How Interjections Increase Customer Satisfaction, Purchase Intent & Loyalty

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Abstract

Could a subtle shift in the language used by service providers improve service interactions? This research suggests that linguistic interjections e.g., "wow", "aww", and "hmm", can shape consumer attitudes and behaviours. Seven experiments demonstrate that consumers are more satisfied, willing to purchase, and likely to remain loyal when service agents (human or chatbot) use interjections. The studies find support for three processing mechanisms. Consumers respond positively to interjections because they feel listened to, feel the agent is in a positive mood, and feel the agent is human. The effect holds across a range of consumer contexts and at different stages of the purchasing process. In a live-text chat, the effect occurs irrespective of a consumer's age, gender, education, or income. However, for voice interactions, a participant's gender appears to play a role. The findings shed light on a range of psychological processes while providing a straightforward means of enhancing customer satisfaction, purchase intent, and loyalty.

Keywords: *Interjections, customer satisfaction, chatbots, perceived listening, anthropomorphism, purchase intent.*

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Statement of Original Authorship

The work contained in this thesis has not been previously submitted to

meet the requirements for an award at this or any other higher education

institution. To the best of my knowledge and belief, the thesis contains

no material previously published or written by another person except

where due reference is made.

Signature: QUT Verified Signature

Date: 20th June 2022

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Chapter 1:

INTRODUCTION

Customer satisfaction is fundamental to service research and practice. This is because satisfaction is known to predict many important outcomes. For individual consumers, satisfaction predicts purchase intent (Mittal & Kamakura, 2001), loyalty (Szymanski & Henard, 2001), and willingness to pay (Homburg et al., 2005). For firms, satisfaction predicts firm performance and shareholder value (Kriss, 2014; Otto et al., 2020). For national economies, customer satisfaction has been linked to overall consumption expenditure (Yeung et al., 2013).

Despite decades of effort to measure and improve customer satisfaction, dissatisfaction with customer service remains high. Only 49% of U.S. consumers say companies provide a good customer experience (PwC, 2018), while 77% of consumers feel that poor customer service reduces their quality of life (Oracle, 2018). A recent satisfaction white paper explains that 89% of consumers want to provide feedback about satisfying or dissatisfying experiences. However, the majority of respondents feel

that brands are not taking action based on that feedback (Microsoft, 2020). Clearly, identifying the antecedents of satisfaction is warranted.

Academic researchers have empirically demonstrated ways in which employee behavior can increase satisfaction. Examples include physical behaviours and movement, body language and facial expressions, and personal appearance. Satisfying behaviours and movement include approaching the customer first (Söderlund, 2018), making an effort to find low stock items in the back-room (Keh et al., 2009) or following social distancing norms during the Covid-19 pandemic (Söderlund, 2020). Satisfying body language and facial expressions include smiling (Barger et al., 2006), and maintaining appropriate eye contact (Tsai & Huang, 2002). Other researchers have considered employee characteristics – such as overall appearance (Bebko et al., 2006), physical attractiveness (Luoh & Tsaur, 2009; Soderlund & Julander, 2009), appropriate uniforms (Shaoa et al., 2004) and visible tattoos (Dean, 2010) as predictors of customer satisfaction. Employee's physical behavior, body language, facial expressions and appearance can increase customer satisfaction.

However, most service delivery is no longer face-to-face. Customer service is increasingly an omni-channel experience (Verhoef et al., 2015), where text and instant messaging is increasing in popularity, email and phone interactions remain high, but physical face-to-face interactions are decreasing (Crawford, 2019; Microsoft, 2020). As such, consumers do not have access to employee behavior, body language and

appearance as service quality cues when forming their impressions regarding customer satisfaction. Further complicating matters, the agent providing customer service may or may-not be human (Blut et al., 2021; Sheehan et al., 2020). Thus, identifying the antecedents of customer satisfaction when face-to-face cues are not available is warranted.

Recent studies have identified ways to improve satisfaction using subtle shifts in language. These studies are critical, because the findings can be applied to both technology-mediated and face-to-face service delivery. Packard et al. (2018) demonstrate that the use of personal pronouns has a significant impact on customer satisfaction. Consumers were more satisfied to read "*I am reviewing this matter for you*" vs. "*We are reviewing this matter for you*", because the employee using "*I*" was perceived to have more agency and empathy. In a similar vein, You et al. (2019) found that when service failure occurs, consumers prefer to be told "*Thank you for your patience. I appreciate it!*", rather than "*Sorry for keeping you waiting. I apologise!*", because thanking the consumer is perceived as praising them for a positive personality trait (patience in this instance), which can increase their self-esteem. Finally, Packard & Berger (2021) demonstrate that concrete (vs. abstract) language is more satisfying for consumers. For example, concrete statements, such as "*Would you like tea or coffee*" are said to be more satisfying that abstract statements, such as "*Would you like anything else*", because they demonstrate that the employee is attending to and anticipating the customer's needs.

These three studies demonstrate that subtle shifts in employee language can have a significant impact upon customer satisfaction. Furthermore, because these changes are linguistic, they can be employed in both face-to-face and mediated customer service environments (e.g., telephone, live-chat etc.).

This thesis examines whether the words service agents use can improve satisfaction. Specifically, the thesis proposes that using interjections can improve customer satisfaction and impact consequential consumer choices, such as purchase decisions or brand switching intentions. Interjections are "words that constitute utterances by themselves and express a speaker's current mental state or reaction", (Ameka, 2006). They are very brief, discrete expressions of cognition or affect (Scherer, 1994). Examples include "oh", "wow", "hmm", "uh huh" or "aww". Consider a consumer shopping for a pair of shoes in a store. The salesperson may say "Those shoes look good on you". Conversely, using an interjection, the salesperson may say "*Wow. Those shoes look good on you*". This small shift in language may seem trivial. However, the research in this thesis demonstrates that the use of interjections in customer service, has significant downstream consequences upon consumer attitudes and behaviours.

Seven experiments examine the effect of interjections in service delivery. A summary of the studies is shown below in Table 1. Studies 1A and 1B were pilot studies. They were designed to confirm the presence of the main effect in a live-chat

context. Interjections are shown to improve customer satisfaction, regardless of whether the service agent is presented as a human employee or a non-human chatbot. Studies 2A and 2B replicate and extend the findings in a new context, while testing perceived listening as a theoretical account for the interjections → satisfaction relationship. Study 3 continues to build upon the empirical package, testing the impact of interjections on a consequential consumer choice. Participants made a binary purchase decision (yes/no) following a service interaction featuring the presence (vs. absence) of interjections. Study 3 also introduces agent affect as a theoretical account for the impact of interjections. Study 4 examined the impact of interjections in a post-purchase context, asking participants to decide whether they would continue to do business with a firm who denied their warranty claim. The service agent evaluating the warranty claim used (vs. did not use) interjections. Study 4 also introduces anthropomorphism and dehumanization, or the attribution and denial of human-like traits as a theoretical account for the impact of interjections. All three processing mechanisms (perceived listening, agent affect and anthropomorphism) were analysed simultaneously in this study. Finally, study 5 presents a preliminary test into the effect of interjections in audible interactions. Participants listened to an audio recording between a customer and a voice-enabled chatbot which used (vs. did not use) interjections. The studies feature a mix of outcomes. In studies 1 and 2, the consumer achieves their goal, as it was described in the study instructions. However, in studies 3 through 5, the consumer is

forced to settle for a sub-optimal outcome. In this way, the thesis examines the impact

of interjections in a variety of service contexts, broadening generalisability.

Table 1. Summary of experiments

Study	Method	Partner	CB Context	Outcome	DV	Purpose
1A	Animation	Human	Restaurant	Optimal	Satisfaction	Main effect
1B	Animation	Chatbot	Restaurant	Optimal	Satisfaction	Main effect
2A	Text	Human	Flowers	Optimal	Satisfaction	Listening mediation
2B	Text	Chatbot	Flowers	Optimal	Satisfaction	Listening mediation
3	Text	Agent	Hotel	Sub-optimal	Binary choice (purchase)	Listening vs. agent affect mediation
4	Text	Agent	Warranty	Sub-optimal	Binary choice (loyalty)	Listening vs. agent affect vs. anthro mediation
5	Audio	Chatbot	Hotel	Sub-optimal	Satisfaction	Main effect with audio

Method refers to the stimuli in which interjections were presented. Animation = participants watched an animation, text = participants engaged in a live text chat, audio = participants listened to an audio recording of a service interaction. Partner refers to the way in which the service agent was presented. Human and chatbot are self-explanatory, agent refers to a non-descript 'other', not explicitly described as human or non-human. Outcome refer to the type of outcome the participant / consumer experienced. Optimal = they got what they wanted, on time, under budget etc. Sub-optimal = they did not.

The thesis makes several theoretical contributions. First, the research adds to a body of works demonstrating that a small change in language, can have a significant impact on consumer attitudes and behaviours. The research achieves this by being the first to demonstrate that interjections increase customer satisfaction, purchase intent and customer loyalty. Second, this research is the first to demonstrate that interjections increase perceived listening. This is useful to the study of mediated communication – where access to visual cues such as facial expressions and body language are not available. In an online chat, a consumer cannot see if the employee is facing them, making eye contact, or nodding their head in agreement. This thesis demonstrates that interjections perform a similar role – making people feel heard. Third, this research is the first to provide evidence of interjections increasing anthropomorphism. This can open new lines of theoretical inquiry, given anthropomorphism is known to produce downstream consequences in human-robot and human-chatbot interaction.

With regards to managerial implications, the recommendations derived from this research are clear. First, human service agents are advised to use interjections in live chat. This could have a large impact on practice, given 48% of consumers use live-chat for customer service (Microsoft, 2020). The use of interjections could occur naturally, or be added to customer service scripts, which are used to standardize employee behavior (Nguyen et al., 2014). Further improving text-based interactions, programmers should add interjections to their chatbots. This is also likely to have a large impact, given

chatbot use is predicted to grow rapidly (*Chatbot Market - Growth, Trends, Covid-19 Impact and Forecasts (2022 - 2027)*, 2022). Finally, with regards to audible interactions (i.e., telephone, voice-activated chatbots), customer service staff and programmers are advised to employ interjections. The data presented, suggests that interjections improve the experience of male consumers, with no negative impact on female consumers – although further research is required.

This thesis is presented in 10 chapters. Chapter 2 provides a review of the relevant literature. Chapter 3 provides a theoretical framework for testing how and why interjections lead to increased customer satisfaction. Hypotheses, derived from the existing literature are developed in this chapter. Next, the overall research design employed in this thesis is discussed in Chapter 4. The thesis presents each of the studies as individual chapters (chapters 5-9). Thus, each of the study chapters include their own brief introduction, method, results, and discussion sections. Lastly, Chapter 10 summarizes the overall thesis findings. The theoretical and practical implications are provided in depth, along with a future research agenda. An outline of the thesis structure can be seen in Table 2.

Table 2. Summary of thesis chapters

Chapter	Title	Composition
Chapter 1	Introduction	Introduction to the thesis: topic, rationale, findings and design
Chapter 2	Literature Review	Synthesis of the relevant literature
Chapter 3	Theoretical Framework	Development of hypotheses and presentation of the conceptual background
Chapter 4	Research Design	Overview of research design, data collection methods, sampling strategy and analysis
Chapter 5	Study 1 A&B	Pilot studies to demonstrate the effect of interjections upon satisfaction
Chapter 6	Study 2 A&B	The effect of interjections on satisfaction as explained by perceived listening
Chapter 7	Study 3	Interjections predict purchase intent, as explained by listening and agent affect
Chapter 8	Study 4	Perceived listening, agent affect and anthropomorphism. Why do interjections decrease switching intent in service failure?
Chapter 9	Study 5	Preliminary study of interjections in verbal interactions. Relevant to phone calls and voice-enabled chatbots
Chapter 10	General Discussion	Summary of findings, implications, limitations and future research directions

Chapter 2:

LITERATURE REVIEW

How our choice of words impacts others

Language is fundamental to the human experience. We can discern language in the womb (Jabr, 2015), and by 20 years old, the average American is thought to know 42,000 lemmas, which are words excluding names of people and places (Brysbaert et al., 2016). The words we speak, write, hear and read impact us in countless ways. Research suggests that the language we use shapes the way we think about time (Boroditsky, 2001), space (Levinson, 1996), and of course - other people (Kinzler et al., 2007). The language we use maintains stereotypes (Maass et al., 1989) and influences the way we see other genders (Vigliocco et al., 2005). Recent research in countries that use masculine and feminine nouns, found that giving Covid-19 a male grammatical gender, i.e., *le* (vs. *la*) coronavirus – increased its perceived danger and consumers' willingness to undertake precautionary measures (Mecit et al., 2021). The words we choose can even indicate when we are lying. People using concrete (vs. abstract) language are

judged to be more truthful (Hansen & Wänke, 2010), while a study of prisoners found that lies contain fewer self-references, other references, exclusive words, and more negative emotion words (Bond & Lee, 2005). Clearly, the words we use are powerful, influencing the message sender and receiver.

Word choice has been shown to have interesting consequences. For example, researchers have studied the differential effects of *climate change* vs. *global warming* on perceived severity and willingness to act (Villar & Krosnick, 2011). Others have found that the readability of insurance documents influences expectations about how easy it will be to make an insurance claim when necessary (Van Boom et al., 2016). Researchers studying the impact of specific words have found that assertive language is convincing when consumers feel an issue is important (*You must* economize water use), but softer, more polite appeals work best when consumers need convincing (*It is best to* economize water use; Kronrod et al., 2012). Congruence between word choice and product type is also important. Emotional language improves product reviews for hedonic goods. However, the relationship is reversed for utilitarian goods i.e., a backfire effect (Rocklage & Fazio, 2020). As a final example from the broader word choice literature, "Everyone likes this movie" is more persuasive when said by a stranger as opposed to a friend or relative. This is because the stranger is further removed from the consumer – thus, the "everyone" referred to in the statement is perceived to be a larger, more diverse set of people (Lee & Kronrod, 2020).

This thesis examines the impact of language upon consumer attitudes and behaviours. Several recent studies suggest that an employee's word choice can significantly increase or decrease customer satisfaction scores. For example, Packard et al. (2018) demonstrate that the use of personal pronouns has a significant impact on customer satisfaction. They found that customers were more satisfied when employees used "*I*" statements, to emphasize the agent, versus "*we*" statements, which emphasize the firm. Hearing "*I understand*" is more satisfying for consumers than "*We understand*", because the employee using "*I*" is perceived to have more agency and empathy. In a similar vein, You et al. (2019) found that when service failure occurs, consumers prefer appreciation over an apology. For example, in a busy restaurant, consumers prefer to be told "*Thank you for your patience. I appreciate it!*", rather than "*Sorry for keeping you waiting. I apologize!*". This is because thanking the consumer is perceived as praising them for a positive personality trait which can increase their self-esteem.

Packard & Berger (2021) demonstrate that concrete (vs. abstract) language is more satisfying for consumers. For example, concrete statements, such as "*I'll go search for that t-shirt in grey*", are thought to be more satisfying than abstract statements, such as "*I'll go look for that*". This effect occurs because concrete statements demonstrate that the employee is attending to, and anticipating, the customer's needs. In the future research section of their paper, Packard & Berger (2021) explain that additional studies into verbal, non-verbal or behavioural cues that signal listening is warranted. This

research attempts to answer that call. In a similar vein, Gloor et al's. (2017) paper shows a positive correlation between simple, direct language and higher net promoter scores, which are conceptually similar to customer satisfaction scores. Söderlund & Oikarinen (2018) found that employee humour can backfire, because it reduces the attention a customer pays to other, more important elements of communication. Finally, given that machines can use language, a number of studies examine how language can impact satisfaction via anthropomorphism and perceptions of humanness (Blut et al., 2021; Sheehan et al., 2020; Söderlund & Oikarinen, 2021). These studies provide evidence to suggest that the words an employee uses during service delivery can have a meaningful impact upon customer satisfaction. Furthermore, satisfaction is known to influence a range of downstream behaviours and attitudes.

Demonstrating that specific words influence consumer thought and choice is useful for several reasons. Knowing the best words to use can contribute to a range of managerial changes. The findings may be applied to face-to-face communication, voice communication e.g., telephone calls and call centre operations or text communication e.g., live-chat services, and text message interactions. The findings may also be applied to automated, AI based service delivery via text chatbots or voice systems such as Siri and Alexa. Furthermore, the findings may improve satisfaction in a range of service delivery scenarios, from hospitality to healthcare – although further testing to identify

boundary conditions for the effects would be required. To date, no research has tested

the impact of interjection use in service delivery. This thesis aims to address this gap.

Interjections (independent variable)

Definition of interjections

Interjections are parts of speech that are grammatically independent of the words

around them and convey information about the speaker's current thoughts and feelings

(Ameka, 1992; Wilkins, 1992). Examples include *wow* (I'm surprised), *hey* (I want

attention), *hmm* (I'm thinking), and *yuk* (I'm disgusted). This definition of interjections,

provided by Ameka (1992) and Wilkins (1992) is used in this thesis as it is the most

commonly accepted definition. It has two parts. First, interjections are grammatically

independent. Second, interjections convey information about the speaker's thoughts

and feelings. Several academic papers support the first proposition; interjections are

independent. For example, Schröder (2003) found that presenting audio recordings of

interjections in isolation (no words on either side of the interjection), without context or

instruction, was sufficient to convey identifiable meaning. A single interjection can

communicate threat, elation, boredom, relief, worry or anger. Interjections can convey

meaning on their own, however they are context-specific (Ameka, 2006). The

interjection *aww* signifies that something is cute. However, *aww* cannot be fully

interpreted until the speaker, the source of the "cuteness" and the social context are

identified. *Ouch* means pain, however *ouch* said in the chiropractor's chair expresses physical pain, whereas *ouch* said when the chiropractor gives you the bill expresses a different kind of pain. Other papers support the second proposition; interjections convey the speaker's thoughts and feelings. For example, researchers have mapped specific interjections onto specific cognitive and affective states (Goddard, 2014). *Hmm* (consideration), *aha* (eureka moment), *eh?* (questioning) are demonstrative of cognition, while *wow* (surprise) or *bleh* (revulsion) signify affective states.

According to this definition, interjections may be words (e.g., damn) or non-words (e.g., aww). They often involve the production of sounds not found in other parts of the language (e.g., tut-tut) and may not include any vowels (e.g., psst, Ameka, 1992). As such, interjections are described as atypical with regards to phonology (referring to sound patterns) and morphology (referring to the formation and structure of words; Ameka, 2006). The use of interjections in face-to-face communication typically involves physical movements and body language (Ameka, 2006). Furthermore, the sound of interjections often mimics a physical action or reaction e.g., gasping, gagging, sighing, which makes interjections somewhat similar to onomatopoeia (Libert, 2019). As with most academic constructs, there are alternative perspectives and definitions. Interested parties are encouraged to read Libert (2011) and Wharton (2003).

Types of interjections

There are different views regarding the best way to categorize or group interjections. The most common are categorization according to structure (morphology) or according to meaning (semantics). Ameka (2006) and Goddard's (2014) typologies are useful for categorizing exemplars of the phenomenon by structure. Ameka (2006) explains that interjections can be simple e.g., *ugh*, complex e.g., French *oh la la!* or part of an interjectional phrase e.g., *bloody hell*. Simple interjections cannot be used other than as an interjection. Meanwhile, complex interjections are thought to include swear words and alarms e.g., *help*, *fire*. In a similar vein, Goddard (2014) delineates between three types of interjections: noise-like primary interjections e.g., *tsk-tsk*, word-like primary interjections e.g., *wow*, *gee* and secondary interjections e.g., *Christ*, *good grief*. It is worth noting, that not all researchers agree with these groupings. Some question the validity of interjectional phrases and secondary interjections (Wierzbicka, 1992).

Taking a semantic approach and categorizing interjections by their meaning, interjections can be expressive (the speaker feels), cognitive (the speaker thinks) or conative (directed at the receiver) or phatic (used as part of a communicative routine; Ameka 2006). This view couches interjections inside of categories derived from Jakobson's (1960) functions of language theory. Emotive or expressive interjections are used to express oneself e.g., "*Wow* – that car is fast". Cognitive interjections pertain to states of thought e.g., "*oh-oh*, this is bad". Conative interjections ask something of the

receiver e.g., "*Shh*, this is a library". Finally, phatic interjections are used to facilitate an interaction e.g., "*Hi*. Welcome to our store". A summary of interjection categories is provided in Table 3.

Table 3. Summary of interjection types

Morphological Approach

Noise-like	Word-like	Complex	Interjectional phrases
Yuk	*Wow*	*Damn*	*God damn it*

Semantic Approach

Expressive	Cognitive	Conative	Phatic
Aww	*Oh-oh*	*Eh?*	*Ok*

Function of interjections

Academic views regarding the function of interjections have changed over time. Historical perspectives describe interjections as non-words and of little value (Libert, 2019; Wharton, 2003). The word interjection comes from the Latin interjicere "to throw between". As such, interjections were originally seen as throwaways, to be tossed in between words with more substance and communicative power. Nineteenth century perspectives class interjections as paralanguage. "Interjections are only the outskirts of real language. Language begins where interjections end", (Müller, 1861, p. 307). This

para-language view, puts interjections into a class of communication alongside inflection, pitch, speed of speaking etc. This perspective has changed.

The modern standpoint is that interjections are incredibly versatile. They can be used as an exclamation (*ouch, wow*), a greeting (*hi*), as part of a response to someone else (*huh? oh!*) or to indicate indecision (*um*) or deep thought (*hmm*). Norrick (2009) explains that interjections may function as a back-channel, discourse marker, attention getter, floor-holder, transition, to indicate conversational repair or to signal disapproval.

Scherer (1994) appears the first to describe interjections as 'affect bursts', which he defines as "very brief, discrete, nonverbal expressions of affect in both face and voice" (p. 170). Picking apart the term "affect burst", interjections definitely convey affect, and they are delivered in a short, sharp way. In support of the affect component, Prinz (2002) has mapped a range of interjections against individual emotions. For example, Prinz (2002) demonstrates that disgust can be expressed by interjections such as blech, ick and yuk, with high intercoder reliability. In support of the burst component, Goddard (2014) argues that interjections serve a very primary form of expression. They communicate affect and cognition with more immediacy and intensity than full sentences. "Someone who utters *Ugh!* or *Wow!*, for example, may be expressing something like an immediate feeling of disgust or surprise/admiration, but they are not describing their feelings as someone can do by saying I'm disgusted or that's amazing", (Goddard, 2014, p. 54).

Who uses interjections and when?

Interjections, as a part of language are likely to be very old. Early researchers theorized that interjections have their evolutionary roots in animal cries and natural sounds (Wundt, 1900). This idea has been advanced using modern research techniques such as fMRI. The use of interjections activates regions of the brain associated with control of deep-seated, instinctual, emotional behavior, leading researchers to suggest "interjections might trace back to proto-speech vocalizations of an early stage of language evolution", (Dietrich et al., 2008, p. 1751). Today, interjections are found in all languages (Ameka, 1992; Goddard, 2014). For example, English *hey* or *psst* are functionally similar to Russian *a'u* and Japanese *oi* and *nee*. English *yuk!* is similar to Polish and Russian *fu!*, *fe!* and *tfu!* (Wierzbicka, 1992). They are used by all age groups, developing early in childhood (Montes, 1999). They are thought to occur in lively, spontaneous dialogue, as opposed to thought-out, formal prose (Koch & Oesterreicher, 1994). In studies of public speakers (Hillary Clinton, Robin Williams, David Letterman), interjections are typically used at the start of a statement – suggesting they signal one's intention to speak (O'Connell et al., 2005). Finally, there is some evidence to suggest that females use interjections more frequently than males (Bi, 2010; Hayasi, 1998; Leaper, 2019).

Clearly, the words we use have power. Other types of words influence the message sender and receiver and these effects hold in customer service. It is reasonable to assume interjections also have an impact on customer experience. Having reviewed interjections as the independent variable, a review of the satisfaction literature is provided in the following section.

Customer Satisfaction (dependent variable)

Johnson & Fornell (1991) defined customer satisfaction as a customer's overall evaluation of a product or service offering to date. In the thirty years since then, satisfaction has been conceptualized and operationalized in many different ways, depending on the context. Conceptualizations have been adjusted to account for differing views as to the underlying mechanism by which satisfaction occurs i.e., disconfirmation of expectations, transactional equity, product performance etc. (Otto et al., 2020). Furthermore, researchers have delineated between different types of customer satisfaction over time (i.e., satisfaction derived from the purchase process itself vs. post-purchase evaluations vs. cumulative satisfaction over the course of a commercial relationship, Jones & Suh, 2000; Williams & Naumann, 2011). Customer satisfaction is often discussed in conjunction with service quality or perceived value and delineating between these constructs is sometimes difficult (Cronin et al., 2000; Gustafsson et al., 2005). This is especially true in service delivery. The widescale application and

changing nature of customer satisfaction is evident in the number of instruments that have been designed to measure it. Examples include, Total Quality Management (TQM; Powell, 1995), SERVQUAL (Babakus & Boller, 1992), and SERVPERF (Carrillat et al., 2007) etc.

According to research aggregators such as Scopus and Web of Science, investigation into "customer satisfaction" began in the 1960's and grew rapidly from the 1980's. However, growth in satisfaction research appears to be a function of growth in overall research output. Using Scopus (1980-2021), there is a very strong, positive correlation between the number of customer satisfaction publications, and the number of overall academic publications each year, r (39) = .976, $p < .001$.
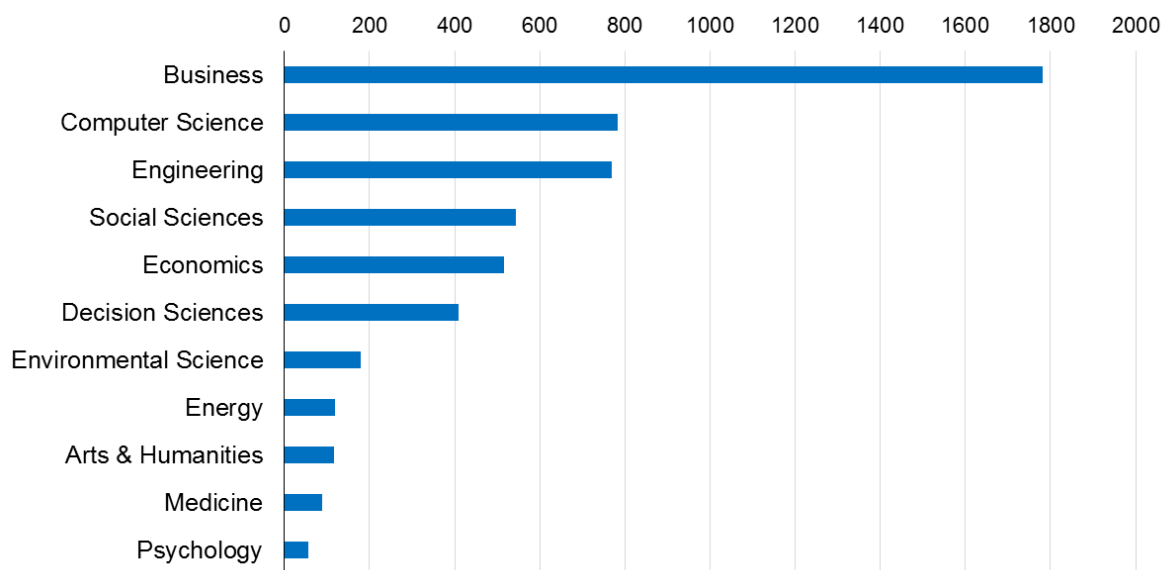
Figure 1. Number of "customer satisfaction" publications by discipline (2011-21)

The customer satisfaction literature is spread across a wide range of academic

domains. This is shown in Figure 1, which compares article counts, across disciplines as

defined by Scopus (2011-2021). The variable is used in many fields, but commonality

exists between disciplines. Computer science researchers use satisfaction to design

better mobile apps (Zhou, 2012), websites (Eid, 2011) and cloud services (Chen et al.,

2011). Engineers use satisfaction scores to improve product design (Wang, 2013) or

public train systems (Mouwen, 2015). Environmental scientists are concerned with

national park visitor satisfaction (Chen et al., 2011) and green-product evaluations

(Mohd, 2017). Arts & humanities researchers measure satisfaction among library users

(Cristobal, 2018) and university students (Afthanorhan et al., 2019) while medical

researchers measure satisfaction with healthcare in the developing world (Agyapong et

al., 2018) or the COVID-19 vaccination process (Stämpfli et al., 2021).

Critically examining the satisfaction literature, a number of issues become

apparent. First, the majority of studies are based on correlational data. This means

causation cannot be determined (Zikmund et al., 2020). Despite this, a number of papers

still make assertions regarding temporal precedence and causality. Second, many of the

papers report findings from a single study. Given recent issues regarding research

replication (Earp & Trafimow, 2015; Shrout & Rodgers, 2018), results from a single

study should be interpreted with caution. Third, most of the papers are context

dependent, examining the antecedents and consequences of satisfaction in niche

scenarios. As such, findings are difficult to generalize. Stemming from this, a fourth

issue is that many of the studies suffer from selection bias. Participants were often

selected because of their exposure to a particular event, which further reduces

generalizability (Bethlehem, 2010). Fifth, many of the studies reviewed are

overpowered, with inappropriately large sample sizes. As such, they identify

significant, but inconsequential effects. As Kaplan et al. (2014) explain, "effects

identified in big datasets, although statistically significant, might be almost trivial at the

individual level as statistical significance testing is designed for use in small rather than

enormous datasets", (p. 344). Unfortunately, managerial insights based on the findings

of such studies may not lead to meaningful changes in consumer behavior.

Focusing on the business and marketing literature, customer satisfaction is

critical for both practitioners and researchers. For firms, customer satisfaction can be

used to evaluate management performance (O'Connell & O'Sullivan, 2010), as a

segmentation strategy (Athanassopoulos, 2000; Fuller & Matzler, 2008), or as a

marketing claim e.g., a satisfaction guarantee (Sharifi, 2019). For researchers, satisfaction

is fundamental because it predicts a range of important outcomes – for consumers,

firms and national economies. At the individual level (i.e., consumers), satisfaction

scores are known to predict complaint behavior (Fornell et al., 1996), repeat purchasing

(Mittal & Kamakura, 2001), customer loyalty (Szymanski & Henard, 2001) and even

willingness to pay (Homburg et al., 2005). At the firm level, customer satisfaction has

been linked to firm performance. For example, Anderson et al. (2004) report evidence of a satisfaction → shareholder value relationship, suggesting that a 1% increase in satisfaction is associated with a 1.016% change in shareholder value, although the effect size varies between industries. More recently, Otto et al. (2020) published a meta-analysis of 251 correlations from 96 studies to demonstrate a significant, positive relationship between customer satisfaction and firm performance. Finally, customer satisfaction is known to have an impact at the macro level. Yeung et al. (2013) used well-established econometric techniques to demonstrate that satisfaction plays a role in determining consumption expenditure in selected European countries.

Context-specific literature

Live-chat – also known as online chat or instant messaging refers to the online, synchronous transmission of text-based messages from sender to receiver (Friermuth & Jarrell, 2006). It is a form of computer-mediated communication (Ho & McLeod, 2008). Synchronous online chat is prolific, connecting consumers to firms or each other through instant messaging apps, social media, firm websites, dating websites, computer games, and customer support portals. In an online chat, a consumers' communicative partner may or may not be human.

A number of studies have examined specific design features which increase consumer satisfaction with the medium. Given the rise of chatbots, the most recent,

relevant literature focuses on improving chatbot performance, as opposed to human-human interactions. One group of studies focuses on the message, or the language used by a live-chat agent. For example, Liu & Sundar (2018) found that chatbots which expressed empathy and sympathy in a health-advice context, outperformed chatbots which did not. Luo et al. (2019) found that sales decrease when a chatbot discloses its non-human status. Sheehan et al., (2020) demonstrate that the words a chatbot uses following miscommunication, also known as conversation repair, impact chatbot performance. Finally, Adam et al. (2021) demonstrate that the use of first person pronouns and small talk improved live-chat agent evaluations. A second group of studies focuses on other, non-language factors. For example, Candello & Pinhanez (2017) tested the effect of typeface or font, finding that a machinelike font increased consumers' belief that they were talking to a machine, however, a hand-written font did not have the opposite effect i.e., increase anthropomorphism. Gnewuch et al. (2018) tested the impact of response delays. This is important because a chatbot can respond to a consumer request faster than a human service agent can type. As such, Gnewuch et al. (2018) report that a dynamic response delay is most satisfying for consumers. That is, a response delay should be set to increase automatically as the number of words in a chatbot's response increases. Finally, Westerman et al. (2019) found that a chatbot which makes spelling mistakes is in fact perceived as less human-like, which is

counterintuitive, given that making a spelling mistake is a very common human behavior.

Interjections are distinct from emoji, emoticons and other forms of online non-verbal communication. This is because interjections are verbal - they can be written with language as opposed to pictorially displayed and cab be heard as sounds in a face-to-face context. The literature on emoji and emoticons was reviewed and is somewhat conflicting. Emoticons, which are graphical representations of facial expressions are thought to increase the perceived helpfulness of online customer reviews, because they increase processing fluency (Huang, Chang & Okumus, 2020). Emoji's use in advertising is thought to increase audience affect and subsequent purchase intentions (Das, Wiener & Kareklas, 2019). However, other research has shown that emoji's used by service agents have no effect on perceived warmth and actually reduce perceived competence (Glikson, Cheshin & van Kleef, 2018). Further research is needed to clarify the function and consequences of emoji and emoticons, however that is beyond the scope of this research.

To date, no research has tested the impact of interjections in an online chat context. Furthermore, few studies have tested their proposed design changes across both human-human and human-machine interactions.

Chapter 3:

THEORETICAL FRAMEWORK

This thesis aims to test a causal relationship between interjection use by a service agent and customer satisfaction. At the same time, the thesis proposes three theoretical accounts as processing mechanisms to explain why interjections should impact customer satisfaction and downstream consumer choice. They are summarized as follows; interjection use makes customer service more satisfying because the agent is (i) perceived as being a better listener, (ii) perceived as displaying more positive affect, and (iii) perceived as more human-like and less likely to be dehumanized.

Perceived listening

Listening comprises of a range of actions and processes including attentiveness, verbal and non-verbal cues, attitudes, memory and behavioural responses (Lewis & Reinsch, 1988). Put more simply, listening is attending to and understanding what

someone says (Steil et al., 1983). Put another way, listening is event perception and shared meaning, as opposed to simply hearing sounds (Gaver, 1993). Listening is often discussed alongside empathy. Some listening models assert that empathy predicts one's motivation to listen (Steil et al., 1983), while others argue that the constructs should be measured simultaneously, as empathetic listening is a behavior distinct from just listening by itself (Drollinger et al., 2010). There are many different ways to measure and think about listening (Gearhart & Bodie, 2011). Furthermore, researchers have different perspectives about listening; as either an individual phenomenon (listener vs. speaker) or as a dyadic phenomenon (listener and speaker cooperatively; Kluger et al., 2021). Despite conflicting definitions and operationalisations of listening, researchers agree about its effects. Listening is fundamental to interpersonal relationships and their success. It is studied in the context of marriages (Pasupathi et al., 1999), doctor-patient relationships (Fassaert et al., 2007) and student learning environments (Vandergrift, 2007).

A number of studies link perceived listening with customer satisfaction (de Ruyter & Wetzels, 2000; Drollinger & Comer, 2013; Packard & Berger, 2021). This includes data from buyers, who rate listening as critical in interpersonal selling, linking it with trust and satisfaction (Aggarwal et al., 2005). Hiring managers agree, ranking listening skills as the number one success factor for professional sales people (Marshall et al., 2003). A recent meta-analysis provides robust support for the idea that listening

"increases adaptive selling, improves customer attitudes to the salesperson and trust (i.e., relational performance), and ultimately leads to higher sales performance", (Itani et al., 2019, p. 126).

Correlation data from a call centre suggests that perceived listening influences customer satisfaction. De Ruyter & Wetzels (2000) found that high levels of employee attentiveness and responsiveness, both factors of listening behavior, were related to increased customer satisfaction and trust. Attentiveness was defined as verbal cues i.e., "go on", "yes" and non-verbal cues i.e., voice pitch, rate, and volume. Responsiveness was defined as understanding and agreement between service agent and customer, as demonstrated by the agent speaking at appropriate times, offering elaborate and relevant information etc. Other studies from other disciplines report similar results. For example, Wanzer, Booth-Butterfield and Gruber's (2004) studies into communication in health-care found that perceived listening was positively associated with patient satisfaction.

Other, more relevant studies manipulate a linguistic construct to demonstrate an indirect effect on satisfaction via perceived listening. Packard and Berger (2021, studies 3 - 5) demonstrate that using concrete ("*Those blue jeans are great*") vs. abstract ("*Those pants are great*") language, increases perceived listening, which subsequently increases customer satisfaction. The authors argue that the use of concrete language "generates

inferences that they (employees) are attending to and understanding the topics raised by a conversational partner", (Packard and Berger, 2021, p. 800).

This research is the first to propose that the use of interjections increases perceived listening. In a business context, listening is defined as attending to and understanding the customer. This is because interjection use can signify cognition and stimuli-relevant affect. Goddard (2014) provides the examples of "wow", "gee" and "yikes". Imagine a friend tells you that they were going to lose their job. Responding with "yikes", would signify that you were actively listening and attending to both the statement and its inferred meaning i.e., stress and financial concern. As a second example, imagine a colleague asked your opinion on a serious matter. Using the interjection "hmm", before responding may indicate that you were listening, and the "hmm" represents cognition, indicating that this serious matter deserves a considered response on your part.

Given interjections may signal perceived listening and perceived listening is thought to predict customer satisfaction, the following hypotheses are proposed;

H₁: Service agents using interjections will be perceived as more satisfying.

H₂: Interjections will have an indirect effect on satisfaction through the service agent's perceived listening.

Displays of positive affect

Positive affect describes a person's positive emotions, moods, sensations and sentiments (Ashby et al., 1999). People experiencing positive affect may be described as happy, excited, energetic, confident, and alert. Other's may be able to determine when someone is experiencing positive affect, due to displays of positive affective. As discussed below, positive affective displays are known to predict customer satisfaction.

There is literature to suggest that employee positive affect is related to a positive customer experience (Bitner et al., 1994; Diener et al., 2020; Goodwin, 1996; Puccinelli et al., 2009). For example, Pugh (2001) investigated the impact of bank tellers positive moods upon customer satisfaction. The data suggests that positive emotions (greeting, smiling) displayed during a banking transaction were positively correlated with customer's perceptions of service quality. Tsai and Huang (2002) found similar results. Their study of service delivery in a shoe-shop suggests that employee smiling, eye-contact and the delivery of a pleasant greeting are positively correlated with the amount of time a customer spent in the shop as well as their intentions to revisit. Many other studies report similar results. Barger et al. (2006) found that the degree to which coffee shop staff smiled at customers predicted customer satisfaction. This relationship between employee's positive affective displays and customer satisfaction is generally explained by emotional contagion (Barger et al., 2006; Puccinelli, 2006; Pugh, 2001)

although there are conflicting accounts (Hennig-Thurau et al., 2006). Proponents of the emotional contagion account suggest that a happy employee makes for a happy customer, which makes for a satisfying service encounter. For example, Barsade (2002) used an experimental design to show that emotional contagion (the transfer of moods between people) – occurs, as rated by both independent coders and self-report measures. Opponents suggest that it is the 'authenticity' of the affective display that matters, not the display itself i.e., an authentic smile is more contagious than a large, obvious smile (Hennig-Thurau et al., 2006). On balance, there is sufficient evidence to suggest that employee positive affect predicts satisfaction in technology mediated service (live chat, phone etc). The authenticity of affective displays is likely to be important in face-to-face interactions. However, in interactions which lack visual cues, judging the authenticity of a service agents affect is more difficult. It is reasonable to assume that word choice indicates affect in text-based interactions, while word choice combined with intonation, pace and volume are appropriate cues for audible interactions.

This thesis proposes that interjections function similarly to positive affective displays (smiling, greeting etc). Establishing this would be especially useful in mediated communication (i.e., instant messaging, live-text chats, phone calls, emails etc), where customers cannot assess an employee's body language and facial expressions. In face-to-face communication, a service agent may smile or laugh to signify happiness in

response to a customer's joke. In a live chat, the use of "ha-ha", as an interjection may perform the same function. Given the linguistics research describes interjections as 'affect bursts', and positive employee affect is predictive of satisfaction, the following hypotheses are proposed:

H3: Interjections will have an indirect effect on satisfaction through consumers' perceptions of service agent positive affect.

H4: In-line with emotional contagion, interjections will have an indirect effect on satisfaction through agent affect and then participant affect.

Anthropomorphism & Dehumanization

Consumers can and do communicate with non-human service agents. Advances in artificial intelligence and natural language processing mean that customer service and even social conversation can occur between a human customer and service machine (Sheehan et al., 2020). The perception of human-like traits within non-human objects is known as anthropomorphism (Epley et al., 2007). Anthropomorphic perception is thought to be the product of the perceiver and the perceived. With regards to the perceiver, individual differences, such as one's need for social connection (Epley et al., 2008; Shin & Kim, 2018) and need for control and mastery of their environment (Waytz et al., 2010) predict anthropomorphism. But anthropomorphism is also determined by

the target objects design and behavior. A robot with facial features is more human-like than one without them. This factor of anthropomorphism is known as elicited agent knowledge (Eyssel et al., 2012).

The degree to which a machine displays human-like traits is known to predict satisfaction under certain circumstances (Blut et al., 2021). Anthropomorphism can positively impact consumer evaluations of certain product attributes (Landwehr et al., 2011), increase the strength of brand-consumer relationships (MacInnis & Folkes, 2017) and even increase charitable giving (Zhou et al., 2018). However, anthropomorphism is not always beneficial to consumers and brands. Studies have shown that anthropomorphism of service robots can backfire, triggering negative consumer attitudes via feelings of eeriness (Kim et al., 2019). Meanwhile, anthropomorphism can increase problem gambling (Riva et al., 2015), increase impatience (May & Monga, 2014) and undermine self-control in consumption contexts (Hur et al., 2015).

This thesis is the first to propose that a chatbot using interjections would be perceived as more human-like or anthropomorphic due to a consumer's access to elicited agent knowledge. This increased anthropomorphism would then increase satisfaction scores in this instance. In a similar vein, Sheehan et al. (2020) found that a chatbot's language use in attempting to repair conversation failure, predicted anthropomorphism and subsequent adoption intent. Admittedly, adoption and customer satisfaction are different constructs, but they are likely to have high

correlation between them. A more recent meta-analysis has indeed confirmed that anthropomorphism is a known predictor of variables positively correlated with satisfaction e.g., adoption intent (Blut et al., 2021). When a communicative machine is providing customer service, it is proposed that interjection use increases satisfaction via anthropomorphic perceptions.

Furthermore, the thesis proposes that it is conceptually appropriate to use anthropomorphism as a mediating variable when the service interaction is between two humans. This is because anthropomorphism has been described as the opposite of dehumanization (Schroeder & Epley, 2016; Waytz et al., 2014). In other words, anthropomorphism is the attribution of humanness to non-human objects, while dehumanization represents the removal of human attributes from humans (Shin & Kim, 2018). Human customer service agents, especially those working overseas may be the targets of dehumanization, given racial and ethnic outgroup membership predicts dehumanization (Haslam & Stratemeyer, 2016). Furthermore, foreign service agents may be dehumanized if their work is seen as repetitive, automated or unskilled. The power dynamics behind a customer service interaction (master vs. servant) may also produce dehumanization, given one's desire for social dominance is a known predictor of dehumanization (Haslam & Stratemeyer, 2016). Finally, there are circumstances in which customers may be genuinely unsure as to whether they are communicating with a human or a machine. When either a human or machine uses interjections to

communicate affect, this may decrease dehumanization / increase anthropomorphism, given congruence between emotion inducing stimuli and the display of an appropriate emotional response is very human-like behavior. As such, it is proposed that interjections increase human-like perceptions of communicative machines.

H₅: Interjections will have an indirect effect on satisfaction through the increased anthropomorphism / decreased dehumanization of a service agent.

Summary and theoretical model

In sum, customer satisfaction is critical to both research theory and practice. Identifying the antecedents of satisfaction is therefore worthwhile. A number of studies suggest that the language used by an employee can impact satisfaction. However, to date – no one has examined the role of interjections. The extant literature about interjections suggests they may impact satisfaction and consumer choice. Drawing upon other, tangential findings from a variety of fields, this thesis further proposes three processing mechanisms which may explain an interjection → satisfaction relationship. A theoretical model emerging from the proposed relationships is shown in Figure 2. The following chapter provides an overview and justification for the methodology and design choices made in order to test the theoretical model. This includes a detailed discussion of research methodologies, data collection methods, sampling and analysis.
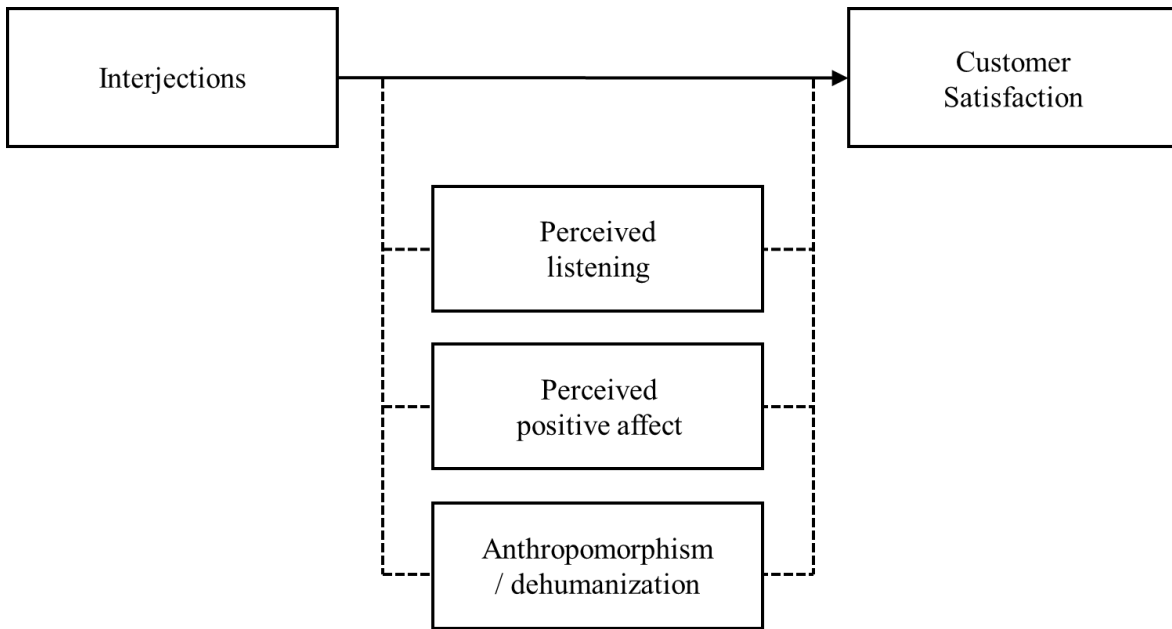
Figure 2. A theoretical model of the relationships explored

Chapter 4:

RESEARCH DESIGN

The previous chapters explain the purpose and aims of the research, provide an

overview of the literature, and outline the theoretical justification for the research

hypotheses. This chapter provides an overview and justification for the methodology

and research design. Full details of the research paradigm, data collection methods,

sampling strategy, and analysis are provided.

Research Paradigm

This thesis, the questions it poses, and the ways in which it attempts to answer

those questions are predicated upon a set of ontological and epistemological

assumptions. "These (assumptions) provide taken-for-granted understandings of the

nature of the world and the people in it, preferred methods for discovering what is true

or worth knowing, and basic moral and aesthetic judgments about appropriate conduct

and quality of life", (Alvesson & Deetz, 2000, p. 23). These assumptions constitute a world-view, which is, "the very skeleton of concrete cognitive assumptions on which the flesh of customary behavior is hung", (Wallace, 1970, p. 143). Concerning the nature of reality (Creswell, 2007), this thesis adopts a positivist ontology. It presupposes a single, identifiable reality and truth, which can be measured and studied (Guba & Lincoln, 2005). With regards to epistemology and the process of thinking, this thesis is objectivist, concerned with scientific rigor, valid, and verifiable studies – independent of subjectivity and social realities (Guba & Lincoln, 2005).

Research Method

In keeping with the positivist paradigm, this thesis is grounded in the conventions of hard science. A deductive, top-down approach was used, where theory informed specific hypotheses to be formally tested (Babbie, 2016). Therefore, the scope of work and the methodology employed have methodological fit, categorised within the "mature archetype" presented by Edmondson and McManus (2007). In other words, a specific research question, combined with quantitative data and existing constructs, was used to draw statistical inferences regarding a broader population. Edmondson & McManus describe each of these methodological choices as congruent and complimentary.

Experiments are the most fundamental part of consumer behavior analysis. They are concerned with controlling and changing the environmental stimuli affecting consumer choice (Fagerstrøm & Sigurdsson, 2018). This view is echoed by others, who suggest that consumer behavior, as a sub-discipline of behavior analysis has its roots in experimentation and inductive research methods (Baum, 2005). Experiments are a particularly powerful way to confirm hypotheses. When an experiment is not possible within a particular research domain, this is often seen as a barrier to progress (Currie & Levy, 2019). The experimental method was selected for this research because experiments show that (a) the cause and effect are connected, (b) the cause precedes the effect, (c) the cause-and-effect relationship occurs consistently across participants and (d) that alternative explanations have been accounted for (Babbie, 2016).

This thesis presents a series of experiments, opting for study designs which can be replicated (Merriam, 1991). In these experimental studies, the independent variable (*X*; interjections) is manipulated across different groups to examine the hypothesized effect by comparing differences in the dependent measure (*Y;* satisfaction, binary consumer choice), between groups (Baron 1990). Random assignment was utilized to eliminate the possibility that uncontrollable individual differences among study participants would have an impact on the effect under investigation (Baron, 1990). Given the hypotheses were designed to investigate cause-and-effect relationships, an experimental design was most appropriate (Merriam, 1991). The process described

herein, follow the prescribed scientific method. It is assumed that the consistency of the

results is evidence of substantive findings (Denzin & Lincoln, 2017).

Sampling design

Non-probability sampling was employed in the thesis, which involved selecting

a sample through purposive judgment. The studies use a sampling frame of adults in

the U.S. registered with Prolific, an online platform for crowdsourcing behavioural

research. This approach is very common in consumer behavior studies (Goodman &

Paolacci, 2017). Prolific was chosen over MTurk and professional panel providers, as

research suggests that data from Prolific is of better quality (Kees et al., 2017; Peer et al.,

2017). Furthermore, a Prolific sample is considered more naïve, given that MTurk

workers may be familiar with common experimental manipulations and measures. The

5% most active MTurk participants take approximately 40% of MTurk studies

(Robinson et al., 2019). This is compared to 20% of the studies on Prolific (Prolific, n.d.).

Except for the pilot studies (1A & 1B), the thesis aimed to achieve a sample size

(N > 50 per cell) for each experiment. For the studies in which the dependent measure is

a dichotomous variable (i.e., consumer choice), a larger sample was used. To ensure the

data quality, only Prolific users who have completed more than 100 studies with a 98%+

approval rate were invited to participate. No participant completed more than 1 study.

Analysis

The objective of this thesis is to examine the differential effect of interjection use (X) upon customer satisfaction and consequential consumer behaviours (Y). Thus, t-tests are used to compare mean differences in Y scores between the two conditions (Allen et al., 2014). T-tests are also used throughout the thesis to demonstrate that there are no differences in the demographic composition of the participants between experimental conditions i.e., all conditions feature people of the same age, gender distribution, income and education.

A second objective of this thesis is to examine and test three different theoretical accounts for how interjections may impact customer satisfaction. This is done using mediation analysis. Mediation implies a causal process in which the mediator; M transmits the influence of the independent variable; X onto the dependent variable; Y (Fairchild & McDaniel, 2017). This is done using Hayes PROCESS Macro – Model 4 (Hayes, 2017). Finally, in Study 5, moderation analysis is used to examine boundary conditions (W) for the interjection $\rightarrow$ satisfaction relationship. In this scenario, regression is used to test for a relationship between the product of X and W upon Y. This is also done using Hayes PROCESS Macro - Model 1 (Hayes, 2017). The correct use of these procedures involves several assumptions. Unless specifically reported, the data conformed to those assumptions.

Ethics & Pre-registration

The data presented in this thesis was collected with the approval of the Queensland University of Technology Office of Research Ethics and Integrity: Human Research Ethics division. Each of the studies were defined as being of low / negligible risk. A participant information sheet was provided to all participants prior to each study, enabling informed consent. All participants were paid a nominal fee for participation, to recognize their contribution to this research. The theoretical model and hypotheses were pre-registered online.

Chapter 5:

STUDY ONE (A&B)

Introduction

Study 1A and 1B were two-condition, between-group experiments designed to investigate whether consumers prefer a service agent (human or chatbot) which uses interjections. The studies asked participants to watch a short animation of an instant-messaging customer service interaction, in which the service agent used (vs. did not use) interjections. In study 1A, participants were told that the service agent was a human employee. In study 1B, participants were told the service agent was a chatbot.

Study 1A (human employee)

Sample

A sample of 72 Americans (56.9% female, M_{age} = 28.55, SD = 9.53) elected to participate in the study. A power analysis for an independent sample t-test with a continuous dependent variable, .05 alpha, .80 power, and estimated mean scores of 4/7

vs. 5/7 with a standard deviation of 1, suggested that this sample size was sufficient. Data from 5 participants were removed as they failed an attention check question designed to test that they had watched the stimuli animation. The sample was taken from an online panel (Prolific).

Stimulus

The stimulus consisted of an animation of a consumer - service agent interaction. This method has been used before in experiments manipulating language in consumer behavior contexts (Sheehan et al., 2020). The animation shows a consumer attempting to make a restaurant reservation for a special occasion. Two versions of the animation were prepared; one in which the employee does not use interjections and one in which the employee does use interjections. For example, when the consumer says the reservation is for two people, the employee responds with "Let me see if I can fit you in" in the control condition or "*Hmm*. Let me see if I can fit you in" in the experimental condition. The interactions are identical except for the presence or absence of interjections. A full transcript of the interaction for both conditions is provided in Table 4.

Table 4. Study 1 A&B stimuli transcript

Turn	No Interjections	Interjections
E/CB	Welcome to The Aria Restaurant	Welcome to The Aria Restaurant
C	I would like to make a reservation for next Tuesday at 7PM	I would like to make a reservation for next Tuesday at 7PM
E/CB	How many people?	Ok. How many people?
C	It is for 2 people	It is for 2 people
E/CB	Let me see if I can fit you in Your reservation is done	Hmm. Let me see if I can fit you in Ok - Your reservation is done
C	It is for my anniversary	It is for my anniversary
E/CB	Congratulations	Wow. Congratulations
C	Can we please have the table by the window? We had our first date there	Can we please have the table by the window? We had our first date there
E/CB	Yes	Aww. Yes
C	Thank you. I am picky. See you Tuesday	Thank you. I am picky. See you Tuesday
E/CB	See you then	Ha-ha. See you then.
Participants were presented with an image explaining that (1) the animation was over and (2) giving them a code to enter into Qualtrics to demonstrate they had watched the entire animation.		

Note: E/CB = employee in study 1A and chatbot in study 1B, C = customer

The animations used in the study were high in ecological validity. They were designed to replicate an interaction occurring on Facebook Messenger. Consumers messaging businesses via Facebook is extremely common, with over 20 billion B2C messages occurring each month (Facebook, 2018). The restaurant was given a fictitious name (The Aria) with a custom logo. The animation was set inside a wireframe image of a mobile phone to add realism as shown in Figure 3. Care was taken to ensure that the

animations were identical in all respects, bar the experimental manipulation i.e., presence vs. absence of interjections. For example, the pauses between the consumer-employee responses did not change between conditions. At the end of each animation was a 4-digit code, used as an attention check question to confirm participants had watched the entire animation. The animation was 1.5 minutes long.
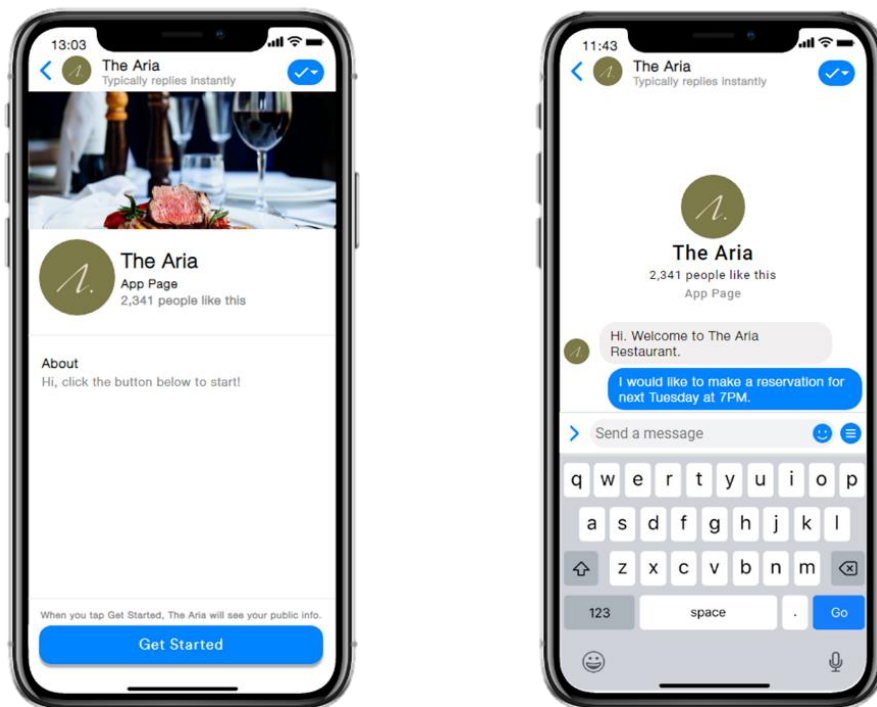
Figure 3. Screenshots of Study 1 stimuli

Procedure

Participants were randomly assigned to one of the two conditions and began by reading the study instructions. They were told that "companies use live text chat to provide customer service" and that their task was to watch a customer-employee interaction via live-chat and then evaluate the employee's performance. In order to ensure participants felt comfortable in rating the fictitious employee, they were told that their feedback would only be used for training purposes. Participants then watched the animation. Finally, the participants responded to the survey items, measuring satisfaction and demographic characteristics.

Measures

Satisfaction was measured using a single item, "I would be satisfied with the employee's responses". Scores were recorded on a 7-point Likert scale, anchored at strongly agree (7) and strongly disagree (1). A single item dependent measure was considered appropriate in this initial pilot study, given that research suggests there is no difference in the predictive validity of single vs. multiple-item measures of concrete, singular constructs (Bergkvist & Rossiter, 2007). Demographic variables included age, gender, income, and education.

Results

An independent sample t-test was run to confirm that the sample characteristics were consistent between the two conditions. No significant group differences in age ($M_{interjections}$ = 30.27 vs $M_{control}$ = 27.41, p = 0.23), gender ($M_{interjections}$ = 1.55 vs $M_{control}$ = 1.71, p = 0.23), income ($M_{interjections}$ = 3.33 vs $M_{control}$ = 3.03, p = 0.50), or education ($M_{interjections}$ = 4.33 vs $M_{control}$ = 4.47, p = 0.65) were found between the conditions. Furthermore, multiple regression showed that the demographic variables had no relationship with the dependent measure. As such, the demographic variables were excluded from further analysis.

An independent-samples t-test was conducted to compare satisfaction between the conditions. There was a significant difference in mean scores between the no interjections (n = 34, M = 5.00, SD = 1.41) and interjections (n = 33, M = 5.70, SD = 1.26) conditions; $t(65)$ = -2.12, p = .037, Cohen's d = 1.34. The results are shown in Figure 4. A Cohen's d above 0.8 indicates a large effect size (Cohen, 1988). These results suggest that interjections have a significant, large effect on satisfaction. Specifically, the data suggests that human service agents which use interjections are more satisfying. Thus, study 1A supports H_1.
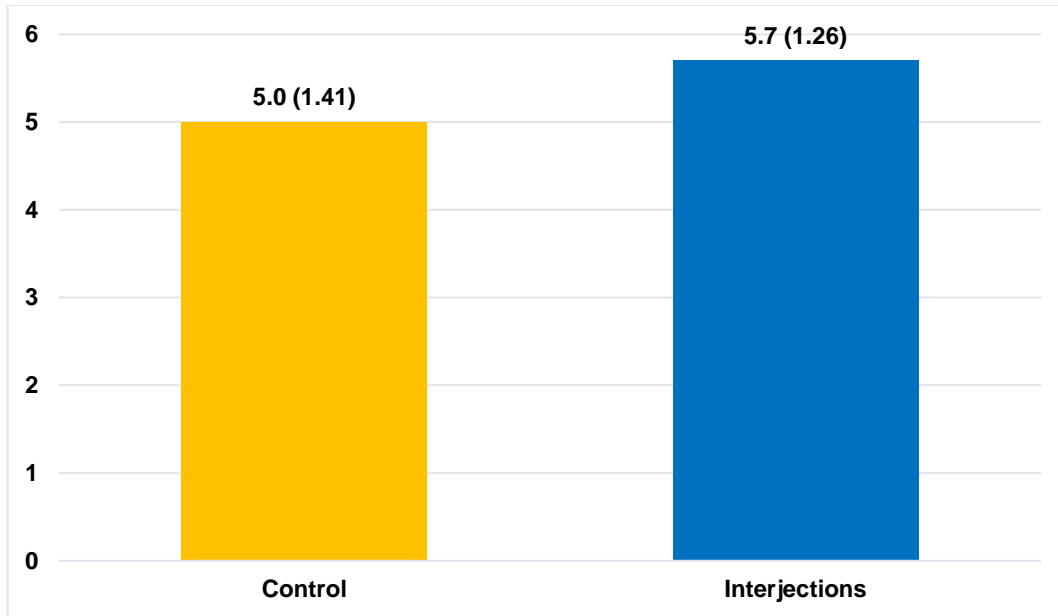
Figure 4. Mean (& SD) satisfaction scores across the two conditions (human-human animation)

Study 1B (chatbot)

Study 1B used the same stimulus, procedure, and measures as study 1A. Everything was consistent, except the way in which the animation was presented. In Study 1A, the animation was described as a customer service interaction between two humans, i.e., a human consumer and a human employee. In this study (1B), the animation was described as being between a human consumer and a chatbot. Participants were told that the study was about chatbots and provided a brief description of what a chatbot is. The instructions explicitly mentioned chatbots, and the measurement instruments were modified to refer to a chatbot, i.e., "I would be satisfied

with the chatbot's responses". Because Study 1A and 1B were otherwise identical, only

the sample characteristics and results are reported below.

Sample

A sample of 64 Americans (57.8% female, M_{age} = 33.89, SD = 12.73) from the

Prolific panel elected to participate in the study. One participant was removed from the

analysis for failing to watch the entire animation.

Results

An independent sample t-test was run to confirm that the sample characteristics

were consistent between the two conditions. No significant group differences in age

($M_{interjections}$ = 33.74 vs $M_{control}$ = 34.03, p = 0.92), gender ($M_{interjections}$ = 1.55 vs $M_{control}$ = 1.59, p

= 0.72), income ($M_{interjections}$ = 1.96 vs $M_{control}$ = 1.81, p = 0.29), or education ($M_{interjections}$ = 1.39

vs $M_{control}$ = 1.77, p = 0.54) were found between the conditions. Furthermore, multiple

regression showed that the demographic variables had no relationship with the

dependent measure. As such, the demographic variables were excluded from further

analysis.

An independent-samples t-test was conducted to compare satisfaction between the two conditions. There was a significant difference in mean scores between the no interjections (n = 32, M = 3.66, SD = 1.65) and interjections (n = 31, M = 5.48, SD = 1.20) conditions; $t(61)$ = -4.98, $p < .001$, Cohen's d = 1.45. These results, shown in Figure 5 suggest that interjections have a significant, large effect upon satisfaction. Specifically, the data suggests that chatbot's which use interjections are more satisfying. Thus, study 1B further supports H_1.
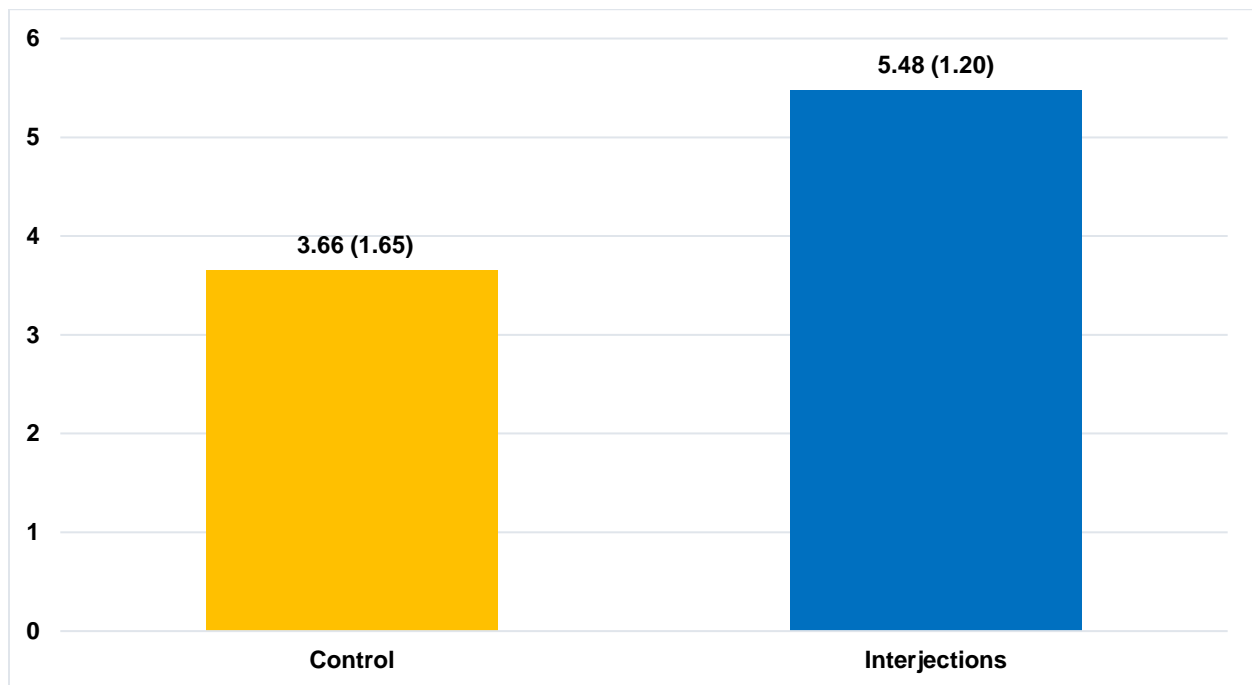
Figure 5. Mean (& SD) satisfaction scores across the two conditions (human-chatbot animation)

Discussion

Study 1A and 1B provide preliminary evidence to suggest that interjections increase customer satisfaction. The effect appears to occur whether the service agent is human or non-human. However, there were several limitations with these studies. As pilot studies, they used small sample sizes, single item measures and did not test for theoretical accounts or boundary conditions. Furthermore, the stimuli involved a third party interacting with the service agent, as opposed to the participants themselves. Therefore, a second set of experiments was prepared.

Chapter 6:

STUDY TWO (A&B)

Introduction

Study 2A and 2B were two-condition, between-group experiments, that aimed to replicate and extend upon the previous study. As such, several changes were made to the experimental protocol. First, participants in the previous study watched an animation of someone else interacting with a customer service agent. They were asked to imagine they were the customer when providing a customer satisfaction score. A more realistic design would involve participants having a conversation with an agent themselves and then rating their own satisfaction. In the second study, participants were asked to have a genuine instant messaging conversation with a service agent. The format followed the previous study, i.e., in Study 2A, participants were told they were interacting with a human employee. In Study 2B, they were told they were interacting with a chatbot. Second, while the previous studies provided evidence of the main effect (interjections → satisfaction), they did not test for a processing mechanism. Therefore, this study attempted to test the mediating role of perceived listening. A number of

other, smaller changes were also made to enhance rigor and generalizability. These

included (i) changing the consumer context, from a restaurant booking in the previous

studies, to ordering flowers for delivery in this study, and (ii) changing from a single-

item dependent measure, appropriate for preliminary studies, to multiple scale items

for each construct in this study.

Study 2A (human employee)

Sample

A sample of 129 Americans (48.1% female, M_{age} = 28.64, SD = 9.44) from the

Prolific panel elected to participate in the study. One participant's data was removed for

failing an attention check question.

Stimulus

Participants were randomly assigned to the conditions and asked to hold a

scripted conversation with one of two purpose-built chatbots. The chatbots used (vs.

did not use) interjections. They were designed to assist consumers to order flowers for

Mother's Day via instant messaging. The chatbots represented the fictitious "Aria

Flower Delivery" and were embedded in a separate website, independent of the data

collection software. The chatbots were designed to greet the human user and respond to

user input. They were built using an online platform, FlowXO, which does not require

coding experience, making replication straightforward. A screenshot of the chatbot is

provided in Figure 6.
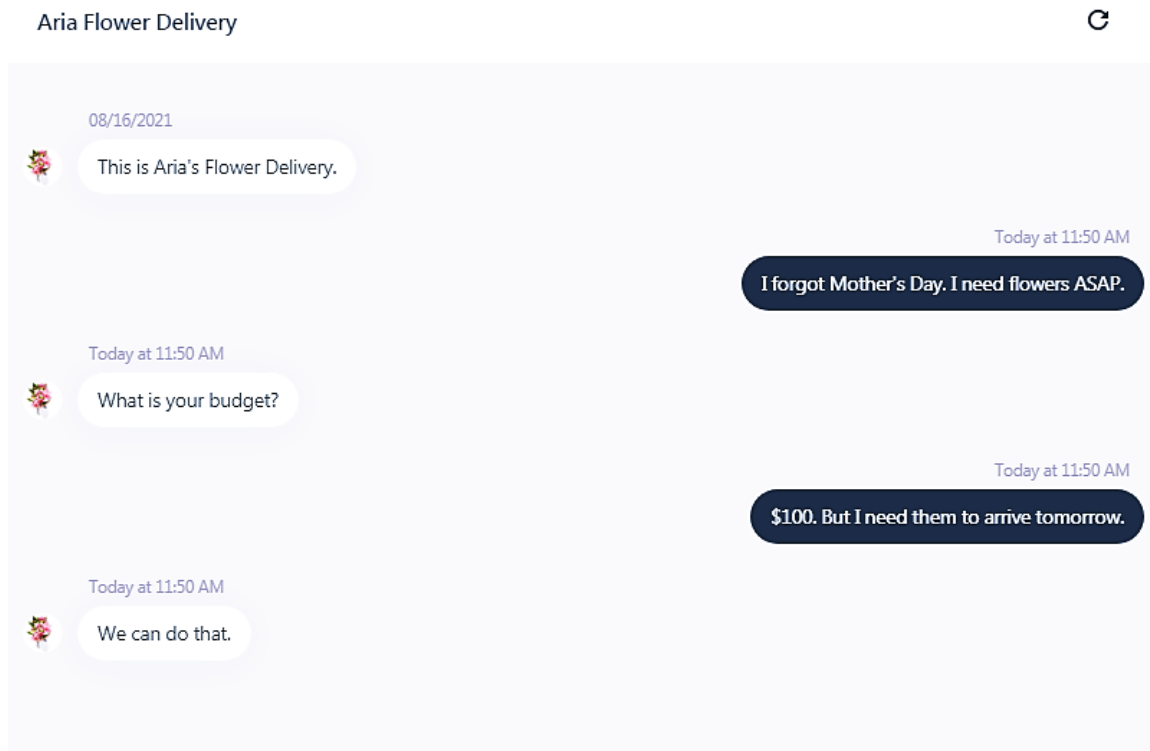
Figure 6. Screenshot of Study 2 stimuli

In order to eliminate extraneous variables, the participants were asked to use a

script. Sheehan, Jin and Gottlieb (2020) developed this procedure to address

methodological limitations within the chatbot literature. In prior research, participants

have been asked to have open-ended conversations with chatbots and then evaluate

them. However, this reduces internal validity and makes replication extremely difficult.

This is because each participant has a different conversation with the chatbot. Where

one participant may state, "What flowers do you recommend?", another participant may ask, "I like roses. Can I get those?". The scripting of the conversation in this study is considered a strength of the design. Scripted interactions ensure that all participants have the same experience.

As per Study 1A and 1B, the chatbots in each condition were identical, except for the presence (vs. absence) of interjections. For example, at one point in the conversation, the participants gave the chatbot a personal message to write inside a card, sent with the flowers. The non-interjection chatbot replied, "Your message will be included". In contrast, the interjection chatbot replied, "*Aww*. Your message will be included". Before running the study, we had 10 laypeople assess the conversation script for realism. Full details of the script are provided below in Table 5.

Procedure

The participants were randomly assigned to one of the two conditions. They were provided with an explanation of what live-chat is and told that they were to help in the training of a new staff member. The idea was to replicate the feel of a mystery shopping exercise. Participants were asked to stick to the script provided, to ensure the training session was successful. Next, the participants were given some task-related information, regarding their hypothetical need to purchase flowers. Participants were provided with the script they were to use during their live-chat service interaction.

Table 5. Study 2 stimuli transcript

Turn	No Interjections	Interjections
E/CB	This is Aria's Flower Delivery.	This is Aria's Flower Delivery.
P	I forgot Mother's Day. I need flowers ASAP.	I forgot Mother's Day. I need flowers ASAP.
E/CB	What is your budget?	Oh dear. What is your budget?
P	$100. But I need them to arrive tomorrow.	$100. But I need them to arrive tomorrow.
E/CB	We can do that.	Yep. We can do that.
P	What flowers do you recommend?	What flowers do you recommend?
E/CB	I recommend some pink Asiatic lilies and Gerberas.	Hmm. I recommend some pink Asiatic lilies and Gerberas.
P	Perfect.	Perfect.
E/CB	What message do you want in the card?	What message do you want in the card?
P	I love you Mom. I always will. Happy Mother's Day.	I love you Mom. I always will. Happy Mother's Day.
E/CB	Your message will be included.	Aww. Your message will be included.
P	I'm an awful child I know.	I'm an awful child I know.
E/CB	It happens. You're only human. I am sending the order to the shop owner now. Where do you want them delivered?	It happens. You're only human. Ha-ha. I am sending the order to the shop owner now. Where do you want them delivered?
P	724 Main St, Tamar, OH 44316. Thank you.	724 Main St, Tamar, OH 44316. Thank you.
E/CB	Happy I could help.	Done. Happy I could help.
P	Just send the invoice to jjohns1190@gmail.com.	Just send the invoice to jjohns1190@gmail.com.
E/CB	Your invoice number will be 2145.	Ok. Your invoice number will be 2482.

Note: Participants in Study 2A entered the invoice number into Qualtrics to demonstrate they have successfully completed the interaction, sticking to the script provided. Participants in Study 2B were presented with an image explaining that (1) the training session was over and (2) giving them a code to enter into Qualtrics.

Participants then clicked a link to access the live-chat website, hosted on the FlowXO servers. Participants were asked to enter their scripted line, observe the employee's response and then enter the next scripted line, until the employee advised them that the conversation was over. At the end of the conversation, the participants were presented with a 4-digit invoice number for the flower order. The invoice number was entered into Qualtrics to confirm that the participant had successfully completed the interaction. Following the live-chat conversation, the participants responded to survey items measuring satisfaction, perceived listening, and demographic variables (age, gender, income, and education).

Measures

Satisfaction (α = .957): The participants completed a three-item measure of satisfaction. The items were, "I would be satisfied with the employee's responses", "I would be satisfied with the employee's communication" and "The employee was good at its job". The items were modified versions from prior research (Packard & Berger, 2021). We also asked participants to rate the employee's performance on a 7-star scale. We included this measurement option as it is commonly used in commercial settings. Responses to all items, except the 7-star rating, were taken on a 7-point Likert scale, anchored at strongly agree and disagree.

Perceived listening (α = .897): This variable measured the degree to which participants felt the employee was attending to and understanding them. Three items to measure perceived listening were taken from Packard and Berger (2021). They were, "The employee gave the customer personal attention", "The employee understood the customer's specific needs" and "The employee was listening to the customer". Responses to all items were taken on a 7-point Likert scale, anchored at strongly agree and disagree.

Results

Main effects

An independent sample t-test was run to confirm that the sample characteristics were consistent between the two conditions. No significant group differences in age ($M_{interjections}$ = 27.70 vs $M_{control}$ = 29.18, p = 0.36), gender ($M_{interjections}$ = 1.48 vs $M_{control}$ = 1.52, p = 0.61), income ($M_{interjections}$ = 2.68 vs $M_{control}$ = 2.68, p = 0.98) or education ($M_{interjections}$ = 3.89 vs $M_{control}$ = 3.98, p = 0.74) were found between the conditions. Furthermore, multiple regression showed that the demographic variables had no relationship with the dependent measure. As such, the demographic variables were excluded from further analysis.

An independent-samples t-test was conducted to compare satisfaction and perceived listening between the two conditions. There was a significant difference in satisfaction scores ($M_{interjections}$ = 6.08, SD = .98 vs. $M_{control}$ = 5.62, SD = 1.07; $t(125)$ = -2.56, p = .012, Cohen's d = 1.03). There was also a significant difference in perceived listening scores ($M_{interjections}$ = 6.05, SD = .87 vs. $M_{control}$ = 5.59, SD = .96; $t(125)$ = -2.83, p < .01, Cohen's d = .92). The results are shown in Figure 7. These results suggest that interjections have a significant and large effect upon satisfaction and perceived listening. Thus, study 2A further supports H₁.
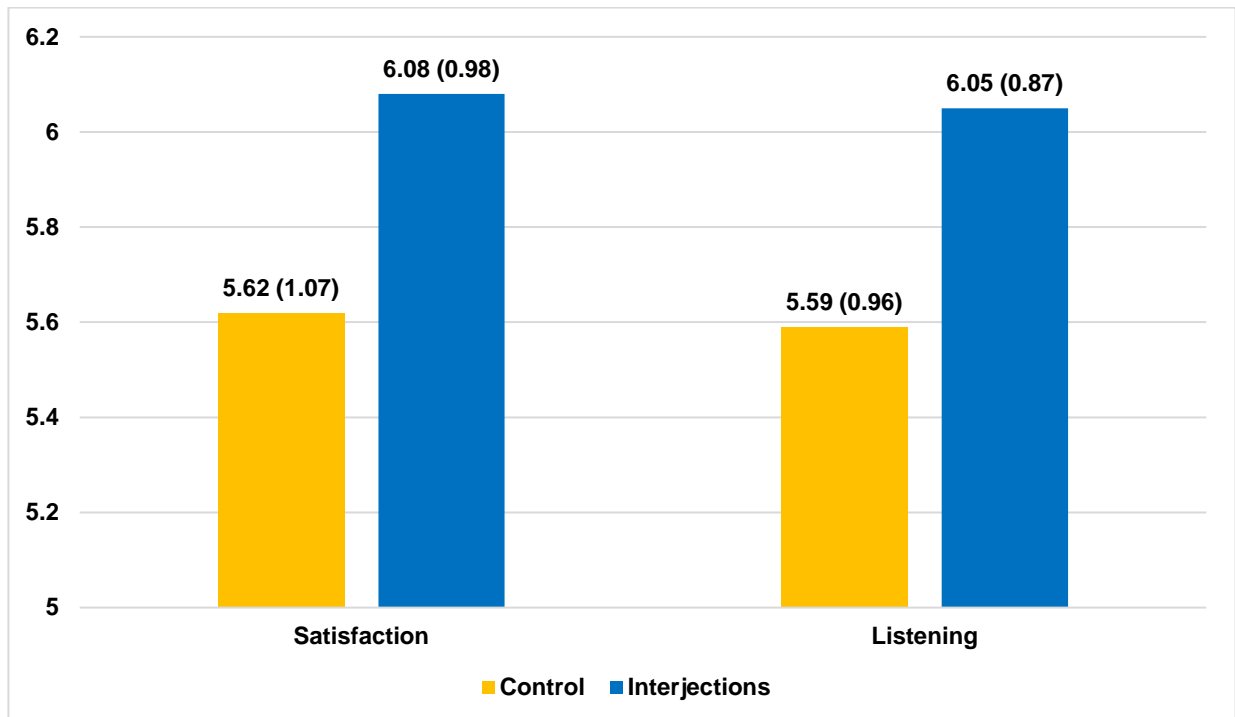
Figure 7. Mean (& SD) satisfaction and listening scores across the two conditions (human-human interaction)

Mediation analysis

The next step was to test the indirect effects of interjections upon satisfaction as explained by perceived listening. A correlation table of the relevant variables is presented in Table 6.

Table 6. Means, standard deviations and correlations (Study 2A)

Variable	Mean (*SD*)	1	2	3
1: Satisfaction	5.85 (1.05)	1		
2. Interjections (Cond)	1.49 (0.50)	.223*	1	
3. Perceived Listening	5.82 (0.94)	.755**	.245**	1

** *p* < 0.01 level, two-tailed, * *p* < .05, two-tailed.

The PROCESS macro (Hayes, 2017; Model 4) with 5,000 bootstrapped iterations was used. Bias-corrected 95% confidence intervals (CIs) were generated for each model to test whether an indirect effect existed, and mediation was supported (Shrout & Bolger, 2002). If the 95% confidence limits included zero, the indirect effect was not significant. Regression analysis was used to investigate whether employee perceived listening mediated the effect of interjections upon satisfaction. Interjections significantly predict perceived listening (*b* = 0.46, *SE* = 0.16, *p* < .01). Perceived listening significantly predicts satisfaction scores (*b* = 0.82, *SE* = 0.07, *p* < .001). The indirect effect (interjections → employee perceived listening → satisfaction) was also significant (*b* = 0.38, *BootSE* =

0.13, 95% CI = 0.12, 0.65). The data supports perceived listening as a mediator (H2),

given the 95% confidence intervals do not span zero.

Study 2B (chatbot)

Study 2B used the exact same stimulus, procedure, and measures as study 2A.

Everything was consistent, except the way in which the interaction was presented. In

Study 2A, participants were told they were interacting with a human employee. In this

study (2B), participants were told they were interacting with a chatbot. The instructions

explained that the study was about chatbots and provided a brief description of what a

chatbot is. The instructions explicitly mentioned chatbots, and the measurement

instruments were modified to refer to a chatbot i.e., "I would be satisfied with the

chatbot's responses". Because Study 2A and 2B were otherwise identical, only the

sample characteristics and results are reported below.

Sample

A sample of 124 Americans (60.5% female, M_{age} = 29.93, SD = 8.93) from the

Prolific panel elected to participate in the study. Seven participants' data was removed

for failing an attention check question.

Results

Main effects

An independent sample t-test was run in order to confirm that the sample characteristics were consistent between the two conditions. No significant group differences in age ($M_{interjections}$ = 31.07 vs $M_{control}$ = 28.97, p = 0.20), gender ($M_{interjections}$ = 1.67 vs $M_{control}$ = 1.68, p = 0.95), income ($M_{interjections}$ = 3.45 vs $M_{control}$ = 3.17, p = 0.41) or education ($M_{interjections}$ = 4.64 vs $M_{control}$ = 4.14, p = 0.06) were found between the conditions. Furthermore, multiple regression showed that the demographic variables had no relationship with the dependent measure. As such, the demographic variables were excluded from further analysis.

An independent-samples t-test was conducted to compare satisfaction and perceived listening between the no interjections and interjections conditions. There was a significant difference in satisfaction scores ($M_{interjections}$ = 5.80, SD = .55 vs. $M_{control}$ = 5.36, SD = 1.17; $t(115)$ = -2.61, p = .01, Cohen's d = .92). There was also a significant difference in perceived listening scores ($M_{interjections}$ = 6.25, SD = .71 vs. $M_{control}$ = 5.72, SD = .80; $t(115)$ = -3.72, p < .001, Cohen's d = .76). The results are shown in Figure 8. These results suggest that interjections have a significant effect upon satisfaction and perceived listening. Thus, study 2B further supports H$_1$.
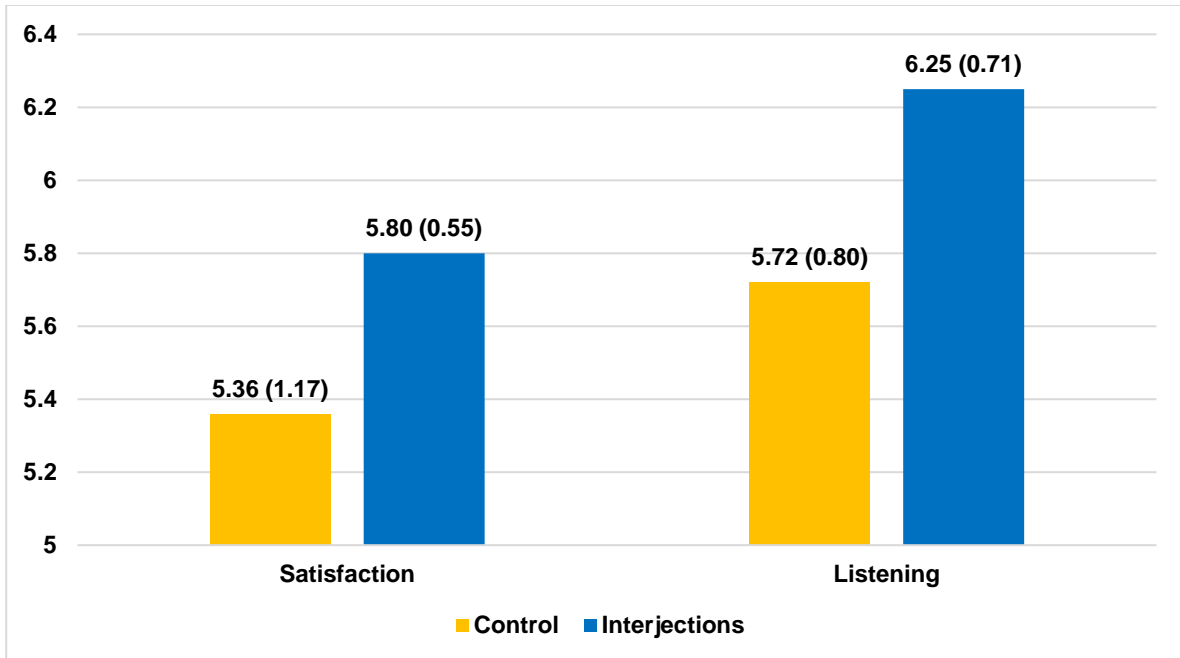
Figure 8. Mean (& SD) satisfaction and listening scores across the two conditions
(human-chatbot interaction)

Mediation analysis

The next step was to test the indirect effects of interjections upon satisfaction as explained by perceived listening. Table 7 presents a correlation table of the relevant variables on the following page.

Table 7. Means, standard deviations and correlations (Study 2B)

Variable	Mean (*SD*)	1	2	3
1: Satisfaction	5.58 (.94)	1		
2. Interjections (Cond)	1.50 (.50)	.239*	1	
3. Perceived Listening	5.98 (.80)	.641**	.328**	1

** $p < 0.01$ level, two-tailed, * $p < .05$, two-tailed.

Regression analysis was used to investigate whether chatbot perceived listening mediated the effect of interjections upon satisfaction. Interjections significantly predict perceived listening ($b = 0.50$, $SE = 0.22$, $p < .001$). Perceived listening significantly predicts satisfaction scores ($b = 0.74$, $SE = 0.09$, $p < .001$). The indirect effect (interjections → chatbot perceived listening → satisfaction) was also significant ($b = 0.37$, $BootSE = 0.13$, 95% CI = 0.15, 0.65). The data supports perceived listening as a mediator (H_2), given the 95% confidence intervals do not span zero.

Discussion

Experiments 2A and 2B replicate and extend upon the previous study. Using a second consumer scenario (restaurant booking vs. flower delivery), these studies support the claim that interjection use increases customer satisfaction. Consistent with the previous studies, the effect appears to occur when the service agent is human and

non-human. Building upon the previous studies, both 2A and 2B provide empirical

support for perceived listening as a processing mechanism. However, as presented in

the literature review, there are several plausible mediators to explain why interjections

impact consumer perceptions. Further studies were developed.

Chapter 7:

STUDY THREE

Introduction

Study 3 was a two-condition, between-group experiment that aimed to replicate and extend the previous study. As such, several changes were made to the experimental protocol. First, the previous studies (1A&B, 2A&B) featured service delivery in which the customer got what they wanted. They were able to book the restaurant table for their anniversary. They were able to order the flowers for delivery on time and under budget. However, perfect outcomes are not always possible. This study was designed to examine the role of interjections in service delivery when the customer can only achieve a sub-optimal outcome. This was done for several reasons. First, it increases the generalisability of the findings. Second, it is theoretically interesting, because a sub-optimal outcome may impact the perceived listening and agent affect mediators as well as the dependent measure. Consumers may feel less heard when they cannot achieve their desired outcome. Consumers may also feel that the service agent is in a less positive or friendly mood. Alternatively, consumers may feel that the agent is in a

positive mood, while denying them their request – and these emotions could be

perceived as incongruent with the situation, harming overall evaluations. This study

tests whether interjections are sufficient to have an impact under these conditions.

Finally, from a methodological perspective, using a sub-optimal context, reduces the

likelihood of a ceiling effect in the data. Ceiling effects, also known as scale attenuation

effects occur when a high proportion of participants have the maximum possible scores

for a particular variable (Salkind, 2010).

Second, study 2A and 2B found support for perceived listening as a mediator

between interjections and satisfaction. This study examines multiple potential

mediators by retaining perceived listening and adding positive agent affect. Each

potential mediator was tested individually and then both were tested simultaneously.

Third, this study (3) uses a consequential, binary choice (yes/no) dependent

measure. The pilot studies (1A and 1B) used a single Likert scale item as the dependent

measure. The previous studies (2A and 2B) used a composite variable of three Likert

scale items. All four studies found that interjection use resulted in higher satisfaction

scores. This study attempts to extend upon those findings. The participants are

presented with a sub-optimal scenario. That is the hotel rooms they want are booked

out and not available. They are offered the next best option. The dependent measure

reflects their willingness to accept this sub-optimal outcome. Proceeding with a hotel

booking or not is consequential, i.e., it has a tangible impact on firm performance.

Studies 1 and 2 showed consistent results, regardless of whether the service agent was presented as human or non-human. Therefore, study 3 refers to the conversational partner in ambiguous terms, i.e., "service agent". The term service-agent could be construed as either human or non-human. This was done to save time and resources, given the data to date suggests there is no meaningful difference between human employees or chatbots, in terms of the main effect and mediation.

Sample

A sample of 168 Americans (73.1% female, M_{age} = 36.47, SD = 14.70) from the Prolific panel elected to participate in the study. Seven participants' data was removed for failing an attention check question ("please answer strongly disagree to this question").

Stimulus & Procedure

Participants were randomly assigned to the conditions and asked to hold a scripted conversation with one of two purpose-built chatbots. The chatbots used (vs. did not use) interjections. The chatbots were designed to answer users' questions on behalf of the fictitious Waterford Hotel. The participants were told that they were looking for a romantic hotel trip to celebrate their wedding anniversary. They asked the

service agent if they could book one of the rooms with the best view (the Lakeview

rooms). The service agent informed them that those rooms were sold-out. However,

there were still other rooms with a partial view of the lake available. Participants

completed the interaction and then returned to Qualtrics to complete the survey. The

procedure was identical to that used in Study 2. A full transcript for the stimulus is

provided as Table 8.

Table 8. Study 3 stimuli transcript

Turn	No Interjections	Interjections
SA/CB	Welcome to the Waterford Hotel. Would you like to make a reservation?	Welcome to the Waterford Hotel. Would you like to make a reservation?
P/C	I have a few questions.	I have a few questions.
SA/CB	How can I help?	Ok. How can I help?
P/C	Do you have availability this weekend?	Do you have availability this weekend?
SA/CB	Yes. We have some availability.	Hmm. Yes. We have some availability.
P/C	It is for my anniversary.	It is for my anniversary.
SA/CB	Congratulations.	Wow. Congratulations.
P/C	Is hotel parking included?	Is hotel parking included?
SA/CB	Parking is included in the room rate.	Yes. Parking is included in the room rate.
P/C	Is breakfast included?	Is breakfast included?
SA/CB	All you can eat buffet is included in the room price.	Yes. All you can eat buffet is included in the room price.
P/C	I'll make sure I'm hungry.	I'll make sure I'm hungry.
SA/CB	Any other questions?	Ha-ha. Any other questions?
P/C	Which rooms have the best view?	Which rooms have the best view?
SA/CB	The best rooms are our Lake View rooms	Hmm. The best rooms are our Lake View rooms
P/C	Any available? I want it to be romantic.	Any available? I want it to be romantic.
SA/CB	I'll check. I'm sorry. Lake-view rooms are sold out this weekend. Our second-best rooms, with a partial view are still available.	Aww. I'll check. Oh. I'm sorry. Lake-view rooms are sold out this weekend. Our second-best rooms, with a partial view are still available.
P/C	Ok. That's all my questions.	Ok. That's all my questions.
SA/CB	Thank you. If you want to continue this conversation later, please use code 2487.	Ok. Thank you. If you want to continue this conversation later, please use code 2482.

Note: SA/CB = Study 3 described the other party as a nondescript service agent (SA) i.e., neither human or machine. Study 5 was an audio chatbot (CB). Study 5 was an audio recording of this interaction, using a human confederate as the consumer and text-to-speech machine voice at the service agent.

Measures

Dependent measure: The dependent variable was measured as follows; "Given the rooms with the best lake view are sold out; would you reserve a room with a partial view of the lake?". There were two response options: Yes and No.

Perceived listening (α = .861): Was measured as described in Study 2.

Agent affect (α = .956): This variable measured the degree to which individuals perceived the service agent as displaying positive emotions. The agent's perceived affect was measured using three items; "enthusiastic", "excited", and "peppy", taken from the Job Affect Scale (JAS, Burke et al., 1989). The JAS was used over other, more popular affect measures (i.e., Positive and Negative Affect Scale, PANAS) because the JAS was specifically designed to measure affect at work vs. general affect. Responses to all items were taken on a 7-point Likert scale, anchored at strongly agree and disagree.

Participant positive affect (α = .946): This variable measured the degree to which individuals themselves felt positive emotions following exposure to the stimuli. Participant positive affect was measured using six items from PANAS (Watson et al., 1988), right now I feel; "happy", "enthusiastic", "excited", "joyful", "peppy" and "energetic".

Results

Main effects

An independent sample t-test was run to confirm that the sample characteristics were consistent between the two conditions. No significant group differences in age ($M_{interjections}$ = 35.33 vs $M_{control}$ = 37.72, p = 0.30), gender ($M_{interjections}$ = 1.71 vs $M_{control}$ = 1.77, p = 0.39), income ($M_{interjections}$ = 3.39 vs $M_{control}$ = 3.37, p = 0.94) or education ($M_{interjections}$ = 4.41 vs $M_{control}$ = 4.53, p = 0.64) were detected. Furthermore, multiple regression showed that the demographic variables had no relationship with the dependent measure. As such, the demographic variables were excluded from further analysis.

A chi-square test of independence was performed to assess the relationship between interjections and acceptance of a sub-optimal outcome. There was a significant relationship between the two variables, X^2(1, N = 161) = 4.56, p = .33. Participants in the interjection condition were more likely to accept the sub-optimal outcome. An independent-samples t-test was conducted to compare perceived listening and positive affect scores between the no interjections and interjections conditions. There was a significant difference in mean scores for both variables. The presence of interjections appears to have increased perceived listening scores ($M_{interjections}$ = 5.58, SD = 1.15 vs. $M_{control}$ = 4.74, SD = 1.20; t(159) = -4.49, p < .001, Cohen's d = 1.18) and perceived positive affect scores ($M_{interjections}$ = 4.78, SD = 1.45 vs. $M_{control}$ = 3.20, SD = 1.40; t(159) = -7.02, p < .001,

Cohen's d = 1.43). The results are shown in Figures 9 and 10. These results suggest that interjections have a significant effect upon consumer choice, perceived listening and agent affect. Thus, study 3 further supports H$_1$.
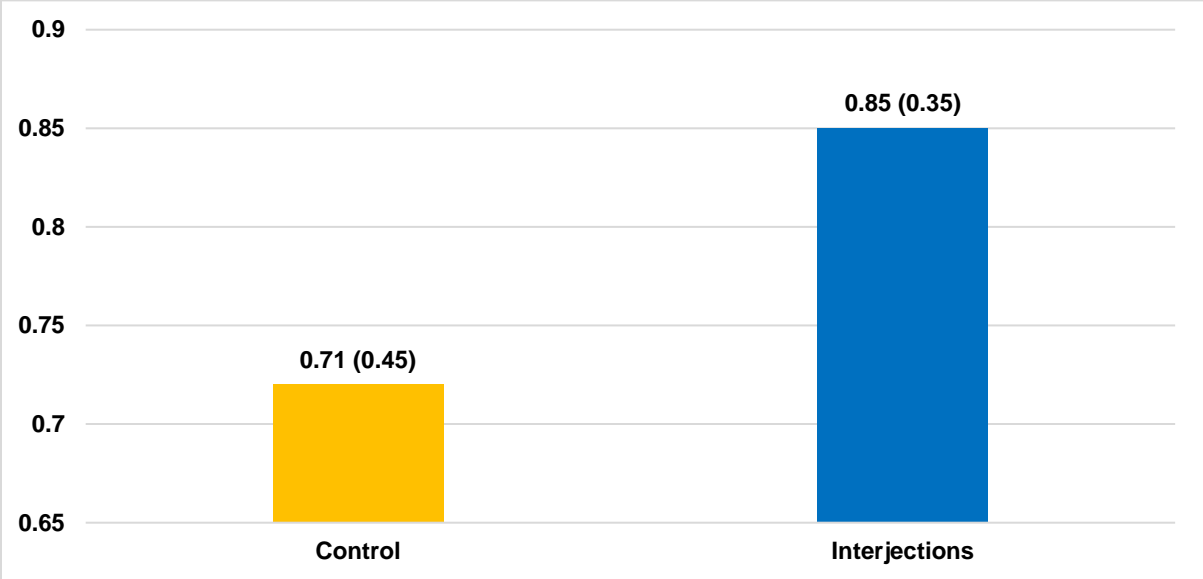

Figure 9. Probability (& SD) of a hotel booking despite a sub-optimal outcome
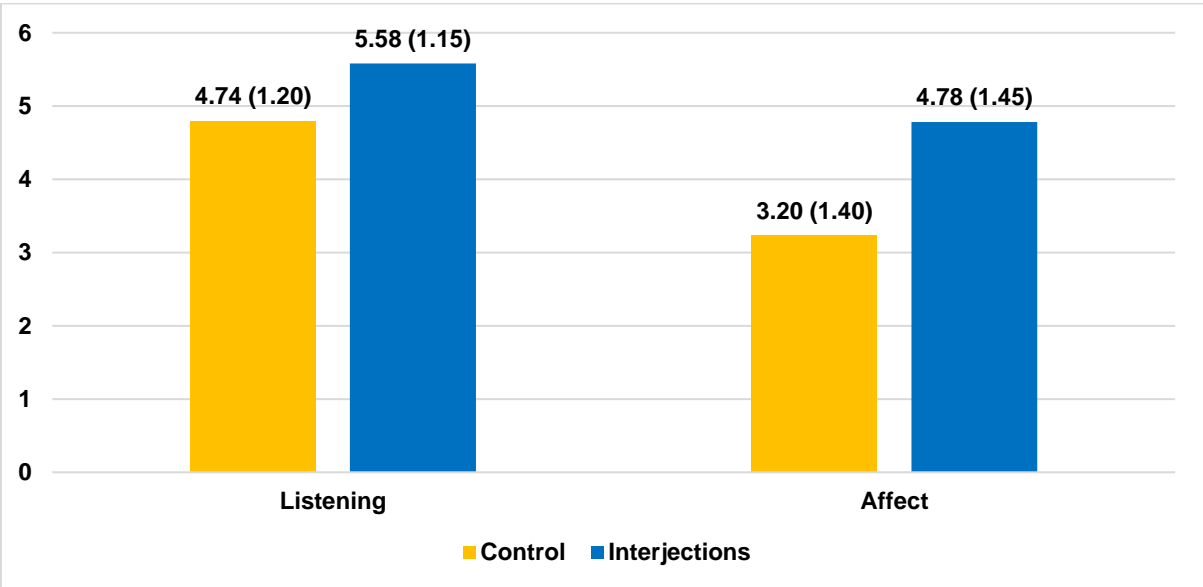
Figure 10. Mean (& SD) perceived listening and service agent affect scores

Mediation analysis

The next step was to test the indirect effects of interjections upon satisfaction as explained by perceived listening and service agent affect. This was done in two stages. First, mediation analysis was run testing the explanatory power of perceived listening and positive affect individually. Then, the two mediators were tested simultaneously, as is best practice (Fairchild & McDaniel, 2017). Table 9 presents a correlation table of the relevant variables.

Table 9. Means, standard deviations and correlations (Study 3)

Variable	Mean (*SD*)	1	2	3	4	5
1: Purchase Intent	.79 (.41)	1				
2. Interjections (Cond)	1.5 (.50)	.175*	1			
3. Perceived Listening	5.18 (1.24)	.373**	.336**	1		
4. Agent Affect	4.00 (1.62)	.351**	.487**	.673**	1	
5. Participant Affect	3.95 (1.24)	.130	.050	.079	.243**	1

** $p < 0.01$ level, two-tailed, * $p < .05$, two-tailed.

Perceived listening: Regression analysis was used to investigate whether service agent perceived listening mediated the effect of interjections upon consumer choice. Interjections significantly predict perceived listening ($b = 0.83$, $SE = 0.18$, $p < .001$).

Perceived listening significantly predicts a consumer's probability of accepting a sub-optimal outcome ($b = 0.65$, $SE = 0.16$, $p < .001$). The indirect effect (interjections →

perceived listening → DV) was also significant ($b = 0.55$, $BootSE = 0.21$, 95% CI = 0.23,

1.08). The data supports perceived listening as a mediator (H_2), given the 95%

confidence intervals do not span zero.

Agent affect: Regression analysis was used to investigate whether service agent

positive affect mediated the effect of interjections upon consumer choice. Interjections

significantly predict positive affect ($b = 1.58$, $SE = 0.22$, $p < .001$). Positive affect

significantly predicts a consumer's probability of accepting a sub-optimal outcome ($b =$

.57, $SE = 0.15$, $p < .001$). The indirect effect (interjections → positive affect → DV) was

also significant ($b = 0.91$, $BootSE = 0.30$, 95% CI = 0.43, 1.63). The data supports positive

affect as a mediator (H_3), given the 95% confidence intervals do not span zero.

Simultaneous test: Next, perceived listening and agent affect were tested

simultaneously using PROCESS Model 4. The coefficients for the independent variable

→ mediator paths do not change. Perceived listening continued to significantly predict

the DV ($b = 0.43$, $SE = 0.20$, $p = .03$), however positive affect as a mediator was no longer

significant ($b = 0.35$, $SE = 0.18$, $p = .06$). Examining the total indirect effects, interjections

→ perceived listening → DV, was significant ($b = 0.36$, $BootSE = 0.22$, 95% CI = 0.04,

0.92), while interjections → positive affect → DV was no longer significant, ($b = 0.55$,

$BootSE = 0.33$, 95% CI = -.05, 1.26). Interpreting these findings, it appears as though

perceived listening and service agent affect can both explain why interjections increase the likelihood of a consumer accepting a sub-optimal outcome. However, perceived listening appears to capture more unique variance in DV scores, such that when the mediators are tested simultaneously, only listening remains significant. In a sub-optimal situation, listening seems more important than the agent's mood. This makes sense conceptually. It could be incongruent for a service agent to deliver bad news while appearing enthusiastic, excited or peppy. Meanwhile, perceived listening appears to be a context-free benefit. That is, listening enhances the customer experience, regardless of the context.

Serial mediation: Finally, serial mediation was run to test the emotional contagion hypothesis (H4) i.e., the proposed relationship being interjections → agent affect → participant affect → consumer choice. This was done using PROCESS Model 6. Interjections significantly predict agent affect ($b = 1.60$, $SE = 0.22$, $p < .001$) and agent affect predicts participant affect ($b = .21$, $SE = 0.06$, $p = .001$). Agent affect continues to predict the DV while controlling for participant affect ($b = 0.54$, $SE = 0.15$, $p < .001$), however the final path in the serial mediation model, participant affect → DV is non-significant ($b = 0.13$, $SE = 0.17$, $p < .45$). Thus, the data partially supports H4, given that emotional contagion appears to have occurred. However, there is no evidence that participant affect influenced the dependent measure.

Chapter 8:

STUDY FOUR

Introduction

Study 4 was a two-condition, between-group experiment that aimed to replicate

and extend upon the previous study. As such, several changes were made to the

experimental protocol. First, anthropomorphism was measured as a new potential

mediator. As explained in the literature review, it is reasonable to assume that

interjection use could (a) decrease the dehumanization of a human service agent and/or

(b) increase the perceived humanness of a non-human service agent. Furthermore, there

is evidence to suggest that humanness is satisfying in customer service contexts.

Second, this study extends the previous findings by demonstrating an additional effect

of interjection use. This study was designed to show that interjection use increases

customer loyalty intentions, even when the customer receives a sub-optimal outcome.

In this study, the participant roleplays as a consumer failing to negotiate a warranty

replacement or repair on a damaged laptop. Finally, this study extends upon the

previous findings by demonstrating that interjections improve outcomes in another

product category; technology products.

Sample

A sample of 170 Americans (48.2% female, M_{age} = 36.53, SD = 11.55) from the

Prolific panel elected to participate in the study. Nine participants' data was removed

for failing an attention check question.

Stimulus & Procedure

The procedure followed that described in the previous study. It was only the

context and measurement items that changed. In this study, the chatbot was designed to

answer customer inquiries on behalf of Ace Technology. The instructions stated, "Your

brand-new laptop has been damaged - the screen is cracked. It is your fault, but it is

brand new. You contact the company you purchased it from to see if you can get it

replaced or repaired under warranty. You start a conversation with an agent from Ace

Technology. Click here to begin the live-chat and please follow the script". The

conversation was typical of a routine warranty inquiry. However, it concluded with the

service agent explaining that the damage that occurred is not covered by the firms'

warranty terms. The conversation ends with the agent issuing the participant a unique

code to serve as an attention check measure. A copy of the stimuli is below in Table 10 (p. 80). Following the experimental manipulation, participants returned to Qualtrics to respond to items measuring the dependent, mediating, and demographic variables.

Measures

Loyalty intent (dependent measure): The dependent variable was measured as follows; "Given you cannot have the laptop fixed or replaced free of charge, would you still shop with this company". There were two response options: Yes and No.

Perceived listening (α = .851), agent affect (α = .957), and participant positive affect (α = .954): These variables were measured as described in Study 2.

Anthropomorphism (α = .947): This variable measured the degree to which participants felt the service agent displayed humanlike characteristics. The instrument used was a modified version of the Godspeed Questionnaire (Bartneck et al., 2009), which provides a set of semantic differential items to measure the anthropomorphism of social robots. The instrument includes 5 items: (a) fake – natural, (b) machinelike – humanlike, (c) artificial – lifelike, (d) unconscious – conscious, and (e) communicates inelegantly – communicates elegantly.

Table 10. Study 4 stimuli transcript

Turn	No Interjections	Interjections
P	I'm having issues with my laptop	I'm having issues with my laptop
SA	Can I start with your name please?	Can I start with your name please?
P	Alex	Alex
SA	What is the serial number on the laptop?	Ok. What is the serial number on the laptop?
P	445160	445160
SA	That name doesn't match our records	Hmm. That name doesn't match our records
P	It was a birthday gift from my partner	It was a birthday gift from my partner
SA	Nice gift.	Aww. Nice gift. Wow
P	It was. It's broken	It was. It's broken
SA	Can you describe the damage	Oh-no. Can you describe the damage
P	The screen is cracked in multiple places	The screen is cracked in multiple places
SA	How did it occur?	Ok. How did it occur?
P	My dog knocked it off the bed	My dog knocked it off the bed
SA	And this caused the damage?	Oh-dear. And this caused the damage?
P	Yes. That dog is crazy, but I love him	Yes. That dog is crazy, but I love him
SA	So how can we help?	Ha-ha. So how can we help?
P	It's still under warranty	It's still under warranty
SA	I'm sorry. That sort of accident isn't covered by our replacement warranty	Oh. I'm sorry. That sort of accident isn't covered by our replacement warranty
P	Can it be repaired under warranty?	Can it be repaired under warranty?
SA	I'm afraid it cannot	Hmm. I'm afraid it cannot
P	Ok. That's all. Bye	Ok. That's all. Bye
SA	Thank you.	Ok. Thank you.
	To continue this conversation, use code 8830.	To continue this conversation, use code 6550.

Note: SA = service agent, P = participant

Results

Main effects

An independent sample t-test was run to confirm that the sample characteristics were consistent between the two conditions. No significant group differences in age ($M_{interjections}$ = 37.24 vs $M_{control}$ = 36.13, p = 0.53), gender ($M_{interjections}$ = 1.46 vs $M_{control}$ = 1.49, p = 0.68), income ($M_{interjections}$ = 3.36 vs $M_{control}$ = 3.05, p = 0.26), or education ($M_{interjections}$ = 4.31 vs $M_{control}$ = 4.25, p = 0.81) were detected. As such, the demographic variables were excluded from further analysis.

A chi-square test of independence was performed to assess the relationship between interjections and the probability a consumer would maintain their relationship with the firm, after having a warranty claim rejected. There was a significant relationship between the two variables, $X^2(1, N = 161) = 7.63$, p = .006. Participants in the interjection condition were more likely to remain loyal to the firm. An independent-samples t-tests was conducted to compare perceived listening, positive affect and anthropomorphism scores between the two conditions. There was a significant difference in mean scores for all three variables. Perceived listening scores were higher in the interjection condition ($M_{interjections}$ = 4.99, SD = 1.46 vs. $M_{control}$ = 4.48, SD = 1.33; $t(159)$ = -2.30, p = .02, Cohen's d = 1.40) as were positive affect scores ($M_{interjections}$ = 4.62, SD = 1.34 vs. $M_{control}$ = 2.94, SD = 1.39; $t(159)$ = -7.79, p < .001, Cohen's d = 1.36). Finally, the new

variable, anthropomorphism appears to be impacted by interjections ($M_{interjections}$ = 4.67, SD = 1.47 vs. $M_{control}$ = 4.00, SD = 1.75; t(159) = -2.61, p = .01, Cohen's d = 1.62). The results are shown in Figures 11 and 12.
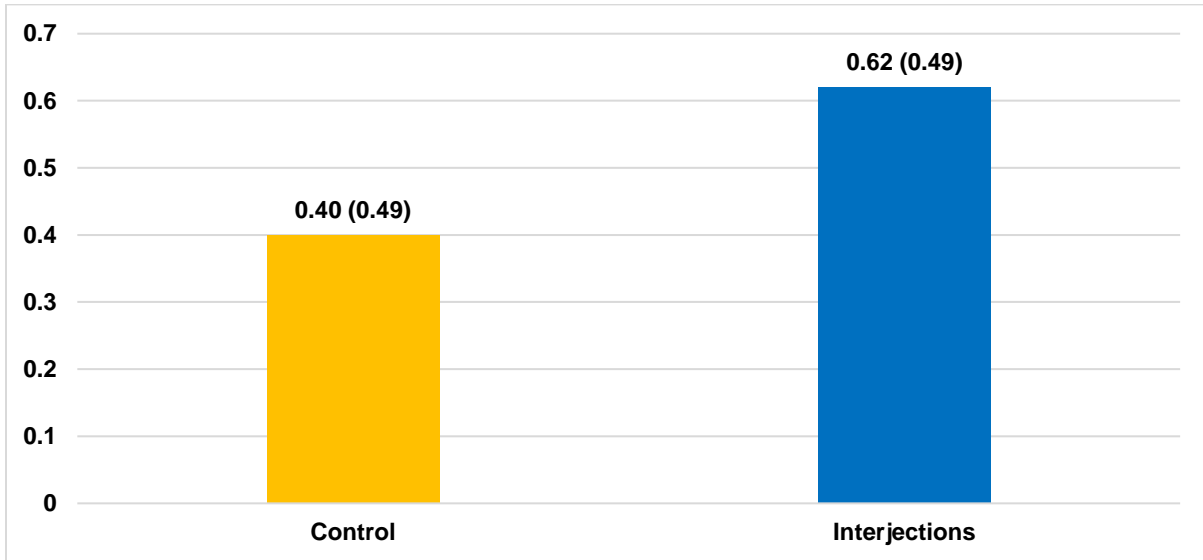
Figure 11. Probability (& SD) of remaining a customer despite a sub-optimal outcome
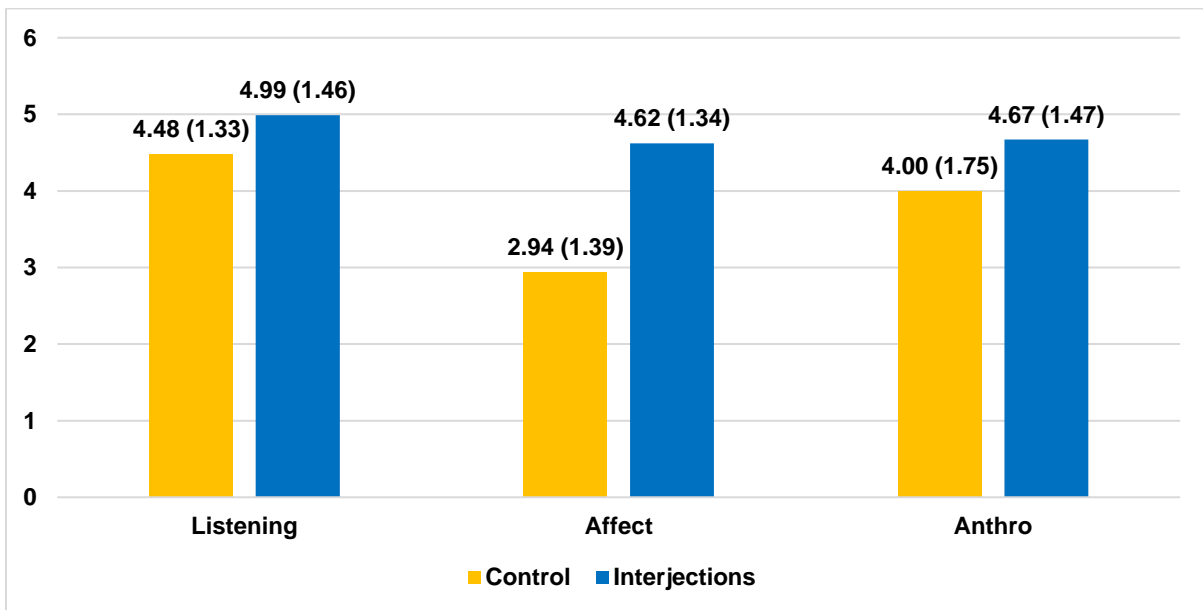
Figure 12. Mean (& SD) perceived listening, affect, and anthropomorphism scores

Mediation analysis

The next step was to test the indirect effect of interjections upon loyalty intent as explained by perceived listening, agent affect and anthropomorphism. This was done in two stages. First, mediation analysis was run testing the explanatory power of each mediator individually. Then, the three mediators were tested simultaneously. Table 11 presents a correlation table of the relevant variables.

Table 11. Means, standard deviations and correlations (Study 4)

Variable	Mean (*SD*)	1	2	3	4	5	6
1: Loyalty	.50 (.50)	1					
2. Interjections	1.48 (.50)	.218**	1				
3. Listening	4.72 (1.42)	.482**	.180*	1			
4. Agent Affect	3.75 (1.60)	.448**	.526**	.606**	1		
5. Anthro	4.32 (1.65)	.402**	.203**	.605**	.518**	1	
6. Participant Affect	3.75 (1.60)	.198*	.102	.145	.280**	.233**	1

** $p < 0.01$ level, two-tailed, * $p < .05$, two-tailed.

Perceived listening: Interjections significantly predict perceived listening ($b = 0.50$, $SE = 0.22$, $p = .02$). Perceived listening significantly predicts a consumer's loyalty choice ($b = 0.84$, $SE = 0.16$, $p < .001$). The indirect effect (interjections → perceived listening → DV) was also significant ($b = 0.43$, $BootSE = 0.20$, 95% CI = 0.07, 0.86). The data supports perceived listening as a mediator (H_2), given the 95% confidence intervals do not span zero.

Agent affect: Interjections significantly predict positive affect ($b = 1.68$, $SE = 0.21$, $p < .001$). Agent affect significantly predicts a consumer's loyalty choice ($b = 0.67$, $SE = 0.14$, $p < .001$). The indirect effect (interjections → agent affect → DV) was also significant ($b = 1.13$, $BootSE = 0.27$, 95% CI = 0.68, 1.75). The data supports positive affect as a mediator (H_3), given the 95% confidence intervals do not span zero.

Anthropomorphism: Interjections significantly predict anthropomorphism ($b = 0.67$, $SE = 0.35$, $p < .001$). Anthropomorphism significantly predicts a consumer's loyalty choice ($b = 0.53$, $SE = 0.11$, $p < .001$). The indirect effect (interjections → anthropomorphism → DV) was also significant ($b = 0.35$, $BootSE = 0.15$, 95% CI = 0.08, 0.69). The data supports anthropomorphism as a mediator (H_5), given the 95% confidence intervals do not span zero.

Simultaneous mediation: Next, all three mediators (listening, positive affect, anthropomorphism) were tested simultaneously using PROCESS Model 4. The

coefficients for the independent variable → mediator paths do not change. Perceived

listening continued to significantly predict the DV (b = 0.54, SE = 0.19, p < .01). However

positive affect was no longer significant (b = 0.29, SE = 0.17, p = .08). Neither was

anthropomorphism (b = 0.19, SE = 0.14, p = .18). Examining the total indirect effects,

interjections → perceived listening → DV, was significant (b = 0.27, $BootSE$ = 0.16, 95%

CI = 0.03, 0.65). Meanwhile interjections → positive affect → DV (b = 0.50, $BootSE$ = 0.30,

95% CI = -.05, 1.14) and interjections → anthropomorphism → DV (b = 0.13, $BootSE$ =

0.11, 95% CI = -.05, 0.40) were no longer significant. Paths and significance are shown in
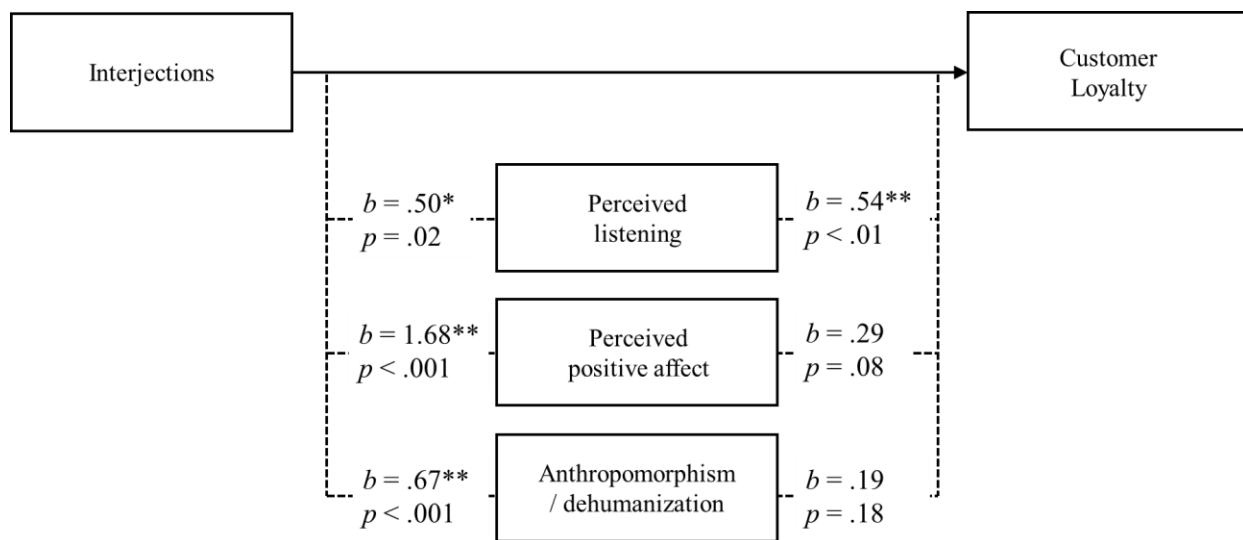
Figure 13.

Figure 13. Study 4 path statistics for simultaneous mediation analysis

Each of the three mediators showed statistically significant mediation when tested individually. In testing all three mediators simultaneously, only perceived listening remained significant. Interpreting these findings, it appears as though perceived listening, agent affect, and anthropomorphism can explain why interjections increase consumer loyalty intentions, following a sub-optimal outcome. However, perceived listening appears to account for more unique variance in the dependent measure. This is the same pattern that was described in the previous study. Again, listening seems paramount. Agent affect and anthropomorphism are important factors, however it may be that their predictive power decreases in sub-optimal scenarios. Imagining a total service failure, it may be that positive affective displays are inappropriate, while anthropomorphism is neither positive nor negative. However, even when the customer fails to achieve their desired outcome, a service agent who is listening, may soften the blow. Perceived listening appears to be a context-free benefit – enhancing the customer experience, regardless of the context.

Sequential mediation: Finally, in testing H$_4$, serial mediation was run using PROCESS Model 6 (interjections → agent affect → participant affect → DV). The pattern was the same as the previous study. Interjections significantly predicted perceptions of the agent's positive affect ($b = 1.68$, $SE = 0.21$, $p < .001$), agent affect significantly predicted participant affect ($b = 0.26$, $SE = 0.07$, $p < .001$). However, participant affect did not significantly predict the dependent measure ($b = 0.15$, $SE = 0.14$, $p = .28$). Thus, the

data partially supports H$_4$, given that emotional contagion appears to have occurred. However, there is no evidence that participant affect had a subsequent effect upon the dependent measure.

Chapter 9:

STUDY FIVE

Introduction

The previous studies examined a service agent's use of interjections during a live

text chat - on social media or a firm-owned website. Study 5 represents an exploratory

attempt to extend the generalizability of the findings to include audible service

interactions. The context in this experiment was voice-activated chatbots (e.g., Siri or

Alexa). The findings may apply to telephone-based customer service. However, further

research is required. Instead of watching an animation of a customer-employee

interaction or communicating with a chatbot directly, in study 5, participants were

asked to listen to a short audio recording of a conversation between a customer and a

non-human service agent. The automated agent had a realistic voice, powered by

speech-to-text software.

The studies to date did not manipulate service agent gender. The decision to

manipulate agent gender in this study was taken, after an additional literature review,

for several reasons. First, in a text-based interaction, without any gender cues (e.g., a picture of the agent, the agent disclosing their name), there is no way for a consumer to determine an agent's gender. However, this is not the case in an audio conversation, where a voice is stereotypically male or female. Second, female chatbots are more common (Borau et al., 2021; UNESCO, 2020), however, all commercially available text-to-speech software includes both male and female voices – so producing a chatbot in either gender is possible. Furthermore, there is evidence to suggest that chatbot gender impacts performance. Female chatbots and robots score higher in interpersonal warmth, while male chatbots score higher in perceived competence (Borau et al., 2021; Eyssel & Hegel, 2012). Given that interpersonal warmth is uniquely human, while competence is not, chatbot gender may also impact anthropomorphic perceptions (Gray & Wegner, 2012). Third, there is evidence to suggest that females use interjections more often than males (Bi, 2010; Hayasi, 1998; Leaper, 2019). However, there is no data as to how each gender is perceived when using interjections.

Finally, there is also evidence that participant gender can interact with chatbot and robot gender to impact evaluations. First, Schermerhorn et al., (2008) demonstrate that male vs. female participants act differently in the presence of a non-gendered robot. Their follow-up study (Crowell et al., 2009) manipulated robot gender via vocal cues. They found evidence for an interaction between robot gender and participant gender upon scores for a social desirability bias instrument. Siegel et al's. (2009) field study

demonstrates that men were more likely to donate money to a female robot. Their data

also suggests that male participants rated female robots as more credible, trustworthy,

and engaging. The reverse pattern was observed for female participants, who preferred

male robots.

As such, study 5 aimed to test a three-way interaction between interjections

(manipulating presence vs. absence of interjections), agent gender (manipulating male

vs. female agent voice), and participant gender (measured variable).

Sample

A sample of 345 Americans (58% female, M_{age} = 35.85, SD = 12.39) from the

Prolific panel elected to participate in the study. Nine participants' data was removed

for failing an attention check question.

Stimulus & Procedure

This study used the same context described in Study 3 (The Waterford Hotel).

However, instead of communicating with a chatbot themselves, participants listened to

an audio recording depicting a confederate communicating with a chatbot. The script

for the conversation was the same as that used in Study 3. The confederate inquired

about booking a hotel room for a romantic weekend, to celebrate an anniversary. The

confederate asked about booking a room with the best view as it was a special occasion. The service agent apologized, explaining that they were sold out, however, there were still other rooms available. Participants were asked to listen to the audio and evaluate the agent's performance.

The audio files were made using a microphone, text-to-speech tools and Audacity – a free, open-source audio editing program. First, the confederate recorded the human lines from the script, e.g., "Is hotel parking included in the price?" and "Which rooms have the best view?". Next, a review of text-to-speech software was conducted. Amazon Polly was selected as the best option for the automated speech as the voices were the most realistic. The software could handle non-word interjections such as "aww" or "wow" using appropriate inflection and tone. The agent lines from the script were produced using both male and female voices and then saved as MP3 files. Examples include "*Hmm.* The best rooms are our Lakeview rooms" vs. "The best rooms are our Lakeview rooms". The Audacity software was then used to stitch the individual audio files into 4 versions of the same conversation (interjection presence vs. absence and male vs. female agent voice). The conversations were approximately 1 minute in duration and can be made available upon request.

Measures

Dependent measure (α = .938): The dependent variable was a composite of three items designed to measure purchase intent via a participant's likelihood to accept a sub-optimal outcome. The items were "I would make a reservation at this hotel", "I would like to stay at this hotel", and "I would make a booking at the Waterford for the romantic weekend". All responses were recorded on 7-point Likert scales anchored strongly (dis)agree. Perceived listening (α = .803), agent affect (α = .921), and anthropomorphism (α = .918) were measured as described in the previous studies.

Results

Main effects

In order to examine the impact of interjections upon consumer choice, listening, agent affect and anthropomorphism, t-tests were run. The male and female chatbot conditions were collapsed into a single group, and interjections were dummy coded as '0' and '1'. The presence of interjections appears to have increased perceived listening scores ($M_{interjections}$ = 5.71, SD = 0.88 vs. $M_{control}$ = 5.53, SD = 0.93; $t(328)$ = -1.82, p = .03, Cohen's d = 0.91), agent affect scores ($M_{interjections}$ = 4.43, SD = 1.26 vs. $M_{control}$ = 3.58, SD = 1.31; $t(328)$ = -5.93, p < .001, Cohen's d = 1.29) and anthropomorphism scores ($M_{interjections}$ = 3.77, SD = 1.47 vs. $M_{control}$ = 3.48, SD = 1.39; $t(328)$ = -1.80, p = .03, Cohen's d = 1.43). However, the presence of interjections had no significant impact on scores for the

dependent variable ($M_{\text{interjections}}$ = 5.07, SD = 1.37 vs. M_{control} = 5.19, SD = 1.31; t(328) = -0.81, p = .20). Follow-up examination of mediation analysis and a three-way interaction as the focal analysis (interjections x agent gender x participant gender) are presented in the next sections.

Mediation analysis

The next step was to test the indirect effect of interjections upon purchase intent as explained by perceived listening, agent affect and anthropomorphism. The three mediators were tested simultaneously using PROCESS Model 4. Chatbot gender and participant gender were entered into the model as covariates. A summary of the analysis is shown below in Figure 14.

Interjections had a marginally significant effect on perceived listening (b = 0.17, SE = 0.10, p = .08), a significant effect on perceived agent affect (b = 0.83, SE = 0.14, p < .001) and a marginally significant effect on anthropomorphism (b = 0.27, SE = 0.15, p = .08). Perceived listening went on to predict purchase intent (b = 0.42, SE = 0.08, p < .001). Positive affect did not predict purchase intent (b = 0.02, SE = 0.06, p = .70). Anthropomorphism did predict purchase intent (b = 0.20, SE = 0.06, p < .001). Examining the total indirect effects, none of the mediation paths were significant, although perceived listening and anthropomorphism were close; interjections → listening → purchase intent (b = 0.07, $BootSE$ = 0.04, 95% CI = -0.00, 0.31), interjections → agent affect

→ purchase intent (b = 0.02, *BootSE* = 0.05, 95% CI = -0.08, 0.18), interjections →

anthropomorphism → purchase intent (b = 0.05, *BootSE* = 0.03, 95% CI = -0.00, 0.14).
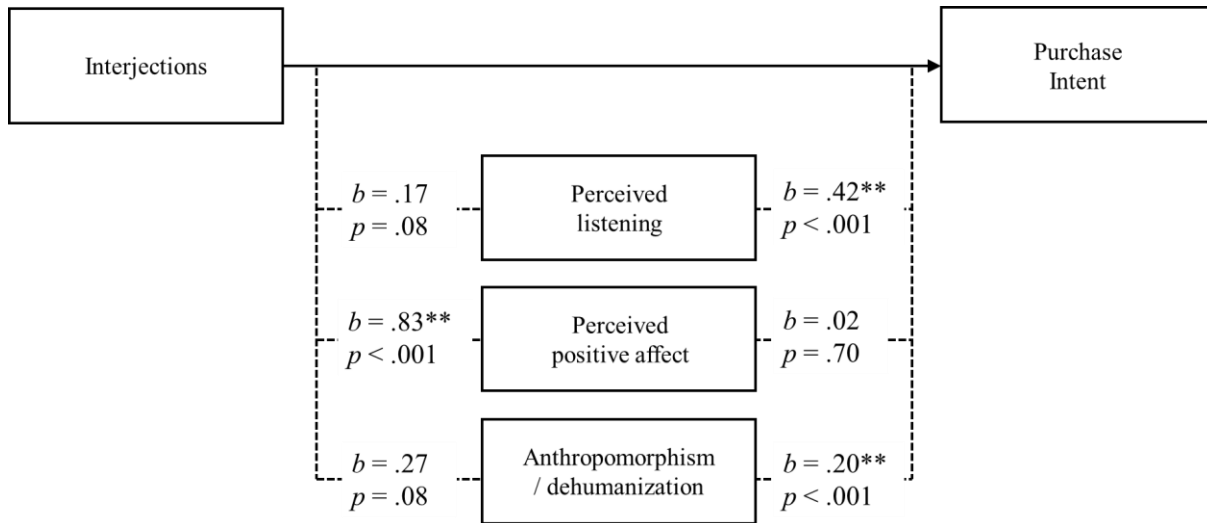
Figure 14. Study 5 path statistics for simultaneous mediation analysis

Interaction effects

To examine the impact of interjections, service agent gender and participant

gender on consumer choice, a three-way interaction was tested using a univariate

general linear model. A summary of the results is shown in Table 12. None of the main

effects (interjections, chatbot gender or participant gender) were significant. Neither

was the three-way interaction between interjections, chatbot gender and participant

gender (F (1, 330) = 0.24, p = .61). However, a two-way interaction between interjections

and participant gender was significant (F (1, 330) = 8.46, p < .01).

Table 12. Three-way interaction F values and significance

Variable	Mean Square	F	Significance
Interjections (INT)	2.66	1.52	0.21
Chatbot gender (Chatbot G)	6.13	3.50	0.06
Participant gender (Participant G)	0.74	0.42	0.51
INT x Chatbot gender	2.10	1.19	0.27
INT x Participant gender	14.85	8.46	< .01**
Chatbot G x Participant G	1.79	1.02	0.31
INT x Chatbot G x Participant G	0.43	0.24	0.61

** $p < 0.01$ level, two-tailed, * $p < .05$, two-tailed.

In order to examine the interjections x participant gender interaction in more detail, a univariate general linear model was run. This model used chatbot gender as a covariate. As shown in Figure 15, there was no significant main effect of interjections (F (1, 330) = 1.77, p = .18) or participant gender (F (1, 330) = 0.33, p = .56). However, there was a significant interaction of interjections and participant gender on purchase intent (F (1, 330) = 13.75, p < .01).
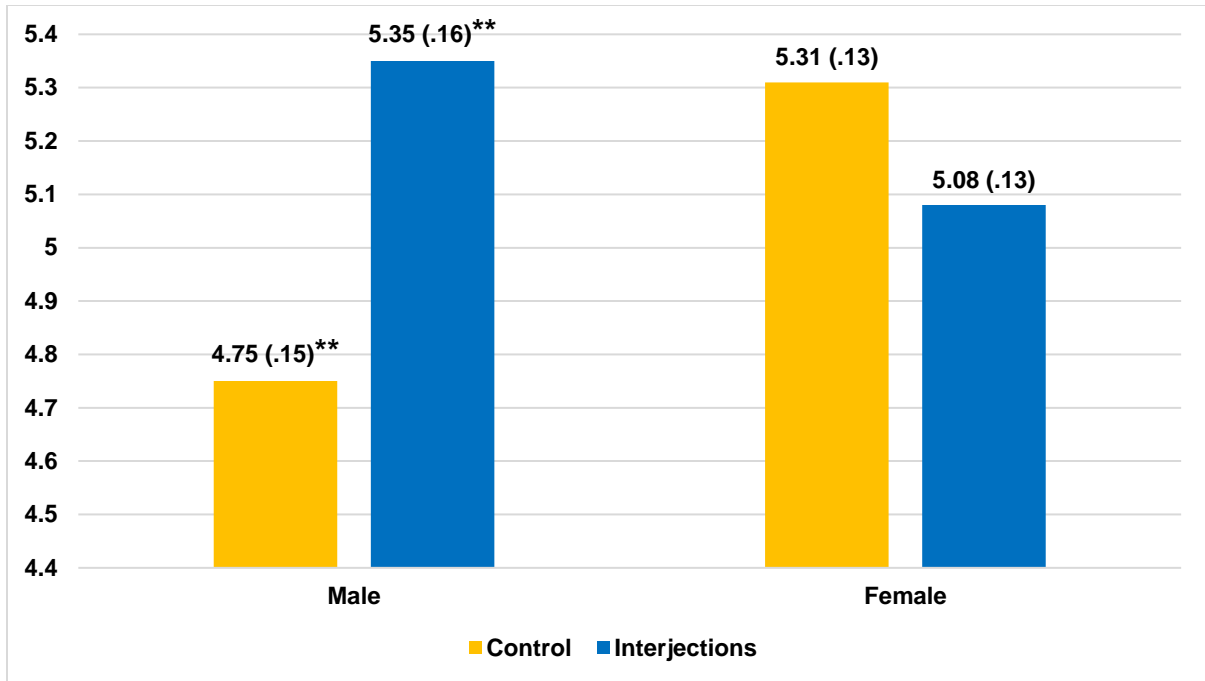
Figure 15. Mean (& SD) purchase intent scores comparing male vs. female participants

Running a follow-up simple effects analysis, the data shows that interjections significantly increased purchase intent for male participants ($M_{interjections}$ = 5.35, SE = .16 vs. $M_{control}$ = 4.75, SE = .15, p < .01). This is consistent with the other studies presented in the thesis. However, interjections had no significant impact for female participants ($M_{interjections}$ = 5.08, SE = .13 vs. $M_{control}$ = 5.31, SE = .13, p = .23).

One potential explanation for these results comes from Helson's (1948) adaptation level theory. The theory explains how recollections or judgements of past events influence evaluations of stimuli in the present moment. Adaptation-level theory explains the process of habituation to a sensory stimulus. For example, if one were to

eat a 150-gram apple every day for months, they may consider a 220-gram apple as large, despite it being smaller than the average apple. This theory has been applied to language and word choice. For example, Heim et al. (2020) show that participants willingness to describe a set of objects as 'many' (vs. 'few'), can be adjusted up or down, irrespective of size, following repeated exposure to object sets described in those terms. It may be that interjections were not salient for females in Study 5, because females use interjections more frequently in day-to-day life (Bi, 2010; Hayasi, 1998; Leaper, 2019). In this way, a female's reference point or mental representation of the average conversation may already contain interjections. Thus, when evaluating the interjection chatbot, the interjection manipulation was less noticeable for females.

This account alone, does not explain why interjections impacted the dependent measure, for females in the previous studies – but not in this study. Perhaps interjections are more commonly used in verbal communication that in text, thus habituation has occurred verbally, but not visually. A second potential explanation has to do with authenticity. Authenticity is thought to moderate the relationship between a service agents positive affect and customer satisfaction (Hennig-Thurau et al., 2006). A genuine smile from the bus-driver is pleasing, while a pronounced, fake smile might feel menacing. It is possible that because females use interjections more frequently, they are more attuned to identify genuine versus sarcastic or fake interjections. This could explain the differences in female scores between the text-based interactions (Studies 1-4)

and the audible interaction (Study 5). An audible interaction includes cues such as

intonation and inflection, which may be used to evaluate authenticity. Further research

is required.

Chapter 10:

GENERAL DISCUSSION

General Discussion

The thesis proposes and then demonstrates that the use of interjections by a

customer service agent increases customer satisfaction scores. Studies 1A & 1B and 2A

& 2B suggest that the effect occurs whether the agent is a human employee or a non-

human chatbot. Studies 3 and 4 suggest the effect is strong enough to impact

consequential, binary consumer choices such as purchase intent and switching intent.

The effect appears to occur across a range of consumer contexts. Those tested include

purchasing flowers, restaurant bookings, hotel inquiries and warranty claims on

technology products. Furthermore, the effect appears to occur at different stages of the

purchasing process, including information search and post-purchase evaluation. When

the interaction is text-based (studies 1-4), it appears to occur consistently, irrespective of

a consumer's age, gender, education, or income. However, when the interaction is

audible (study 5), it appears that the consumers' gender is important.

Theoretical Contribution

These findings are important. The existing literature identifies employee behavioural cues which are satisfying in face-to-face interactions i.e., smiling (Barger et al., 2006), attractiveness (Luoh & Tsaur, 2009) and approaching the customer (Söderlund, 2018). However, the majority of service delivery is now mediated by technology. As such, consumers do not have access to these visual cues, which are commonly processed as indicators of service quality (Bebko et al., 2006). Because services are experiential, consumers can struggle to evaluate a service without such cues (Zeithaml, 1981). This thesis contributes to an emerging body of works which find significant, substantial effects associated with subtle shifts in language (Packard et al., 2018; Packard & Berger, 2021; You et al., 2019). The novel finding that interjection use improves customer satisfaction (H_1) is valuable, because it can be applied to both online and off-line interactions.

The thesis proposes and tests three processing mechanisms to explain why interjections have a significant impact on customer satisfaction and consumer choice. As hypothesized, it appears as though a service agent's use of interjections is satisfying for consumers because the consumer feels listened to (H_2), the consumer feels the service agent is in a positive mood (H_3), and the consumer feels the service agent (and probably the interaction itself) is humanlike (H_5), as opposed to robotic and scripted. Running

these mediators simultaneously – so that they compete to explain unique variance in the dependent measure – perceived listening consistently remains significant, while the other variables do not. Furthermore, the benefits of perceived listening appear to be context-free. This thesis demonstrates that interjections use and listening enhances a consumer's experience, when they achieve their desired outcome and when they are asked to settle for a sub-optimal outcome. These sub-optimal outcomes may be somewhat trivial (a hotel room without a view) or more substantial (denial of a warranty claim for an expensive technology product).

With regards to H_2, this thesis is the first to show that interjection use increases perceived listening. This is very helpful in mediated communication, where non-verbal listening cues (facing the speaker, eye contact, head nodding) are unavailable. Paraphrasing or restating someone's ideas back to them is another verbal behavior which demonstrates listening. Paraphrasing is used to make people feel heard in customer service (Min et al., 2015), therapy (Jones, 2011) and crisis negotiations (Van Hasselt et al., 2006). While paraphrasing and interjections can both be used in mediated communication, interjections are more efficient and immediate. The thesis also contributes to a body of work citing listening as fundamental to human interaction. Gladwell, (2005) provides an insightful example on the importance of listening. He asks readers to imagine they work for an insurance firm, seeking to identify doctors likely to be sued for medical malpractice. Gladwell explains that observing doctor-patient

interactions would be a better predictor of lawsuits than statistical analysis of doctor

training and error rates. Surgeons who have never been sued spent 3 minutes longer

with each patient, than those who had (18.3 vs. 15 mins). People don't sue doctors they

like and they like doctors who listen and treat them with respect. Consumers desire to

feel heard will likely increase over time, as remote-working and isolation decrease face-

to-face interaction. Interjections may help to make a cold, impersonal, computer-

mediated interaction feel warm and empathetic.

With regards to H3, the thesis is the first to apply interjections as affect bursts to a

business or marketing context. The existing research was clear; happy and enthusiastic

employees lead to satisfying customer service (Barger et al., 2006; Bitner et al., 1994;

Diener et al., 2020). But how can employees' display positive affect via text? This

research suggests context-relevant interjections are highly effective. The results can also

advance human-machine interaction research. Researchers are discussing and testing

ways to have chatbots and robots mimic human emotions (Somers, 2019). This is

because emotional systems are thought to outperform emotionless systems (Liu &

Sundar, 2018), although further research is required to identify boundary conditions.

Researchers manipulate factors such as facial expression and posture (Calvo-Barajas et

al., 2020; Yagi et al., 2021) or language e.g., "I'm sorry to hear that", (Liu & Sundar,

2018). Interjections can serve as an experimental manipulation in this regard – allowing

researchers to further probe the consequences of machines' mimicry of human

emotions. The data somewhat supported the contentious emotional contagion account of affective displays in service delivery (H_4), finding that interjections did increase agent affect and even participant affect. However, the final stage of the sequential mediation (participant affect → DV) could not be replicated as described in the literature.

Finally, with regards to H_5, the thesis presents the first demonstration of interjection use as contributing to perceptions of humanness. As such, it may improve our understanding of anthropomorphism, elicited agent knowledge, human-robot interaction and natural language processing. This research shows that interjections and anthropomorphism improve the customers' experience. Training human employees to use interjections may also improve the employees' experience. It is well known that customer service staff often face abuse and dehumanization (Fuller, 2019; Korczynski & Evans, 2013; Terskova & Agadullina, 2019). Given that dehumanization is thought to be the opposite of anthropomorphism (Schroeder & Epley, 2016; Waytz et al., 2014) and interjections increase anthropomorphism, using interjections may decrease dehumanization. This may be particularly useful with the rise in off-shore, out-sourced customer service (Lu et al., 2020; Thelen et al., 2011), given dehumanization typically occurs along racial and ethnic lines (Haslam & Stratemeyer, 2016).

Finally, with the addition of Study 5, the thesis sheds light on the differences between text-based and audio-based chatbot interactions. The data suggests that interjections which work in text-based environments may be less effective in audible

environments, where word choice likely interacts with a speaker's tone, inflection, volume, and speed. The data suggests that audible interjections, enhance a male consumers experience, while having no discernible effect on female consumers. Adaptation-level theory (Helson, 1948) would suggest that audible interjections are more salient for men, because men are less likely to use them in speech (Bi, 2010). Meanwhile, interjections may be salient to both men and women in a text-based interaction, as neither gender has been habituated to interjections via text.

Figure 16 shows which paths from the theoretical model represent new theoretical contributions and which paths contribute to the existing literature.

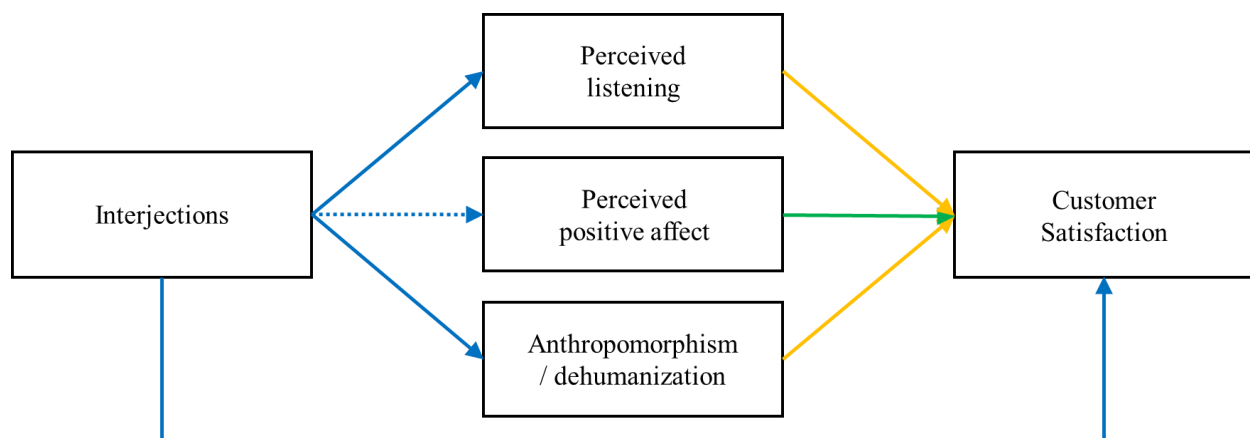

Figure 16. Theoretical contribution and novelty of findings

Note: Solid blue lines indicate the findings are a new contribution to the literature, dotted blue lines indicate a new application of existing knowledge (new to the business / consumer behavior discipline), yellow lines indicate existing knowledge of weak-moderate strength, green lines indicate existing, well-established knowledge.

Practical Contribution

These findings can be applied to business practice in several ways. First, human customer service agents should be encouraged to use interjections when interacting via live-chat or instant messaging. This suggestion can have a large impact, given 48% of consumers world-wide have used a live-chat for customer service (Microsoft, 2020). The number of consumers messaging firms directly, via their websites, social media or chat apps is large and increasing (Statista, 2021). The use of context relevant interjections should form part of employee training or be added to interaction scripts, which are commonly used in customer service roles to standardize employee behavior (Nguyen et al., 2014).

Second, programmers are advised to add interjections to text based chatbot programming. This should be possible with both simple rule-based chatbots and AI chatbots using natural language processing. Again, implementing this change is likely to have a large impact. Due to labour shortages, AI based solutions such as chatbots are being used to fill the live-chat supply gap (Microsoft, 2020). 65% of consumers feel comfortable handling issues without a human involved (Bazilian, 2017), while firms are driven to deploy chatbots because they dramatically reduce phone call and email volumes (MIT Technology Review, 2018; Moore, 2018), offering a return with little effort (Srinivasan et al., 2018). The data suggests that interjections should improve all

human-chatbot service interactions. However, firms looking to adopt a more fine-grained approach may build systems which use interjections more liberally for customers who use interjections themselves or display other personality traits. This is possible. A number of papers explain how chatbots can detect user personality and sentiment and then reflect or mirror those traits back to consumers to improve satisfaction (Lee et al., 2017; Shumanov & Johnson, 2021).

Third, practitioners are advised to add interjections to audio-based interactions. The data suggests that interjections are likely to improve the service interaction when the consumer is male. The data also suggests that interjections did not increase or decrease purchase intent for females. The mean purchase intent scores were lower for females when the chatbot used interjections, however, the decrease was not significant. Thus, interjections appear to beneficial for a male audience and risk-free for a female audience. Thus, interjections could be used in a variety of scenarios, however they show most promise, when a product category or brand has a male target market. Alternatively, interjections could be added to a conversation once the consumer is identified as male.

The findings likely apply to face-to-face interactions and other forms of written communication such as emails or text, although further studies are required. It is reasonable to assume that interjections would impact perceived listening and employee affect – and subsequent consumer behavior in these types of interactions. However, in

face-to-face interactions, employee authenticity will be important. For example, saying "Wow", with congruent facial expressions is likely to be satisfying, however saying "Wow", with a sullen expression and apathetic posture, is likely to have a backfire effect, being perceived as rude or sarcastic.

Future Research & Limitations

First, the most compelling avenue for future research is a test of interjection use in face-to-face service delivery. This would open new lines of theoretical enquiry, while providing significant practical benefit. Second, interested parties are encouraged to examine interjection use in populations outside of the United States. Interjections are universal (Ameka, 1992; Libert, 2014). However different cultures have different communication styles and linguistic preferences (Rau et al., 2009; Sanchez-Burks et al., 2003). Third, further probing of the differences between text-based and audio-based listening and affective cues could prove fruitful.

Beyond these three avenues for future research, new studies could examine moderators or boundary conditions for the relationships presented. Three moderators of interest are; (i) task complexity and risk, (ii) the frequency of interjection use and (iii) interjection valence. First, it may be that task complexity and risk interact with interjection use. For example, the present research examined interjection use in low-risk

consumption scenarios. However, it would be interesting to study how interjections

perform in high-risk scenarios such as health diagnoses or scenarios high in formality,

such as financial or legal services. Using interjections in high-risk, complex scenarios

may reduce psychological distance between the two interlocutors (Trope & Liberman,

2010). However, interjection use may backfire, decreasing the perceived professionalism

of the interjection user. Future experiments could examine the potential dark side of

interjections – by examining their impact on perceived competence and warmth. These

two dimensions of social cognition are fundamental to interpersonal relations (Fiske et

al., 2007). In a similar vein, Glikson et al., (2018) explain that real life, face-to-face smiles

increase perceptions of competence and warmth, however smiley faced emoji have no

effect on warmth, but decrease the perceived competence of the sender. This is because

emoji may be considered inappropriate in certain contexts. Furthermore, this research

tested interjections in optimal and sub-optimal conditions. However, interjections may

also backfire when the consumer receives a very poor outcome (i.e., worse than sub-

optimal). The second potential moderator is interjection frequency. Future research

could identify whether a single interjection is sufficient to have an effect. Conversely,

researchers may investigate if too many interjections have a negative effect on consumer

attitudes. Finally, interjections can have negative emotional valence e.g., "yuk". It is

unclear how an interjection such as yuk would be perceived by consumers. Used at the

correct time, it might increase perceived listening or anthropomorphism as yuk may be

a contextually appropriate response. However, it was not tested.

BIBLIOGRAPHY

Adam, M., Wessel, M., & Benlian, A. (2021). AI-based chatbots in customer service and their effects on user compliance. *Electronic Markets*, *31*(2), 427–445. https://doi.org/10.1007/s12525-020-00414-7

Afthanorhan, A., Foziah, H., Rusli, R., & Khalid, S. (2019). The effect of service quality on customer satisfaction in three campuses of UniSZA. *International Journal of Innovation, Creativity and Change*, *7*(10), 42–56.

Aggarwal, P., Castleberry, S. B., Ridnour, R., & Shepherd, C. D. (2005). Salesperson empathy and listening: Impact on relationship outcomes. *Journal of Marketing Theory and Practice*, *13*(3), 16–31. https://doi.org/10.1080/10696679.2005.11658547

Agyapong, A., Afi, J., & Kwateng, K. (2018). Examining the effect of perceived service quality of health care delivery in Ghana on behavioural intentions of patients: The mediating role of customer satisfaction. *International Journal of Healthcare Management*, *11*(4), 276–288.

Allen, P., Bennett, K., & Heritage, B. (2014). *SPSS Statistics* (22nd ed.). Cengage Learning Australia.

Alvesson, M., & Deetz, S. (2000). *Doing Critical Management Research*. SAGE Publications Ltd.

Ameka, F. (2006). Interjections. In K. Brown (Ed.), *Encyclopedia of Language and Linguistics* (2nd ed., pp. 743–746). Elsevier. https://doi.org/http://dx.doi.org/10.1016/B0-08-044854-2/00396-5

Ameka, Felix. (1992). Interjections: The universal yet neglected part of speech. *Journal of Pragmatics*, *18*(2–3), 101–118.

Anderson, E. W., Fornell, C., & Mazvancheryl, S. K. (2004). Customer satisfaction and shareholder value. *Journal of Marketing*, *68*(October), 172–185.

Ashby, F., Isen, A., & Turken, A. (1999). A neuropsychological theory of positive affect and its influence on cognition. *Psychological Review*, *106*(3), 529–550.

Athanassopoulos, A. (2000). Customer satisfaction cues to support market segmentation and explain switching behavior. *Journal of Business Research*, *47*(3), 191–207.

Babakus, E., & Boller, G. (1992). An empirical assessment of the SERVQUAL scale. *Journal of Business Research*, *24*(3), 253–268.

Babbie, E. (2016). *The Practice of Social Research* (14th ed.). Cengage Learning.

Barger, P. B., Grandey, A. A., Barger, P. B., & Grandey, A. A. (2006). Service with a smile and encounter satisfaction: Emotional contagion and appraisal mechanisms. *Academy of Management Journal*, *49*(6), 1229–1238.

Baron, A. (1990). Experimental designs. *The Behavior Analyst*, *13*(2), 167–171.

Barsade, S. G. (2002). The ripple effect: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly*, *47*(4), 644–675.

Bartneck, C., Kulic, D., Croft, E., & Zoghbi, S. (2009). Measurement instruments for the anthropomorphism, animacy, likeability, perceived intelligence, and perceived safety of robots. *International Journal of Social Robotics*, *1*(1), 71–81. https://doi.org/10.1007/s12369-008-0001-3

Bazilian, E. (2017). *Infographic: How consumers want companies to use customer-service chatbots*. AdWeek.

Bebko, C., Sciulli, L., & Garg, R. (2006). Consumers' level of expectation for services and the role of implicit services promises. *Services Marketing Quarterly*, *28*(2), 1–23.

Bergkvist, L., & Rossiter, J. R. (2007). The predictive validity of multiple-item versus single-item measures of the same constructs. *Journal of Marketing Research*, *44*(2), 175–184. https://doi.org/10.1509/jmkr.44.2.175

Bethlehem, J. (2010). Selection bias in web surveys. *International Statistical Review*, *78*(2), 161–188.

Bi, Q. (2010). Characteristics of the language of women in English. *Journal of Language Teaching and Research*, *1*(3), 219–221.

Bitner, M., Booms, B., & Mohr, L. (1994). Critical service encounters: The employee's viewpoint. *Journal of Marketing*, *58*(4), 95–106.

Blut, M., Wang, C., Wünderlich, N. V., & Brock, C. (2021). Understanding anthropomorphism in service provision: a meta-analysis of physical robots, chatbots, and other AI. *Journal of the Academy of Marketing Science*.

Bond, G. D., & Lee, A. Y. (2005). Language of lies in prison: Linguistic classification of prisoners' truthful and deceptive natural language. *Applied Cognitive Psychology*, *19*(3), 313–329. https://doi.org/10.1002/acp.1087

Borau, S., Otterbring, T., Laporte, S., & Fosso Wamba, S. (2021). The most human bot: Female gendering increases humanness perceptions of bots and acceptance of AI. *Psychology & Marketing*, *38*(7), 1052–1068.

Boroditsky, L. (2001). Does language shape thought?: Mandarin and English speakers' conceptions of time. *Cognitive Psychology*, *43*(1), 1–22.

Brysbaert, M., Stevens, M., Mandera, P., & Keuleers, E. (2016). How many words do we know? Practical estimates of vocabulary size dependent on word definition, the degree of language input and the participant's age. *Frontiers in Psychology*, *7*(JUL), 1–11. https://doi.org/10.3389/fpsyg.2016.01116

Burke, M., Brief, A., George, J., & Roberson, L. (1989). Measuring affect at work: Confirmatory analyses of competing mood structures with conceptual linkage to cortical regulatory systems. *Journal of Personality and Social Psychology*, *57*(6), 1091–1102.

Calvo-Barajas, N., Perugia, G., & Castellano, G. (2020). The effects of robot's facial expressions on children's first impressions of trustworthiness. *29th IEEE International Conference on Robot and Human Interactive Communication, RO-MAN 2020*, 165–171.

Candello, H., & Pinhanez, C. (2017). Typefaces and the Perception of Humanness in Natural Language Chatbots. *CHI '17 Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*, 3476–3487. https://doi.org/10.1145/3025453.3025919

Carrillat, F., Jaramillo, F., & Mulki, J. (2007). The validity of the SERVQUAL and SERVPERF scales: A meta-analytic view of 17 years of research across five continents. *International Journal of Service Industry Management*, *18*(5), 472–490.

Chatbot market - growth, trends, Covid-19 impact and forecasts (2022 - 2027). (2022). Mordor Intelligence. https://www.mordorintelligence.com/industry-reports/chatbot-market

Chen, C., Lee, H., Chen, S., & Huang, T. (2011). Tourist behavioural intentions in relation to service quality and customer satisfaction in Kinmen National Park, Taiwan. *International Journal of Tourism Research*, *13*(5), 416–432.

Chen, J., Wang, C., Zhou, B., Lee, Y., & Zomaya, A. (2011). Tradeoffs between profit and customer satisfaction for service provisioning in the cloud. *Proceedings of the IEEE International Symposium on High Performance Distributed Computing*, 229–238.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Routledge Academic.

Crawford, L. (2019). *State of Customer Service Automation*. https://go.helpshift.com/rs/113-UDX-599/images/Report_State_of_CS_Automation.pdf

Creswell, J. (2007). *Qualitative inquiry and research design: Choosing among five approaches.* SAGE Publications Ltd.

Cristobal, A. (2018). Expectations on library services, library quality (LibQual) dimension and library customer satisfaction: Relationship to customer loyalty. *Library Philosophy and Practice*, 1706.

Cronin, J., Brady, M., & Hult, G. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of Retailing, 76*(2), 193–218.

Crowell, C. R., Scheutz, M., Schermerhorn, P., & Villano, M. (2009). Gendered voice and robot entities: Perceptions and reactions of male and female subjects. *2009 IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS 2009*, 3735–3741. https://doi.org/10.1109/IROS.2009.5354204

Das, G., Wiener, H., & Kareklas, I. (2019). To emoji or not to emoji? Examining the influence of emoji on consumer reactions to advertising. *Journal of Business Research, 96*, 147-156.

de Ruyter, K., & Wetzels, M. G. M. (2000). The impact of perceived listening behavior in voice-to-voice service encounters. *Journal of Service Research, 2*(3), 276–284.

Dean, D. (2010). Consumer perceptions of visible tattoos on service personnel. *Managing Service Quality, 20*(3), 294–308.

Denzin, N., & Lincoln, Y. (2017). *The SAGE Handbook of Qualitative Research* (S. Publications (Ed.)).

Diener, E., Thapa, S., & Tay, L. (2020). Positive Emotions at Work. *Annual Review of Organizational Psychology and Organizational Behavior*, *7*, 451–477. https://doi.org/10.1146/annurev-orgpsych-012119-044908

Dietrich, S., Hertrich, I., Alter, K., Ischebeck, A., & Ackermann, H. (2008). Understanding the emotional expression of verbal interjections: A functional MRI study. *NeuroReport*, *19*(18), 1751–1755. https://doi.org/10.1097/WNR.0b013e3283193e9e

Drollinger, T., Comer, L., & Warrington, P. (2010). Development and validation of the active empathetic listening scale. *Psychology & Marketing*, *30*(6), 461–469. https://doi.org/10.1002/mar

Drollinger, Tanya, & Comer, L. B. (2013). Salesperson's listening ability as an antecedent to relationship selling. *Journal of Business and Industrial Marketing*, *28*(1), 50–59. https://doi.org/10.1108/08858621311285714

Earp, B., & Trafimow, D. (2015). Replication, falsification, and the crisis of confidence in social psychology. *Frontiers in Psychology*, *6*, 621.

Edmondson, A., & McManus, S. (2007). Methodological fit in management field research. *Journal of Management Review*, *33*(4), 1155–1179.

Eid, M. (2011). Determinants of e-commerce customer satisfaction, trust, and loyalty in Saudi Arabia. *Journal of Electronic Commerce Research*, *12*(1), 78–93.

Epley, N., Waytz, A., Akalis, S., & Cacioppo, J. T. (2008). When we need a human: Motivational determinants of anthropomorphism. *Social Cognition*, *26*(2), 143–155.

Epley, N., Waytz, A., & Cacioppo, J. T. (2007). On seeing human: A three-factor theory of anthropomorphism. *Psychological Review*, *114*(4), 864–886.

Eyssel, F., & Hegel, F. (2012). (S)he's Got the Look: Gender Stereotyping of Robots. *Journal of Applied Social Psychology*, *42*(9), 2213–2230. https://doi.org/10.1111/j.1559-1816.2012.00937.x

Eyssel, F., Kuchenbrandt, D., Hegel, F., & De Ruiter, L. (2012). Activating elicited agent knowledge: How robot and user features shape the perception of social robots. *Proceedings - IEEE International Workshop on Robot and Human Interactive Communication*, 851–857.

Facebook. (2018). *Why messaging businesses is the new normal*. https://www.facebook.com/business/news/insights/why-messaging-businesses-is-the-new-normal

Fairchild, A. J., & McDaniel, H. L. (2017). Statistical commentary: Best (but oft-forgotten) practices: mediation analysis. *The American Journal of Clinical Nutrition*, *105*, 1259–1271.

Fassaert, T., van Dulmen, S., Schellevis, F., & Bensing, J. (2007). Active listening in medical consultations: Development of the Active Listening Observation Scale (ALOS-global). *Patient Education and Counseling*, *68*(3), 258–264. https://doi.org/10.1016/j.pec.2007.06.011

Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Bryant, B. E. (1996). The American Customer Satisfaction Index: Nature, purpose, and findings. *Journal of Marketing*, *60*(4), 7–18.

Friermuth, M., & Jarrell, D. (2006). Willingness to communicate. *Handbook of Research on Electronic Surveys and Measurements*, *16*, 355–356. https://doi.org/10.4018/978-1-59140-792-8.ch050

Fuller, J., & Matzler, K. (2008). Customer delight and market segmentation: An application of the three-factor theory of customer satisfaction on life style groups. *Tourism Management*, *29*, 116–126.

Fuller, K. (2019, November). Offshore call centre operators open up about what it's like working on the other side of the call. *ABC News*. https://www.abc.net.au/news/2019-11-29/what-its-like-to-work-in-an-offshore-call-centre/11742600

Gaver, W. (1993). What in the world do we hear?: An ecological approach to auditory event perception. *Ecological Psychology*, *5*(1), 1–29.

Gearhart, C., & Bodie, G. (2011). Active-empathic listening as a general social skill: Evidence from bivariate and canonical correlations. *Communication Reports*, *24*(2), 86–98.

Gladwell, M. (2005). *Blink: The power of thinking without thinking*. Back Bay Books.

Glikson, E., Cheshin, A., & Kleef, G. (2018). The dark side of a smiley: Effects of smiling emoticons on virtual first impressions. *Social Psychological and Personality Science*, *9*(5), 614-625.

Gloor, P., Fronzetti Colladon, A., Giacomelli, G., Saran, T., & Grippa, F. (2017). The impact of virtual mirroring on customer satisfaction. *Journal of Business Research*, *75*, 67–76.

Gnewuch, U., Morana, S., Adam, M., & Maedche, A. (2018). Faster is Not Always Better: Understanding the Effect of Dynamic Response Delays in Human-Chatbot Interaction. *26th European Conference on Information Systems: Beyond Digitization - Facets of Socio-Technical Change, ECIS 2018*. https://aisel.aisnet.org/ecis2018_rp/113

Goddard, C. (2014). Interjections and emotion (with special reference to surprise and disgust). *Emotion Review*, *6*(1), 53–63.

Goodman, J., & Paolacci, G. (2017). Crowdsourcing consumer research. *Journal of Consumer Research*, *44*(1), 196–210.

Goodwin, C. (1996). Communality as a dimension of service relationships. *Journal of Consumer Psychology*, *5*(4), 387–415.

Gray, K., & Wegner, D. M. (2012). Feeling robots and human zombies: Mind perception and the uncanny valley. *Cognition*, *125*(1), 125–130. https://doi.org/10.1016/j.cognition.2012.06.007

Guba, E., & Lincoln, Y. (2005). Paradigmatic controversies, contradictions, and emerging confluences. In N. Denzin & Y. Lincoln (Eds.), *The SAGE handbook of qualitative research* (3rd ed., pp. 191–215). SAGE Publications Ltd.

Gustafsson, A., Johnson, M. D., & Roos, I. (2005). The effects of customer satisfaction, relationship commitment dimensions, and triggers on customer retention. *Journal of Marketing*, *69*(4), 210–218.

Hansen, J., & Wänke, M. (2010). Truth from language and truth from fit: The impact of linguistic concreteness and level of construal on subjective truth. *Personality and Social Psychology Bulletin*, *36*(11), 1576–1588. https://doi.org/10.1177/0146167210386238

Haslam, N., & Stratemeyer, M. (2016). Recent research on dehumanization. *Current Opinion in Psychology*, *11*, 25–29.

Hayasi, T. (1998). Gender differences in modern Turkish discourse. *International Journal of the Sociology of Language*, *129*, 117–126.

Hayes, A. (2017). *Introduction to Mediation, Moderation, and Conditional Process Analysis* (2nd ed.). Guilford Press.

Heim, S., Peiseler, N., & Bekemeier, N. (2020). "Few" or "Many"? An Adaptation Level Theory Account for Flexibility in Quantifier Processing. *Frontiers in Psychology*, *11*(March), 1–7. https://doi.org/10.3389/fpsyg.2020.00382

Helson, H. (1948). Adaptation-level as a basis for quantitative theory of frames of reference. *Psychological Review*, *55*(6), 297–313. https://doi.org/doi: 10.1037/h0056721

Hennig-Thurau, T., Groth, M., Paul, M., & Gremier, D. D. (2006). Are all smiles created equal? How emotional contagion and emotional labor affect service relationships. *Journal of Marketing*, *70*(3), 58–73.

Ho, S. S., & McLeod, D. M. (2008). *Computer-Mediated Communication*. 190–207.

Homburg, C., Koschate, N., & Hoyer, W. (2005). Do satisfied customers really pay more? A study of the relationship between customer satisfaction and willingness to pay. *Journal of Marketing*, *69*, 84–96.

Huang, G., Chang, C., Bilgihan, A., & Okumus, F. (2020). Helpful or harmful? A double-edged sword of emoticons in online review helpfulness. *Tourism Management*, *81*, 104135.

Humans + bots: Tension and opportunity. (2018). MIT Technology Review.

Hur, J. D., Koo, M., & Hofmann, W. (2015). When temptations come alive: How anthropomorphism undermines self-control. *Journal of Consumer Research*, *42*(2), 340–358. https://doi.org/10.1093/jcr/ucv017

Itani, O. S., Goad, E. A., & Jaramillo, F. (2019). Building customer relationships while achieving sales performance results: Is listening the holy grail of sales? *Journal of Business Research*, *102*(April), 120–130. https://doi.org/10.1016/j.jbusres.2019.04.048

Jabr, F. (2015). First impressions: The study of fetal perceptions takes off. *Scientific American*, *313*(1), 24. https://doi.org/doi:10.1038/scientificamerican0715-24

Jakobson, R. (1960). Closing statement: Linguistics and poetics. In T. Sebeok (Ed.), *Style in Language* (pp. 350–377). MIT Press.

Johnson, M., & Fornell, C. (1991). A framework for comparing customer satisfaction across individuals and product categories. *Journal of Economic Psychology*, *12*, 267–286.

Jones, M., & Suh, J. (2000). Transaction-specific satisfaction and overall satisfaction: An empirical analysis. *Journal of Services Marketing*, *14*(2), 147–159.

Jones, S. (2011). Supportive listening. *International Journal of Listening*, *25*(1–2), 85–103.

Kaplan, R., Chambers, D., & Glasgow, R. (2014). Big data and large sample size: A cautionary note on the potential for bias. *Clinical and Translational Science*, *7*(4), 342–346.

Kees, J., Berry, C., Burton, S., & Sheehan, K. (2017). An analysis of data quality: professional panels, student subject pools, and Amazon's Mechanical Turk. *Journal of Advertising*, *46*(1), 141–155.

Keh, H., Ren, R., Hill, S., & Li, X. (2009). The beautiful, the cheerful, and the helpful: The effects of service employee attributes on customer satisfaction. *Psychology & Marketing*, *30*(3), 211–226. https://doi.org/10.1002/mar

Kim, S. Y., Schmitt, B. H., & Thalmann, N. M. (2019). Eliza in the uncanny valley: anthropomorphizing consumer robots increases their perceived warmth but decreases liking. *Marketing Letters*, 1–12. https://doi.org/10.1007/s11002-019-09485-9

Kinzler, K. D., Dupoux, E., & Spelke, E. S. (2007). The native language of social cognition. *Proceedings of the National Academy of Sciences of the United States of America*, *104*(30), 12577–12580. https://doi.org/10.1073/pnas.0705345104

Kluger, A. N., Malloy, T. E., Pery, S., Itzchakov, G., Castro, D. R., Lipetz, L., Sela, Y., Turjeman-Levi, Y., Lehmann, M., New, M., & Borut, L. (2021). Dyadic listening in teams: Social relations model. *Applied Psychology*, *70*(3), 1045–1099. https://doi.org/10.1111/apps.12263

Koch, P., & Oesterreicher, W. (1994). Writing and its use. In H. Gunther & O. Ludwig (Eds.), *An interdisciplinary handbook of international research* (pp. 587–604). de Gruyter.

Korczynski, M., & Evans, C. (2013). Customer abuse to service workers: An analysis of its social creation within the service economy. *Work, Employment and Society*, *27*(5), 768–784.

Kriss, P. (2014). *The value of customer experience, quantified*. Harvard Business Review.

Kronrod, A., Grinstein, A., & Wathieu, L. (2012). Go green! Should environmental messages be so assertive? *Journal of Marketing*, *76*(1), 95–102. https://doi.org/10.1509/jm.10.0416

Landwehr, J. R., McGill, A. L., & Herrmann, A. (2011). It's Got the Look: The Effect of Friendly and Aggressive "Facial" Expressions on Product Liking and Sales. *Journal of Marketing*, *75*(3), 132–146. https://doi.org/10.1509/jmkg.75.3.132

Leaper, C. (2019). Young adults' conversational strategies during negotiation and self-disclosure in same-gender and mixed-gender friendships. *Sex Roles*, *81*(9–10), 561–575.

Lee, D., Oh, K., & Choi, H. (2017). The chatbot feels you - A counseling service using emotional response generation. *2017 IEEE International Conference on Big Data and Smart Computing, BigComp 2017*, 437–440. https://doi.org/10.1109/BIGCOMP.2017.7881752

Lee, J. K., & Kronrod, A. (2020). The strength of weak-tie consensus language. *Journal of Marketing Research*, *57*(2), 353–374. https://doi.org/10.1177/0022243720904957

Levinson, S. (1996). Frames of reference and Molyneux's question: Crosslinguistic evidence. In P. Bloom & M. Peterson (Eds.), *Language and Space* (pp. 109–169). MIT Press.

Lewis, M., & Reinsch, N. L. (1988). Listening in organizational environments. *Journal of Business Communication*, *25*(3), 49–67.

Libert, A. (2019). Interjections. *Linguistics, January*, 67–76. https://doi.org/10.1093/obo/9780199772810-0230

Libert, A. R. (2014). A survey of interjections in international auxiliary languages. *Journal of Universal Language, 15*(1), 79–103. https://doi.org/10.22425/jul.2014.15.1.79

Libert, A. R. (2011). On conversational valence and the definition of interjections. *Proceedings of the 42nd Australian Linguistic Society Conference*, 281–295.

Liu, B., & Sundar, S. S. (2018). Should Machines Express Sympathy and Empathy? Experiments with a Health Advice Chatbot. *Cyberpsychology, Behavior, and Social Networking*, *21*(10), 625–636. https://doi.org/10.1089/cyber.2018.0110

Lu, L., Gregory, G., & Thelen, S. (2020). Influence of country of origin and type of information exchanged on consequences of offshore service sentiment. *Journal of Service Theory and Practice, 30*(3), 233–255. https://doi.org/10.1108/JSTP-02-2019-0045

Luo, X., Tong, S., Fang, Z., & Qu, Z. (2019). Frontiers: Machines vs. humans: The impact of artificial intelligence chatbot disclosure on customer purchases. *Marketing Science*, *38*(6), 937–947. https://doi.org/10.1287/mksc.2019.1192

Luoh, H., & Tsaur, S. (2009). Physical attractiveness stereotypes and service quality in customer-server encounters. *Service Industries Journal*, *29*(8), 1093–1104.

Maass, A., Salvi, D., Arcuri, L., & Semin, G. R. (1989). Language use in intergroup contexts: The linguistic intergroup bias. *Journal of Personality and Social Psychology*, *57*(6), 981–993. https://doi.org/10.1037//0022-3514.57.6.981

MacInnis, D. J., & Folkes, V. S. (2017). Humanizing brands: When brands seem to be like me, part of me, and in a relationship with me. *Journal of Consumer Psychology*, *27*(3), 355–374. https://doi.org/10.1016/j.jcps.2016.12.003

Marshall, G. W., Goebel, D. J., & Moncrief, W. C. (2003). Hiring for success at the buyer-seller interface. *Journal of Business Research*, *56*(4), 247–255. https://doi.org/10.1016/S0148-2963(02)00435-6

May, F., & Monga, A. (2014). When Time Has a Will of Its Own, the Powerless Don't Have the Will to Wait: Anthropomorphism of Time Can Decrease Patience. *Journal of Consumer Research*, *40*(5), 924–942. https://doi.org/10.1086/673384

Mecit, A., Shrum, L. J., & Lowrey, T. M. (2021). COVID-19 is feminine: Grammatical gender influences danger perceptions and precautionary behavioral intentions by activating gender stereotypes. *Journal of Consumer Psychology*. https://doi.org/10.1002/jcpy.1257

Merriam, S. (1991). How research produces knowledge. In J. Peters & P. Jarvis (Eds.), *Adult education: Evolution and achievements in a developing field of study* (pp. 42–65). Jossey Bass.

Microsoft. (2020). *Global state of customer service*. https://info.microsoft.com/ww-landing-global-state-of-customer-service.html

Min, H., Lim, Y., & Magnini, V. (2015). Factors affecting customer satisfaction in responses to negative online hotel reviews: The impact of empathy, paraphrasing, and speed. *Cornell Hospitality Quarterly*, *56*(2), 223–231.

Mittal, V., & Kamakura, W. A. (2001). Satisfaction, repurchase intent, and repurchase behavior: Investigating the moderating effect of customer characteristics. *Journal of Marketing Research*, *38*(1), 131–142.

Mohd, S. (2017). Green products usage: Structural relationships on customer satisfaction and loyalty. *International Journal of Sustainable Development and World Ecology*, *24*(1), 88–95.

Montes, R. G. (1999). The development of discourse markers in Spanish: Interjections. *Journal of Pragmatics*, *31*(10), 1289–1319. https://doi.org/10.1016/s0378-2166(98)00106-4

Moore, S. (2018). *Gartner Says 25 Percent of Customer Service Operations Will Use Virtual Customer Assistants by 2020*. Gartner Corporate Website. https://www.gartner.com/newsroom/id/3858564

Mouwen, A. (2015). Drivers of customer satisfaction with public transport services. *Transportation Research Part A: Policy and Practice*, *78*, 1–20.

Müller, M. (1861). The theoretical state, and the origin of language. *Lectures on the Science of Language*, 287–328. https://doi.org/10.2307/3024908

Nguyen, H., Groth, M., Walsh, G., & Hennig-Thurau, T. (2014). The Impact of Service Scripts on Customer Citizenship Behavior and the Moderating Role of Employee. *Psychology and Marketing*, *31*(12), 1096–1109. https://doi.org/10.1002/mar

Norrick, N. R. (2009). Interjections as pragmatic markers. *Journal of Pragmatics*, *41*(5), 866–891.

O'Connell, D. C., Kowal, S., & Ageneau, C. (2005). Interjections in interviews. *Journal of Psycholinguistic Research*, *34*(2), 153–171. https://doi.org/10.1007/s10936-005-3636-3

O'Connell, V., & O'Sullivan. (2010). The impact of customer satisfaction on CEO bonuses. *Journal of the Academcy of Marketing Science*, *39*(6), 828–845.

Oracle. (2018). *Seventy-seven percent of consumers feel inefficient customer service experiences detract from their quality of life*. PR Newswire. https://www.prnewswire.com/news-releases/seventy-seven-percent-of-consumers-feel-inefficient-customer-service-experiences-detract-from-their-quality-of-life-300626778.html

Otto, A. S., Szymanski, D. M., & Varadarajan, R. (2020). Customer satisfaction and firm performance: Insights from over a quarter century of empirical research. *Journal of the Academy of Marketing Science*, *48*(3), 543–564.

Packard, G., & Berger, J. (2021). How concrete language shapes customer satisfaction. *Journal of Consumer Research*, *47*(5), 787–806.

Packard, G., Moore, S. G., & McFerran, B. (2018). (I'm) happy to help (you): The impact of personal pronoun use in customer-firm interactions. *Journal of Marketing Research*, *55*(4), 541–555.

Pasupathi, M., Carstensen, L. L., Levenson, R. W., & Gottman, J. M. (1999). Responsive listening in long-married couples: A psycholinguistic perspective. *Journal of Nonverbal Behavior*, *23*(2), 173–193. https://doi.org/10.1023/A:1021439627043

Peer, E., Brandimarte, L., Samat, S., & Acquisti, A. (2017). Beyond the Turk: Alternative platforms for crowdsourcing behavioral research. *Journal of Experimental Social Psychology*, *70*, 153–163.

Powell, T. (1995). Total quality management as competitive advantage: A review and empirical study. *Strategic Management Journal*, *16*(1), 15–37.

Prinz, J. (2002). Disgust as a basic emotion. *Emotion Researcher*, *16*, 7–8.

Prolific. (n.d.). *Why Prolific*. https://prolific.co/prolific-vs-mturk/

Puccinelli, N. (2006). Putting your best face forward: The impact of customer mood on salesperson evaluation. *Journal of Consumer Psychology*, *16*(2), 156–162.

Puccinelli, N. M., Goodstein, R. C., Grewal, D., Price, R., Raghubir, P., & Stewart, D. (2009). Customer experience management in retailing: Understanding the buying process. *Journal of Retailing*, *85*(1), 15–30.

Pugh, S. D. (2001). Service with a smile : Emotional contagion in the service encounter. *Academy of Management Journal*, *44*(5), 1018–1027.

PwC. (2018). *Experience is everything: Here's how to get it right*. https://www.pwc.com/us/en/advisory-services/publications/consumer-intelligence-series/pwc-consumer-intelligence-series-customer-experience.pdf#page=8

Rau, P., Li, Y., & Li, D. (2009). Effects of communication style and culture on ability to accept recommendations from robots. *Computers in Human Behavior*, *25*(2), 587–595.

Riva, P., Sacchi, S., & Brambilla, M. (2015). Humanizing Machines : Anthropomorphization of Slot Machines Increases Gambling. *Journal of Experimental Psychology: Applied*, *21*(4), 313–325.

Robinson, J., Rosenzweig, C., Moss, A., & Litman, L. (2019). Tapped out or barely tapped? Recommendations for how to harness the vast and largely unused potential of the mechanical turk participant pool. *PLoS ONE*, *14*(12), e0226394.

Rocklage, M. D., & Fazio, R. H. (2020). The enhancing versus backfiring effects of positive emotion in consumer reviews. *Journal of Marketing Research*, *57*(2), 332–352. https://doi.org/10.1177/0022243719892594

Salkind, N. (2010). *Ceiling effect*. SAGE Encyclopedia of Research Design. https://doi.org/https://doi.org/10.4135%2F9781412961288.n44

Sanchez-Burks, J., Lee, F., Choi, I., Nisbett, R., Zhao, S., & Koo, J. (2003). Conversing across cultures: East-West communication styles in work and nonwork contexts. *Journal of Personality and Social Psychology*, *85*(2), 363–372.

Scherer, K. (1994). Affect bursts. In S. van Goozen, N. van de Poll, & J. Sergeant (Eds.), *Emotions: Essays on emotion theory* (pp. 161–193). Lawrence Erlbaum Associates.

Schermerhorn, P., Scheutz, M., & Crowell, C. (2008). Robot social presence and gender: Do females view robots differently than males? *Third ACM IEEE International Conference on Human-Robot Interaction*.

Schröder, M. (2003). Experimental study of affect bursts. *Speech Communication*, *40*(1–2), 99–116.

Schroeder, J., & Epley, N. (2016). Mistaking Minds and Machines: How Speech Affects Dehumanization and Anthropomorphism. *Journal of Experimental Psychology: General*, *145*(11), 1427–1437.

Shaoa, C., Baker, J., & Wagner, J. (2004). The effects of appropriateness of service contact personnel dress on customer expectations of service quality and purchase intention. *Journal of Business Research*, *57*(10), 1164–1176.

Sharifi, S. (2019). Examining the impacts of positive and negative online consumer reviews on behavioral intentions: Role of need for cognitive closure and satisfaction guarantees. *Journal of Hospitality Marketing and Management*, *28*(4), 397–426.

Sheehan, B., Jin, H., & Gottlieb, U. (2020a). Customer service chatbots:

    Anthropomorphism and adoption. *Journal of Business Research*, *115*, 14–24.

Sheehan, B., Jin, H. S., & Gottlieb, U. (2020b). Customer service chatbots:

    Anthropomorphism and adoption. *Journal of Business Research*, *115*(February 2019),

    14–24.

Sheehan, B., Jin, H. S., & Gottlieb, U. (2020c). Customer service chatbots:

    Anthropomorphism and adoption. *Journal of Business Research*, *115*.

    https://doi.org/10.1016/j.jbusres.2020.04.030

Shin, H. I., & Kim, J. (2018). My computer is more thoughtful than you: Loneliness,

    anthropomorphism and dehumanization. *Current Psychology*, *39*, 445–453.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental

    studies: New procedures and recommendations. *Psychological Methods*, *7*(4), 422–

    445.

Shrout, P., & Rodgers, J. (2018). Psychology, science, and knowledge construction:

    Broadening perspectives from the replication crisis. *Annual Review of Psychology*, *69*,

    487–510.

Shumanov, M., & Johnson, L. (2021). Making conversations with chatbots more

    personalized. *Computers in Human Behavior*, *117*(March 2020), 106627.

    https://doi.org/10.1016/j.chb.2020.106627

Siegel, M., Breazeal, C., & Norton, M. I. (2009). Persuasive robotics: The influence of

    robot gender on human behavior. *2009 IEEE/RSJ International Conference on

    Intelligent Robots and Systems, IROS 2009*, 2563–2568.

    https://doi.org/10.1109/IROS.2009.5354116

Soderlund, M. (2020). Employee norm-violations in the service encounter during the corona pandemic and their impact on customer satisfaction. *Journal of Retailing and Consumer Services*, *57*, 102209.

Söderlund, M. (2018). The proactive employee on the floor of the store and the impact on customer satisfaction. *Journal of Retailing and Consumer Services*, *43*, 46–53. https://doi.org/10.1016/j.jretconser.2018.02.009

Soderlund, M., & Julander, C. (2009). Physical attractiveness of the service worker in the moment of truth and its effects on customer satisfaction. *Journal of Retailing and Consumer Services*, *16*, 216–226. https://doi.org/10.1016/j.jretconser.2008.11.008

Söderlund, M., & Oikarinen, E. L. (2018). Joking with customers in the service encounter has a negative impact on customer satisfaction: Replication and extension. *Journal of Retailing and Consumer Services*, *42*(February), 55–64.

Söderlund, M., & Oikarinen, E. L. (2021). Service encounters with virtual agents: an examination of perceived humanness as a source of customer satisfaction. *European Journal of Marketing*, *55*(13), 94–121.

Somers, M. (2019). *Emotion AI, explained*. MIT Management. https://mitsloan.mit.edu/ideas-made-to-matter/emotion-ai-explained

Srinivasan, K., Nguyen, C., & Tanguturi, P. (2018). *Chatbots are here to stay*.

Stämpfli, D., Martinez-De la Torre, A., Simi, E., Berger, J., & Burden, A. M. (2021). Community pharmacist-administered covid-19 vaccinations: A pilot customer survey on satisfaction and motivation to get vaccinated. *Vaccines*, *9*(11), 1320.

Statista. (2021). *Mobile messenger and communication apps - Statistics and facts*. Statista.

Steil, L. K., Barker, L. L., & Watson, K. W. (1983). *Effective listening: Key to your success*. McGraw-Hill.

Szymanski, D. M., & Henard, D. H. (2001). Customer satisfaction: A meta-analysis of the empirical evidence. *Journal of the Academy of Marketing Science*, *29*(1), 16–35.

Terskova, M., & Agadullina, E. (2019). Dehumanization of dirty workers and attitudes toward social support. *Journal of Applied Social Psychology*, *49*(12), 767–777.

Thelen, S. T., Yoo, B., & Magnini, V. P. (2011). An examination of consumer sentiment toward offshored services. *Journal of the Academy of Marketing Science*, *39*(2), 270–289. https://doi.org/10.1007/s11747-010-0192-7

Tsai, W. C., & Huang, Y. M. (2002). Mechanisms linking employee affective delivery and customer behavioral intentions. *Journal of Applied Psychology*, *87*(5), 1001–1008.

UNESCO. (2020). *Artificial Intelligence and Gender Equality*. https://unesdoc.unesco.org/ark:/48223/pf0000374174

Van Boom, W. H., Desmet, P., & Van Dam, M. (2016). "If it's easy to read, it's easy to claim"—The effect of the readability of insurance contracts on consumer expectations and conflict behaviour. *Journal of Consumer Policy*, *39*(2), 187–197. https://doi.org/10.1007/s10603-016-9317-9

Van Hasselt, V., Baker, M., Romano, S., Schlessinger, K., Zucker, M., Dragone, R., & Perera, A. (2006). Crisis (hostage) negotiation training a preliminary evaluation of program efficacy. *Criminal Justice and Behavior*, *33*(1), 56–69.

Vandergrift, L. (2007). Recent developments in second and foreign language listening comprehension research. *Language Teaching*, *40*(3), 191–210. https://doi.org/10.1017/S0261444807004338

Verhoef, P., Kannan, P., & Inman, J. (2015). From multi-channel retailing to omni-channel retailing: Introduction to the special issue on multi-channel retailing. *Journal of Retailing*, *91*(2), 174–181. https://doi.org/10.1016/j.jretai.2015.02.005

Vigliocco, G., Vinson, D. P., Paganelli, F., & Dworzynski, K. (2005). Grammatical gender effects on cognition: Implications for language learning and language use. *Journal of Experimental Psychology: General*, *134*(4), 501–520. https://doi.org/10.1037/0096-3445.134.4.501

Villar, A., & Krosnick, J. A. (2011). Global warming vs. climate change, taxes vs. prices: Does word choice matter? *Climatic Change*, *105*(1), 1–12. https://doi.org/10.1007/s10584-010-9882-x

Wallace, A. (1970). *Culture and Personality*. Random House.

Wang, C. (2013). Incorporating customer satisfaction into the decision-making process of product configuration: A fuzzy kano perspective. *International Journal of Production Research*, *51*(22), 6651–6662.

Wanzer, M. B., Booth-Butterfield, M., & Gruber, K. (2004). Perceptions of health care providers' communication: Relationships between patient-centered communication and satisfaction. *Health Communication*, *16*(3), 363–384.

Watson, D., Clark, L., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS Scales. *Journal of Personal and Social Psychology*, *47*, 1063–1070.

Waytz, A., Heafner, J., & Epley, N. (2014). The mind in the machine: Anthropomorphism increases trust in an autonomous vehicle. *Journal of Experimental Social Psychology*, *52*, 113–117.

Waytz, A., Morewedge, C. K., Epley, N., Monteleone, G., Gao, J.-H., & Cacioppo, J. T. (2010). Making sense by making sentient: Effectance motivation increases anthropomorphism. *Journal of Personality and Social Psychology*, *99*(3), 410–435.

Westerman, D., Cross, A. C., & Lindmark, P. G. (2019). I Believe in a Thing Called Bot: Perceptions of the Humanness of "Chatbots." *Communication Studies*, *70*(3), 295–312. https://doi.org/10.1080/10510974.2018.1557233

Wharton, T. (2003). Interjections, language, and the 'showing/saying' continuum. *Pragmatics & Cognition*, *11*(1), 39–91. https://doi.org/10.1075/pc.11.1.04wha

Wierzbicka, A. (1992). The semantics of interjection. *Journal of Pragmatics*, *18*, 159–192.

Wilkins, D. P. (1992). Interjections as deictics. *Journal of Pragmatics*, *18*(2–3), 119–158.

Williams, P., & Naumann, E. (2011). Customer satisfaction and business performance: A firm-level analysis. *Journal of Services Marketing*, *25*(1), 20–32.

Wundt, W. (1900). *Volkerpsychologie*. Engelmann.

Yagi, S., Nakata, Y., Nakamura, Y., & Ishiguro, H. (2021). Can an android's posture and movement discriminate against the ambiguous emotion perceived from its facial expressions? *PLoS ONE*, *16*(8), e0254905.

Yeung, M. C. H., Ramasamy, B., Chen, J., & Paliwoda, S. (2013). Customer satisfaction and consumer expenditure in selected European countries. *International Journal of Research in Marketing*, *30*(4), 406–416.

You, Y., Yang, X., Wang, L., & Deng, X. (2019). When and why saying "Thank You" is better than saying "Sorry" in redressing service failures: The role of self-esteem. *Journal of Marketing*, *84*(2), 133–150.

Zeithaml, V. (1981). How consumer evaluation processes differ between goods and services. In J. Donnelly & W. George (Eds.), *Marketing of Services* (pp. 186–190). American Marketing Association.

Zhou, T. (2012). Understanding users' initial trust in mobile banking: An elaboration likelihood perspective. *Computers in Human Behavior*.

Zhou, X., Kim, S., & Wang, L. (2018). Money Helps When Money Feels: Money Anthropomorphism Increases Charitable Giving. *Journal of Consumer Research*, *0*. https://doi.org/10.1093/jcr/ucy012

Zikmund, W., Lowe, B., Winzar, H., D'Alessandro, S., & Babin, B. (2020). *Marketing Research* (5th ed.). Cengage Learning.