very independent. Some see themselves as being different because they have external funding. Others see themselves different because they are providing a service for a fee. They see themselves as really quite different and so that issue has been merged because people are, when asked to enact their projects, to this framework, they say, oh yeah, we are quite different from everybody else. Whether it is true or not is another issue but they certainly see themselves as being a hotchpotch of different groups.²

In a nutshell, how well these reforms were actually implemented, how much they went beyond compliance into truly changing the way departments managed was very much a factor of leadership at the top level. One thing that we did and worked well, we actually got a project group of people together from nine agencies. We brought them into Treasury for a three-month pilot, and we actually took cash forward estimates and we used those people from the nine agencies to work through a documented methodology, whereby agencies could actually take their cash forward estimates and convert them into accruals. Once we had that documented process robust, then that became the template, by which everyone else had to go through the same process. That was a very powerful strategy, and it was powerful because in other jurisdictions, they got just these private sector accountants to come in and essentially do that. Whereas here, we were trying to convert a mindset and the skills base of our existing people, because we had a government that believed in employment security policy. They did not want to see a wholesale sacking of current financial managers who had a cash background, bring in all the private sector accountants, and there you go, you know it will all go well. So we had to actually form a bridge over which we could bring people along a learning continuum and again. We have recently robust accrual budget estimates, but how well agencies have absolutely embraced full, honest accrual budgeting, balance sheet management, the box and dice, will depend on the competency of management in their financial areas, more so, but obviously on the level of sponsorship at the senior levels within the organisation.³

Virtually every manager of an accounting area was replaced in a fairly short period of time within a year or so of the change to accrual accounting. A number of them were replaced by people from outside. Others were replaced from people

¹ Document 18-10-1
² Document 16-8
³ Document 28-11
from inside but they were virtually all replaced. ... Almost, if not 100 per cent turnover.¹

I suppose the people who understood cash have been replaced by people who understand accruals. We had a person over from New Zealand who said to us, in New Zealand most directors of finance, when they moved to accruals, changed in the first twelve months, because previous directors of finance did not have the skills. It does intrigue me a little bit, that if you look at the directors of finance in Queensland government departments, there are not very many of them who have changed. a lot of directors of finance have been in government for a long time, and I would tend to suggest that you would still find more than half of them who were there when accruals were introduced.²

The second logical step was that once we collectively commit to these outcomes, that we should have clear lines of linking between the outputs, the services delivered by agencies and those outcomes. That was the accountability linking that we saw, that even though collectively agencies would have a responsibility in delivering the outcomes, clearly, they should retain responsibility for the effectiveness and efficiency of how they deliver their own services. There was quite a lot of activity around improved performance measures for agencies at the time and, we introduced output reporting into the budget process.³

On the third aspect of the model, the performance review and evaluation, we started working fairly closely with agencies to have some consistent and streamlined means of reporting performance. We agreed that we would report various aspects of their products, the way they delivered their products. We came up with criteria such as, the quantity, that is, how many clients are actually being assisted or provided with services, quality of service, and we started to look at unit cost. We started talking about price, the price of actually delivering a unit of the various services. However, we have moved away a bit from that.⁴

... with assistance

Within Treasury, certainly we did use consultants, quite a bit. It was, I guess, to test our theory, to assist us in delivering those to the agencies. For instance, we had an expert reference panel in ’97. We had two consultants: One from QUT, an academic from QUT in a consultancy role, and we had a consultant coming from Canberra. Very much, we used them as sounding boards, and to refine our thinking, and to inject other ideas. Very much, I thought as validating what we were doing a lot of the time. Certainly, we would have them along to raise the debate. For instance, we were talking about, one question, can you measure policy advice. Therefore, we would have a whole range of various academics come along, to provide that, or to initiate that discussion across the agencies. Yes, we do draw on a lot of that, and for me, it is more collecting and putting it

¹ Document 21-10
² Document 4-12
³ Document 8-11
⁴ Document 8-11
into the melting pot and when we are sure that it is a good move to take, we will take it then and there. I think it is a very cautious agenda. Mind you.¹

I suppose of all the lessons we have learnt, through the SAP process, the government departments in these areas have learned how to deal with consultants. We were very wet behind the ears. We were babes in the wood and many of the consulting firms certainly took advantage of that, I think, at the time, when we were implementing SAP. Because we did not know anything about this ERP system. We did not know anything about UNIX systems. We knew nothing about the client server environment. We were complete novices, did not have a clue, and consequently, the first department to go live was Transport Department. In addition, we believed at the time, that you had to have a consultant to tell you what to do. We then got consultants in and we did not know, but the consultants knew even less than we did. We knew nothing, but it was not until after we saw them that we found out they knew less than we did. We were all on the same training course, except they were charging us $1500 a day for them turning up at the same training course. This went on for a couple of years unfortunately, because the next department did exactly the same thing and then the next department did the same thing. Because we were all under this belief that you had to have a consultant.²

We actually have a preferred panel of consultants, routinely they invite them along to show their prospectus and what have you, and then a number, quite a number are collected. It just speeds up and streamlines the process, all we need to go to a consultant, cuts down on paperwork.³

I think some people have good attitudes to them and some people have bad attitudes to them. To use a consultant is a cop out half the time. You can say look, I have this huge project to go, let us employ a consultant. There are many reasons for it and one of them is, because that way, if something goes wrong, you can blame the consultant. It was not my fault it was his or hers.⁴

The concept of 'if you can find it in the Yellow Pages, do not provide it yourself', was brought to bear. It was an office wide philosophy.⁵

If an agency wants some sort of training, we direct them to outside consultants for the contracting panel.⁶

When they bid for a job, they used to put what we called the A team up. On the second day, after they got the job, they would bring into the B team. However, by the time, they actually started the work, it would be the students, and then they would move the whole team away to the next job. The people that were actually there for the three months to do the work, was usually a project manager who knew what he was doing and a team of students, or learners with him,

¹ Document 8-11
² Document 18-10
³ Document 8-11
⁴ Document 18-10
⁵ Document 21-10
⁶ Document 18-10-1
maybe one other. We were paying big money for these people and they were not delivering a very good product. Because they did not have the skills, they did not have the knowledge; they did not know how government worked. They did not even have business experience, some of them and, when they left, they took what knowledge they had with them as well. The departments were left with a system that they did not know how to run, they did not know how it was configured, and they did not know how it was set up technically.¹

Yesterday at a meeting, we got an attitude from people from SAP over it. The consultants have their place and I think that’s what SAP believe as well. But if you have some serious matters you want to talk about SAP, or if you want some serious advice about SAP, you talk to SAP not the consultants. Consultants are good for assisting with your business process re-engineering and all that sort of stuff.²

N. was an accountant, I was an accountant and the auditor was an accountant, and a number of that people who were involved in that project team were all accountants. As to the rationale of why set up a separate directorate, it was probably because it was seen as being a very major project for the Queensland government and to try to run it as ongoing with ongoing business. If you did not take people away and have them totally focussed on that, then it would not happen. In addition, we had a project plan and we had certain milestones that we had to meet. The intention was always, we were set up as a directorate, even the work that I did for instance with my departments, I still involved the Treasury person who worked on that department. They were always still involved, because part of our role too was to train Treasury people. There were many budget officers in Treasury, who were not accountants. It was to train them about what was required as well and the idea was always we were doing that on the assumption that the whole directorate would be disbanded. Our role was to virtually move things across to the people in Treasury who would pick it up and continue to run with it. Nevertheless, I think just simply there was probably a realisation about the magnitude of what we were taking on and setting up the Strategic Financial Management Directorate was probably seen as being the best way to project manage that.³

Most departments now employ a large number of accountants. It requires those skills to be there all the time. We are now in an accrual accounting world. Therefore, it requires that you have people there all the time who understand accruals.⁴

... with software

We were a very, very important client for SAP and the main reason was, up till us, SAP, I think, only had one government client worldwide before us, and that

¹ Document 18-10  
² Document 18-10  
³ Document 4-12  
⁴ Document 4-12
was the Mannheim City Council in Germany. We were the first major public sector client. Why we were important to them was they could not get into the United States. The United States government would not look at it, unless they had a reference site. That is why the Queensland government got such a good deal out of their SAP. One of the reasons why the Queensland government got such a good deal out of SAP, they needed us as a flagship for them. We have a very good contract with SAP, we get very good support from SAP. Other people when we talk to them, they cannot believe the type and the amount of support we get from SAP. Particularly in the early days, we only had to breathe heavy and SAP would send a consultant out from Germany. I think we are still very important to them from that point of view. We were one of their flagship public sectors, and because they used us as a reference site, on quite a number of occasions, we believe they got their foothold into the American government. Unless you have a foothold in the American government, you will not get a foothold in America at all. That rather predicated a lot of stuff they did overseas and stuff. They are into a lot of, not just federal government, but there is something like 8,000 public sectors in the United States, local councils, state governments, city and regional and federal. There are thousands of them and they really needed the foothold to get into there. They needed us as a reference site. Are you anywhere else in the world? Yeah, the whole Queensland government is running on us. The Queensland government even then, had a pretty good reputation. So yeah, they used us left, right and crooked.¹

In the RFO process, eight companies responded to the RFO, and we had a set of selection criteria. They were books about an inch thick on each module. We went through a whole process with every department. We put key people in rooms and went through and created these great long checklists of what was desirable, what was the functionality they would want. What did you want to see in the screen? How did you want to process, could you print cheques straight away? Could you fax invoices or all this? And it was a book for each one. It was amazing. The companies responded to those RFOs, they had to respond tick, tick, tick, tick, and that’s a part of the formal documentation reply. Monstrous, it was honestly, the replies were three inches thick and we went through and ticked them all off and there were desirable and there were criteria they had to meet. If they did not meet those criteria, it went out the door. In the end, there were only three left. Finance One, Oracle Financials and SAP. The next stage of the process was that we sat down and tested the systems. They went through the functionality that was available to us and unfortunately we said Okay, turn on your general ledger and the Finance One did not have one.²

Cash accounting was a concept that SAP had not hit before. They did not know how to sort of handle that. They had this module, the FM module that did not work properly. Nevertheless, they now, actually eight years later, have things work quite well. The only problem is we are now fully accrual, so I am told.³

¹ Document 18-10
² Document 18-10
³ Document 18-10
They did not understand, what it was the Government was trying to achieve. A little bit like, what is cash accounting? I think their lack of understanding of public sector business and their reluctance to upset the relationship. Because they certainly had the content knowledge of the system, of how it could be used.¹

Agencies were using the Treasury Module for cash accounting before accrual accounting actually took place.²

The goal is an orderly, cost-effective adoption of the New Generation QGFMS by all agencies.³

The processes in agencies would certainly have a high degree of similarity. Although I suspect from what I have heard that the degree of tailoring that has happened with SAP within agencies suggests that they do all take a bit of a different approach to the task nonetheless.⁴

The New Generation QGFMS (SAP R/3) meets the business needs of agencies by providing:

- real-time update of general ledger from all applications;
- screen customising;
- on-line real-time reports which offer a timely statement of the agency’s financial position;
- reports which can be created and processed without programming skills;
- reports may be viewed either tabularly or graphically;
- a cash forecasting feature;
- a full accounting functionality – this includes a planning (budgeting) facility; a fully integrated financial investment application.

... Agencies should be aware that increased flexibility leads to complexity. Implementation of this system will require careful management to ensure that the functions offered by the system are maximised in conjunction with departmental financial processes.⁵

Treasury developed a standard system of it, so to speak... say here’s a configuration, a like for like, exactly what you want in the previous system, this is how it’s configured, pick this up and implement it. Some agencies, because QLD Treasury cannot literally tell them what to do, they are only a lead agency in that respect, some agencies just did not do that, they went off on their own. Treasury actually changed its story as we went along. One minute it is a standard system model... you pick it up and you implement it. The next minute, after a few questions were raised, it actually changed to being just simply a template or guidelines; no need to follow it strictly. Once Treasury started to receive a bit of criticism, about the template of the standard system, it then says, well, we had no intentions of asking you to implement it. However, their implementation strategies in Treasury’s documentation, that clearly says, agencies are going to implement the standard system of it, and this is the

¹ Document 3-7
² Document 21-10
⁴ Document 16-12
rollout program. It changed, and the reason why it changed was because accrual accounting was being implemented, the managing for outcomes reform agenda was picking up and gaining momentum, and Treasury then realised, that the standard system model was in fact a cash system it was redundant, before it was implemented. Then they went and developed that Treasury system that converted all the accruals from SAP into cash! The solution was actually the Treasury Module. That was a bit of a disaster because the agencies were keeping their cash at a very low transaction level, and the amount of processing that was required at the end of the month, was horrendous.¹

Many long and difficult hours were spent by the staff of agencies involved in implementing accrual accounting and SAP R/3. For its part, Treasury recognises the scope and magnitude of the tasks involved and is providing as much assistance as possible, in the form of training and support.

The end result to the government, however, is well worth the trouble with significantly improved financial decision-making, streamlined accountability and vast improvement in the quality of financial reporting.²

In Treasury SAP is used for purchasing and asset management, and financials, paying, you know, drawing cheques. It is not used in any other way. None of the financial models, modelling tools or anything else that are available in SAP is used in Treasury, none of those things. SAP has got some of the great financial modelling tools in the world and they go out and buy a software package that runs on their PC that does something different. Because they are more comfortable with it or something, I do not know, but it is not used as a part of its core business in Treasury. Because it is, and I think there is lots of reasons for it and this is common throughout a lot of the departments where it is not used as an ERP system. It is seen in those departments as a corporate service, or corporate system. It is not a core business system. Core business systems are in fact, written by somebody else. They are something you buy from somewhere else; you do not buy from SAP.³

We can get much more sophisticated. There are a lot of things I would like to have, like a nice little reporting tool on SAP so I don’t have to do what I currently do which is draw the data out of SAP and put it in spreadsheets to provide it in a useful and meaningful framework for the strategic management team.⁴

It can be a part of your core business. I mean it has tremendous modelling capabilities and all that sort of stuff for use within Treasury.⁵

It has also a lot to do with that some people believe Treasury forced SAP on them and therefore we are not going to use it for anything else. Little do they know that Treasury did not buy it at all. The departments, they bought it themselves. It might not have been them physically, but somebody in their department is the person who signed on the dotted line. We never chose SAP, we

¹ Document 3-7  
³ Document 18-11  
⁴ Document 4-12  
⁵ Document 18-11
never had a vote; except for our corporate people, as an agency. We never even got a tick on the box. We were there as advisers. We actually did not select it. We were part of the selection group, because we were there as consultants. We had nothing to do with it. We thought it was the appropriate choice at the time because there was nothing else. It was either that or Oracle Financials, but we didn’t actually select it, and even if they had selected Oracle Financials, there would have been many of the same issues.1

Objectives
The objectives of QSAB are to

- Provide leadership in developing Whole-of Government approaches to resource management systems including influencing the Government’s knowledge management strategy.
- Assist and encourage agencies to realise full benefits of resource management systems including QGFMS through business improvements and best practice to meet agency priorities.
- Explore and recommend strategies to safeguard and further leverage the Government’s significant investment in resource management systems including QGFMS.
- Foster the ongoing strategic direction of the Office of Financial Systems and Training.2

I do not think, there was an attempt to do a cost-benefit analysis after the first stage implementation. When we tried to do it, we could not actually get the data from the agencies on any of it. They were very protective. I suspected that Treasury also became very protective of its own, because it was a disaster, pretty much so, very high cost.3

...with information

Information Bonanza for Agencies

Information has the potential to revolutionise the quality of financial and non-financial information available for decision-making about, and accountability for public services. Moving from a cash-based system to an accrual output budgeting system will enable the generation of information that has never before been available in the Queensland public sector. ...4

We had to do policies that said how the budget process was going to operate. In other words, what sort of information did we want from agencies so that the Cabinet Budget Review Committee, which is our Premier, Deputy Premier and two other ministers, who make the decisions around the budget and allocate funds. We needed to take decisions around, what information did we want from agencies to go through the budget process. So for the first time we actually said to them, do not just tell us you want to do X and it is going to cost $5. We now actually want information, much more detailed information, around the initiative that you

1 Document 18-11
3 Document 3-7
want to do. We want information around the outcome that that initiative will achieve. We want some information around some good performance measurements that will give government in a sense over time, of whether that outcome is being achieved or not and whether the output, or service or product, is actually being delivered effectively. We started to require much more robust information on budget bids that came in from agencies. We also now needed information on what the impact of this initiative is on both the operating statement and on the balance sheet, and what is the ongoing implication. For example, if you are going to build a capital project under a cash budget, it used to be: I need $10 million so I can build a building. But now we said, no, you actually have to take into account what sort of appreciation costs, what are the ongoing costs. We got much more robust information that came in when agencies were requesting budget information, budget funding and that information would then, if those particular initiatives were endorsed, be sufficiently robust to feed into a full impact on the financial statements of that organisation from a budgeting perspective. Those policy frameworks were prescriptive in the sense of the nature of the information that we wanted coming from the agencies. They were also fairly prescriptive in terms of how we wanted to run them in terms of their financials systems.¹

Maybe next year we will get an opportunity to sit down more with people and say, what is the information that is in SAP and how can you better use it, and how can we design things that provide you with the information that you need. Yeah, I think you cannot get really good management reports for people unless you sit down with them and find out what it is they want to know, and then work out how’s the best way to get the data out of SAP. Because invariably it is there and it may be that, you just have not structured some of the cost centres properly in order to get that information. I think there is certainly no problem in terms of SAP and its ability as a functional system.²

SAP probably is a great system in terms of the data that is in it. I think getting the data out of it can be more of a problem and getting some useful reports. However, computer systems generally are not that great about producing user-friendly reports there is an issue about directors, managers of various different business areas needing to know what it is they want to know, and some of them do not know what they do not know. It’s a bit hard for them to say what it is they want to come out but, and that for me is a matter of working with them in terms of trying to get them to understand what information it is that they might possibly want.³

Craving that I can still refine the reports that I do provide to them, but we still tend to focus pretty much on inputs as a monthly reporting. We report on an operating statement basis, so we are very much reporting on how we are travelling against those inputs. We do not do any reporting around the outputs. Our outputs are primary school, preschool, primary school, secondary school and

¹ Document 28-11
² Document 2-12
³ Document 2-12
specialised. They are fairly big areas but we do not do any reporting on outputs on a management basis.¹

**High tier consolidation**

We have actually gone backwards in functionality from a whole-of-government perspective. We did not realise with the old Dunn and Bradstreet system, we have a world’s first shared services system. That was actually the leading practice in the world. We had the functionality and system, but as a structure, we just gave it up and de-amalgamated that system into 29 little versions of it that are all quite different now, and then had to build another monster called TriData to get back what we used to have under QGFMS. The operating costs of QGFMS are around . . . one of the major reasons to go to SAP back in 96 was that the seen cost of QGFMS operational costs I can tell you now that my department alone exceeds operating cost on its SAP system of the whole of the old Dunn and Bradstreet system. Easy.²

In addition to the statutory reports, there was a reporting regime implemented which required agencies to report on a quarterly basis. At that time in parallel, with all of that, TriData was being developed and that permitted agencies to manually plug figures into the right spots on the screen and that information was brought across to Treasury, and Treasury looked at it from a whole of government perspective to see how the budget was going. That happened too and SFMD was involved with the development of TriData the specification of that.³

**Tridata**

**What is Tridata?**

Tridata is a computer-based, whole-of-Government financial and non-financial information system. It was implemented in 1999, replacing the Central Finance System, the Budget Management System and the whole-of-Government reporting system. Tridata was designed to meet all of Treasury’s financial management requirements (including the production of forward estimates, preparation of Budget Papers, management of the Budget process and whole-of-Government Reporting) under an accrual environment. Non-financial performance data relating to departments and agencies associated with the Queensland Government (eg. Government-Owned Corporations, statutory authorities) is also collected and collated. This includes output characteristics and performance targets and results.

The Queensland Government uses this data to publish reports that meet its Public Reporting Obligations. These reporting obligations exist due to Commonwealth and State Law, Acts of the Queensland Parliament, Australian Accounting Standards and Australian Bureau of Statistics requirements.

**What are the key components of Tridata?**

The three key Tridata Modules, used for input and reporting of financial and non-financial information, are:

1. the Input Application (IA), which holds;

---

¹ Document 2-12
² Document 2-9
³ Document 21-10
• information in financial statement format (Operating Statement, Statement of Financial Position & Statement of Cash Flow), for both budgeted estimates and actual results;
• information on forecasted estimates for the current year;

2. the Adjustment Tracking Module (ATM), which holds information on adjustments to the budgeted financial statements; and
3. the Performance Evaluation Module (PEM), which holds information on performance measures and targets for Agency outputs.

Financial information in TriData is input using whole-of-Government Financial Information Requirements or (WoGFIRs). WoGFIRs are codes attached to financial information to guide Departments/Agencies under accrual accounting. This guide provides a single source of all valid component codes that can be used to classify accounts, together with comprehensive definitions for each major activity type. The WoGFIRs have a hierarchical structure, or outline, which allows for consistent reporting across entities.

Who can access Tridata?
TriData access is available to both Agencies and Treasury Analysts. All State Government budget sector Departments, Commercial Business Units, Statutory Bodies and Government-Owned Corporations with reporting obligations under the Managing for Outcomes reporting framework require access to TriData.

…

How is Tridata used?
TriData is used primarily for budget development and monitoring, and reporting of actual results. Agency users enter, view and query their budget and actuals financial data and outputs non-financial performance data. Treasury Analysts then review and approve the Agency data. They also use TriData for analysis and reporting. Treasury uses the data to consolidate and produce Whole-of-Government Statements for Budget and reporting purposes.

Treasury Analysts have a range of information available to them through TriData. The financial statement information in the Input Application (IA) is held at the detailed WOGFIR level. This provides detailed information on the account code, purpose of the financial information and any counter-party involved. Treasury Analysts can view this detailed information while reviewing and approving the entered amounts. They can also print reports at a “rolled-up” (financial statement) level. Until Treasury Analysts approve the information input by Agencies, it is not available for consolidation or whole-of-Government reporting.

Agencies seek adjustments to their budgets through the ATM. Treasury Analysts are required to review these adjustments and recommend the same or alternate adjustment amounts. Treasury Analysts then approve the adjustments in the ATM once the appropriate approval process (ie CBRC, Treasurer or Treasury) has occurred. In the PEM, Treasury Analysts view, review, approve and report performance information input by Agencies.

Treasury Analysts also have a range of reports that they can access via TriData Report Production in their Network Applications (available through the ‘Start’ button). These include approved fiscal limit reports, adjustment reports (for sought, recommended and/or approved status), financial statements and a cash flow mapping report, which assists agencies in reconciling their Statement of Cash Flows. The TriData Report Production module is not accessible directly by agencies and Treasury Analysts may be requested from time to time by their agencies to run these reports on their behalf. The TriData Help Desk can also provide assistance with this as required.1

From July 1st 1999, the Tridata system will commence operation to support central government information requirements under MFO. The Office of Financial Systems and Training (FS&T) has developed a set of programs to assist agencies to create tables in SAP R/3 to store mappings to WOGFIR codes and subsequently extract actuals data to be loaded into Tridata.¹

A1 Purpose of the Financial Information Requirements

Accrual information has been collected using the Whole of Government Financial Information Requirements (WoGFIRs) since the 1998/99 Budget and from 1 July 1999 for Actuals.

Agencies should note that the WoGFIRs are not a specification for the departmental chart of accounts.

Under accrual accounting, a greater range of information is required to be reported to Treasury. Financial data is classified into five groups: assets; liabilities; equity; revenues; and expenses. Accounts from each group now require a FIR code.

It should be noted that the information required does not have to be stored in departmental general ledgers. It is sufficient for the coding block (FIR code) to be attached to activities in the subsidiary ledgers of SAP or other software packages.

Treasury’s Office of Financial Management has developed a generic method of extracting the information required from departments.

Uses of the data

The purpose of the expanded WoGFIRs is to enable the various uses of the data to be met through a single data collection mechanism. This is to avoid the numerous information requests issued to agencies throughout the year.

Treasury will use the collected information for statutory reporting, cash management, appropriations/budget monitoring, Whole of Government position assessment and Government Finance Statistics. Information is also provided to the Commonwealth Grants Commission, the Australian Bureau of Statistics, ratings agencies and other users.

Frequency of collection

It is intended that the majority of this information will be collected on a monthly basis.

Treasury acknowledges that additional information will be required at the end of year to complete AAS 31 reporting requirements. Agencies will be notified of these requirements at a later date. Since this information is only required once a year, it was decided not to build these in to the WoGFIRs.

Representatives from agencies were consulted at the commencement of FS&T’s project to ensure that the greatest number of common systems’ requirements was addressed in the development of the extract programs. Nevertheless, the programs are generic in nature and will require each individual agency to adapt them and make configuration changes to their SAP system accordingly.

To ensure the successful adoption of the extract process, there are a number of steps and external processes that agencies will have to undertake. In addition, there are considerations from a TriData and MFO perspective that may also have an impact.²

² Ibid, 1.
We developed in tandem with the whole policy framework the Treasury finance system that we rolled out across government, the budgeting system across government. We were quite prescriptive in terms of the codings, and how we wanted things presented. We were prescriptive in that, because we wanted a single system, TriData. We wanted a single system that could roll out the reports according to the Commonwealth reporting requirements, to the reporting requirements out there in the public arena in terms of end of financial year reports. The TriData people developing that system worked hand in hand with my team who were actually developing the policy framework for the accrual output budgeting.¹

The Strategic Financial Management Directorate was driving the policy development and implementation of the Managing for Outcomes framework. As sort of an offshoot from that, we had a little systems development team, or TriData development team, which did the development of the requirement specification, the request for offer, tender evaluation, business requirement specs, contract negotiation and so on for the system. It was not actually formally part of the SFMD unit; it had a little life of its own basically. However, both of those reported to a Managing for Outcomes Steering Committee, which was established to look after the whole implementation.²

We had an external vendor provide the software and do the actual systems development side of it, although we had a fairly big internal team. We had some departmental representation on that but not a lot and we had one or two people from I think, Ernst and Young providing a bit of quality assurance along the way. However, largely the players were Treasury and the vendor DSS, Decision Support Systems.³

DSS did some work for New Zealand Treasury some time back, when New Zealand Treasury went to accrual and they also developed the same system for the Department of Finance at the Commonwealth Government level. When we were selecting the vendors from the request for offer process, they certainly stood out as being a company that had a pretty good understanding of the business issues involved. Much more than any of the other vendors that we came across at that point, so they were well up on somewhat the different, the specific government issues.⁴

TriData is almost a start to finish system as far as the budgeting process is concerned. The heart of it is a module called adjustment-tracking module, which is, in accounting terms, essentially a journaling tool. When departments want to vary their budgets, they have to put in a request through this adjustment-tracking module, we have the facility to examine it, and the Treasury analysts can review it, alter it, if they want to. If we decide we are not happy with the numbers, we can form an alternative view. We use that to take requests for budget variations to the Cabinet Budget Review Committee. When we get the decisions from that Committee, we will either approve or reject the variation.

¹ Document 8-11
² Document 16-12
³ Document 16-12
⁴ Document 16-12
that is in there. Whatever the result of that variation is, we then process that adjustment, that updates the financial statements for the agency, and in this way we generate financials on a budgeted basis for each department. That functionality as we update adjustments feeds through to a cash disbursement module so that these adjustments are approved and the amount of funding that agencies are going to get changes and we adjust the amount of disbursements that they get on a fortnightly basis. We can do that fairly well automatically through that process. That is how we control the expenditure limits and the disbursement of funds. Within TriData, we have a facility for collecting monthly actual information from agencies, which we can then use to see, track how well they are going vis-a-vis their budget. We also can collect from them monthly forecasts if we want the activities, so that we also have another benchmark to track how their activity is going throughout the year. We do all of that with a common agency structure and a common chart of accounts so that whether we are looking at budgets, forecasts, cash flows, or whatever, it is all comparable over time.¹

The primary purpose of TriData is the whole-of-government financial reporting in the different formats. But there is sufficient commonality amongst those formats that it really comes down to having a chart of accounts that is sufficiently detailed to be able to be rebuilt into whichever different format that you are concerned with at the time and we actually set up in the system a series of consolidation hierarchies. We have two, one for GFS and one for the AAS31; the AAS29 stuff we do not do so much to a hierarchy but rather through tailored reports.²

We use the GFS presentation, for budgeting and planning because that is the Australian standard. There is a binding agreement of the Commonwealth, states, and territories to use that whereas there is not such a requirement to use the accounting standard. The accounting standard is intended for whole-of-government actuals reporting, but the only standard that really exists for budgeting reporting is the GFS standard.³

In some senses, TriData is very much a consolidation tool and agencies would not have a need for anything like that. It probably is unique to the Treasury environment. We are trying to pull together information from many different agencies, which probably all have their own approaches, their own charts of accounts and, different ways of looking at things. Hence, we have a need for a tool at the end that can map all that into a common format for us.⁴

We actually do not have any links and I am not aware of any agencies that do, although some may. Do not have links between SAP and TriData as such. Agencies or departments typically run an extract tool, which has been developed in using

¹ Document 16-12  
² Document 16-12  
³ Document 16-12  
⁴ Document 16-12
SAP technology, which extracts information into a file, which then can be aggregated into the format that we require for input to TriData.1

All of the TriData modules are online for agencies. It is an internet-enabled system, or some agencies use the internet and some go through Citech through the government network; but in either case, they have online access to all the data, all the time. We get agencies to do most of the updating and validation in the system.2

The AAS29 is a consolidation standard for departments. It is really very specific in its application. It would not really even apply to a government owned corporation or something like that, and there is not a lot in AAS29 that is not actually covered in most of the other accounting standards but basically, it makes it mandatory for a department to do a full consolidation. Moreover, it provides a lot of the definitions and information that someone who was only relatively new to accrual accounting would need to know to do that job. It is an attempt to produce a how-to-do-it for a new departmental manager. The AAS31 is just looking at much the same thing but from a different point of view. It is a requirement on government as such to do a consolidation of all of its entities. Again, it is a mandatory thing and there are not many standards, which actually have that kind of reach to tell a government that it must do a consolidation. It is conceptually very consistent with the AAS29 but there are a few instances, where there are some differences in presentation but most of those stem from the process of consolidation and elimination of entity things. There will be some things, which are relevant at an AAS29 level, which are not relevant at the AAS31 level. An example of that would be the biggest item of revenue for agencies by far under the MFO framework, the appropriations that they receive from parliament; under AAS31 that is eliminated because that is paid from Treasury. It is taken away on consolidation; it is an item that would appear in AAS29, but not in AAS31. There have been over time some different transitional arrangements for some things under AAS29 and 31. Just through the process of changing the accounting standards, they are not always necessarily changed in a synchronised, coordinated kind of fashion; so one will be updated one year and another one might be updated next year. Therefore, there is plenty of scope for those differences to emerge over time but the accounting standards board is looking at making some changes to both SS29 and 31 to try to get them more integrated and to make it easier to maintain them.3

TriData, the whole-of-Government financial management system, was reviewed and significantly improved to make it more functional and reliable. The changes to TriData made it easier for agencies to prepare high quality and timely financial information to meet their own financial management requirements and Treasury’s budget development, monitoring and reporting needs.4

We are reviewing that now with probably a view to focussing more on the financials than the non-financials. Where that goes I am not sure, but the problem

---

1 Document 16-12
2 Document 16-12
3 Document 16-12
with the non-financials is that they tend to be different sets of items for each agency and the problem is you cannot consolidate them. You cannot aggregate them across agencies to a whole of government view like the ones you can with the financials. That raises the question, is it cost effective to have a large database to do that when there is no possibility of bringing it together? What we’re looking at now is whether, in the context of X-economy initiatives and more electronic document management, whether we’d be better off just collecting stuff on a document basis and storing it on a document basis rather than having it sitting in a database. There is also that issue and the other issue that we are looking at is I guess just the format of the performance information on financial information that we are getting at the moment. Whether that is necessarily the most useful suite of information, but I guess, that is a different issue. Nevertheless, we have been up until this point collecting non-financial information through TriData on a quarterly basis. That probably will not continue to be part of the system though.¹

The true costs of costing—

Economic agents must have knowledge of expenditures necessary to make available a product or service for a contractual or market transaction that can only take place when a price has been determined. Costing or cost-accounting that provides the conceptual structure for getting to know this expenditure is, however, much more than a means to allocate expenditures for services and products. As measuring and calculating technologies, cost accounting methods also proffer the means to evaluate and hence to control. Cost accounting generates managerial knowledge.

In parallel to the evolution of the new public management doctrines, a novel costing system was pioneered in the manufacturing industry during the years 1984 to 1992, which became known as activity-based costing [ABC]². Activity-based costing was mainly developed by Robin Cooper and Robert S Kaplan³. At the beginning of 1988, the criticism of traditional costing systems was put forward somehow modestly, by proposing a plurality of approaches that varied depending on their purpose—inventory valuation, operational control, and product cost measurement—while stressing the simplicity of these systems and consequently their successful operation on personal computers and in a decentralised way⁴. Only a few months later, activity-based costing was touted as the only alternative that “can paint a picture of product costs radically different from data

¹ Document 16-12
³ Ibid.
generated by traditional systems". This marks the settling of that new approach, still to be put into practice with use of a microcomputer. Activity-based costing is not only a “formal accounting system” but a “tool of corporate strategy”, since important decisions cannot be made by managers “without accurate knowledge of product costs”. Thus, ABC did not stop with the claim that it makes overheads of individual product and service lines entirely transparent, and that it does away with the practice of estimating costs instead of determining them accurately. It was turned from a calculative technique into a means of managerial control and labelled activity-based management (ABM).

As pointed out by Jones and Dugdale, the emergence of ABC bears the distinctive features of the creation of modern management knowledge. It was contentious, in that traditional discourses and practices were radically questioned, while strategic status was simultaneously claimed for accountants. It was driven by commodified management knowledge, in that it was firstly promoted and turned into practices by management consultants, and that secondly it was originally incorporated into computer software. Its integration in computer software started as the suggestion to use spreadsheets and culminated in the integration into ERP software. The proponents of ABC did not only claim the necessity of their approach in superseding prior costing methods. With the postulate of it being a management approach it was positioned as knowledge that was relevant for top management, while “[advancing] the case for management accountants to be the key agents in controlling other professional and managerial groups on behalf of executive and owning principals”. ABM is political in that it sets up a distinction between “value-adding” and “non-value adding” activities. This allows rationalising of the scrutiny exercised over product lines, customers and staff managers, while strengthening the status of accountants as the supplier of precious knowledge for top management.

Parallel to the increase in status of ABC knowledge and expertise its generalisation evolved. Originally, a reference to a projection of the situation related to manufacturing in the USA, the aspirations of computer-aided manufacturing in the late 1970s and early 1980s, and conceived as an engineering ‘solution’, ABC ended as a universally valid

---

1 Robert Cooper and Robert S Kaplan, “Measure cost right: make the right decisions,” Ibid, 100.
2 Jones and Dugdale, “The ABC bandwagon and the juggernaut of modernity,” 134.
3 Ibid.
4 Ibid, 156. point out that the predecessor of ERP, called MRP and MRPII (see Chapter 7: Commodified Management Knowledge: Information Systems and Expertise) integrated standard costing techniques, and because of that were blamed for the failures of companies using them.
5 Ibid, 151.
6 Ibid.
knowledge. It was supposedly applicable in all kinds of industries and organisations across the globe\(^1\). Thus, ABC is a commodity due to its creation outside traditional environs, such as academe and professional associations, and being instantiated through consultant work, business press, and computer software. Truth becomes the quality of merchandise\(^2\); its success is measured by how many times it has been sold requiring it being vendible to as many potential customers as possible. It has to also to be costly and its effects must be crucial for the most determinative potential customers. The second aspect of its truth is political. Its verity emerges from the contentious efforts of its proponents to replace other knowledges, other expertise, and establish control over knowledge that is valued by top management.

Peter Armstrong\(^3\) has highlighted the ontical paucity of the ABC approach. It is based on the assumption of a ‘realist’ view, in that all direct costs are external to any accounting system brought to bear on them; direct costs are extant beyond the case of a production engineer or an accountant. Indirect costs may also be seen as debased by being merely estimates of a more or less arbitrary nature. This means that direct costs are real, while indirect costs are constructed. Hence, ABC posits that all costs are ultimately direct, and accessible to exact measurement in principle. If approximations are being performed, then this is to shorten the procedure, not in the sense of estimates. In this way, all indirect costs are defined as direct costs emerging from real activities, in this way establishing the postulate of profound accuracy\(^4\). The claim for accuracy and ‘realness’ of the ABC method is supported by its integration into large-scale business software, where it is presented as the accounting correlate of process engineering\(^5\).

**calculate …**

**ABC… It’s as easy as 1+2+3**\(^6\)

**Costing system**

Agencies are responsible for selecting, implementing, and monitoring a costing system, which provides reliable information on valid output costs. Costing systems that are considered acceptable are discussed in

---

1 Ibid, 157.
Output Costing Guidelines published by Queensland Treasury. Costs and benefits are to be considered when determining the nature and complexity of costing systems. A detailed, complex system may provide more information, and the additional expense may be warranted in light of the benefits gained.

Recommended costing technique

Activity Based Costing is the costing technique that is recommended by Queensland Treasury for initial consideration by all Government agencies prior to adopting any new methodology. The [Public Works and Housing] Department’s Output Management Project team manager Sally Cook said PW&H has already specified its outputs, trialled and evaluated costing methods using SAP financial management software, and converted its 1998-99 cash Budget to accruals at an output level.

PW&H is also setting the pace in the introduction of systems. It is one of the first organisations in Australia to trial the SAP activity-based costing module (CO-ABC) to evaluate its desirability for the costing of its activities.

They are going through that transition towards a better management accounting system than they have had historically. Historically, they have reached the point where they are for a number of reasons. One appears to be the lack of understanding of full costing at all or its needs. The idea of their being a responsibility centre, like a cost centre and the idea of determining the full cost of doing things, in terms of this is our service entity for the Queensland government servicing the general community. If people need to know what it is costing to eradicate fire ants, then we should know what the real cost is -- lack of seeing it in that light. What they have seen is the only thing they have run on their financial report, the information that an external funding agency was prepared to see on it. Anything called overhead, central charge, they did not want to see on that report, and therefore it was irrelevant to their manager. It is not my cost it is some central thing, it is budgeted, its resources are allocated from central services, it is not my problem. I am not accountable; it is not a controllable cost to me. Therefore, it is now really pressure from Treasury to move towards more full costing.

You have the inertia of agencies that means, I suppose, coming back to the whole concept of measuring outputs as a similar thing. If you could put in place, a clear regime that says how we are going to measure the outputs of the Department of Treasury. Is it pieces of policy that we prepare? Is it actual outcomes, is it the delivery of the ASAP agenda or is it simply that we have delivered the best possible advice that we can and, the outcome is outside your control? How you identify and actually cut that to get to the best possible deal? What we’ve found with some of the management accounting issues and activities based across things, is that you have a range of agency acceptance or otherwise of that, and some agencies see it as a very useful and beneficial tool, and they have taken

---

3 Ibid.
4 Document 16-8
it and run quite hard with it. You have other agencies who say well it is all just too hard, and what is it actually useful for. We have been running our own systems in the past and we know that we are happy with that. That inertia is very difficult to get over. What we, as an organisation have tended to do is to perhaps try and pick the highest value adding areas in which we can spend our time and resources to actually drive some reform.

We have some very good examples where we can actually look at the unit costs. Pick out a cost of delivering a service, and then you can start looking at cost effectiveness, looking at cost in relation to the results or the outcomes that you are trying to achieve. In some cases, it is difficult to do that, delivering a program cost, and in some cases for instance, we might be looking at a trend over time. For instance, the bulk of the funding has increased by ten per cent, but under five key indicators; they are not tracking it enough in which ways. This means taking a fairly practical approach to it. We are not driving performance measures purely to have them there.

To me, it looks like the management people are real powers. One of the principles that have been identified at the concept team meeting, one of the things that we expected in the system is that the system should be able to tell us what the full cost is of a project.

The ABC costing methodology that was set up in 1997 provided some very good information. However, you really have to understand the benefit of doing that, putting the cost benefit in activities can be extremely expensive to do. Often we can get business to provide that information, but what if I am not quite sure how it works and what it is for and how it is going to be used. Certainly if there is not a commitment to using that in the budget process or costing process, well why do it.

I think that we are talking about the logical framework. I think in terms of management accounting, we have done quite a bit in the last few years. It’s all very well to have them on and say yes, we are now reporting on an output basis, but that impacted on a whole range of things like equity return and depreciation, and how we value our assets, and if we are going to set up our business on the basis of outputs. We have to be very good at accurately assigning the full costs of producing that output. For instance the capital costs, how do you apportion the capital costs for health for instance, to particular outputs? I guess, what I am trying to say is, you have an enormous capital outlay with Health. If you have a huge capital outlay and your outputs are not related to those particular buildings for instance, I mean, if you are talking about hospitals and you are talking about an output that is a hospital service, but it is not like that. We talk about acute services; we talk about mental health services, all based on being delivered from that same capital base.

---

1 Document 28-11
2 Document 8-11
3 Document 16-8
4 Document 8-11
being the hospital. Therefore, there are quite a few management accounting issues that have had to be addressed.¹

That’s one thing that I am particularly keen on pursuing, and that’s what I want to do under this enhanced budget process: to get a much closer link between, and to utilise as many of, the techniques and instruments that we can to get better resource allocation outcomes through the budget process. not to have it driven as an input thing that you’ve got $100 last year so you’re going to get $100 this year plus, whatever you put your hand up for as extra money for this or for that. To then turn around and provide us with full information on what you have actually delivered. What it costs you to deliver that. So run through, let us get an ABC regime in place so that we know that it does actually cost this much to undertake these activities. What has that actually delivered for you? Is that, has that met the performance indicators that you said you were going do? Has it achieved these particular outcomes that your Minister has agreed to with the Premier as his you know, lying in the sand over there that that is what we are seeking to achieve. So I suppose it comes back in the circle. What are you looking to do? Are you looking to maintain the integrity on the input side through the legislative basis that you currently have or do you want to fundamentally turn that around and say, what are you seeking to actually do, government agencies, and that is what are you doing about delivering on these priorities, enhancing these particular services for Queenslanders. How do you measure that in this fashion? How have you performed against those measurement targets. What has it cost you to do that actually and to undertake that and, is that the best way to be spending your money.²

The OFM was awarded a Commonwealth Government Technology Productivity Gold Award for enhancing a system that can enable our clients to integrate a variety of business information to report on business performance. The system will gather financial, activity based costing and human resource information and deliver it in a user-friendly web-based environment. The system is widely recognised as a potential influential extension of existing technology and has been demonstrated at various public sector and industry conferences in Europe, Singapore, and Australia.³

and discipline

If managers are to appreciate and use product costing information, they need to feel confident that the information is reliable. They should realise that if they are feeding garbage in to the system they will get garbage back out. Lack of trust in the data leads to duplication of systems, bad decisions and confusion. It is therefore, important that systems are simple, robust and supported by managers.⁴

There is nothing wrong with the accrual accounting and management accounting systems, provided the organisation believes in it. Management enforces it, accurately, promptly, and then people might be required to explain why those figures

¹ Document 8-11
² Document 11-11

283
they get are wrong and are low against value and high against budget. These are sort of the lessons, and I think it has all to do with the culture of the organisation.¹

The methods of reporting are there, but people need to be trained, and informed about their meaning and held accountable for the reports from those systems. No one will take it seriously until then. The data that is put in may be rubbish, when people have put in for example, their time. They might be saying, all those projects there, I am actually involved in, but how many will I put on my payslip, on my timesheet. What they are doing is saying, I would not split myself over any more than three of them. So all the figures are wrong, it is not actually a reflection of the cost of the project, because nobody ever is held accountable for the amount of time they spend on each project.²

It is always top management that make it or break it. This is all about becoming management for them and how management have, or have not in the past, particularly evaluated performance, isn’t it. You cannot just say, we will put a system in, take care of that. You actually have to live, eat and sleep it. You have to actually take those reports, interpret them and require people to explain why this or that was the outcome. Because, if they are not held accountable for that report, then it is just a piece of rubbish that the system spits out. That is really what has been, one of the things that has been happening.³

Okay, what they have been doing is requesting reports. They want reports that may be related to issues like the development of rural women in Queensland. All of sudden the department looks at its information systems and finds that there is no way of finding that information from the information system. We need to of course, come in as a scramble, to try to find out how to answer that question and various parts of the organisation, different business groups might be doing something with rural industry. A training program here or there or providing internet access maybe to some rural spot for women to get access. It is a scramble to try to find how to answer the questions that government have put to them. That is a very costly and inaccurate process and they do not have any measures to be able to report on how effective those programs have been. For example, they want to know for some educational program conducted in Queensland, what the male/female breakdown is, how participants did rate it, and did they actually learn anything. They stand and look at the information systems and say none of that is in our information system.⁴

An accounting firm to start with would have to account for every four minutes; you put in your time sheet. You also put in a breakdown of your time for the entire week, accounting for every four minutes, whether it was client work, lunch-time, photocopying, filing, travel. Every four minutes and people are held accountable for all of those hours. What proportion of your time do you spend photocopying, how much time you have charged that client against budget for that

¹ Document 16-8
² Document 16-8
³ Document 16-8
⁴ Document 16-8
client. Now that [government] is a service industry like this and they are held accountable. All the intricate record keeping is available and it is all about staying within budget against what we plan to charge to the client and how much margin there was there for profit. That is probably a better comparison than manufacturing. They have to operate a full costing model and make sure they charge enough to cover all their costs, not just the ones that are directly related to seeing the client.¹

Many people are there because they have always been there. The scientist who tests water, or whatever, he is doing it because he believes in it, is a scientist. He doesn’t like filling in a timesheet and each day, he decides what he’s planning to do so as opposed to you know, somehow being held accountable for however many hours he’s doing it. Therefore, there are other real serious cultural issues.²

Consolidation deferred—accounting and accountability

They did a timeline on it at one of the meetings, over the last twenty years, all the different attempts, different systems that have been forced upon them. They referred to all of these things and all the different attempts to do the same thing that we are doing now, in different forms. The critical factor that was lacking in all the way through was lack of commitment: Top management commitment and commitment from within the organisation, because they could only see themselves on the axis of organisational structure. They did not see any other sort of reporting as important in terms of their individual performance evaluation. However, that is about to change.³

There was a strong focus on financial accounting side of it, getting operating statements, balance sheets, that was going to be how the budget was derived and that, in the future. There was a project on cost accounting and there was a project officer in that. We wrote several booklets and did lots of training sessions on ABC costing. A number of agencies took that up, ABC costing. I do not think that it is going really still to that extent, but there was probably more of a focus in terms of what SFMD was doing on the financial accounting side, the understanding that the management accounting side was actually more the departments’ issue and responsibility, although we did provide a lot of guidelines. There was a booklet on costing, of outputs. There was a separate project working on that and all of us got involved in getting that out across our agencies. That information was made available to everybody. However, in terms of the split if you like, there was financial accounting, there was management accounting with cost accounting, and then there was the budget process. We had those three different streams that we were looking at. Financial accounting probably fell more into the budgeting side. We would budget more on that information than on costing information. In terms of a split between

¹ Document 16-8
² Document 16-8
³ Document 16-8
management information and financial information, I think, probably financial information would have had about between 70 and 80% focus as opposed to management accounting.\footnote{Document 28-11}

Around the end of the year, there is a lot of transferring going on because there is a lot of journaling of figures around to make it look like it balances. A bit of mistrust of the system, generally because they put any figures in and they can adjust them out and transfer them around as well. It is not as if you type real numbers in and then you have to be held accountable for them, because they are not.\footnote{Document 16-8}

I look at my branch and I would say we provide management reports; we do not do ABC costing. We do costing essentially based on our ledgers and our cost centres. Which is probably not very satisfactory but an organisation the size of Education Queensland, to be based on costing would be a massive exercise and I would have to be convinced that there were benefits that outweighed the costs of doing that. I think just, the actual bringing in of accruals as opposed to cash was a huge cultural change in the public service. We have 1,300 schools and they operate on accruals. We are continually being asked why we cannot go back to cash, and I have explained why we cannot go back to cash. Change in itself of bringing in accruals was a massive with the public service that had been operating on cash for a hundred years. I think that is probably the main reason for the greater focus on financial accounting. If we had already had accrual accounting and we brought in a Managing for Outcomes framework, we would probably have had a much stronger focus on management and costing side of things than we were able to. ABC costing was seen by everybody as being, okay that is probably top of the range, best thing that we could do but it is a big job, a massive job, and it is expensive.\footnote{Document 4-12}

What I was getting at before though was, SAP is here. It is a finance system and they have various other systems that feed into the data warehouse. Now, they have not been using SAP for reporting. They have been reporting out of the data warehouse. They keep information up in the data warehouse that did not come out of the SAP system. No managers, program managers, not anybody have been doing reports out of SAP because of licensing issues. Therefore, nobody is actually an informed user. The chief management accountant at DPI does not even have a log in. The project accountant is now starting to work with the SAP team who has been training people in the core accounting for the last twelve months, only recently got an SAP login. Okay, so, the data warehouse is the reporting structure. The current SAP team though are proposing greater use of the reporting capabilities of SAP itself.\footnote{Document 16-8}

I am not quite sure what other agencies are doing in terms of costing information. However, I would imagine that the CSA type traces would have to have some kind of costing system because of the way they operate as a shared service pro-
vider and yes, and perhaps the shared service provider, corporate services review stuff that is coming out of ASAP, will drive some more of that costing information. It is certainly costing around, transaction processing, maybe not so much around the strategic financial management and organisation and the actual service delivery within the department, but certainly around the shared service provider, there would have to be some kind of costing regime, I would imagine.1

The other issue that seems to have lead to where they are is total reliance on implementers of SAP. Zero internal knowledge. The service agency [CSA] that supports this department has zero knowledge of the CO module, zero. The bureau that services this department has zero knowledge of this module, and there are no internal SAP people in this department. There is no way they are going to be using controlling, the controlling module at all. So essentially, in terms of quality of implementation, they are not using the functionality that they should. They are not following proper accounting principles and say the system was imposed, yet another system.2

The issue of the accountability is one. Again we’re encountering that through this particular process, where devolution has provided agencies with what they perceive as a greater degree of accountability and responsibility for undertaking particular areas or functions to which they have been given that responsibility. That is then supported through the financial management, financial administrative and audit act, through having accountable officers, who then have that responsibility to prepare and report on their financial statements and the other issues under financial management standards under their control. That is fine, no problem with that. What has happened is not that the devolution has not gone to the heads of agencies, but I think it has been utilised as a way of saying: we know our own business best, and how can you come in and say, look, you are not delivering this properly or not delivering that properly. It is still, in many respects, an input focussed approach, rather than an output focussed approach. So we’re still not providing appropriate performance incentives and sanctions that are based on what has actually being delivered, and that is very difficult in a lot of cases to actually measure. How do you then provide an appropriate regime that has, through devolution of the activities and therefore the responsibility and accountability, for delivering those activities to the best possible extent, through setting in place appropriate performance benchmarks, which then measure what has been delivered, as opposed to how has the inputs been utilised? So there needs to be a fundamental, a further turning around in the focus from the input type of approach to the output focus.3

1 Document 4-11
2 Document 16-8
3 Document 11-11
Expertise in transition—mediating the blueprint

Institutionalisation of innovation may be a rather precarious affair for IT expertise, especially when it assumes the oxymoronic status of internal consultancy. Part of the raison d’être of consultancy is its externality in relation to its field of operation, therefore the emulation of its discourses and practices by a staff function appears to be counteracted by various forces. Institutionalised knowledges may not only be in competition with others within the same organisational setting and external to it, but also be disadvantaged through their own intra-organisational status. The very same bodies of expertise that have promoted innovation become obviated by being kept at a distance by various sides, and by distancing themselves through the adoption of discursive means that are a pastiche of commodified management knowledge.

The Office of Financial Management (OFM) provides advice and services to Queensland Government agencies to improve their financial and business management practices. This includes assisting our clients to develop effective business management processes, skills and systems as well as playing a lead role in supporting the implementation of Managing for Outcomes (MFO) within the Queensland public sector. The OFM provides business and management improvement advice to our clients and assists in the development of financial management competencies. We support our clients to maintain and improve their financial management systems and assist them to realise the benefits of financial reform, systems development and new technologies. Improved business management processes, systems and skills in agencies benefit the Queensland community through the better management of public funds, greater efficiencies in corporate management, better information to aid government resource allocation and improved service delivery. Part of this output was previously referred to as Financial Systems and Training.\(^1\)

Business improvements and benefit realisation

We assisted our clients to realise the full benefits arising from their investment in business systems through the development of benefit realisation guidelines. The guidelines provide a framework for agencies to ensure that the strategic direction for their business systems will be translated into performance benefits and initiatives. We facilitated benefit realisation workshops and training courses to assist our clients through this process. We facilitated a two-day conference that demonstrated how public sector agencies could realise the benefits from the use of innovative resource management solutions and technologies. More than 200 agency representatives attended the conference, which also featured case studies and demonstrations of systems.\(^2\)

Vision

An innovative, continually improving and performance-oriented Queensland public sector.

Key roles

- Support the implementation of MFO across the Queensland public sector.
- Support for the implementation of the Aligning Services and Priorities (ASAP) process across the Government.

\(^2\) Ibid.
• Provide consultancy services to assist Government agencies to improve their financial and business management practices.

• Customise training solutions to improve financial management skills across the Queensland public sector.

• Support agencies to maintain and improve financial management systems.

• Assist agencies to realise the full benefits of their investment in financial management systems.

• Provide a link between Treasury and agencies for debate on resource management policy development and implementation issues.1

The Office of Financial Management (OFM) had been a portfolio office of Queensland Treasury. It had formed as the “Office of Financial Systems and Training” in 1998, reporting to the Under-Treasurer, and with the explicit intent to consolidate into one organisational unit those functions that had previously been distributed within the department. Its duties were initially to provide training to ameliorate financial management practices, specifically with the prospect of improving the operations of the Queensland Government Financial Management System.2

The Strategic Financial Management Directorate (SFMD), established in 1997, was charged with directing and controlling government reforms entailing the introduction of accrual output budgeting—called “Managing for Outcomes”, until the passing of the 1999–2000 budget. SFMD’s mission was accomplished when that budget was delivered in compliance with the reform agenda. SFMD’s operations ceased in September 1999. In directing departments towards the novel reporting and budgeting procedures, SFMD had pursued a “hands-on” approach, whereby its liaison officers collaborated with finance officers in the departments in situ.

After the termination of the Strategic Financial Management Directorate, “the oversight and policy functions” of the SFMD were assumed by the Fiscal Performance Division, in continuance of the reform efforts. This meant that accounting policy and financial management reform and, more specifically, post-implementation accrual output budgeting were returned to a pre-existing division within the department. While the Fiscal Performance Division resumed responsibility in this new context for overall government policy, matters of individual departments regarding the effectuation of MFO became the responsibility of the appropriate business divisions within Treasury, namely Education and Justice; Industry and Energy; Resources and Transport; and Community and Government Services. (The aforementioned divisions were current until 1999 but by 2000 the

2 Queensland. Treasury, Queensland Treasury: a new direction ([Brisbane, Qld]: [n.d.]).
relevant divisions had been reduced to three—Education and Justice; Resources and Industry; and Community and Government Services.)

The Office of Financial Systems and Training was assigned a support role in promoting accounting and budgeting improvements, taking over the training function previously performed by the Strategic Financial Management Directorate. Direct contact relating to the Office of Financial Systems and Training with the departments was carried out by its Client Services section, which was subdivided analogously to Treasury’s business divisions.

Consequently, once the Strategic Financial Management Directorate had met its target of ensuring the delivery of the 1999/2000 financial year budget in compliance with the overall government reform agenda, a further dispersion of responsibilities occurred. Firstly, overall policy development and monitoring became the domain of the Fiscal Performance Division; secondly, the three business divisions within Treasury were required to ensure the further implementation of accrual output budgeting within the departments and agencies in their sphere; thirdly, the Office of Financial Systems and Training, apart from its role as promoter of enhanced financial management practices in conjunction with the accounting information system (QGFMS), branched out into management education to solidify administrative and accounting reform. The following will show how the Office of Financial Management sought to accomplish its initial task - to provide training for ameliorating financial management practices in relation to the implementation of the new standard business systems across government.

The humble beginnings of what later became the OFM can be seen in its predecessor, the Financial Systems Support Group (FSSG). This came into being in 1985 as a training and support provider for the new government-wide accounting system (Management Science of America, later Dunn & Bradstreet). This group was initially formed by seconding eight staff from different departments for a six-month period. FSSG continued to be the central training provider for the lifetime of that system.

The role of providing operational training for the financial computer system was virtually eliminated with the introduction of the new standard business systems (SAP R/3) within the government departments. A central system ceased to exist, and demand for training increased dramatically.

When the change approach pursued by the Strategic Financial Management Directorate (which could be characterised as directing a collaborative effort) was abandoned, the
OFM had to embark on a different mode for mediating management knowledge. Departments and government agencies became redefined as clients and OFM assumed the role of internal consultant.

The OFM provides business and management improvement advice to our clients and assists in the development of financial management competencies. We support our clients to maintain and improve their financial management systems and assist them to realise the benefits of financial reform, systems development and new technologies.1

The problem with redefinition of a government unit into a consultancy role is discussed in the following section, with special reference to the ‘Benefits Realisation Initiative’. By this initiative, OFM aimed to ameliorate financial management practices in relation to implementation of the new standard business systems across government.

To function as a consultant, OFM had to establish its claims for expertise within an environment that was not conducive to such a venture. In comparison with the Fiscal Performance Division, and Treasury’s Business Divisions, as mentioned above, were simultaneously involved in driving the reform further. OFM was the least established at a time when the departments were facing a dispersion of responsibility between three different units within Treasury. Moreover, OFM had undergone successive redefinitions. After its predecessor had lost its training role for the previous system, OFM’s work within a distributed environment needed to be re-established. OFM’s challenge is articulated as expertise being surpassed by others:

Utilisation of the high levels of technical expertise within the Office, particularly as clients diverge from a single release of the SAP R/3 system, and determining our role in supporting these clients.2

This was paralleled by the need to gain recognition for competence with the new undertaking of management education that had been added to the reconfigured information systems support role:

Acceptance by the external environment, particularly our clients, of the expanded role of the Office in consolidating and driving the Managing for Outcomes (MFO) framework within the Queensland Public Sector.3

The objective to “[p]rovide consultancy services to assist agencies with improving business practices”1, appears to have been hampered by the organisation being set up with a

---

3 Ibid.
new portfolio that was also, to some degree, dealt with by the operations of other divisions within the department. It may be assumed that a significant obstacle for its ongoing operations had been its definition as a consultant venture. Examining the situation of OFM in contrast to a commercial consultant service is revealing.

The legitimisation of the knowledge claims put forward by commercial consultants is bound up with a range of conditions:

In general, consultants need to be appreciated by their clients for their objectivity. This objectivity is conferred to consultants because they are considered an outsider to the organisation itself. OFM was not an outsider to government, but rather an integral part of Treasury, the ‘lead agency’ for government reform and information systems effectuation. Therefore, objectivity concerning its client-departments was not recognised as OFM could be identified with the overall objectives of Treasury—these might not have always been shared by the other departments.

Commercial consultants, in particular the larger organisations, can establish credibility and authority by establishing a track record and by referring to successful assignments with significant client organisations. They are able to demonstrate, through their references, that their expertise had been effective somewhere else. In contrast, OFM sought to establish its credibility as a staff function that acted within the divisions of the wider organisation. This conflicted with the aforementioned demand for objectivity.

In particular, their claim (implicit or explicit) to represent information systems knowledge would have been hard to argue. In this realm, OFM found itself in competition with various other actors in the field—the developer (SAP) as the source of packaged software technology and expertise; commercial consultants who mediate between the developer and the user. Finally, due to the decentralised installations of the business systems across government the departments, some of them also claimed substantial IT expertise. OFM could legitimise itself by belonging to any of these established groups, thereby making it difficult for them to demonstrate “differential access to IT knowledge and skills” that would give it a strong position with its clients, who might have identified them with the Treasury department in the first place.

---

2 Bloomfield and Best, “Management consultants: systems development, power and the translation of problems.”
The benefits realisation campaign

The benefits realisation campaign was a major venture, by which OFM sought to bring to use its technical expertise within the overall infrastructure of financial management systems. This campaign was initiated with development of the ‘Benefits Realisation Guidelines’.1

Benefits realisation is a rhetorical construct of the IT consultancy industry, which is apparently closely related to how these experts create and sustain market conditions for trading their services in conjunction with ‘packaged solutions’. Without detailing further specifics of the ERP market, the following observation by Chris Westrup and Frank Knight might be indicative why the ‘benefits realisation’ work attained such high visibility and significance:

Marketplace considerations are important, consultants will often go into a tender for business and therefore have to bid competitively. As a consultant at Andersen Consulting commented, this results in anything but the basic foundation system being left until later where non-tender optimisation work can be offered.2

Benefits realisation may thus be seen as a euphemism for post-implementation optimisation work—the suggestion of a successive contract. The expression itself suggests that ‘benefits’ are already out-there; that they are available as ‘functionality’ of the already installed ‘packaged solution’ that needs to be further unboxed in order for the system to deliver its full performance. Hence, benefits realisation is a phenomenon that has emerged out of the commodified management knowledge constituted by pre-programmed ‘solutions’ and consultants expertise, and also the conditions by which it is traded. For the user, a perceived lack of benefits becomes a problem that can be remedied by further induction of external expertise. This is a case where “…problems get constructed in tandem with the solutions defined by available expertise”3. Information systems consultancy, as an ongoing business, also had to cope with the decline in implementation contracts due to the already-accomplished adoption of ERP by a large segment of the potential clientele.

2 Westrup and Knight, “Consultants and Enterprise Resource Planning (ERP) systems.”
3 Scarbrough, “Problem-solutions in the management of information systems expertise,” 949.
Benefits realisation guidelines

The ‘Benefits Realisation Guidelines’ were a means to raise awareness among managers and IT experts of government departments of a need for them to become proactive. They should “realise the full potential of intended benefits arising from their investment in the Queensland Government Financial Management System (QGFMS)”; it further claims to be a generic approach that “will ensure that each agency’s strategic direction for QGFMS will be translated into performance benefits and initiatives”1.

The ‘Guidelines’ further assume that departments have a plan for the further development of their financial management systems—a “strategic” plan. It is, however, unclear whether strategy in this case refers merely to the projected continuous enhancement of the information system, or whether the claim is made that this “IT-based development [relates] to the strategic needs of the business”2, in this case the department or agency. Within a range of departments, the financial management system might represent only a small fraction of the overall software applications portfolio. For example, there might be systems crucial to service delivery, thus making the financial system strategic, only in the sense of the reporting and budgeting functions within the department and across government.

The ‘Guidelines’ seek to align Treasury’s “whole-of-government and external reporting and budgeting requirements” with “the business needs of agencies” regarding the financial management system. The hint that there are current deficiencies that need to be remedied, refers only to those instances that are observable within the departments, such as “inefficiencies”, “inadequate information”, lack of “data consistency and integrity”, and a general “dissatisfaction” of systems users (p.2).

The QGFMS is, as the name indicates, an accounting system. Yet, the ‘Guidelines’ employ the organising visions of Business Process Re-engineering (BPR) and Enterprise Resource Planning (ERP) in order to raise interest in the benefits realisation initiative. The ‘Guidelines’ suggest “a resource management system, such as SAP R/3, has the potential to significantly change the business processes throughout the agency” (p.3).

---


The guidelines also evoke the mythical equating of information with power and intelligence, by claiming that the system may “significantly empower staff with business and financial information” (p3). Additionally, benefits realisation requires a complete reconceptualisation of organisational structure and planning:

The planning for benefits realisation will also affect the corporate planning processes of agencies in that it will require the alignment of the management information system and IT infrastructure with the organisation’s strategic direction.1

In essence, post-implementation optimisation work is thus presented as the technological imperative that enforces a restructuring of the relation between organisational objectives and information technology.

This corresponds with the above-mentioned ambiguity of the concept of strategy - either being a plan of action for information systems development, or being the claimed link between the future objectives of the organisation and a coordinated information infrastructure. By presenting how Treasury has allegedly envisioned the matching of organisational with technological development, this ambiguity is further sustained. This picture renders (p.6) a vision of a loosely coupled evolutionary development towards ‘best practice’ on the business side, and ‘e-commerce’ on the technology side. This paradigmatic strategic plan thus goes far beyond financial management—financial accounting and management accounting—and suggests the comprehensive adoption of the suite of applications offered by the developers of standard business systems as a seemingly inexorable trend.

In the guidelines, a variation of the ‘Balanced Scorecard’2, named “benefits scoreboard”, is applied to represent the different expectations that should be met by the QGFMS in order to meet client and departmental business needs, match government regulations, and also “provide a return on investment” (p.7). In emulation of the subtitle of a popular book, the program of action to be proposed is “Translating Strategy into Performance Benefits” (p.8). Among the numerous objectives to be enacted within the four squares of the scoreboard, the government reform agenda is a single item: “Support the MFO framework” (p.8).

---


Notable is the interpretation of the ‘fifth’ dimension within the ‘Guidelines’ adaptation of the ‘Balanced Scorecard’. While Kaplan and Norton put at the centre of the four squares of the scorecard the company’s vision and mission (or strategy), this position is taken in the ‘Guidelines’ by the “QGFMS Strategic Plan”\(^1\). This approach is paralleled by academics who propose the Balanced Scorecard for systems evaluation, more specifically the evaluation of standard business system implementation where the four perspectives are centred on the “Project Perspective”\(^2\). This can be seen as a strong rhetorical resource rendered as a graphic depiction—the information system centred as the determinant of the other perspectives. It is a way to reaffirm information technology as strategically significant.

As conceptual tools, the ‘Guidelines’ offer the following implements: (a) a list specifying and briefly explaining how to handle the items to be considered, (b) in a form or template suggested for use to plan and monitor benefits realisation, and (c) a synopsis of benefits, enablers and ways of determining the advantages to be expected from the improvement work to be undertaken. Benefits are seen in terms of timeliness, accuracy, and reliability; ways of determining the advantages are mostly expressed in labour time savings, while enablers mostly consist of an enumeration of the “objective” functionality of the software in use—SAP R/3.

Eventually, it is argued that benefits realisation—supposedly capable of remedying perceived deficiencies and inefficiencies arising out of the installation of the information system—may be a container to spread the message about ongoing innovation:

Benefits planning can become an effective tool for communicating the vision for QGFMS and can assist in developing a better understanding of the desired future state of QGFMS. As such, benefits planning can become an effective change management tool in that it has the potential to assist in overcoming resistance to change and in developing a positive attitude towards the new system.\(^3\)


Thus, benefits realisation becomes politically charged in that it is re-orientated into a rhetorical resource for projecting a future state of the organisation and challenging conflicting views.

In order to disseminate knowledge about benefits realisation and to initiate appropriate practices within departments and agencies, OFM implemented different strategies such as workshops within departments, a conference, and a cross-departmental interest group called Benefits Realisation Network. The workshop(s) and the conference were held during the year 2000\(^1\), while the activities of the special interest group lasted from the end of the same year until the end of 2001\(^2\).

**Benefits realisation workshops**

Apart from the ‘Guidelines’ and its associated instructions and templates, OFM utilised for the workshop(s) two main supplementary implements: a questionnaire, the *pre-workshop - agency status report*\(^3\), and a manual, the *consultancy brief*\(^4\), outlining the conduct of the workshop for both OFM consultants and the managers within the department.

The *agency status report* sought to elicit basic data from the department where the workshop was being planned, for the purposes of the OFM consultants. It requested the identification of general operational and development issues. However, most of the examination was directed towards:

- technical items, such as the current software release and components being used, which activities were supported by the system, and to which other (legacy or third-party) systems interfaces were maintained;
- assessments of the information system in terms of perceived lack of efficiency, pecuniary and staffing demands, and upgrade and configuration considerations.

An evaluation of this data collection instrument suggests the following assumptions: (a) OFM was unaware of the current shape of the information system infrastructure, and (b) departments were apparently left to define the problems they were facing with the infrastructure by themselves.

---

The consultancy brief, the manual defining the contents and structure of the workshop, had two emphases—strategic planning and benefits realisation planning. Strategic planning sought to initiate the projection of a future image of the financial branch of a particular department and thereby stimulate constant change:

The Strategic Plan will provide a framework within which a clear vision of the strategic direction of the Branch, including QGFMS can be articulated and appropriate strategies outlined that will enable the Branch to continually innovate and develop in pursuit of its mission.1

Benefits realisation planning relies on the active participation of the department’s managers to construct a plan that will demonstrate the quality and gains that can be gleaned, immediately after completion of the workshop:

The deliverables from this part of the workshop will include a series of schedules that can be collated to form a Benefits Realisation Plan that will be used to drive, monitor, and evaluate the Branch’s achievements in harvesting the benefits of investing in QGFMS over the next 2-3 years.2

A report on the workshop run at the Department of Police on 19 March 2000 claims that managers had adopted the Guidelines to improve the financial management system and that this workshop had initiated strategic planning for the Finance Division. Although OFM had suggested that the information system needed to be recognised as a ‘strategic resource’, the outcomes of the workshop reflect rather a modest approach to potential enhancements. However, this approach seemed to be not without contradictions, since it gave consideration to both the developer’s transformation technique, as well as to business process reengineering. Whereas the upgrade to a higher version of the current software is planned to be ‘technical’, that is without the involvement of any changes to the way work is performed. Despite these rather humble plans, the manager of the IS section of that department who intended to pursue this initiative would have needed to cross inner-departmental boundaries thereby immediately facing resistance, and was thus forced to abandon the path of innovation. The concerned department reported on the efforts that “[a] number of enhancements to the SAP R/3 Financial Management System have been initiated in 2000-01 to increase the use and functionality of the system”3

1 Ibid, 3.
2 Ibid, 4.
3 Queensland. Department of Police, Annual report, 2000-2001 ([Brisbane, Qld]: 2001), 64.
Benefits realisation conference

We facilitated a two-day conference that demonstrated how public sector agencies could realise the benefits from the use of innovative resource management solutions and technologies. More than 200 agency representatives attended the conference which also featured case studies and demonstrations of systems.¹

Benefits realisation network

At the end of 2000, OFM changed the approach it pursued with the benefits realisation campaign. Instead of acting as a change agent or consultant by running workshops for managers in the departments to promote a strategic approach towards information system improvement, it became a facilitator for a series of meetings of government managers. These were individuals involved or interested in activities that were considered to be benefits realisation. OFM’s approach had changed completely: there was no plan or agenda, and OFM did not take any initiative, except for providing for the facilities.

I think we realised that we did not have the resources. Doing these workshops was very resource intensive. When I did one at CSA, it involved me, three half days, plus at least 3 or 4 weeks beforehand sitting down with the agency, going through what they required. What they were up to at the moment, what they were looking to get out of the session. I had to consult with staff at FST about how systems could support some of those things etc. There is a lot of legwork involved just to assist one particular agency at one particular point in time. I think the decision was not probably explicitly made but the decision was implicitly made that perhaps with the resourcing that we had at the time, we would be better positioned to not concentrate so much on the workshops. in a way that’s why we came up with the idea of the network, because we thought the network could get the message of benefits realisation out to the agencies in a more resource friendly way. All we had to do was organise the meetings and the agencies rather run that network themselves. They are the ones that come forward with presentations etc. We assist it here and there and there was a lot better way for us I think, to get the message across about benefits realisation to a wider group of people than conducting one on one workshops with individual agencies. It would have taken us 12 months to get round to all the agencies and to get the information out there. Therefore, this is a better way to do things we thought.²

It was not just a resource intensive exercise in terms of me getting up there and facilitating. It was also resource intensive for the agencies themselves. Because they had to dedicate staff to come to the workshop which is fairly difficult to do. The one I did at CSA, there were probably ten. Generally speaking, the same ten over the three and a half day. So we had people from

² Document 18-11-1
their finance area, their business improvement area and the SAP systems type area and stuff like that. So by the time you add all them up it’s probably eight to 10 people who showed up for each workshop. Police, I think was a similar number. I was not involved with that one but, I get the impression it was a similar sort of number. I think in the police one the staff could only afford half a day for the workshop. The realisation was that half a day was just too short a length of time. However, if you could not dedicate any more time to getting all those people in the room together what do you do? Well, I think we just came to a, probably not an explicit decision, but an implicit decision that the workshop way of doing things was not the most efficient way to actually get the message out there about benefits realisation.1

At the inaugural meeting of the “Benefits realisation Network” [27 November 2000]2, it was decided to institutionalise the interest group with its own “Terms of Reference”3. The purpose of the network was seen as presenting exemplars of successful transformations, putting the emphases on ‘case studies’, and also on ‘methodologies’. It also considered extending the scope of matters of interest beyond what had occasioned the initiative—the promotion of improvements to the financial information system—to all the other modules of software in use in government, as well as to become involved with matters other than information systems.

In terms of ‘methodologies’, the approach put forward by OFM—the Benefit Realisation Guidelines, with its Balanced Scorecard application—was already challenged by the presentation of an alternative ‘methodology’ by representatives of another government department. This alternative was called ‘benefit management’ and was actually a method marketed by a commercial consultant company4.

A university institute that was liaising with various government departments in relation to the implementation and management of standard business systems joined the group at the second meeting. The academics offered assistance to interested departments and agencies. This seemed to be in line with the network’s emphasis on ‘case studies’. Advantages forecast for participation were

familiarisation with ‘methodologies’ for improvements;

---

1 Document 18-11-1
generation of accounts of technology utilisation that were transferable;

incorporation of new knowledge into the agency emerging from the collaborative effort;

minimal input in terms of labour time since organisation and execution would be jointly

carried out by OFM and the academic institution;

and receipt of possible technology advice by the academics.

These investigation were to follow a formal, academic protocol for data gathering, analy-
sis and reporting.\(^1\)

Despite the formal endorsement of both the ‘methodology’ and ‘case study’ approaches

as a platform for the activities of the network in its terms of reference, and a rather

steady rate of participation of representatives from government organisations, the level

of interest to materialise these proposed programmatic items turned out to be rather

modest. An evaluation of the network members’ orientation towards these activities

revealed that only one third of them decided to cooperate with the revision and

enhancement of the ‘Guidelines’ devised by OFM. Equally, only one third of the

participating government departments decided to participate in university-based research

on their activities in terms of enhancing the business by using the information system.

Hence, the projected intensification of the network membership’s collaborative efforts

did not succeed. In addition, a range of departments never joined the network. The

university institute that had expended efforts prior to presenting its proposal to the

network meeting\(^2\) had to withdraw from its case investigation, and embarked on a

different collaborative research approach with OFM\(^3\). There were also concerns raised

that the attendance of academics at the network meetings would entail the risk that they

might violate the intellectual property rights of the government organisations by

misusing information gathered at these events.\(^4\) These objections were mainly grounded

\(^1\) Aaron Palmer and Guy Gable, “Proposed case study methodology,” in [Meeting, 26th February

2001], ed. Queensland Government / Benefits Realisation Network ([Brisbane, Qld]: 2001),


\(^2\) Darshana Sedera, Guy Grant Gable, and Michael Rosemann, “A Balanced Scorecard approach to

telecom and financial systems performance measurement,” in 12th Australasian Conference on Information

Systems (Coffs Harbour, NSW: 2001), Darshana Sedera, Michael Rosemann, and Guy Grant Gable,

“Using performance measurement models for benefit realization with enterprise systems - the

Queensland Government approach,” in 9th European Conference on Information Systems (Bled:

2001).

\(^3\) Queensland. Benefits Realisation Network, Minutes: Tuesday, 16th October 2001 ([Brisbane, Qld]:

2001).

\(^4\) Queensland. Treasury. Office of Financial Management, Benefits Realisation Network - summary of

member survey responses ([Brisbane, Qld]: 2001).
in the circumstance that the university institute was believed to be in a working relationship with a consultancy company that sought business with government, but was not endorsed by the latter.

Following the ‘institutionalisation’ of the network, four further meetings were held where presentations were given on the experiences and activities of the government organisations. The final meeting with a presentation consisted of a demonstration by a private consultancy company of their proprietary benefits realisation approach coupled with a software product for its implementation with barely any reference to the audience’s requirements as public sector organisations\(^1\). This was the same benefits realisation method that had been touted by a government department at an earlier meeting\(^2\). Network members commented positively that the consultancy did not seek further contacts to government organisations after the event\(^3\).

Overviews of activities reported to the network suggest that a wide variety of projects had been named benefits realisation, for example, training, reporting, transaction processing. Moreover, measurements of benefits was given minimal prominence, nor was there a strong reflection on strategy\(^4\). One agency reported on linking third party applications to the main system for the automation of administrative processes. Another had developed its framework but this was still being tested. A third department had established that business cases for information systems should include a section on benefits realisation. Within a number of sections in a large department that was a heavy user of business systems, BR-related work appeared to be in differing stages, such as strategy development and prescribing BR for new projects, collecting data for measurement activities, and setting up an intra-departmental network for exchange of experiences. A fifth department accounted for activities that took a business rather than a technology perspective. A smaller department did not make a strict distinction between business improvement and benefits realisation, while in the last case a strategic planning effort was claimed to be still underway. The ‘Balanced Scoreboard’ as promoted by


\(^3\) Queensland. Benefits Realisation Network, Minutes: Tuesday, 19th February 2002 ([Brisbane, Qld]: 2002).

earlier OFM had probably been used nowhere. Finally, when a system upgrade was performed in the department to which OFM belonged, its Benefit Realisation guidelines were considered as not pertinent to this process\(^1\).

**Non-commercial management knowledge mediation – the pitfall of transposing strategy and methodology**

At this point, it needs to be recalled that OFM originally assumed the position of an expert concerning the financial management system that was the common instantiation of the standard business software across government. OFM defined itself as knowledgeable regarding the system in arguing its perceived functionality and seeking to instil the vision of a technological strategy encompassing e-commerce and e-business, service delivery, inter- and intranet, and business process re-engineering. In seeking credibility in this position, it drew heavily on current managerial discourse. The new information system was considered an investment in technology, which consequently required *post hoc* positive returns. This theme was related to proposing a strategy combined with a ‘methodology’ for its implementation. The effectuation of the strategy was exemplified by the technologist’s version of the balanced scorecard, while templates and guides suggested its ease of actualisation. A great deal of the expected benefits were based on the narrative of information as power. The overall significance of the initiative was probably overstated by positing that benefits realisation might ultimately effect the alignment between organisational mission and information infrastructure. Thus, the relation between a strategy for technology and organisational strategy remained somehow diffuse; furthermore indicated by the fact that little consideration was given to the government reform agenda “Managing for Outcomes”.

The abandonment of the approach for instructing on benefits realisation strategy and method could be interpreted as the acknowledgment that competing expertise was present within the individual departments and consequently, local initiatives of a similar character were emerging. OFM’s guidelines attained little attention and, with the network, a kind of pluralistic expert community was established with the foci of methodologies and cases. OFM’s guidelines were actually seriously challenged by the presentation of a proprietary consultant method by one of the departments. Making the turn from the consultant-instructor for benefits realisation towards the facilitator of benefits realisation as research was hampered by the departments’ reluctance to allow

---

outsiders access to their cases. Lastly, the question regarding to what extent OFM’s status as part of Treasury and its relation to the Fiscal Performance Division, and Treasury’s Business Divisions, were conducive to establishing its position as a mediator, remains unanswered.

In its claim for financial (information systems) expertise and its mediation, within its special context OFM would probably have needed to negotiate between all the parties involved: the software developer, business consultants, Treasury, the departments, and the university institute.

The more an organization seeks to exploit the advantages offered by a particular form of expertise, the more it has to articulate and internalize its links with the socio-economic structures, which transmit and legitimize that expertise.¹

Only establishing and maintaining these links would have permitted them to establish the knowledge building power that had been required by an internal consultant.

I do not think we have had a formal presentation for the last couple of meetings as such. It is more just a case of everyone talks about what is happening in their agency, which they are finding quite useful. I guess the network has evolved over the last two years. It started off being formal presentations if you like, to actually get your word out there about benefits realisation, and as more agencies started doing it for themselves it’s now more a case of what are you guys doing at the moment. What problems have you had and oh yeah, we had that problem six months ago and here is how we fixed it.²

Because the message is out there about benefits realisation and there is the network running by itself, what we are proposing for the network next year is that we are not, we actually have made a decision here not to have any, not to actually assist, not to be involved in secretariat type work for the network. Therefore, whoever is the chair of that network, that agency will actually have the running of the network in terms of organising meetings and agendas and minutes and presentations and all that sort of stuff. We are not going to do that role at all.³

Scheme and review—

While MFO is a significant initiative for the Queensland public service, it is about “evolution not revolution” in the way we do our business. MFO is about equipping the government and the public sector with the “tools”

¹ Scarbrough, “Problem-solutions in the management of information systems expertise,” 947.
² Document 18-11-1
³ Document 18-11-1
needed to achieve best practice and continuous improvement in service delivery for the benefit of the people of Queensland.¹

On 14 September 1999, Queensland’s first accrual output budget was delivered under the Managing for Outcomes framework that the Government uses to determine the appropriate delivery of services to the Queensland community.²

It is very complex and it is layer upon layer. If you look at it in the broader scale, you have the Commonwealth review of government service provision. I can give you an example of that. They compare their result, the key performance measures for a number of like agencies in various jurisdictions. They will compare emergency services: the main argument is what you catered in your group towards the end of the year. We all have found definitions really challenging; however they have come a long way, and the reports now are published once a year and we have just received the latest one. They are starting to benchmark. For instance, you take health. There are Commonwealth reporting climates, there are state reporting climates, and there are the various specialist areas that require certain reports. There are complex layers of reporting depending on the particular agency. Not only based on funding, but from a community perspective, how we actually improve and how to have a consultant relationship to other jurisdictions and internationally. A lot of that, we don’t have any control over, that’s there and it’s really up to the agencies to make some sense out of it. From our perspective, what we are saying is, if we have a common set of outcomes and currently, for about 35 measures that we would all like to be reporting against. We routinely report those through the various layers of performance-based reports that we have, to our annual report and the strategic plan, our budget documentation and so on. Layers of reporting, at least, let us streamline that and report on the 10% not the 100%. What we are doing internally here, is looking at a particular outcome, it might be health. We are looking at the agencies that contribute to that, we are looking at the maybe the 7 of 35 measures that we have signed up to. We are trying to provide an in-depth assessment of how we are travelling, not only in terms of the state, but also more importantly for particular groups, in particular locations. Those results are pretty good, but it’s not been good for the aboriginal communities in North Queensland for instance, and then we’re trying to provide some cue as to where our deficiencies might be, how we can actually make a difference and that’s the information that we’re feverishly trying to produce as well and put through to hopefully, the mid year review or the strategic discussions that go on around the budget process.³

³ Document 8-11
ontic structures, institutionalisation of innovation ...

MFO builds on other Queensland public sector financial improvements of recent years, and is a natural progression from program management.1

As it is now five years since the introduction of MFO, it is appropriate that progress is reviewed and more importantly, initiatives are identified to ensure that progress towards the full implementation of MFO is achieved. The purpose of the MFO model was to improve outcomes to communities and to achieve better value for money through improved public sector management. The aim was to ensure better integration of the three primary service delivery processes - planning, resource allocation and performance monitoring. Performance management was seen to be the key to this integration.2

A number of agencies, a number of CEOs from agencies complained very strongly to Gerard Bradley that they were not receiving support for MFO anymore and they were used to it with these MOLOs going out and spending a bit of time with them. The complaints kept rolling in, so somebody decided there should be an MFO Stage 2; stage 1 having served its purpose. Gerard decided that it would go to OFM and part of the reason for that was that OFM had a good relationship with agencies at the SAP level and at that stage, at the training provision level. However, it still did not have the skills that it needed to do the things required of it.3

It was seen a year or so ago that it probably needed a new impetus. I think there was an internal review conducted by BDO Kendalls. There was some recommendation that it might be useful in terms of info to give it another bit of a push.4

Financial management improvement

Following the delivery of Queensland’s first accrual output budget in September 1999, a review was conducted of the Managing for Outcomes framework. While the review highlighted many positive aspects of Queensland’s new management and accountability framework, it recommended improved integration of the changes into agencies’ operations. As a result, work began to benchmark service delivery to ensure value for money. Enhancements to the performance review regime commenced for all Government agencies, with the further development of performance measures and targets in key policy areas. This provides a more strategic focus during the budget process, enabling resources to be better allocated in accordance with the Government’s priorities and fiscal principles.5

In this round, Stage 2, what we have done is stand back and do our own analysis and review, more in a brainstorming way about what has been working, what has not been working. We have looked particularly at what is the agencies’ role in all this. we’ve looked what has been working and not working for them, to what extent has MFO been seen as compliance more than something that they can use to help them manage internally, and we’ve come up with five or six initiative

---

2 Queensland. Treasury, Managing for Outcomes: overview of stage 2 proposed projects ([Brisbane, Qld]: 2002).
3 Document 21-10
4 Document 8-11
projects. First, we revisited the outcomes and breathed some life into them. We had all of the agencies together over a number of weeks and months and CEOs agreed that these are the key things we are trying to achieve. Very high policy order outcomes we are looking at. We have agreed approximately 35 key measures across government that might form the front end of the performance measurement system within agencies and we might start getting better focus and be a bit more streamlined about performance-based reports like the annual reports. There is a lot of documentation coming from agencies. A lot of reports about performance and some agencies have 300 or 400 performance measure items. We’re saying that’s fine, we need to manage this and this is the way you need to manage it, but from a whole-of-government perspective, particularly from the government funding and policy perspective, it’s probably better value to know where we can make a difference in terms of the key areas, rather than having this amount of information. It is really getting a bit more focus across all of the performance reporting.1

We are working very closely with agencies. We are looking to drive or facilitate a much more collaborative approach across the agencies and how they identify a strategy and how they are going to allocate the resources to various things. Again, we are revisiting the way they report their budget documentation in terms of their performance in agencies. It is really standing back and saying, well, in five or six years we have established certain things very well. We have accrual accounting well in place; we have our systems and processes in place for agencies to report routinely on their outputs etc, etc. However, we are failing, in some areas. Therefore, we have a number of initiatives.2

That is our major challenge. It is actually trying to make some sense of what agencies are delivering to clients on the ground, and how we can actually make some sense of it in terms of prioritising funding. We are saying the key, or one of them, is through the performance information. We believe that we can demonstrate a core concept between what happens on the ground and the outcome that might be driving. We worked with one or two agencies to show actually that flow through. For instance, we are talking about, clearly, we subscribe to an outcome of reduced road deaths. The outcome would be improved safety to the community, to keep the key measure that we all ascribe to, particularly across four or five key agencies, transport, etc. Now there are a number of programs set up for that purpose across those four or five agencies. When you look at their output structure, those performance measures that they are routinely reporting on have a clear link back through to that ultimate indicator which is reduction in road deaths. If we are talking about cost effectiveness within the agency, we can actually look at the unit cost of delivering those programs, and we can compare that with whether they have actually had an impact. Transport will claim that they can do that very rigorously in a scientific way.3

---

1 Document 8-11  
2 Document 8-11  
3 Document 8-11
Another example is education where they are looking at a new resource allocation formula. They are looking at for instance, across literacy programs, literacy proving an area where we need to improve, and have done for some time. So the cost of literacy programs in relation to results that are actually being achieved over, obviously a three or four year period.¹

We are doing it through, in a very broad sense, through writing some guidelines, through looking at logical frameworks, but in a very practical sense, the work that is done in agencies more like a case study to show to the others that it’s not impractical it can be done and you can get better at it over time. I mean it is a long process, it does not happen overnight. We seen it in 5 years with that kind of thing, we have endeavoured to model. The model is logical, and is standing up. We are starting to get politicians talking about outcomes. The speak is changing and I do not think it is one of these fly by night models that come and go, and is fashionable for three or four years. I think it is logical and can work, but we have to keep trying and pushing forward.²

We have just developed with the agencies, a mapping of their outputs. One output leading to an outcome, rather than multiple to multiple. Of course, it has to be acknowledged that everything you deliver should be delivered in a triple bottom line way.³

In line with the recommendations of the MFO Post-Implementation Review, financial management improvements will continue to be developed and consolidated. Over the next three years, in conjunction with the Department of the Premier and Cabinet, we will implement a performance management framework for agencies in line with the Charter of Social and Fiscal Responsibility. Specifically, we will foster partnerships with agencies to progress benchmarking and output specification, to develop performance measures and targets and establish better methods for measuring non-financial aspects of service delivery.⁴

It becomes political in Government too. You need to understand also, what the political agenda is of getting it wrong. You cannot have an assessment at the end of the day that says you got it wrong. Because that brings down Government. So it is much better, to see it as an evolutionary learning process.⁵

An outcome could be defined to a point, where there is a single, or a primary intent, notwithstanding other things that it could probably impact on. A typical example could be one output in primary industry, having something to do with services to rural communities, and it does multiple things and it has fire aid programs, funding to rural women and various rural initiatives. in that case is well, that could be de-fabricated to a point, where that clump of funding has a primary purpose and in that way we can start tracking and linking the performance measures that the output level, the very tangible level, up to the more intangible outcome issues. That might be, empowering rural communities or something, or rural prosperity. It’s interesting, out of all of the agencies, 25

---

¹ Document 8-11
² Document 8-11
³ Document 8-11
⁵ Document 3-8
or 26 of them, we have only had two that were still sort of talking in terms of they are not sure whether it is going to work for us. The others have come straight on board, and it is really clarifying their core business. In fact, a lot of them now, are really looking at their outputs, and they are having many discussions around their core business. The agencies should not see this for an agencies sake. What we are saying is, we’re all in the business of achieving that and then we should look at how we can best bring it about.¹

We need to restructure perhaps our financial management processes or essentially the budget process, to reflect better a more formal way of undertaking that type of review process. Therefore, it moves back into picking up a number of elements that we are managing for outcomes process and the identification. That what we are looking at is not an input based activity reporting mechanism, but certainly, a performance based outcome and output regime. We can then look at what results were actually being delivered and how we can actually achieve those. As part of that, what we are looking at doing is how to enhance the budget process and the whole resource allocation activities of what we are going through and that agencies may need to pursue.²

and periodic intervention

Treasury has taken the lead on issuing that reform agenda across those four key whole-of-government areas. Those four whole-of-government initiatives, we are driving them all simultaneously. The one with the highest profile, the one that is perhaps the most, furthest advanced, and the one that obviously has the largest impact on any individual agency, and the highest financial issues and implications is the corporate services one.³

It is the biggest thing the government has done in the last couple of years and will be the biggest IT project the government for the next four years.⁴

We will then gradually move to standardisation of our systems and processes. That is an initial investment but the investment and the way that we are structuring it, is we will undertake the investment on the-whole-of-government basis and then take the financial risk on a whole-of-government basis and pick up the financial benefits over time, again on that whole-of-government basis.⁵

ASAP is an acronym that stands for Aligning Services and Priorities, which is essentially an initiative that the government sought to establish at the end of last year to better recognise the need for improved resource allocation into the key areas of government. This government saw as its key priority for service delivery across all government agencies. What we were looking to do is to say, where, how are we currently spending our funds, and where can we get a better alignment of our resource usage to deliver on the key priorities of the govern-

¹ Document 8-11
² Document 11-11
³ Document 11-11
⁴ Document 18-10
⁵ Document 11-11
That was structured along the lines of a self selection process, or self nomination process by agencies, where all agencies were asked to identify and nominate areas and activities within their current portfolio responsibilities, and which they felt needed to be reassessed, or potentially could be realigned or restructured so that funding could be freed up and go into other areas.1

The ASAP agenda is essentially run out of Treasury. My area has been responsible for running that. Within each of those whole-of-government areas, there is a review of the budget process etc. We have established steering committees, and we have a governance structure in place that involves the Premier's Department in each area. In relation to the corporate services review we have, because of the magnitude of the issue, we have been involved with the Department of Premier in ongoing briefing of Treasurer and Premier in terms of where we want to take it. Because it is such a fundamental reform agenda, we are informing and consulting on a very ongoing day-to-day basis with Premiers, but it is being essentially run out of the Treasury portfolio.2

There is a range of things, I suppose, but essentially the financial imperatives are a critical component: sitting down and just looking at it on the corporate services side. The duplication that occurred, and again SAP was perhaps a very good example of that, where a policy of the government was to move to a single application for the delivery of financial services, in the naïve view that you have a devolved system, but you have a single application that makes sense, and agencies would then go and utilise that. The cost, just in terms of running those systems, is significant, because of the degree of customisation and therefore duplication of development etc. that has occurred increasing the costs through development, through maintenance, through the licensing arrangements, through everything.3

Where SAP I think, have also taken the view that, well, we can maximise our revenue by upgrading three agencies at a time and bringing in new systems and they are not supporting the old ones after a set time and having a rolling program across all agencies. To turn that around and say well, whilst a customised service to a particular agency might suit that agency, you could then roll everything into a standard set of systems and processes. What will you need to do to have that standard that is applicable across all agencies? From an agency as large as education to an agency as small as parliamentary council, then has equal access to and paying an appropriate price for, the provision of the corporate services that they want to purchase from the provider.4

You do an upgrade of SAP and it is a complete circle of the wheel. That is the difference. When you do an upgrade to an SAP system, you are talking a nine-month project with 30 people or something. I mean they are quite significant and

---

1 Document 11-11
2 Document 11-11
3 Document 11-11
4 Document 11-11
when you have 19, or 18 production systems, the government is always spending a lot of money upgrading. Constantly, that is one issue.¹

Oh yeah, huge amounts of numbers saved, just on hardware and things like that alone. Now we have, depending who counts them, roughly a hundred SAP systems in government. I mean test, development, production, training, all those sorts of systems, physical pieces of service. That is an awful lot of hardware to be looking after and it is not all in one place. It is spread from one end of Brisbane to the other. Lots of different people touching it. Consequently, part of this idea is, apart from the accounting system, let’s put all this in one building and let’s get rid of all the little ones and get these big super computers, put them in and see what happens. That is one option, I do not know if that will happen, but that is certainly an option.²

What is happening at the moment is, that we have a whole stack of agencies all using SAP in a different way with different configurations and different versions and all the rest of it. All doing the same thing, like all doing payroll and finance support and whatever the case may be. ASAP is definitely about that. The previous QGFMS, Dun and Bradstreet system was one central system that all the agencies logged on to. SAP has become a whole lot of different systems all around the place. I think the ASAP review of corporate services is now looking at what really is the best way to go and how do we get economies of scale and how do we take the best practice elements of all the different things that agencies are doing and bring them all together.³

The cost of then seeking to gain whole-of-government type information, again using finance as the example, for the preparation of financial statements, for HR and Payroll. For example, when a person transfers from one agency to another, they move from one system to another. The costs involved in that. The machinery of government changes, when agencies are broken up and moved from one to another are all high cost, low efficiency outcomes that will continue to occur physically but can be much more efficiently managed. I suppose they were the drivers that we were looking at.⁴

I think it has a lot to do with the decision of process re-engineering this; that rather predicates the whole thing. There have to be whole big piles of what we didn’t do in our current SAP environment. That was to do a whole lot of process re-engineering. The departments did not avoid it deliberately; some of the departments did and some did not. This is a total business process re-engineering as well across the whole government.⁵

However, obviously the situation is that you have a range of instances, where you have organisations as different as, this is what they tell us, as the Department of Police, Emergency Services, Education, the Parliamentary Council, Treasury, who all have different requirements and everyone says that they are

¹ Document 18-10
² Document 18-10
³ Document 18-10-1
⁴ Document 11-11
⁵ Document 18-10
unique. Nevertheless, I do not think you can get more unique than some of the private sector organisations that are already gone through this process. Someone like a Mayne Nickless who have hospitals and security systems and a host of other activities that they have all brought together and provide back office applications on a single basis for that.¹

Now, all that money that was available around in the nineties though, there is starting to be more questions asked as to, it is not just the system, it’s the business processes. People are starting to question that every department is different. You either process a purchase order in the Mines Department or Natural Resources, should that be any different to processing a purchase order in Forestry, or processing a purchase order in Treasury or Premiers. From an economic rationalist point of view, there is no difference. From the business perspective there might be, but the people are saying now that you could do business re-engineering and all these corporate processes in government, optimise the systems that support, standardise them across government. There may, in fact, have been an opportunity for quite significant savings across government and with that money that was available in the nineties, while we’re really start to hit the bottom of the bucket now, for lots of reasons. The government just does not have the cash it did have fifteen years ago, available to it. In the future, the predictions are we are going to have a lot less than we have now. If we keep going the way we are now with this corporate applications and corporate processes, we are going to be draining money out of the government’s coffers, which would be better off building hospitals, putting police on the streets and all those sort of things. Therefore, the government at this stage has directed us to do something about it.²

This is the next stage in the process. We have evolved. I have claimed we are actually going backwards, but anyway. However, back in 1985, when we had the Dun and Bradstreet system it was a centralised system, a centralised model. We are actually moving forward to that model again. We are actually revisiting that entire model. We are revisiting the hardware, even to that extent. We are even centralising the hardware. We do not know what will come out of those sorts of studies yet, but one option certainly is, it is a much bigger. At the moment, we have gone to a model that is lots of little pieces of hardware, and we have gone from the mainframe to lots of little pieces of hardware. We could be going back to a big box; we will certainly be going back to a big box, whether there is one or four of those big boxes.³

Upgrades are a classic case of that. You can have an upgrade and you could, I will pick a number, spend a million dollars on an SAP upgrade, 3.1l to 4.6c, you can comfortably spend, and an 8 month, 9-month project. Consultants running around everywhere and at the end of that you know no more about your system than you did at the beginning and all the corporate knowledge is in fact, invested in

¹ Document 11-11
² Document 18-10
³ Document 18-10
this bloke or woman who leaves and goes somewhere else next week. Yet you have paid an awful lot of money and all you have is a different screen.¹

So we are moving from the situation where we have a policy of all agencies utilising a single finance system, being the SAP system to one that is fine, but we have one system with as many different applications as we have agencies. Where SAP I think, have also taken the view that well, we can maximise our revenue by upgrading three agencies at a time and bringing in new systems and they’re not supporting the old ones after a set time and having a rolling program across all agencies. To turn that around and say well, whilst a customised service to a particular agency might suit that agency, you could then roll everything into a standard set of systems and processes. What will you need to do to have that standard that is applicable across all agencies? So, from an agency as large as education to an agency as small as parliamentary council, then has equal access to and paying an appropriate price for, the provision of the corporate services that they want to purchase from the provider.²

We undertook a detailed data and information collection exercise. That was for the Corporate Services review, where we went out at the beginning of the year doing a first run past to get a general feel for the costs, the activities, the staffing levels etc., in the corporate services area. We went back in June and July to find that in detail. Therefore, we had a detailed pro forma outline of information requests that we sought from all agencies. It included individual activities, the resourcing that went into those, the physical assets that agencies had that were utilised to undertake those particular tasks, full time equivalent working employees involved in performing those tasks, salary levels. It was in a great degree of detail.³

**Corporate Systems Questionnaire**

A separate Corporate Systems Questionnaire should be completed for:

- All systems (or part of a system) for the Corporate Service Functions of Finance, Human Resources (including payroll), Procurement, Document and Records Management and Property and Facilities Management⁴

**Significant systems projects related to corporate services**

In the CBRC outcomes letters issue to all Ministers and CEOs, it was acknowledged that many agencies are currently planning to undertake work on system upgrades or new installations in scope for this Review. It was also advised that

- any major investment need to be very carefully considered in view of the preliminary stages of this review; and
- agencies considering such investments should advise the ASAP Project Team before commitments are entered into.

¹ Document 18-10
² Document 11-11
³ Document 11-11
It is important that the project team is advised of all proposals for new systems, e.g. document management, employee self services, or upgrades to existing systems e.g. SAP or other ERP systems. Further direction on systems investment will be provided shortly¹.

Chapter 11: Governing Efficiency or the Essence of the
New Public Management is nothing Managerial

Investigation into past events and ideas is commonly triggered by the utilitarian wish of avoiding to ask the very same questions over and over again, although answers have been given but vanished into oblivion. In distinction to that, from a hermeneutic perspective, a dialogue with the past or its questioning means questioning ourselves. This means foremost and most of the time to put our knowledge into question. Questioning of knowledge is, however, not possible with the reflexivity afforded by scientific knowledge itself, since this reflexivity is always bound by the selective projection of science. The pervasiveness of scientific discourses and their diversity have spawned reflections on the becoming of knowledge that are guided by concepts that originate from mathematical physics, cybernetics and information theory. The persuasiveness of these conceptualisations, and their inroads into common sense, demand a response that is not oblivious to our own historical conditioning out of which these conceptualisations emerge. Constructs of these conceptualisations, such as knowledge-as-information, are the result of performing the selective objectification of knowledge upon knowledge itself. The hermeneutic determination of knowledge in modernity as technological knowledge responds to this dilemma in a number of ways. As a way the world becomes known, or as Being appears, modern knowledge could be seen as being at the core of the challenging disclosure of Being that Martin Heidegger has called Ge-stell. The main mode of knowing, which is language, becomes formalised through information technology while the same technology simultaneously eventuates the proliferation of images of the world produced by science. The acme of modern technology – information technology – thus correlates to the mode of disclosure of all that is as information Ge-stell.

The technological nature of knowledge is also found within governmental rationalities and technologies. The knowledge about knowledge that comes to pass within Ge-stell is deprived, since it ignores the ethical, political and truth aspects of knowledge. This is especially perilous when we look at governmental knowledge, which is driven by an ethos that hardly ever becomes explicit as such, and if it does, this ethos is dismissed as ideological, while the purity of the reasoning of economics is stipulated. Neo-liberal government reform has brought about the adoption of managerial rationalities and technologies,
and of information technological rationalities. Information systems are supposed to offer a response to current managerial concerns. The neo-liberal discourse likewise appears as a response to governmental concerns, which are to be dealt with in an economist-managerial manner.

Studies of the new public management that have been concerned with the introduction of new budgeting and reporting regimens in government based on business principles, have frequently pondered whether commercial rules are technically befitting the ‘objective’ needs of governmental practices. Likewise, these budgeting and reporting regimens have been scrutinised to determine whether they actually follow some common principles allowing identification of some kind of homogenous evolution across different legislations. These questions are deemed less pertinent and pressing if these new practices are considered as constitutive for a domain of knowledge in modernity. Under this perspective, the purported objectives and benefits of the new budgeting and reporting regimens can be treated as the discursive means by which a different image of government and its object is presented. Thus, debate about the goodness of these new regimens may be safely left to the experts. Likewise, whether information systems have been ‘successfully implemented’ is deemed a question that concerns those who speak for those systems, or against them. This position does not allow asking what technology contributes to new knowledge. Experts define problems only within the horizon of their domain; they are like scientists and not in a good position to deliberate about practices and their rationalisations.

Since the overall projection within the neoliberal constellation has evolved over decades, how and which and at what time the new practices are actualised is dependent on the local dynamics of power/knowledge. In fact, what seems to matter is the co-constitution of the new knowledge by a new regimen of responsibility together with a different image of the organisation. This image is held to increase the visibility of administrative activities. Similarly, organisational information systems and concomitant expertise are shaped by their own past, and consequently situated within a particular power/knowledge constellation and are attached to projections of their own.

The intent of the preceding inquiry has been to contribute to the understanding of modern knowledge. Its scientific-technological and political nature has been explored, and the aim has been articulated to progress the interpretation of knowledges that have become seen as ‘technical’ rather than being related to established disciplines and professions. The following themes should not, however, be regarded as conclusions in
the form of an explanation or as devising some piece of theory. Dealing with knowledge cannot be a contribution to knowledge, otherwise we would forfeit discussion of the meaning of knowledge. This should not imply that the destructive narrative grants itself the liberty to be inconclusive, but that it seeks to communicate what is preliminary, and nevertheless needs to be articulated. From the following, no evidence in the form of facts can be expected, nor can the statements be proven by deduction.

The Efficiency Narrative

*Ge-stell* comes with its own rationalisations or myths, such as efficiency, information, process, integration, calculability, and control—all of which dominate in all walks of life. Intertwined narratives corroborate these rationalities:

- the traditional bureaucratic narrative: efficiency and effectiveness;
- the neo-liberal narrative: fiscal consolidation, government as market;
- the technology narrative, information is knowledge;
- and the narrative of commodified knowledge, which always links a grand strategy as solution to immediate and pressing problems.

Efficiency seems to stand out as the core truth put forward by neo-liberal governmental rationality—it is rendered threefold, as: engineering efficiency, allocative efficiency, and as governmental efficiency. Engineering efficiency refers to the economising of resources and time. Allocative efficiency suggests fair distribution within market equilibrium. Governmental efficiency emerges as the fittingness of a policy measure. Efficiency in this triad hence renders the technological knowledge as politically significant; it links the individual subject to the overall national economy and suggests an ethical trait of the free market. Yet, the commonsensical and engineering conception of productivity is prevailing. In its sense, efficiency always comes as a demand towards people, as an appeal or provocation. Efficiency becomes visible and comparable through business economics, which in turn relies on the technology of commercial accounting.
The Efficiency Technology

Accounting

Visibility of efficiency is effected through the commercialisation of government accounting and comprises the shift from cameral accounting to business-like bookkeeping and the implementation of costing. Financial accounting records transactions over time, while costing reckons with resource use in terms of finance. Financial accounting is directed at communicating to entities external to the organisation, and therefore subject to quasi-legal regulation. Financial accounting needs to be static and uniform across organisations and is therefore relatively ‘stable’ knowledge. Management accounting (costing) is a set of techniques that are shifting or evolving and complex. Management accounting makes efficiency visible—the efficiency of the manager and ultimately that of the individual worker. It is the means to make performance calculable. Costing means the creation of a new power/knowledge constellation, while accrual accounting was about a different way of recording transactions. Subjecting individuals to calculation evokes resistance. Implementing management accounting in government is within the discretion of the departments due to the interpretation of devolution of responsibilities to the departmental executives. Efficiency is also measured in non-economic aspects against the principles of the Charter of Social and Fiscal Responsibility, or the reason of government and its subdivisions into outputs. It is also measured according to indicators set by central government and international organisations, which is largely a matter of negotiation and consensus. There are thus three categories of ways of knowing efficiency:

− accrual accounting, based on stable knowledge, but tending more towards compliance reporting than towards measurement of performance;

− management accounting, which is highly contextualised and within the discretion of departments; and

− non-financial indicators, which are open to interpretation and negotiation.

Knowledge of efficiency therefore appears as fragmented. This fragmentation is due to the different groupings of expertise and constellations of power/knowledge:

− Accrual accounting is inevitable, mandated (a common standard) and implemented from a central agency, and supported by traditional professional expertise (account-
ants). Therefore, there is a separation between financial and cost and benefit accounting; the former is centrally directed while the latter follows the principle of ‘let the managers manage’.

- Management accounting is disciplinary knowledge, and the push towards ABC can be seen as paradigmatic for the political change within bureaucracy; it appears to be disruptive.

- Non-financial measurements are subject to political considerations and therefore an object of contention.

The ultimate knowledge of efficiency is sought through the combination of the two latter groupings against the background of the first. This knowledge would suggest an operational, tactical, and strategic hierarchy: Accrual accounting records events and reports on financial standing; management accounting controls the operations; and strategic measurement techniques are concerned with setting objectives and assessing their achievement. Yet, the pyramid from data to knowledge is not extant, as the political arithmetic of governance is already separate from the workings of the departments by adopting the multidivisional organisation model. Nevertheless, as technological knowledge, governmentality entails the routinisation of renewing its rationality and practices, which comes to pass within the recurring reflexivity, optimism, constructivism, and methodism.

Information Systems

Although both government bureaucracy and business systems software and expertise draw on the same symbolic resource of ‘efficiency and continuous change (enhancement)’, they coexist instead of the latter being instrumental to the former. Moreover, the coalition between management expertise and information systems expertise appears to have been a volatile one.

- The developer of the financial software did not have any significant prior exposure to the application of information technology in government administration.

- The adoption of the new accounting regimen, and the new financial system, was discrete and asynchronous, with the ensuing complication and expenditure.

- A government-specific application had to be put in place to cater for the functions of the central department.
− Internal shifts in expertise between the central department and others were effected by the centrifugal drift of the information technology, triggered by the devolution according to the structural reform agenda.

− Centrally located systems expertise was further displaced by the non-acceptance of its efforts in terms of development and initiating post-implementation work.

− The information system, although marked as a resource-planning system by its representative, remained in many departments as a financial transaction system, while other operational and managerial applications continued in segregation.

− The financial information system emerged as an object of contention while responsibility for installation and the ensuing dissatisfaction was imputed on the central agency.

Despite the high emphasis put on management information during the conduct of reform efforts that resembled the discourse on deployment of information technologies, the information system was eventually regarded a liability. A centralised bureaucratic initiative to streamline internal administration was ultimately launched, which found its rationale in reducing the immense expenditure on technology.

**Truth as Efficiency and Knowledge as Information**

**Efficiency and the Dissolution of Objectivity**

The scientific-technological view of world comes to pass in government reform and information systems. This can be considered analogous to Martin Heidegger’s analysis of science. Primally, there is the ontic projection of man and society to which a certain branch of economics has attached itself; it is the *homo oeconomicus*, and the concomitant claim of economics as the theory for all aspects of the human realm. Method and objectness is accomplished by the diverse means of recording, reporting and calculating. What has been called ‘management by numbers’ that rigorously applies the principle ‘only what can be measured can be managed’, has been certainly augmented through government reform that builds on commercial accounting, policy indicators, and computerisation. Calculation in every respect objectifies, creates facts and suggests or evokes prediction. In addition, governmental innovation also features specialisation and ongoing activity. New expertise is put to use from individuals such as financial and management accountants and computer specialists. Mostly external specialists are drawn
upon. Opening up to external expertise also establishes innovation in government as an ongoing business; in this respect, government administration becomes isomorphic with business corporations. Specialisation implies that knowledge has become fragmented and distributed and needs to be mediated; specialisation and mediation are reciprocal to institutionalisation. This suggests that routinisation of novelty, the constant mediation of new knowledges occurs within the shifts and relations between internal and external expertise. The latter has come to be seen as the originators of visions, fashions, and fads for management. This seems to be a weak conceptualisation of the urge to reproduce knowledge, which simply would not be extant without its institutionalisation, which is commercial.

Commercialised knowledge production and mediation is institutionalised in an environment separated from traditional disciplines and professions, the locus of research and development in firms and the locus of its application. Knowledge in this constellation comes to pass as information and merchandise. Relating knowledge to an exchange value weakens its legitimacy by default. When it is merchandise, it can be good or bad, while knowledge in the Western tradition refers to truth. Thus, there is dissolution of the distinction between ideas and merchandise and consequently a weakening of truth.¹ In addition, although modelled alongside methods and infused with scientific implements like operations research, and being linked to the academic world, commodified knowledge does not have intellectual potency in terms of disclosure but is a “technology of knowing” and occurs as the instruction for particular “techniques” or procedures of working.

The image of knowledge-as-information is a precondition for commodified knowledge in the form of ‘software’ and management technology produced and mediated by the service industry. Within business relations, there is very little room to make explicit matters of judgement and truth that are concomitant to knowledge. Since knowledge in governmental innovation appears as information, and therefore is conspicuously silent about its being a social phenomenon, its relation to power needs to be made explicit. Following Rafael Capurro’s sketch, the relation between power and information as communication between men is formed by two dimensions: a vertical one, in which messages are dictated (angelía), and a horizontal one in which messages are exchanged dialogically and freely (lógos).² We can see angelía present in government innovation in

¹ See the section Information as Anthropological Category.
² See the section Information as Anthropological Category.
many relations: advisory commissions prescribe the enactment of reforms; supranational institutions (OECD) lend weight to the new rationalities, legislation makes changes mandatory. Within the organisation, central departments work with administrative directives. Imposition of messages also emanates from external expertise, since these are not bound by the lógos of academic and professional communities and uses blueprints and templates that cannot be questioned since they are proprietary knowledge. In addition, commodified knowledge is mediated in the shape of political speech. Organising visions, for example Activity-based costing (ABC) and business process re-engineering (BPR) have been promoted with strong rhetoric. Interpreting past and present, they tended to obviate the past and present practices by claiming that standard costing is irrelevant and that workflows need to be rebuilt from scratch. Re-assessing the past and present in order to promote change is a political trope and undermines the semblance of objective knowledge. The representational technologies that are put to work in organisational information systems are likewise contestable, since they are based on interpretation. Finally, the imposition of messages also has to cope with the phenomenon that social science is always epistemologically weak, since it is bound up with political projects. Hence, the postulate of truth as efficiency and representation (as knowledge-as-information) as put to work in governmental innovation contributes to the proliferation of images of the world—in formalisms, in indicators and balance sheets, or in annual reports for the public.

At this point, the ambiguity of technological knowledge comes to pass. It appears to render useful instruments and true knowledge, but is suffused with acting and power. This problem of knowledge is however concealed by the conception of knowledge-as-information, be it in the form of transactional data or in the form of organisational blueprints, models and templates. This concealment is inherent in the representational and commoditised nature of knowledge that is transposed into the public sector. In other words, normative or prescriptive knowledge is veiled as positive or descriptive knowledge.

Knowledge-as-Information as Concealment

The multi-faceted and multi-layered composition of the ‘new public management’ (e.g., economics, accounting, business systems, etc.) and the ensuing multiple mediations, coupled with the phenomenon that its rhetoric is entrenched in the public mind for more than two decades, has made some commentators suggest that is actually highly resistant
Nevertheless, when keeping in mind that this new knowledge is bound up with interpretation and power, questioning this concealment and tracing it in mundane experience appears to be less arduous.

The prescriptive nature of knowledge is veiled in that it is seen as instrumental, and its objectives are taken for granted. It is the emphasis on means, which even permeates the catchphrases such as, ‘government by the market’ and ‘management [of government] by accounting’ that have been coined by the critics of government reform. Indeed, the introduction of managerial structure, financial and cost accounting, and the associated discourses is certainly common to most of the reform endeavours in various political entities. Yet, the aspect of further mathematisation of the knowledge of governing has been given less attention. This mathematisation, in seeking to write the future based on the past, produces a proliferation of images that in turn makes all the calculative efforts questionable.

Part of the concealment seems to be already constituted by the circumstance that the instrumental knowledges that have been used and have had a high visibility during more than a decade, have been argued for as urgent necessities rather than something desirable. The projection that stands behind them is already forgotten. Hence, knowledge construction may be seen as the successful implementation of novel technologies and practices according to preconceived principles. This new knowledge is already ‘out there’, and given the proper causal mix between factors, it can be deployed. In this image, information technology is an instrument that needs to be properly used. Turning ideal into real, or theory into practice and blueprint into instrument may not turn out as intended. Innovation actors, when reconsidering the course of events may experience failure as being over-determined. Yet, never the technological knowledge including information technology is a determinant in this constellation, since it is only a blueprint-instrument, a carrier of sound principles: the sheer complexity of the innovatory endeavour is overwhelming, since it is compressed into too small a timeframe; it is merely the multiplicity of imperatives that deny the opportunity to turn into actuality. In this view, what is supposed to be accomplished and how this should occur seems to be entirely unproblematic. Interests and their conflicts, either of a commercial or political nature are shortcomings that have not been kept under control yet. This kind of ‘detached rationality’ does not ask where knowledge comes from, and what its consequences are;

what matters is that it ‘works’. Alternatively, even these ‘human factors’ may not seem to be relevant; it is the lack of resources, lack of time and shifting priorities that make projects infeasible.

What has been left unquestioned by this detached rationality is that it actually refers back to a definition of government. Since within the neo-liberal doctrine, everything that is involves commodities and market transactions, what government does, is also thought of in this way. Government is not the conduct of rule over population and territory, it is nothing political in a traditional sense, and government is an economic agent. Even the means of internal and external sovereignty, judiciary and police and the military, are nowadays goods and services mediated by a market. It is this inversion of the relation between government and population that asks to assess the effectuation of governance not only in terms of its consequences for the welfare of the community, but also in terms of economic efficiency. Accordingly, the traditional ‘responsibility’ does not render transparent the requirements of economic efficiency. Hence, the neo-liberal reassessment of governments requires an extended and explicit statement of the reason of the state. This reason is conceived as responsibility. It encompasses the traditional spheres of governmental intervention, namely catering for a favourable environment for economic activity, internal security, regulating the exploitation of natural resources, organising social and cultural life, and regional development. These activities are now put under the mandate that derives from prudent economic agency. This self-endorsement of economic agency comes to pass in terms of: competition with other jurisdictions (for example investments by businesses); the need for sound management that becomes visible by dealing with revenue and expenditure in such a way that a surplus is accomplished; being complemented by retaining the highest credibility and being a prudent investor by increasing the capitalisation of the enterprise. In this way, the neo-liberal principle of fiscal consolidation becomes appended to the traditional reason of government, putting the latter under the condition of the former.

This business rationality is to be established by transparency, which is going to be accomplished through information. Information is not that special substance but rests on discipline. Information is only available with conforming actors; it is dependent on the disciplinary nature of knowledge creation in terms of control/self-control, most commonly expressed in the dyad: ownership—commitment. It seems that the coercive logic of the legislative framework and the recommendations of commissions for government reform are matched by logic of coercion. The neo-liberal economic doctrine becomes in-
deed en-acted by ontic legislation, as it were. The documents define government as principally an economic agent, suggest a seamless progression from the rationality displayed into the new governmental technologies, and macro-economic considerations flow down logically into a complete picture together with accounting and budgeting techniques and eventually information technology.

### Rationale

Technology has been taken as the departure of an inquiry about modernity, of which routinisation of innovation is a distinct and conspicuous feature. Information technology, as the acme of technology, is always present in these endeavours, as a field of action and speech, and thus as a precondition for technologies and rationalities.

Information technology has brought forth conceptions of knowledge and language, which equate them with information. It therefore builds on the Western tradition of determining knowledge as the possession of representations that correspond to reality, which also accommodates the view of knowledge as the construction of man. Hermeneutics speaks differently about knowledge, considering the conditions of our present and consequently identifies these conceptions as corresponding to a derived mode of being-in-the-world. This derived mode produces technological knowledge in the form of images of world. Technological knowledge emerges in the realm of human affairs in the shape of governmentality, which appears as governmental rationalities and technologies, and is thus co-constitutive with power. It is within this constellation of power/knowledge and technology that the past is changed in order to determine the future.

This constellation of power/knowledge and technology within which innovation occurs cannot be understood by means of scientific knowledge that objectifies selectively. Particularly in the case of knowledge this would imply a double reduction: representation of representational knowledge. Scientific inquiry cannot ask what is government? what is information technology? what is social science?, but must always treat these categories as given. Understanding of innovation is therefore only possible beyond the practice of research, since research is always bound up with a technological view of world.

It then follows that the reflection on innovation requires the precise determination of social inquiry as practical philosophy. This determination evolves out of the contention
that makes up the hermeneutic situation of the social sciences. The social sciences are producers of images of world, and users of images produced by information technology deliver images of man and society over to information technology. The reciprocal relation between sciences of man and information technology also needs be surmounted to make understanding of innovation possible. Lastly, the debates within the social sciences on reflexivity, method and narration must be seen as an opening to a weakened approach to truth. This precludes first and foremost regarding social scientific endeavours themselves as ways of enfranchisement, since this implies to take the lógos of Western science as model for lifeworld that ought to be defended against colonisation. It further precludes disregarding the chasm between science and philosophy and, in particular, to use philosophical hermeneutics as the handmaiden of research and thus reverting its concepts back into the mould of representational thinking. Lastly, social inquiry as practical philosophy must also deliver a response to the conception in the social sciences of narrativity as tempered irrationality. This hypostatises atemporal cognition as object for social research, and separates spheres of validity for narrative knowledge from scientific knowledge.

Within the understanding of hermeneutics as response to modernity, social inquiry as practical philosophy must therefore be determined as the destructive narrative. As a response, the destructive narrative cannot cater for blueprints to be enacted as method, but must confine itself to providing a signpost. Destruktion and narration are the dimensions of this response. Destruktion means to enter a dangerous route by heeding the destructive mode of thinking that pursues the path of questioning and dismantling theoretical presuppositions as well as everyday practices. Destruktion, more specifically means to attend to the destructive or corrosive tendencies of modernity, to make them recognisable, without accepting them unconditionally, nor by rejecting them from an archaic vantage point. Narration emerges as a way to cope with the condition of thinking that has lost its metaphysical grounding being superseded by technology and social technique, while rendering any single instance and event meaningless by always ordering them into the totalising picture of a universal process. Consequently this requires “to think without a banister”, without rules, guidelines and points of reference. The story can therefore not take recourse to the metaphysical arbiter of history, or to coercive logic, but must attempt to abstain from any metaphysical schemes of the past and logical deduction to discern the meaning of action and speech. A narrative of modernisation in government should however be critically aware of the Platonic narrative of the fabrication of politics, the neo-liberal story of man and society, and the
stories of computers and organisations, and those of calculation and discipline. Otherwise, it would fail to acknowledge that the transformation of governmental rationalities and technologies and its information systems, (argued for with socio-economic rationality and necessity [efficiency and responsibility]), negates that this project is contingent upon social self-understanding in its temporality.

Closure

This investigation is itself a story – a story of interpretation: it has set out from a certain understanding and certain questions, which all have changed underway. On its way, this story has lost sight of methodical intent, and from then on, neither its course, nor its outcome have been anticipated, but have rather withdrawn from predictability. It is this experience of the inquiry itself that urges us to forsake any claims or pretexts of theoretical accomplishment or of utility in the sense of tangible ‘improvements’. What the story of inquiry may achieve, is to give an indication of the possibility of a reflection on knowledge, technology and organisation—a reflection that does not commit itself to the principles of scientific practice, but rather takes these principles as an obstacle, the difference to which has to be sought and which provoke a contentious effort.

It is rather this contention that presupposes openness to experience, as opposed to an a priori vantage point of allegedly secured categories, which grants the opportunity of a critical stance towards rationalisations moulded after scientific discourse and everyday involvements. Awareness of the limitations of both scientific reasoning and common sense also calls to mind that there are confines of a different kind in endeavours that expose these spheres to scrutiny. Dialogical reasoning and narration can assemble only fragments and rely on its and their transient coherence. A destructive narrative thus entails the potential of its own inconclusiveness; it does not seek to displace truth claims of any sort, by pitting one kind of knowledge against an other, but responds by reflection, which, in its frailty, wants to elude the modern constellation.
References


______. *Hermeneutik der Fachinformation [Hermeneutics of specialised information]*. Freiburg (Breisgau): Alber, 1986.


________. “Narration or science?: collapsing the division in organization studies.” *Organization* 2, no. 1 (1995): 11-33.


_______. Minutes: Tuesday, 11th December 2001. [Brisbane, Qld], 2001.

_______. Minutes: Tuesday, 16th October 2001. [Brisbane, Qld], 2001.

_______. Terms of reference. [Brisbane, Qld], 2001.

_______. Minutes: Tuesday, 19th February 2002. [Brisbane, Qld], 2002.

_______. Summary of benefits realisation activities, [13 March 2002]. [Brisbane, Qld], 2002.


_______. “Corporate services circular.” no. 2001-02/1 (2002).

_______. Managing for Outcomes: overview of stage 2 proposed projects. [Brisbane, Qld], 2002.

_______. “Tridata, 2002.” typoscript, [Brisbane, Qld].

_______. Queensland Treasury: a new direction. [Brisbane, Qld], [n.d.].

_______. Steps and considerations for adopting the SAP R/3 actuals data extraction process. [Brisbane, Qld], 1999.


_______. Benefits Realisation pre-workshop - agency status report. [Brisbane, Qld], 2000.

_______. Consultancy brief for benefits realisation workshop. [Brisbane, Qld], 2000.


_______. Treasury SAP upgrade case study. [Brisbane, Qld], 2001.


_______. Financial management manual. [Brisbane, Qld], [n.d.].


Steiner, Carol Jean. “Constructive science and technology studies: On the path to being?” Social Studies of Science 29, no. 4 (1999): 583-616.

_______. “The technicity paradigm and scientism in qualitative research.” The qualitative report 7, no. 2 (2002).


Index

action, 1, 2, 11, 20, 21, 27, 74, 88, 95, 97-104, 110, 132, 141, 156, 169, 171, 183, 190, 191, 195, 210, 233-235, 237, 241, 243
action and speech, 96, 325, 326
action, programs of, 27, 169
actor-network theory, 10, 11, 55, 187-189, 192, 200, 205, 207, 212, 214, 216, 225
Adorno, Theodor W., 32, 82-88, 90
agency, 21, 97, 98, 107, 108, 140, 188, 192, 193, 195, 196, 216
agency, heterogenous, 193
angelía, 74-76, 321
anthropocentrism, 50, 84
anthropology, 198, 205
anthropology, philosophical, 220
Archimedean point, 87, 170, 215, 247
Arendt, Hannah, 4, 6, 11, 75, 90, 93, 95-104, 127, 161, 195, 214, 232-238, 241-246, 249
Babich, Babette, 41, 196, 198, 202, 203, 216
Barthes, Roland, 81
Beer, Stafford, 143
Being, 31, 37, 39, 52, 53, 55, 56, 59, 86-88, 172, 184, 186, 193, 196, 197, 202, 216, 220, 244, 315
of beings, 199, 227
reduction to value, 84
Being, disclosedness of, 38
Being, epoch of, 26
Being, linguistic nature of, 30, 34, 71, 225
Being, meaning of, 86, 173, 180
Being, metaphysical constitution of, 186
Being, obliviousness of, 84
Being, question of, 39, 87, 89, 90, 182, 193
Being, truth of, 34, 50, 89, 193
Being, understanding of, 37
being-in-the-world, 29, 35-38, 74, 160, 196, 325
being-together, 242
Bestand, 58, 65
biology, 69, 70, 213
Bloomfield, Brian, 80, 166
Boland, Richard, 21, 73, 143
BOM, 146, 147
Boss, Medard, 69-71
BPR. See business process re-engineering
bricolage, 174, 176
business economics, 317
business process re-engineering, 145, 146, 172, 322
calculability, 61, 103, 155, 167, 317
Callon, Michel, 191
Capurro, Rafael, 3, 20, 63-65, 71-77, 205, 321
Catholic Church. See Vatican
causality, 56, 57, 65, 71, 72, 138, 195, 204, 205, 245, 246, 249
challenging disclosure, 58, 64, 65, 196, 315
Ciborra, Claudio U., 59
Clegg, Stewart, 94, 107, 131, 208
Coyne, Richard, 81
cybernetics, 55, 69-73, 143, 167, 198, 200, 203, 204, 212, 222, 225, 315
Dasein, 26, 35-37, 39, 74, 86, 87, 172, 183, 196, 239
Davenport, Thomas, 24
democracy, liberal, 111, 115, 210-212, 222
demythologisation, 231
destruction, 17, 34, 39, 181-183, 207, 247
Destruktion, 180, 181, 183, 189, 241, 326
discipline, 20, 69, 85, 103, 106, 123, 157, 202, 324
domination, 3, 16, 84, 85, 87, 88, 90, 97, 99, 104, 108, 162, 169, 170, 211, 214, 222, 229
Dreyfus, Hubert, 105, 106
economics, 12, 16, 101, 109, 113, 114, 123-128, 130, 131, 135, 150, 154, 156, 205, 315, 320, 322
efficiency, 12, 16, 18, 77, 107, 108, 
120, 124, 126, 132, 133, 136, 149, 
157, 223, 318, 319

efficiency, allocative, 125, 157, 317

efficiency, economic, 123, 324

efficiency, engineering, 125, 157, 317

efficiency, governmental, 317

efficiency, political, 157

enframing. See im-position

epistemology, 193, 200, 202, 216, 
227, 229, 232, 238

Ereignis, 90, 248

ERP, 10, 59, 138, 139, 140-147, 
279

ERP narrative, 139, 140, 146

Ersatz, 198, 200

essence, 15, 34, 38-40, 42, 43, 46, 48, 
50, 51, 53-57, 59, 60, 63, 65, 67-69, 
71, 72, 82, 86, 88, 89, 97, 103, 105, 
108, 117, 148, 177, 193, 222, 227, 
244

of Ge-stell, 82

of hermeneutics, 187

of physics, 203

of science, 42, 43, 49, 61, 154, 194, 
203

of technology, 33, 42, 54, 55, 61, 
67, 72, 73, 155, 223

of the quantitative, 148

essence, historical, 153

ethics, 30, 216

ethnomethodology, 167, 179, 189

ethos, 109, 184, 185, 315

of government, 115

experiment, 45, 47, 54, 167

expertise, 10-12, 16, 18, 28, 95, 108, 
110, 111, 114, 116, 133, 134, 136, 
137, 141-144, 147, 148, 150, 157, 
248, 318, 320, 322

fideism, 217

Foucault, Michel, 12, 90, 93, 95, 102- 
106, 108-112, 162, 183, 193, 201, 
239, 240

Frankfurt School, 82, 89, 90

Gadamer, Hans-Georg, 5, 7, 29, 38- 
40, 89, 175, 178, 180, 183, 185

Gartner Group, 145

Ge-stell, 3, 42, 58, 59, 61, 63, 66, 67, 
71, 72, 82, 83, 90, 103, 147, 148, 
156, 158, 168, 182, 186, 196, 200, 
222, 223, 225, 226, 240, 241, 315, 
317
gigantic, 52, 59, 148

Glazebrook, Patricia, 39, 60, 203
governmentality, 12, 110, 116, 119, 
156, 319, 325

Gregory, Wanda, 67, 69, 71

Heidegger, Martin, 3, 11, 26, 27, 31- 
61, 63-70, 72, 82-90, 102-105, 108, 
110, 141, 148, 161, 166, 172, 175, 
177, 180, 182, 183, 185, 186, 189, 
193-200, 203, 204, 209, 212, 214, 
216, 217, 222, 223, 226, 227, 239, 
248, 249, 315, 320

Age of the World Picture, 42

Being and Time, 27, 32, 33, 37, 39, 
90, 172, 181, 182

Science, and Reflection, 42

The Question Concerning

Technology, 54

Her-ausforderung, 59

hermeneutical circle, 35-37

historicity, 21, 28, 107, 171, 172, 181, 
182, 187, 230, 231

homo oeconomicus, 16, 126, 127, 149, 
156, 227, 320

Hull, Richard, 23, 25, 162-168, 208

humanism, 89, 90, 197, 217

humanities, 34, 37, 40, 44, 47, 162, 
166, 185, 201, 232, 235

Humboldt, Wilhelm von, 67

Husserl, Edmund, 38, 39, 86

identity, 51, 70, 96, 98, 104, 157, 183, 
213, 227, 237, 246

im-position, 58, 59, 61-63, 66, 71, 72, 
81, 82, 103, 155

information Ge-stell, 64, 72-74, 315

information systems, 1, 9, 10-13, 15, 
16, 22, 23, 26, 32, 51, 62, 64, 71, 
77-81, 95, 123, 136, 138, 139, 141-
146, 154-157, 161, 163, 164, 166-
168, 177, 187, 231, 316, 320, 322, 
327

information systems development, 171

information technology, 1-3, 12, 13, 
16, 18, 21, 26-28, 32, 61-63, 76-79, 
81, 138, 145, 148-150, 153, 155, 
160-162, 166-168, 199, 200, 224, 
227, 244, 315, 320, 323, 325, 326
information technology consultancy, 144
information theory, 66, 69-72, 200, 201, 204, 222, 315
information, politics of, 73
instrumentality, 56, 57, 100, 108, 156, 157, 202
**Introna, Lucas**, 26, 27
invisible hand, 97, 124, 128
IT expertise, 10, 139, 144, 145, 316, 319
**Kallinikos, Jannis**, 62, 140, 141
knowing, tacit, 36
knowledge of efficiency, 18, 319
knowledge, coercive power of, 46
knowledge, formalised, 153
knowledge, modern, 5, 11, 34, 137, 154, 189, 215, 225, 232, 236, 238, 240, 315, 316
knowledge, mythical, 231
knowledge, narrative, 228, 230, 231, 326
knowledge, organisational, 18, 26, 27, 78, 80, 94, 153, 155, 187, 189, 228, 236, 241
knowledge, post-modern, 200
knowledge, selective objectification of, 154
knowledge, social scientific, 165
knowledge, tacit, 23, 153
knowledge, technological, 32, 80, 137, 141, 167, 200, 315, 317, 319, 322, 323, 325
knowledge-as-information, 1, 15, 20, 22, 23, 63, 73, 77, 192, 225, 228, 315, 321, 322
*Koine*, 187
language as information, 65-67
language of politics, 117
language, essence of, 68
language, formalised, 66, 72, 153
language, natural, 66
language, technological, 67, 69, 72, 81
**Latour, Bruno**, 192, 203-205, 218, 219

**Law, John**, 188, 191-193
liberalism, 109-111, 113, 114, 117, 123, 127
lifeworld, 169, 180
and instrumental rationality, 170
as ideal image of society, 170
lifeworld and action, 169
lifeworld, colonisation of, 1, 187, 221, 326
*Logos*, 75, 76, 184, 185, 321, 326
**Lyotard, Francois**, 203
management consulting, 144
management information system(s), 26, 142, 143
management knowledge, 10-13, 16, 17, 28, 131, 136, 137
mathematics, 44, 131, 198, 201
measurability, 46, 167
medicine, 69, 102, 154
messages, 64, 71, 74, 76, 321
metaphysics, 50, 59, 84, 85, 87, 89, 90, 172, 177, 180, 181, 185, 186, 197-199, 203, 216, 222, 227
metaphysics, completion of, 89, 220-223
microbiology, 204, 213
modernism, 187, 200, 216, 219
modernity, comportment towards, 172
modernity, conditions of, 154, 194, 221, 223, 241
modernity, philosophy of, 29, 181
**Mörchen, Hermann**, 83, 87
MRP, 146, 279
MRPII, 146, 279
myth of ‘tacit knowledge’, 81
of efficiency, 158
of information, 21, 153
of transparency, 173
myth(s), 4, 21, 74, 81, 140, 143, 155, 231
myth, resurgence of, 230, 231
myths
of Ge-stell, 317
narrative
  and acting and speech, 242
  and experience, 243
  and politics, 246
  as a form of knowledge, 173
  as constituent of social inquiry, 232
  of actor-network theory, 210
  of communicative rationality, 171
  of efficiency, 158
  of information, 22, 158
  of management, 132
  of product, 22, 140
  of the market, 158
  of the separation of reason and faith, 219
narrative reporting, 224, 226
narrative(s), 3, 17, 18, 22, 25, 26, 155, 158, 236, 242
  of public sector reform, 122
narrative, acceptance of, 232
narrative, digital, 21, 22, 81
  of knowledge, 23
narrative, fragmentary character of, 247
narrative, historical, 234
narrative, neo-liberal, 127
narratives, multiple, 229
narratives, organisational, 229
narratives, rhetorical utility of, 230
neo-liberalism, 117, 123
nihilism, 82, 84, 220, 221, 225
nihilism, reactive, 223
objectification, 47, 49, 53, 60, 62, 64, 80, 117, 153-155, 161, 171, 213, 225, 227, 239, 315
OECD countries, 9, 16, 128
ongoing activity, 48, 49, 62, 104, 116, 167, 320
ontology, 34, 37, 39, 41, 86, 87, 168, 180, 183, 193, 203, 214, 216, 227, 240
  hermeneutic, 29, 30, 189
ontos-theology, 221, 222, 225
phenomenology, 39, 42, 79, 82, 86, 154, 167, 177, 181, 182, 189, 194, 195, 201, 239
  of Alfred Schütz, 179
  of Edmund Husserl, 38, 39
  of science and technology, 38
phenomenology of science and technology, 154, 194, 247
phenomenology, changeover of, 34, 38
physics, 41, 43, 44, 48, 53, 54, 64, 117, 161, 167, 201-203, 213, 220, 315
Plato, 75, 98, 99, 230
Polanyi, Michael, 23, 37
police, 111-113
political economy, 113, 116, 124, 132
politics, 3, 10, 11, 13, 27, 94, 97, 98, 100, 102, 109, 113, 115, 116, 123, 124, 126, 133, 150, 156, 171, 205, 216, 217, 219
politics and technology, 103
politics, economic theory of, 126
politics, technical, 150
politics-as-fabrication, 326
Pontiff. See Vatican
power, 21, 25, 41, 76, 77, 88, 90, 94, 95, 97-100, 102-111, 128, 130, 131, 147, 153, 156, 158, 163, 192, 208, 211-213, 230, 239, 240, 321-323, 325
power relations, 10, 51, 102, 106, 107, 189
power, concept of, 16, 94, 95, 108
power, disciplinary, 106-108, 158, 211
power, ontic, 18, 52
power, pastoral, 112
power/knowledge, 107-109, 135, 189, 316, 318, 325
process, 5, 6, 16, 20, 36, 40, 52, 56, 59, 61, 75, 100, 125, 140, 146, 169, 185, 214, 234-236, 239, 244-246, 317
process philosophy, 222
process, social, 165
process, universal, 326
projection, 48, 49, 60-62, 114, 116, 119, 126, 134, 142, 150, 154, 163, 167, 179, 192, 193, 203
  of man, 104, 109, 116, 135, 154, 156, 320
  of social being, 23
  of society, 110
  of systems thinking, 70, 71
  of the domain, 44, 47
  of the human agent, 158
projection(s), 14, 43, 44, 69, 111, 154, 157, 226, 239, 315, 316, 323
of experts, 141
of standard costing and scientific management, 132
of the organisation of the state, 112
technological, 204
projection(s), anthropological, 127
projection(s), neoliberal, 316
projection(s), onto-theological, 224
projection(s), scientific, 209, 212, 216
projection(s), sociological, 42, 224
projection, liberal, 116
projection, mathematical, 15, 43
projection, theoretical, 45, 46, 168
pro-vocation, 59, 61, 64, 72
and narrative, 81
psychology, 70, 90, 104, 198, 205, 206
public choice theory, 16, 123, 126, 156
public sector reform, 9, 122, 123, 125, 135, 156
qualitative research. See research, interpretative
quantum mechanics, 201, 203
rationalism, 217
rationalities and technologies, governmental, 135, 325, 327
rationalities and technologies, managerial, 315
rationalities and technologies, neoliberal, 157
rationalities and technologies, political, 149
rationalities, governmental, 149, 150
rationalities, information
   technological, 316
representation, 2, 3, 14, 15, 32, 39, 46, 50, 52, 54, 59, 61, 62, 64, 65, 72, 73, 77, 78, 81, 82, 85, 104, 131, 137, 148, 154-156, 168, 210, 240, 325
research, interpretative, 17, 177, 187
research, qualitative. See research, interpretative
resistance, 82, 88, 102, 106-108, 143, 183, 188, 318
rigour, 44, 103-105, 154, 191, 192, 226
routinisation, 48, 319, 321, 325
SAP, 138, 274
science and technology studies, 17, 42, 69, 193, 194, 200, 201
science does not think, 85
science studies. See actor-network theory
science, modern, 5, 33, 38, 43, 45, 46, 48, 50, 53, 56, 60, 61, 84, 85, 110, 111, 114, 168, 189, 194, 200, 202, 221, 233
sciences of man, 16, 91, 102, 103, 127, 131, 150, 326
Serres, Michel, 201-203, 205, 220, 222
Shannon, Claude, 63
social science(s), 9, 12, 16, 17, 101, 102, 104, 105, 108, 109, 113, 116, 122-124, 126, 127, 150, 156, 161, 162, 164-169, 173-175, 178, 179, 206, 207, 214, 224-226, 239, 240, 244, 322, 325, 326
sociology, 41, 70, 161, 168, 177, 191, 195, 198, 202, 203, 205, 206, 209, 225
sociology of knowledge, 153, 187
sociology of scientific knowledge, 207
sociology of technology, 41
software, 12, 13, 16, 18, 22, 61, 79, 136-138, 140, 142, 144, 145, 147, 157, 164, 167, 280, 321
software packages, 61, 144, 146
Sprachlichkeit, 180
standard business system(s), 10-12, 81, 138, 144, 145, 148, 319
standing-reserve, 55, 58, 64, 66, 81, 82, 103, 155
symmetry, 191, 192, 197, 206, 209
systems theory. See cybernetics
techné, 57, 60, 75
techno-science, 15, 33, 41, 43, 160, 172, 173, 199, 212, 220
theology, 205, 206, 216, 218, 220
thinking is unscientific, 85
translation, 40, 71, 225
truth
   at the end of modernity, 158
truth as efficiency, 151, 199, 209, 322
truth, hermeneutic, 39, 184
Tsoukas, Haridimos, 26-28, 63, 170
Vatican, 217, 218
Vattimo, Gianni, 3, 25, 29, 36, 58, 59, 61, 63, 72, 82, 85, 87-90, 161, 162, 166, 168-170, 173, 176, 180-183, 185-187, 194, 216, 220, 222, 223, 226, 230-232, 236, 244, 247
Wesen. See essence
Wiener, Norbert, 70
world picture, 51, 161, 222
world-as-picture, 38, 43, 52, 61, 62, 77, 78, 156, 214
Appendices
Appendix 1: Government documents


Fraser, E. (2001). Following the yellow brick road to the land of OM (Outcome Measurement). In Queensland Treasury / Office of Financial Management (Ed.), Performance Measurement Seminar (pp. [11]). [Brisbane, Qld].
Midson, L. (2002). Incorporating ASAP into the budget process. In Queensland Treasury / Office of Financial Management (Ed.), ASAP Stage 2 Seminar (pp. [slideshow; 13 slides]). [Brisbane, Qld].
Queensland. Treasury. ([n.d.]). Full cost pricing policy: a Queensland Government policy statement. [Brisbane, Qld].


Queensland. Treasury. ([n.d.]). Queensland Treasury: a new direction. [Brisbane, Qld].

Queensland. Treasury. ([n.d.]). Understanding managing for outcomes. [Brisbane, Qld].


### Appendix 2: Incidental Documents

<table>
<thead>
<tr>
<th>Conversation</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaver, Wayne</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Hampson, Bonnie</td>
<td>6 November 2000*</td>
<td></td>
</tr>
<tr>
<td>Vayo, Craig</td>
<td>16 May 2000*</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minutes of Meeting</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sutherland, Ray</td>
<td>#22 April 1999; #20 May 1999</td>
<td></td>
</tr>
<tr>
<td>Freeman, Rob</td>
<td>#16 April 1999</td>
<td></td>
</tr>
<tr>
<td>Vayo, Craig</td>
<td>#20 April 1999</td>
<td></td>
</tr>
</tbody>
</table>

| Round Table           | +          |            |

* Robert Smyth, investigator  
# She-I Chang, investigator  
+ Gregory Timbrell, investigator
Appendix 3: Interviews with Key Government Innovation Actors

Best, Peter 16 August 2002
Deeth, Norelle 28 November 2002
Ehrenberg, Laurie 16 December 2002
Hampson, Bonnie 3 July 2002
Logan, Rita 4 December 2002
Mason, John 4 July 2002*
Palmer, Aaron 18 October 2002
Pollard, Barbara 8 November 2002
Tesch, Alan 11 November 2002
Timbrell, Gregory 19 November 2002
Weatherley, John 4 July 2002*, 18 October 2002
*round table meeting
#phone conversation
Appendix 4: Abbreviations and Acronyms

AAS  Australian Accounting Standard
ABC  Activity-based Costing
ABM  Activity-based Management
ANT  Actor-network theory
ASAP  Aligning Services and Priorities
ERP  Enterprise Resource Planning [System]
FISB  Financial Information Systems Branch
FSSG  Financial Systems Support Group
FSST  Financial Systems Support and Training
GFS  Government Financial Statistics
MFO  Managing for Outcomes
NPM  New Public Management
OFM  Office for Financial Management
SAP  Systems, Applications and Products [in Data Processing]
SFMD  Strategic Financial Management Directorate
WGFMS  Whole of Government Financial Management System
WoGFIRs  Whole-of-Government Financial Information Requirements