Anthropocentricity and the Social Robot: Artistic and Aesthetic Investigations into Machine Behaviours.

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This paper discusses the notion of anthropomorphism and perceived behaviours in the social robots from the biased view of several artistic robotic installations and performances. The author presents these observations as a source of inspiration for embedding behaviours in robots. Investigating anthropocentricism, these works mix machines from the very abstract geometric to the very representative zoomorphic shapes. The robot was exploited as the medium in atypical human analogies and situations. In *La Cour des Miracles*, we staged the misery of the machine. In *L'Assemblee*, 48 robotic arms gather in an arena to create crowd behaviours. In *Armageddon*, robots were Angels and God's messengers while in *Devolution*, they were part of a biological metaphor with dancers. As we attribute intent to outside agents that act upon the physical world[1], one might question the level of anthropomorphism needed in social robots[2] and also reflect if this projection is an inevitable reflex or not.[3] Social robots have mainly embraced the humanoids with friendly behaviours as the mode of intercommunication[4], should we further ask, if this alley channels the potential of the robot intelligence.

Weak anthropomorphism.

Kinetic art, usually mechanomorphic, feeds on continuous transformation and participation of the viewer. The movement (or perceptible change of state) of an object can be seen in part as its objective nature, while its perception can be its subjective counterpart. Consequently, a rather abstract inert shape can become fluid, organic and eventually anthropomorphic, by the sole means of contextualization and movement. In figure 1, a simple motor mounted on springs creates a rich range of chaotic movement, staging this object in a cage anthropomorphises its essence resulting with the viewers perceiving it as an untamed miserable entity in La Cour des Miracles. Without an immense degree of computation, the behaviour is carried out by a juxtaposition of this social mise-en-scène and the inherent complex dynamic characteristics of the structure. Equally, shapes of figure 2 were created by a set of discrete manipulators[5] where theses geometries are ask to perform to an audience. Beyond the aesthetic of the hypnotic organic movements of these machines, audiences readily address the intent. This uncanny manifestation does not push the viewer to retract from the dialogue but rather induces a fascination to understand and further interact with the object. The weak anthropomorphism is here an advantage as it frees the "sign from the signified". It enables a multiplicity of readings from a simple starting shape: an array of cubes.

Fig. 1. Untamed machine.

Fig.2. Organic cubes.

Anthropomorphism through acting methods for robotic characters.

To explore the acceptance of artificial behaviours we will look at the theatre and the art; both providing fictitious environments to stimulate a suspension of disbelief. Stage performers share similarities with the social robots in that they both utilize gesture, body and physical action to incarnate behaviours. Acting methods may call for psycho-physical unity where behaviour is inherently physically grounded;[6] the walking table of figure 3 manages to navigate even under a deliberate poor gait. The behaviour is a collaboration of the unstable equilibrium of the construction and the staging. The introduction of a latent failure in the gait not only creates a poetic moment but also gives a supplementary spark of life to the object, as it is similarly proposed for social robots.[7] Acting methods propose opposite stances be taken by actors: presence or absence. The presence calls upon the performer's experience to dwell into his/her experience to deliver the character, absence requires an abnegation of the self to produce a pure rendering of the directors' directives and scripts. The beggar of figure 3 had no experience of misery neither of being poor. Its shape was a square box (symbol of a chest) that could rock over a hinge (body language of imploring). The beggar performer lean towards absence while the table is rooted more in presence via the physicality of its shape.

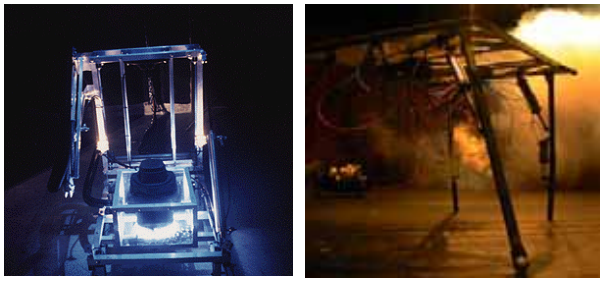

Fig. 3. Characters: beggar (left), walking table (right).

Anthropocentricity and the Fake.

We could associate Baudrillard's symbolic orders[8] with the degree of anthropomorphisation of the machine: it is the reflection of a basic reality, it masks and perverts a basic reality, it marks the absence of a basic reality and finally, it bares no relation to reality whatsoever. The first three call upon anthropomorphic incarnations of the robot while the last is pure simulacra. These artistic explorations fuel themselves at the growing blurred division between the man and the machine and demonstrate the paradox of artificial life. Stuck between the real and the artificial, the flesh and the metal, the sign and the signified, the anthropomorphisation of the robot suffers from Multiple Ontologies Disorder, a high-level manifestation of human-robot schizophrenia.[8] Since the principal of artificial reproduction favours the human body and the human existence as construct, is anthropocentricity at the centre of this disorder?

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