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Managing the human–chatbot divide: how service scripts influence service experience

Sean Sands and Carla Ferraro
Department of Management and Marketing, Swinburne University of Technology, Melbourne, Australia
Colin Campbell
University of San Diego, San Diego, California, USA, and
Hsiu-Yuan Tsao
National Chung Hsing University, Taichung, Taiwan

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Abstract

Purpose – Brands are increasingly considering the use of chatbots to supplement, or even replace, humans in service interactions. Like humans, chatbots can follow certain service scripts in their encounters, which can subsequently determine the customer experience. Service scripts are verbal prescriptions that seek to standardize customer service interactions. However, while the role of service scripts is well documented, despite the increasing use of chatbots as a service mechanism, less is known about the effect, on consumers, of different service scripts presented during chatbot service encounters.

Design/methodology/approach – An experimental scenario was developed to test the research hypotheses. Respondents were randomly allocated to scenarios representing a 2 (service interaction: human, chatbot) × 2 (service script: education, entertainment) design. A total of 262 US consumers constituted the final sample for the study.

Findings – The findings indicate that when employing an education script, a significant positive effect occurs for human service agents (compared to chatbots) in terms of both satisfaction and purchase intention. These effects are fully mediated by emotion and rapport, showing that the bonds developed through the close proximity to a human service agent elicit emotion and develop rapport, which in turn influence service outcomes. However, this result is present only when an educational script is used.

Originality – This paper contributes to the emerging service marketing literature on the use of digital services, in particular chatbots, in service interactions. We show that differences occur in key outcomes dependent on the type of service script employed (education or entertainment). For managers, this study indicates that chatbot interactions can be tailored (in script delivered) in order to maximize emotion and rapport and subsequently consumer purchase intention and satisfaction.

Keywords Service agents, Chatbots, Service scripts, Education, Entertainment

Paper type Research paper

Introduction

In the current competitive environment, service delivery can be a key competitive advantage, with frontline service employees (FSEs) being a critical factor in determining service success (Wirtz *et al.*, 2018; Wirtz and Lovelock, 2016). As an organizational resource, FSEs are key to solving customer problems (Chakrabarty *et al.*, 2014), encouraging purchase through positive verbal and nonverbal interactions (Godes *et al.*, 2005), enhancing customer–brand relationships (Fionda and Moore, 2009) and personally engaging customers in shopping experiences (Kim and Ko, 2012). Indeed, it has been shown that service agents influence a significant proportion of in-store purchase decisions (Chung *et al.*, 2018).

However, as consumers increasingly spend more time in digital environments, many brands are moving toward the integration of digital service solutions. Chatbots are one such development. These are digital service agents that can replace human agents and provide a novel way to satisfy customers (Chung *et al.*, 2018). We define chatbots as artificial

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intelligence (AI)-enabled service agents that can conduct "natural" conversations with consumers and give them individual information (Wuenderlich and Paluch, 2017). Chatbots can deliver service similar to that of general service agents (Lowry *et al.*, 2009), facilitated by advanced technology interwoven with AI, mobile, cloud, big data and biometrics, thereby dramatically changing service interactions (Wirtz *et al.*, 2018). Chatbot service delivery is becoming an increasingly powerful tool for brand marketers seeking to engage customers more efficiently and effectively. Research forecasts that chatbots will be responsible for cost savings of more than US$8bn a year by 2022, up from $20m a year in 2017 (Juniper Research, 2017). As a result, more than 50% of global businesses are either already using chatbots or are planning to do so (Forrester, 2017).

This rapid development is forcing brand managers to consider how chatbots should be designed to emulate human service agents. It is well established in the context of the experience economy (Pine *et al.*, 1999; Schmitt, 1999) that service agents are actors in the broader context of service as theater, serving at the interface between the customer and firm in the creation of experiences (Tuunanen and Cassab, 2011). However, relatively little is known about the impact of chatbots on the customer experience. We contribute to the growing area of digital service research by comparing traditional service agents' service interactions with those of the emerging chatbots. Specifically, we focus on how interactions with service agents and chatbots can be influenced by dynamic service scripts.

A service script is a mechanism by which an organization can manage FSE interactions with customers (Kirsch, 1996). In most cases, service scripts are uniform and controlled, specifying the actions an employee needs to take during a service encounter, including the general rules and protocols to follow at each step of the service process (Walsh *et al.*, 2012). For example, counter employees at McDonald's follow the Six Steps of Window Service: greeting the customer, taking the order, presenting the order, receiving payment, thanking the customer and asking for repeat business. However, some service scripts guide FSE in a more dynamic manner. Employees at Starbucks, for instance, are guided to chat with the customer before taking the order (Nguyen *et al.*, 2014). Such dynamic service scripts could be even more extreme; for instance, they may give FSE guidelines for the style of narrative they should employ, rather than the exact script. In retail, this is commonly seen in settings where FSEs act as guides and focus on educating consumers by providing information about a product, category or lifestyle.

In retail settings, the service interaction and the subsequent script followed are commonly tailored toward education and entertainment (Sands *et al.*, 2015; Sit *et al.*, 2003). However, while these are not the only scripts available to FSEs, they have been shown to be important in driving retail success (Roche, 2018). For instance, at sporting retailer NikeTown, FSEs engage customers within the store with opportunities for entertainment, play and physical engagement in sports of their choice (Peñaloza, 1998). In contrast, FSEs at Apple stores engage customers through education, either at the Genius bar or through temporary in-store events (Graham, 2007). Within each of these retail environments, FSEs deliver dynamic service scripts to enhance the entertaining or educational aspect of customer experiences (Kanter, 2002; Sherry *et al.*, 2001). With this research, we contribute to knowledge by investigating dynamic, rather than uniform, service scripts. Further, unlike past research, which has focused on service scripts from the employee perspective (Tansik and Smith, 1991), we investigate their impact on the consumer. Finally, we extend knowledge by investigating how dynamic service scripts might influence consumers in the context of digital service interactions with a chatbot. In the next section, we present the theoretical background underpinning the current study. In doing so, we develop and present a set of hypotheses and then outline the methodology of our study. Following the presentation of the findings, the paper concludes with a discussion of the theoretical and managerial implications and offers suggestions for future research.

Theoretical background

The evolving nature of service interactions

Service agents are often viewed as an organization's most important asset, with competitive advantage developed through careful recruitment, training and motivation (Jerger and Wirtz, 2017). In fact, high-performing service agents are harder to duplicate than any other corporate resource and are therefore frequently an important source of an organization's competitive advantage (Wirtz and Lovelock, 2016). However, in recent decades, the number of channels and options available for service interactions has dramatically increased (Morgan, 2016). Nowadays, consumers can choose from a variety of service interaction methods including face-to-face, via a call center, service via social media, online chat and, more recently, service interactions via chatbots.

In recent years, chatbots have received increasing attention in terms of both theory and practice (Chung *et al.*, 2018). Nowadays, a diverse range of companies are leveraging advances in technology, AI in particular, to deploy chatbots as virtual mechanisms in the delivery of customer service (Lee *et al.*, 2017; Zhang *et al.*, 2017). Chatbots can assist brands to manage customer relationships, allow more efficient use of customer time and provide better understandings regarding product performance (Mimoun *et al.*, 2017; Zhang *et al.*, 2017). It is estimated that in 2020 up to 85% of all customer interactions will take place without a human agent (Schneider, 2017).

Several important differences exist between FSEs and chatbots in the delivery of customer service. FSEs are difficult to scale, with incremental head count adding significant cost to an organization. In contrast, beyond the development cost, chatbots have close to zero incremental cost, having the added benefit of delivering predictable and homogeneous service interactions, with minimal error and high reliability (Huang and Rust, 2018). However, the homogeneous nature of a chatbot's service delivery can lead to a lack of emotional and social value in service interactions.

Physical distance in service interactions

Service encounters that occur with FSEs or chatbots differ in terms of their physical distance or the proximity of the service agent from the customer (Price *et al.*, 1995). When consumers engage in service interactions, the physical distance with an FSE can be near (i.e. face-to-face) or far (i.e. online); however, interactions with a chatbot are inherently at a distance. Previous research has suggested that the physical distance can influence persuasion. For instance, studies have demonstrated that physical proximity can facilitate attraction (e.g. Kerckhoff, 1974; Segal, 1974). Latané's (1981) theory of social impact also predicts a positive relationship between physical proximity and influence. In social impact theory, immediacy, or closeness in space, is considered to be one of three major determinants of social influence. This relationship can be explained by the fact that proximity increases the perceived likelihood of future interactions; these anticipated future interactions make people more responsive to people who are nearer (Latane *et al.*, 1995).

Close physical distance between FSEs and a customer can enhance involvement, liking, attachment and feelings of familiarity (Mehrabian, 1981; Price *et al.*, 1995; Tan, 1981), while also facilitating perceptions of trust and warmth (Crosby, 1990). Further, close proximity encourages communication (Rafaeli, 1989), the exchange of information and increased interaction (Tan, 1981). In contrast, distance highlights a lack of connection between a consumer and a service provider (Kreilkamp, 1984; Trope *et al.*, 2007) or the feeling of weaker psychological bonds (Hess, 2002). Distance also has an important effect on the manner in which customers process product/service information, which creates opportunities for firms to influence the attributes considered in purchase decision-making (Edwards *et al.*, 2009).

The effect of physical distance on service interactions is driven, in part, by source cues such as physical attractiveness, expertise or speaking style (Price *et al.*, 1995). However, when

interacting with a chatbot, recipients do not have these cues as there are no relevant visual or audio signals (e.g. physical appearance, style of clothing, body language, vocal characteristics and so forth).

The role of service script narratives in service interactions

While typical visual and audio cues are missing from customer–chatbot service interactions, the content of the service interaction itself is a cue that can be used to assess service interactions. In the service literature, the "content" of service interactions is often governed by specific rules of conduct (e.g. Martin and Clark, 1996). Service scripts are one common mechanism by which an organization manages FSE–customer interactions (Kirsch, 1996), often specifying very precisely the actions that FSEs are required to take in particular situations. As such, service scripts create procedures that help FSEs know what to do and in what sequence, in specific situations (Lord and Kernan, 1987).

At one extreme, service scripts are tightly "scripted" (i.e. uniform and controlled) and specify all the actions required of an employee during a service encounter and include the general rules and protocols to follow at each step of the service process (Walsh *et al.*, 2012). For example, as aforementioned, McDonald's counter employees are required to follow the Six Steps of Window Service. Such tightly scripted interactions are intended to facilitate control over service delivery, legitimize organizational actions and provide a basis for evaluating employee performance (Tansik and Smith, 1991). In this way, service scripts are often implemented under the assumption that they ensure a consistent level of service quality as employees are more likely to deliver desired behaviors and outputs (Merchant and van der Stede, 2007).

However, in contrast to tightly scripted interactions, other service scripts can by more dynamic and act as a guide for FSE–customer interactions. For instance, Starbucks employees are guided to engage in brief conversation prior to taking the order (Nguyen *et al.*, 2014). At REI in Seattle, employees have specific roles to play and assist consumers to try, experience and "live" products, acting more as guides than sales agents (Pine and Gilmore, 2011). In these service interactions, the content (cue) of the interaction is more aligned with a service script narrative; that is, the narrative, rather than a tight script, is intended to guide the service agent–customer interactions. In retail, such narratives are commonly employed to encourage FSEs to act as guides and focus on educating consumers about a product, category or lifestyle. Drawing on the metaphor of theater (Goodwin, 1996; Grove and Fisk, 1992; Harris *et al.*, 2003; Schau *et al.*, 2007), we argue that these service script narratives are a means by which FSE and chatbots can be assessed by customers.

Education and entertainment scripts in service interactions

Two commonly employed service script narratives in retail settings are intended to provide education and entertainment (Sands *et al.*, 2015; Sit *et al.*, 2003). In the case of an educational narrative, elements of the employee–customer interaction might encourage customer learning, product exploration or provide information on how products might fit into the consumer's lifestyle. With an entertainment narrative, elements of the employee–customer interaction might encourage playfulness, fun or exploration. Importantly, past researchers have proposed that playfulness can influence the success of human–computer interactions (Starbuck and Webster, 1991; Webster and Martocchio, 1992). Whether for education or entertainment, the service script is reinforced through the content cues delivered in "performing" their role (Goodwin, 1996; Grove and Fisk, 1992).

Past research has shown differences between education and entertainment in retail settings. For instance, education has been shown to play a significant role in creating customer memories and satisfaction, while entertainment can determine customer choice

(Quadri-Felitti and Fiore, 2013; Sands *et al.*, 2009). Employing elements of education or entertainment within the retail setting can be a source of competitive advantage (Sands *et al.*, 2015; Sit *et al.*, 2003), with each narrative delivering value to customers in different ways. In essence, value is derived from education and is cocreated when customers have some prior knowledge about a subject, whereby their knowledge is enhanced or consolidated (Sit and Birch, 2014). Further, value is derived from entertainment when a customer discovers a product for the first time, having little or no prior knowledge or experience (Sit and Birch, 2014).

Consistent with social exchange theory (e.g. Walster *et al.*, 1978), the delivery of education or entertainment service script narratives can be considered as an exchange in which the interaction is enhanced or diminished. Social exchange theory addresses the rules of reciprocity governing the social exchange process (Emerson, 1976), typically transacting social or economic value (Cropanzano and Mitchell, 2005) and subsequently guiding customers' appraisal of the service encounter (Bove *et al.*, 2009). Furthermore, an exchange agent is likely to have a positive or negative affect on the service experience (Gotlieb and Bolton, 2000; Yagil, 2001). As a result, customer perceptions of a service encounter may be influenced by the service script narrative delivered, subsequently influencing consumer responses to the service interaction.

Consumer responses to the service interaction

Service provider interactions are crucial to customer evaluations of service (e.g. Hartline *et al.*, 2000), with consumer emotion and rapport being central to understanding the consumption experience (Mattila and Enz, 2002; Wirtz, *et al.*, 2018). However, in the context of chatbot service interactions, it is difficult to develop rapport and emotional connections with customers. Despite this, in some digital service contexts (i.e. service robots), developers are working to create robots that can mimic emotional responses using facial expressions and body language (Wirtz, *et al.*, 2018). This is important, given the findings that robots that mimic the emotional expression of humans are perceived as more pleasant than those that cannot mimic emotions (Tielman *et al.*, 2014).

While little is known about the benefits and challenges of digitizing service interactions via chatbots, we propose that the content cue service script narrative may be one way by which chatbots could establish rapport and emotional connection with consumers. We expect that chatbots will be able to influence consumer emotion, as research on affect shows that events, persons or objects can elicit emotions that then become the object of the affect (e.g. Schimmack and Derryberry, 2005). In essence, emotions are social rather than isolated, individual processes (Domagalski, 1999). This understanding may counteract the potential disadvantage (i.e. a lack of rapport and emotion) of investing in chatbots for service interactions. Further, such knowledge is important as some customers place a premium on service interactions and strive to build rapport and emotional connection during such interactions (Gremler and Gwinner, 2000).

Conceptual model

The theoretical background provides a foundation for our conceptual model (Figure 1). Specifically, drawing on social impact theory, we expect consumers will vary in their assessment of service interactions with an FSE or chatbot. However, based on the premise of social exchange, we propose that the exchange of resources, via the education or entertainment service script narratives, occurs such that the service script presented (W) moderates the service interaction mode (X) and the mediating variable (*M*). We predict that such appraisal elicits emotion and establishes rapport, which, in turn, influence service (e.g. customer satisfaction) and behavioral outcomes (e.g. purchase intention). With regard to an

educational script, we expect a greater impact when delivered by an FSE because the level of "closeness" in the service interaction enhances involvement, familiarity, trust, information exchange and interaction (Mehrabian, 1981; Price *et al.*, 1995; Rafaeli, 1989; Tan, 1981). Specifically, we hypothesize the following with regard to educational narrative scripts:

H1a. When an educational script is used, FSEs will drive higher purchase intention than chatbots. This effect will be fully mediated by emotion.

H1b. When an educational script is used, FSEs will drive higher purchase intention than chatbots. This effect will be fully mediated by rapport.

H2a. When an educational script is used, FSEs will drive higher satisfaction than chatbots. This effect will be fully mediated by emotion.

H2b. When an educational script is used, FSEs will drive higher satisfaction than chatbots. This effect will be fully mediated by rapport.

In contrast, since past research has proposed that playfulness can influence the success of human–computer interactions (Starbuck and Webster, 1991; Webster and Martocchio, 1992), we propose that entertaining narrative scripts will have an equal impact on positive outcomes whether they are delivered by an FSE or a chatbot. Specifically, we hypothesize the following with regard to entertaining narrative scripts:

H3a. When an entertaining script is used, there will be no difference in customer purchase intention when interacting with FSEs or chatbots.

H3b. When an entertaining script is used, there will be no difference in customer satisfaction when interacting with FSEs or chatbots.

Method

Measurement and scenarios

All items were drawn from existing measurement scales. The service experience outcomes included measures of customer satisfaction and purchase intention. Customer satisfaction was measured with a three-item scale adapted from Bettencourt (1997), and purchase intention was measured with a four-item scale (Dodds *et al.*, 1991), with items adapted to the service setting. The mediator variables included emotional response and rapport. Emotional response, or people's mental state(s) of readiness, arises from cognitive appraisals of an event (Bagozzi *et al.*, 1999) and was measured with a scale developed by Vázquez-Casielles *et al.* (2007) assessing three negative emotion items: "angry," "offended" and "disappointed." Rapport, or the extent to which customers are likely to perceive the service interaction as enjoyable, is measured with four items adapted from Gremler and Gwinner (2000). All items were measured on seven-point Likert scales (1 = strongly disagree and 7 = strongly agree)

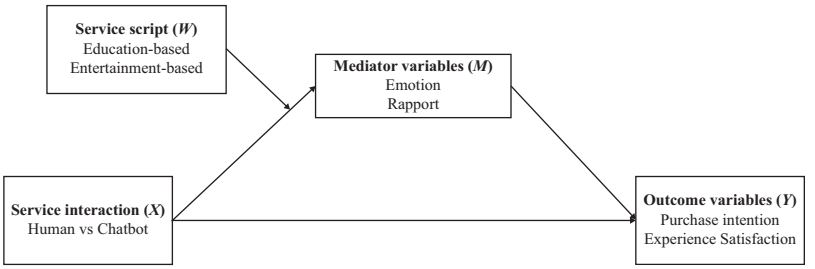

Figure 1.
Conceptual model

and displayed adequate construct reliability and internal consistency. A complete list of variables, factor loadings and scale reliabilities is provided in Appendix, with internal reliability tests demonstrating strong Cronbach's (1951) alphas (ranging from 0.89 to 0.96).

In addition, measures were employed to assess the scenarios presented to respondents. To test the manipulation of the service script narratives, respondents were asked to assess three items relating to education from the encounter ("allowed me to learn a lot," "educates customers" and "offers opportunities for education") and entertainment ("was entertaining," "goal is not just selling products, but to provide entertainment" and "allowed me to have fun"). The scenario manipulation was successful, with a significant difference between the script narratives (education script $M_{edu} = 5.65$, s.d. = 1.10; $M_{ent} = 4.51$, s.d. = 1.25 [$F(1, 401) = 34.74$, $p < 0.001$]) and entertainment script ($M_{edu} = 3.85$, s.d. = 1.41; $M_{ent} = 5.36$, s.d. = 1.05 [$F(1, 401) = 107.50$, $p < 0.001$]) in the expected directions.

Finally, as prior experience with a chatbot was not a qualifier employed in our research, it was deemed necessary to assess respondents' ability to comprehend the scenarios presented. We asked respondents to assess the scenario in terms of their ability to imagine themselves in it (1 = not at all difficult; 7 = very difficult), how realistic the scenario seemed (1 = not at all realistic; 7 = very realistic) and how relatable the scenario was (1 = not at all relatable; 7 = very relatable). Overall, very few respondents found the scenarios difficult to imagine ($n = 12$, 2.9%), unrealistic ($n = 14$, 3.5%) or not relatable ($n = 14$, 3.5%). Further analysis was conducted to test mean differences between those presented with the FSE scenario ($n = 198$) and those with the chatbot scenario ($n = 206$). As expected, there were differences between the scenarios [ability to imagine; sig < 0.01; realism: sig < 0.05; relatability: sig < 0.001], with the FSE experience deemed easier to imagine ($M = 1.72$, s.d. = 1.30), more realistic ($M = 1.72$, s.d. = 1.30) and more relatable ($M = 1.72$, s.d. = 1.30). However, while the mean scores for the chatbot scenario are significantly different from those for the FSE scenario, they still rate very well in terms of ability to imagine ($M = 1.72$, s.d. = 1.30), realism ($M = 1.72$, s.d. = 1.30) and relatability ($M = 1.72$, s.d. = 1.30).

Data collection procedure

Amazon Mechanical Turk (MTurk) was employed to collect data via an online questionnaire. MTurk provides an online platform for recruiting participants that are more demographically diverse than those obtained via student samples or online survey panels, while providing comparable levels of data quality (Buhrmester *et al.*, 2011; Paolacci *et al.*, 2010). About 404 adults (61 percent male, = $M_{age} = 36$ years; s.$d = 9.82$) participated in the study and were randomly allocated to experimental conditions.

A 2 (service agent vs chatbot) × 2 (education script vs entertainment script) between-subjects experiment was conducted. Participants were asked to read a scenario involving an encounter with a service agent or chatbot. The specific service script presented during the service encounter varied in terms of being either an educational script or an entertaining script (scenario text presented in Table 1). To increase the salience of the respective scenarios, participants were asked to write an account comprising five or more sentences where they imagined themselves in a similar situation and reflecting on the service scenario (Kaltcheva and Weitz, 2006), along with the questions and answers they would expect in such a service encounter. Participants responded to questions regarding their perceptions of the service encounter and their future intentions before concluding the study with questions to test the scenario manipulation.

Results

To test the conceptual model represented in Figure 1, PROCESS (Hayes, 2013) was conducted in IBM SPSS. Model 7 of Hayes' PROCESS macro with 5,000 bootstrapped samples was used

Scenario	Scenario text
Chatbot service interaction with an education script	You are having technical difficulties with your laptop and realize that you need a new one. There are several new models available and you decide it is time to learn about the range of new laptops available and their features You start by looking at an online electronics store You are greeted by a chatbot. "Hi, my name is Tony, how can I help you today?" Tony the chatbot offers to show you a range of products and is very informative. You have a detailed conversation where your questions are answered in a highly educational way You get the feeling that the chatbot's role is based on providing an educational experience to you
Chatbot service interaction with an entertainment script	You are having technical difficulties with your laptop and realize that you need a new one. There are several new models available and you decide it is time to learn about the range of new laptops available and their features You start by looking at an online electronics store You are greeted by a chatbot. "Hi, my name is Tony, how can I help you today?" Tony the chatbot offers to show you a range of products and is very entertaining. You have a detailed conversation where your questions are answered in a highly entertaining way You get the feeling that the chatbot's role is based on providing an entertaining experience to you
FSE service interaction with an education script	You are having technical difficulties with your laptop and realize that you need a new one. There are several new models available and you decide it is time to learn about the range of new laptops available and their features You start by looking at an online electronics store You are greeted by a sales associate. "Hi, my name is Tony, how can I help you today?" Tony the sales associate offers to show you a range of products and is very informative. You have a detailed conversation where your questions are answered in a highly educational way You get the feeling that the sales associate's role is based on providing an educational experience to you
FSE service interaction with an entertainment script	You are having technical difficulties with your laptop and realize that you need a new one. There are several new models available and you decide it is time to learn about the range of new laptops available and their features You start by looking at an online electronics store You are greeted by a sales associate. "Hi, my name is Tony, how can I help you today?" Tony the sales associate offers to show you a range of products and is very entertaining. You have a detailed conversation where your questions are answered in a highly entertaining way You get the feeling that the sales associate's role is based on providing an entertaining experience to you

Table 1.
Scenario descriptions for motivational orientation and narrative

to test the hypotheses. Table 2 presents descriptive statistics for the scenario conditions, with the means plotted in Figure 2.

Effect of service interaction and service script

As an initial test of effects, a 2 (service interaction: FSE, chatbot) × 2 (service script: education, entertainment) analysis of variance (ANOVA) was conducted. A significant

interaction effect was found for service interaction on rapport ($F = 17.01$, $p < 0.01$). Specifically, a service interaction with an FSE ($M = 5.77$; s.d. = 1.07) enhances rapport compared to a service interaction with a chatbot ($M = 5.18$, s.d. = 1.23). We also found a marginally significant effect for satisfaction ($F = 3.51$, $p < 0.10$), with an FSE service interaction ($M = 5.51$; s.d. = 1.18) enhancing satisfaction compared to a service interaction with a chatbot ($M = 5.22$, s.d. = 1.24). For service script, a significant interaction effect is found for emotion ($F = 4.35$, $p < 0.05$). Specifically, an entertaining service script ($M = 1.80$; s.d. = 1.06) enhances (negative) emotion compared to an educational service script ($M = 1.55$, s.d. = 0.88). We also find a marginally significant effect for rapport ($F = 3.56$, $p < 0.10$), with an entertaining service script ($M = 5.59$; s.d. = 1.15) enhancing rapport compared to an educational service script ($M = 5.32$, s.d. = 1.23). The PROCESS moderated mediation results are presented in Table 3.

PROCESS moderated mediation results

In terms of purchase intention, when an educational script was employed by an FSE, higher purchase intention resulted compared to when a chatbot facilitated the service interaction. This effect is fully mediated (direct effect: $b = -0.13$, SE = 0.13, 95% confidence interval [CI] = [0.12, −0.37]) by emotion (indirect effect: $b = -0.16$, SE = 0.07, 95% confidence interval

Service interaction	Service script	*N*	Purchase intention Mean (s.d.)	Satisfaction mean (s.d.)	Emotion mean (s.d.)	Rapport mean (s.d.)
FSE	Education	60	5.49 (1.46)	5.61 (0.77)	1.33 (0.58)	5.82 (0.81)
	Entertainment	64	5.24 (1.47)	5.42 (1.48)	1.83 (1.14)	5.73 (1.27)
	Overall	124	5.36 (1.46)	5.51 (1.18)	1.59 (0.94)	5.77 (1.07)
Chatbot	Education	66	5.12 (1.30)	5.25 (1.32)	1.76 (1.05)	4.87 (1.38)
	Entertainment	72	5.05 (1.15)	5.20 (1.17)	1.78 (0.99)	5.46 (1.01)
	Overall	138	5.09 (1.22)	5.22 (1.24)	1.77 (1.01)	5.18 (1.23)

Table 2. Scenario condition summary statistics

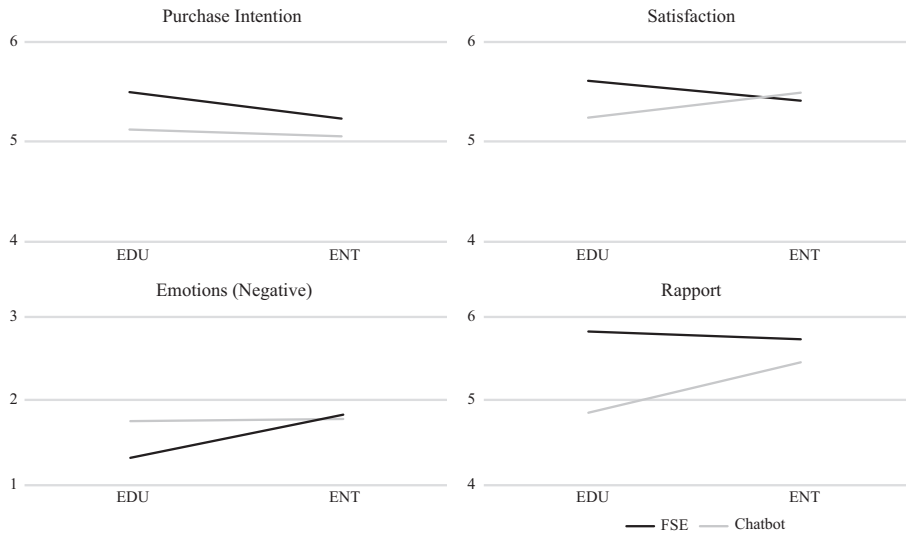

Figure 2. Marginal means by service interaction and service script

Table 3.
PROCESS results

Effects	B (SE)	Lower 95% BCBCI	Upper 95% BCBCI
Direct effects			
Human versus Chatbot → Purchase intention	−0.13 (0.13)	0.12	−0.37
Human versus Chatbot → Experience satisfaction	−0.15 (0.10)	0.05	−0.34
Indirect effects			
Human versus Chatbot → Negative emotion → Purchase intention			
Education script	0.16 (0.07)	0.34	0.04
Entertainment script	0.02 (0.07)	0.15	−0.14
Human versus Chatbot → Rapport → Purchase intention			
Education script	0.53 (0.13)	0.78	0.29
Entertainment script	0.15 (0.11)	0.37	−0.07
Human versus Chatbot → Negative emotion → Experience satisfaction			
Education script	0.13 (0.06)	0.25	0.03
Entertainment script	0.01 (0.05)	0.15	−0.14
Human versus Chatbot → Rapport → Experience satisfaction			
Education script	0.60 (0.13)	0.88	0.35
Entertainment script	0.17 (0.13)	0.41	−0.09

Note(s): Unstandardized regression coefficients are reported

[CI] = [0.34, 0.04]) and rapport (indirect effect: $b = 0.53$, SE = 0.13, 95% confidence interval [CI] = [0.78, 0.29]). Together, these results provide support for both H1a and H1b.

In terms of satisfaction, when an educational script was employed by an FSE, higher purchase intention resulted compared to when a chatbot facilitated the interaction. This effect was fully mediated (direct effect: $b = -0.15$, SE = 0.10, 95% confidence interval [CI] = [0.05, −0.34]) by emotion (indirect effect: $b = 0.13$, SE = 0.06, 95% confidence interval [CI] = [0.25, 0.03]) and rapport (indirect effect: $b = 0.60$, SE = 0.13, 95% confidence interval [CI] = [0.88, 0.35]). Together, these results provide support for both H2a and H2b.

In terms of purchase intention, when an entertaining script was used, there was no difference in purchase intention between an FSE and a chatbot in terms of direct (direct effect: $b = -0.13$, SE = 0.13, 95% confidence interval [CI] = [0.12, −37]) and indirect effects through emotion (indirect effect: $b = 0.02$, SE = 0.07, 95% confidence interval [CI] = [0.15, −0.14]) and rapport (indirect effect: $b = 0.15$, SE = 0.11, 95% confidence interval [CI] = [0.37, −0.07]). These results provide support for H3a. Further, the index of moderated mediation was significant (index = 0.384, SE = 0.166, 95%CI [0.062, 0.723]) for purchase intention.

In terms of satisfaction, when an entertaining script was used, there was no difference in satisfaction between an FSE and a chatbot in terms of both direct (direct effect: $b = -0.15$, SE = 0.10, 95% confidence interval [CI] = [0.05, −0.34]) and indirect effects through emotion (indirect effect: $b = 0.01$, SE = 0.05, 95% confidence interval [CI] = [0.15, −0.14]) and rapport (indirect effect: $b = 0.17$, SE = 0.13, 95% confidence interval [CI] = [0.41, −0.09]). These results provide support for H3b. The index of moderated mediation was not significant for satisfaction.

Discussion

For physical retailers, service agents play an especially important role in that their interactions with customers can be leveraged as a distinct form of competitive advantage. However, as digital channels expand, service interactions have increasingly becoming digital, with chatbots being one manifestation of this trend. Our results support the notion that service script narratives can be employed as a means to better align with, and ultimately better serve, individual customers.

As expected, results indicate that when employing an educational service script, narrative has a significant positive effect for FSEs (compared to chatbots) in terms of both satisfaction and purchase intention. This effect is fully mediated by emotion and rapport, showing that bonds are developed through the close proximity to a human service agent, and the subsequent ability to develop emotion and rapport influences service outcomes. However, this result is present only when an educational service script narrative is employed. In contrast, when an entertaining script is employed, there are no differences between a service agent and chatbot with regard to outcomes. This finding supports past research, which has shown that entertainment, or playfulness, can influence the success of human–computer interactions (Starbuck and Webster, 1991; Webster and Martocchio, 1992). Hence, for brands considering the deployment of chatbots in service interactions, our results suggest that the chatbot should engage with customers in an entertaining, rather than educational, manner. Indeed, our results would suggest that consumers who may be seeking an education-based interaction are best served in-store or by a human customer service agent via another service channel.

Theoretical contributions

The present study makes important theoretical contributions. First, this research provides a theoretical extension to past research with regard to service scripts and shows the enhanced value that educational scripts can play in the social exchange between service agents and customers (Walster *et al.*, 1978). Although the conceptualization of service scripts is based on the well-established

psychological construct of cognitive scripts (Abelson, 1981), to date, limited empirical research has investigated the role that service scripts play in customer service exchanges.

To the best of our knowledge, this is the first study to investigate service scripts and their role in digital service delivery. In this study, we evaluate the extent to which existing theories of physical distance serve as guidelines for FSE–customer and chatbot–customer interactions. Our results support the notion that physical distance is important in service interactions, but that the potential negative effects of physical distance can be mitigated when employing specific narrative cues based on entertainment, rather than education. In essence, this research suggests that the specific narrative script employed in service interactions depends on whether it is being delivered by a service agent or a chatbot.

Second, this research extends previous work by finding that service scripts give employees more leeway when adapting their service delivery to best serve customer needs (Chebat and Kollias, 2000; Schau *et al.*, 2007). In this way, allowing FSEs to use adaptive service scripts may be one way of giving service agents a sense of empowerment and a way whereby managers can consider how chatbots engage with customers. Specifically, our findings suggest that the delivery of education should be facilitated through human service agents, rather than chatbots. To this end, firms should invest in training service agents to provide education-based information for service encounters. We find that when chatbots are used to deliver education, there is a significant negative impact on purchase intention and satisfaction.

Managerial implications

From a practical standpoint, our results provide guidance to managers on how to strategically develop the way in which chatbot interactions can be developed. With the growing demand for the customization of service delivery to meet individual customer needs (Collier *et al.*, 2018), chatbots provide a means of delivering customization at scale. This study shows that, in order to implement this personalization strategy, the content or narrative script employed in a service interaction can define the service encounter. For managers, this suggests that the script narrative (educational or entertaining) employed in service delivery is an important consideration. Importantly, value is not something necessarily embedded in products alone (Chase and Apte, 2007; Holbrook, 1994; Tuunanen and Cassab, 2011), but can be embedded within the offer of services delivered by the agent (human or digital) engaged in the service interaction.

Further, managers should be encouraged to draw on learnings from the theatrical domain in the development and training of service agents and chatbots, as well as the delivery of specific education or entertainment scripts. Specifically, we encourage service managers to consider the theatrical elements of a dramatic script, defined as a blueprint for theatrical production (Aston and Savona, 2013) and an "interior map" (Schechner, 1988). This is important because the blueprint of a script contains specific information that a theatrical team decodes during the rehearsal process, acting as a guiding narrative rather than a prescriptive text. For service agents, the broad dramatic script should contain instructions for the creation of a complex and holistic interaction with customers, encoding the intended narrative. Such a theatrical code distinguishes a dramatic script from the functional script that is often employed in service settings. In broad terms, a dramatic script should guide FSEs on how to relate to the customers involved in the experience (what they say and do), the physical environment in which the experience takes place (including atmospherics) and the narrative context (the story) of the experience.

Research limitations

As with any study, this research has several limitations. First, it investigates a single service setting, and as such the boundary conditions of educational and entertaining scripts for service

agent and chatbot interactions are unknown. Perhaps in environments that are more intuitively education-focused (i.e. DIY stores), the service script narratives may have significant effects. Further, it is likely that individual consumer characteristics will also play an important role depending on whether a consumer is task- or recreation-oriented during a specific shopping trip. This study investigates education and entertainment as distinct service script narratives, considering learning and fun as distinct; however, in reality, these may blend together. Edutainment consumption, which refers to an experience containing both entertainment and educational content with which consumers interact (Addis, 2005), combines education with entertainment and is commonly employed in retail settings. Very little of the current literature directly examines edutainment in the consumption context (Addis, 2005; Balloffet *et al.*, 2014; Chan, 2019), prompting the need for further studies. This research shows that not all service scripts are created equal, thereby indicating a promising avenue for future research that investigates different types of service scripts and narrative themes, as well as their impact on employees and customers. Finally, we chose to focus on negative emotions in our study. However, a case can be made for positive and negative emotions elicited by interactions with chatbots. Hence, we would encourage further exploration of the role of emotion.

Future research opportunities

In terms of future research, it would be worthwhile to examine the boundary conditions that give rise to the benefits of entertaining or educational service script narratives. It might also be of interest to study individual employee traits that improve or hinder a service agent's ability to deliver adaptive service scripts and adjust or tailor narratives to individual customers. It would be fruitful to investigate how customer relationships can be enhanced when service script narratives are aligned with, or tailored to, a customer's problem (Aggarwal *et al.*, 2005). Ultimately, service agents can adapt their service delivery to a customer in a number of ways, and as technology improves, chatbots will be able to have more intelligent social dialogues (Godey *et al.*, 2016), even adapting in order to engage in particular conversation narratives (education or entertainment).

With the rapid rate of technological development, chatbots are becoming increasingly more "human" in their interactions. In New Zealand, AI start-up Soul Machines have developed a new service bot known as "Ava" (Dorfer, 2018). Ava is an evolved humanized chatbot, reflecting and mimicking human behavior. Modeled on the facial scan and voice recordings of New Zealand actress, Shushila Takao, Ava can even recognize nuances in a consumer's tone of voice (typed or spoken) to better understand and respond appropriately to the customer's mood. It is likely that Ava, and other such chatbots, may be able to generate rapport and emotional connection with customers. Future research is called for in the domain of these rapidly evolving humanoid chatbots.

Finally, our studies represent a static model of service performance; that is, the findings are related to only a single point in time; hence, longitudinal research could confirm and extend our findings. Notwithstanding these limitations, our study makes a valuable contribution to service research by finding that it is important to consider the specific narrative script applied when deploying chatbots for service interactions.

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Appendix

Attribute	Factor loading
Satisfaction $\alpha = 0.94$	
I would truly enjoy interacting with this service agent	0.91
I would be satisfied with the service interaction	0.94
The choice to interact with this service agent would be a good one	0.97
Purchase intention $\alpha = 0.96$	
If I were going to purchase a laptop, I would consider interacting with this service agent	0.93
If I were shopping for a laptop, the likelihood I would purchase from this service agent is high	0.94
My willingness to buy from this service agent would be high if I were shopping for a laptop	0.95
The probability I would consider buying from this service agent is high	0.96
(Negative) emotions$\alpha = 0.89$	
I would feel *offended* after this service interaction	0.92
I would feel *disappointed* after this service interaction	0.90
I would feel *angry* after this service interaction	0.92
Rapport $\alpha = 0.91$	
I would have enjoyed interacting with this service agent	0.93
This service agent would create a feeling of "warmth" during the service interaction	0.83
This service agent relates well to me as a customer	0.91
I would have felt comfortable interacting with this service agent	0.90

Note(s): Sample size = 262; Satisfaction; adapted from Bettencourt (1997); Purchase intention; adapted from Dodds *et al.* (1991); (Negative) emotional response; adapted from Vázquez-Casielles *et al.* (2007); Rapport; adapted from Gremler and Gwinner (2000); All items measured on seven-point Likert scales (1 = strongly disagree; 7 = strongly agree)

Table A1. Items and factor loadings

Corresponding author
Sean Sands can be contacted at: ssands@swin.edu.au