Too close for comfort? The impact of salesperson-customer proximity on consumers' purchase behavior

Tobias Otterbring1,2 | Freeman Wu3 | Per Kristensson4,5

1Department of Management, School of Business and Law, University of Agder, Kristiansand, Norway
2Institute of Retail Economics, Stockholm, Sweden
3Department of Marketing, Owen Graduate School of Management, Vanderbilt University, Nashville, Tennessee, USA
4Department of Social and Psychological Studies, CTF, Service Research Center, Karlstad University, Karlstad, Sweden
5Centre for Relationship Marketing and Service Management, Hanken School of Economics, Helsinki, Finland

Abstract
Across a series of lab and field studies, with a total sample of over 1200 participants, we investigate how the physical proximity between salespeople and customers can impact store loyalty, purchase intentions, and actual spending. An initial survey among a representative sample of retail salespeople reveals that they associate close physical proximity between employees and customers with positive consumer outcomes, an intuition that dovetails with prior research documenting the positive influence of such proximity on purchase intentions, particularly in nonexpressive consumption contexts. Contrary to this work, we demonstrate, across four studies in which proximity was both measured and manipulated, that store loyalty, purchase intentions, and actual spending behavior are negatively impacted when consumers encounter a salesperson who is standing close by (vs. farther away), particularly in expressive consumption contexts. Psychological discomfort mediates this effect, such that consumers experience greater discomfort when a salesperson is standing close by, which in turn decreases spending. Importantly, this phenomenon is moderated by identity relevance, such that the negative influence of salesperson-customer proximity specifically emerges when consumers think about products in terms of their ability to express their identities. These findings carry important implications for retailers operating in expressive consumption contexts.

KEYWORDS
discomfort, ecological validity, field experiment, identity relevance, personal space, proxemics, proximity

Some thirty inches from my nose, the frontier of my person goes. W.H. Auden

Conventional wisdom suggests that salespeople should maintain close physical proximity to customers to demonstrate their attentiveness, offer personal service, and close a sale. In fact, according to a professional guide on personal selling, effective selling often involves sticking to one’s customers “like glue” (Smith & Seymour, 2014, p. 194). However, will this retail strategy always be associated with positive consumer outcomes? In the present research, we systematically examine the downstream effects of salesperson-customer proximity in interpersonal retail settings. In a pilot study (cf. Bellezza et al., 2014; Otterbring, 2020), using a representative sample of 37 actual salespeople at a chain of
spending goods stores, we assessed beliefs regarding the benefits of maintaining close physical proximity to one’s customers. Specifically, the salespeople were asked to indicate their agreement with the statement: “Good consumer contact is characterized by proximity to the customer” (1 = strongly disagree; 7 = strongly agree). A one-sample t test revealed that their ratings were significantly above the midpoint of 4.00 (M = 5.30; t(36) = 6.58, p < 0.001), indicating that salespeople intuit that greater proximity to consumers is desirable, even when it does not necessarily involve verbal interactions.¹ This belief seems reasonable considering recent research revealing the positive impact of an employee’s mere presence on consumer affect, product evaluations, and purchase intentions (Otterbring & Lu, 2018; Söderlund, 2016). In fact, Esmark and Noble (2018) recently found that greater physical proximity between salespeople and customers can enhance feelings of acceptance that in turn increases purchase intentions. Taken together, prior research suggests that employees’ physical proximity to customers should produce favorable consumer responses (e.g., Esmark & Noble, 2018; Jacob & Guéguen, 2012). But is this really the whole story? Are there situations where greater physical proximity could create feelings of discomfort that repel customers? In the current research, we measure and manipulate salesperson-customer proximity in both field and lab settings to investigate conditions under which such proximity backfires and leads to negative consumer outcomes.

Our work is the first to document the financial consequences of salesperson-customer proximity in an actual retail setting. Specifically, our key findings—which greater physical proximity significantly decreases actual spending in expressive consumption contexts—diverges from previous work, which has found that it can increase consumers’ purchase intentions, particularly when the product is framed as less expressive (Esmark & Noble, 2018). We believe this discrepancy arises due to the type of products being examined (i.e., expressive vs. nonexpressive), and by extension, the degree to which identity relevance has been made salient. As such, we aim to build on and extend Esmark and Noble (2018) by examining when and how physical proximity between salespeople and customers negatively impacts consumer responses in the context of expressive consumption.

Specifically, while Esmark and Noble (2018) found preliminary evidence that greater proximity can produce negative consumer responses in the context of expressive products, their focus was on nonexpressive products. Further, the expressive product that was used in Studies 1 and 2 (i.e., nail polish) scored significantly below the scale-midpoint of 4.00 on expressiveness (M = 2.65, p = 493), revealing that this product was not considered particularly expressive (the products used in Studies 3–4 also received expressiveness ratings below the midpoint of 4.00). These findings, combined with the fact that negative reactions to proximity did not consistently emerge in Esmark and Noble (2018), suggest that the potential downsides of salesperson proximity in expressive consumption contexts remain inconclusive.²

In what follows, we examine when and how greater proximity between a salesperson and a customer elicits negative responses. In doing so, we pinpoint the theoretical mechanism by showing that psychological discomfort underlies the relationship between salesperson proximity and actual consumer spending, while identifying important boundaries of this phenomenon. More precisely, we find that the negative impact of salesperson-customer proximity on discomfort and consumer responses specifically emerges when consumers think about products in terms of their ability to express their identities, but not when the products’ performance and functionality are in focus. As such, our conceptualization advances a more nuanced understanding of when and how the physical proximity between employees and customers can influence consumers in the marketplace.

1An anonymous reviewer raised concerns about the inferences that could be drawn from the pilot study, given the proximity measure did not explicitly reference physical proximity. As such, these results should be interpreted with appropriate caution.

²We contend that additional aspects of the studies conducted by Esmark and Noble (2018) may have contributed to tentative findings regarding the negative impact of salesperson-customer proximity. For example, study 1 lacked a manipulation check for physical proximity, while the remaining three studies did not appear to isolate the effect of physical proximity from that of physical presence in the far salesperson condition: “As you continue looking for your item, you check and are still alone in the area” (Esmark & Noble, 2018, p. 484). Our research aims to reconcile these mixed findings in the context of expressive consumption.

1 | CONCEPTUAL BACKGROUND

Past research has documented the positive impact of physical proximity on various interpersonal outcomes (e.g., Back et al., 2008; Preciado et al., 2011). For example, Patterson and Sechrest (1970) found that strangers are perceived to be friendlier when they are seated closer to the target, while others found that proximity can generate favorable social impressions (Fay & Maner, 2012; Uzman & Semin, 2009; Wang & Yao, 2016). In fact, such proximity can even encourage people to part with their own money; passersby are more likely to comply with a request for spare change under conditions of greater proximity (Ernest & Cooper, 1974), and restaurant patrons tip more frequently and generously when the server is standing close by while taking their order (Jacob & Guéguen, 2012). Perhaps most central to the current investigation, Esmark and Noble (2018) demonstrated that physical proximity to a salesperson can prompt higher purchase intentions, an effect driven by feelings of acceptance. In short, prior work suggests that greater proximity between customers and salespeople should promote positive consumer responses, consistent with our pilot study examining salespeople’s intuitions.

Importantly, it is worth noting that the increased purchase intentions reported in Esmark and Noble (2018) specifically pertained to products that are more utilitarian and relatively nonexpressive, such as personal hygiene products and everyday groceries. Yet, people buy and consume products not just for functional purposes but also for more symbolic reasons like identity creation and expression (Belk, 1988; Shavitt et al., 2009; Thorbjørnsen et al., 2007). Specifically, people regularly seek out products and brands that.
enable them to express who they are (Ferraro et al., 2011; White & Dahl, 2007), and certain products, such as clothing and cars, are particularly conducive to signaling one’s identity (Berger & Heath, 2007; Chan et al., 2012; Guiry et al., 2006). Notably, salespeople typically play an important role in promoting such products to consumers (Otterbring et al., 2018).

In the current research, we contend that when products are more central to and reflective of one’s identity, which is typically the case in expressive consumption contexts, people will be more prone to self-presentation concerns (Leary & Kowalski, 1990; Schlenker, 1980). Consequently, these concerns should be particularly pronounced when a salesperson is standing close by and could potentially observe and evaluate customers’ behavior (Argo et al., 2005; Jiang et al., 2013). Indeed, when customers are motivated to express their own identities, they typically distance themselves from other social entities to assert their distinctiveness (Berger & Heath, 2007; Chan et al., 2012; Griskevicius et al., 2006, 2009; Xu et al., 2012). Thus, we build on and extend Esmark and Noble (2018) by examining when and how physical proximity between salespeople and customers could negatively impact consumer responses in the context of expressive consumption (e.g., clothing and apparel; Berger & Ward, 2010).

Further, while Esmark and Noble (2018) demonstrated that proximity can increase consumers’ feelings of acceptance, it is also worth noting that their effects were primarily observed among individuals who considered retail employees part of their in-group and placed greater importance on being a part of this in-group. However, a large body of research has shown that consumers are often wary of salespeople’s ulterior persuasion motives and view them as separate social entities with different underlying goals (Campbell & Kirmani, 2000; Dahl et al., 2012; Friestad & Wright, 1994; Main et al., 2007). In fact, the mere perception of being watched by employees can reduce perceptions of privacy, with negative downstream consequences for patronage intentions (Esmark et al., 2017) and customer satisfaction (Esmark Jones et al., 2020), suggesting that interactions with salespeople are not always positive.

Additionally, work on spatial invasion reveals that the encroachment of personal space can generate feelings of discomfort (Altman, 1975; Luck & Benkenstein, 2015; Smith & Knowles, 1979), especially when the physical distance between two individuals is around 3 feet (≈85–100 cm) and below (Kroczek et al., 2020; Thompson et al., 1979). Under these circumstances, further invasions of personal space, even by only half a foot (15 cm), evoke high levels of discomfort (Welsch et al., 2019). Instead, people tend to prefer distances of at least 6–8 feet (=1.8–2.4 m) for dyadic interactions with strangers, a preference that characterizes most non-contact cultures like North America and Northern Europe, where people generally express a greater desire for personal space (Evans & Howard, 1973; Hall, 1966; Kroczek et al., 2020; Thompson et al., 1979; but see Sorokowska et al., 2017).

Taken together, we predict that in the context of expressive consumption, greater salesperson-customer proximity will produce feelings of psychological discomfort, which in turn will reduce store loyalty, purchase intentions, and actual spending. Indeed, space intrusions can be perceived as a self-threat, which can induce discomfort and carry downstream consequences for consumption (Saenger et al., 2020; Thomas et al., 2017). Importantly, we predict that the negative impact of salesperson proximity will only emerge when identity relevance is salient. As such, we posit that when a salesperson is standing physically closer to a customer in a more expressive consumption context, such space violations will generate greater psychological discomfort, which in turn will lead to negative consumer responses, but only when consumers are thinking about products in terms of their ability to signal their identities (Berger & Heath, 2007). More formally:

H1: Greater (vs. lower) salesperson-customer proximity will have a negative impact on store loyalty, consumer spending, and purchase intentions.

H2: The negative impact of salesperson-customer proximity on consumer responses (H1) will be mediated by psychological discomfort.

H3: The impact of salesperson-customer proximity on discomfort and consumer responses will be moderated by identity relevance, such that these negative effects will only emerge when consumers think about products in terms of their ability to express their identities, but not when they think about products in terms of their performance and functionality.

We test these hypotheses in a series of field and lab studies across diverse samples including actual retail shoppers, online panelists, and undergraduate participants. Figure 1 depicts our conceptual model.

**FIGURE 1** Conceptual Model.

H1: Greater (vs. lower) salesperson-customer proximity will have a negative impact on store loyalty, consumer spending, and purchase intentions.

H2: The negative impact of salesperson-customer proximity on consumer responses (H1) will be mediated by psychological discomfort.

H3: The impact of salesperson-customer proximity on discomfort and consumer responses will be moderated by identity relevance, such that these negative effects will only emerge when consumers think about products in terms of their ability to express their identities, but not when they think about products in terms of their performance and functionality.

We test these hypotheses in a series of field and lab studies across diverse samples including actual retail shoppers, online panelists, and undergraduate participants. Figure 1 depicts our conceptual model.
2 | STUDY 1: MEASURED PROXIMITY IN THE FIELD

Study 1, which was conducted at a large sporting goods store in a mid-sized Northern European city, provides initial correlational evidence for our predictions by focusing on customers who interacted with a salesperson before checking out. A total of 183 customers (59% female; median age = 45) fulfilled this criterion and were included in the study. Notably, the store sells high-end sporting goods, thereby lending itself to a more expressive consumption context.3

Customers were approached just before leaving the store and were asked if they had any contact with store personnel aside from the cashier. Those who qualified were invited to complete a brief survey that assessed store loyalty and a set of proximity items associated with psychological discomfort. Store loyalty was measured using two items representing customers’ stated likelihood of returning to the store and making a future purchase in the store (both anchored at 1 = very unlikely, 7 = very likely), which were averaged to form a composite store loyalty index (r = 0.95). Salesperson-customer proximity was measured using five items (adapted from Aiello et al., 1979; Kaitz et al., 2004). These items captured the extent to which the salesperson’s proximity made customers feel uncomfortable (all anchored at 1 = strongly disagree, 7 = strongly agree): (1) The salesperson’s physical proximity to me prevented us from having a good dialogue, (2) The distance between me and the salesperson felt too close, (3) It felt like the salesperson intruded in my physical comfort zone, (4) The salesperson stood so close that I felt uncomfortable, and (5) It was impolite of the salesperson to stand so close to me during our interaction, which were averaged to create an index capturing customers’ negative perceptions of physical proximity (α = 0.81). Note that items 1 and 5 referred to the interaction between the salesperson and the customer, such that all customers, including solo shoppers, could meaningfully respond to these measures. For exploratory purposes, we also assessed the shoppers’ evaluations of the retail staff (i.e., their attitudes towards the employees working in the store that particular day) using three semantic differential items on 7-point scales (bad/good, negative/positive, and unfavorable/favorable), which were averaged to create a salespeople evaluations index (α = 0.94).

While previous research found that women tend to react more negatively to physical space violations compared to men (e.g., Ahmed, 1979; Fisher & Byrne, 1975; Hewitt & Henley, 1987), we did not find any systematic gender differences in this or any of our subsequent studies (see Web Appendix for details).

2.1 | Results and discussion

To investigate whether customers’ negative perceptions of physical proximity, and the ensuing feelings of discomfort, correlated with our focal dependent measures, we conducted two bivariate correlation analyses, consistent with the analytic approach advocated by Griskevicius et al. (2012).

Results revealed significant negative relationships between proximity perceptions and both these key customer outcomes. First, providing preliminary correlational support for H1, customers’ negative perceptions of physical proximity were significantly correlated with their store loyalty ratings (r = −0.17, p = 0.019), such that consumers who perceived that the salesperson was standing close-by expressed lower store loyalty. Second, customers’ negative perceptions of physical proximity correlated with evaluations of the retail staff (r = −0.15, p = 0.045), such that consumers who perceived that the salesperson was standing close-by evaluated the store’s employees more negatively.

These findings suggest that customers and salespeople hold markedly different beliefs about the optimal amount of personal space that shoppers should be provided in the retail environment. While our intuition-based survey revealed that salespeople thought that it would be a good idea to stand close to their customers, consumers responded more negatively to such behaviors and expressed lower store loyalty if they perceived that the salesperson was standing close-by. Additionally, such negative perceptions of proximity were associated with consumers’ overall evaluations of the retail staff. Although these correlations only reflect small-to-medium effect sizes, it is important to note that salesperson-customer proximity could affect store loyalty, which could carry significant long-term consequences for the retailer (Funder & Ozer, 2019). Thus, these preliminary findings highlight the relevance of salesperson-customer proximity for retail practice.

While Study 1 was conducted in an actual retail setting, we have yet to provide causal evidence for our predictions. Moreover, two limitations of Study 1 were that (a) we measured behavioral intentions, which do not always align with actual behaviors (Chandon et al., 2005), and (b) our proximity index did not cleanly disentangle perceived proximity from psychological discomfort. To address these limitations, in Study 2, we systematically manipulate salesperson proximity to investigate whether manipulated, rather than measured, salesperson proximity would elicit negative consumer responses through reductions in actual spending behavior, and in Studies 3–4, we explicate our proposed mechanism, psychological discomfort, using empirically established measures.

3 | STUDY 2: MANIPULATED PROXIMITY AND PROCESS EVIDENCE

The objectives of Study 2 are threefold. First, we document the real-world financial consequences of salesperson-customer proximity by examining whether such proximity can influence consumers’ actual
spending (H1). Second, we aimed to elucidate the role of psychological discomfort in driving the relationship between salesperson proximity and consumer spending (H2). Given previous research has found that personal space violations can induce discomfort (Altman, 1975; Luck & Benkenstein, 2015; Smith & Knowles, 1979), we predicted that such discomfort will mediate the relationship between salesperson proximity and consumer spending. Furthermore, we sought to examine an alternative account based on persuasion knowledge, as it is possible that the negative responses to salesperson proximity could be driven by greater attributions of persuasive intent (Friestad & Wright, 1994).

Indeed, the activation of persuasion knowledge has previously been shown to negatively impact product and brand evaluations (e.g., Kirmani & Zhu, 2007; Main et al., 2007), so we examine the role that persuasion knowledge could potentially play in shaping consumer spending.

One hundred twenty shoppers (57% female; median age = 38.5 years) at a large sporting goods store in Northern Europe participated in a single factor (proximity: close vs. far) between-subjects study in exchange for a lottery ticket (valued at approximately $1) and a retail coupon. Upon arrival, shoppers were approached by a male salesperson confederate and were asked to evaluate a spring jacket. Following Argo et al. (2005), the confederate either stood approximately 2 feet (=60 cm) or 8 feet (=2.4 m) away from the customer. Whereas the former distance commonly falls within the personal space zone and represents an appropriate interpersonal distance to maintain among close friends (below 4 feet), the latter falls within the social zone (4–12 feet) and reflects relationships that are more impersonal in nature (Hall, 1966; McElroy et al., 1990), such as between a customer and a salesperson. During the experiment, a research assistant, who remained blind to the study hypotheses, unobtrusively observed each salesperson-shopper interaction and estimated the physical distance between these individuals in 50 cm intervals. This served as an objective manipulation check of physical proximity.

The salesperson confederate assisted shoppers as they tried on the jacket, informing them of some of its key features (e.g., material, price, available colors, and sizes). Following this interaction, shoppers were approached by the same research assistant and invited to complete a brief survey, using the same items and response format as in Study 1 to examine the degree of proximity-induced psychological discomfort during the retail interaction. These items were averaged to create a psychological discomfort index (α = 0.91). Shoppers then responded to five persuasion knowledge items that were adapted from Campbell and Kirmani (2000) (e.g., “It was pretty obvious that the salesperson was trying to make a sale,” anchored at 1 = strongly disagree, 7 = strongly agree), which were averaged to create a persuasion knowledge index (α = 0.87). Importantly, we expect that the negative consumer responses to salesperson proximity will be driven by psychological discomfort rather than attributions of persuasive intent. Furthermore, to complement the objective proximity manipulation check provided by the research assistant, shoppers also responded to a single-item measure adapted from Esmark and Noble (2018), which was designed to gauge more subjective assessments of salesperson proximity: The salesperson stood very close when we talked (1 = strongly disagree, 7 = strongly agree). All manipulations were effective across studies and were verified by our manipulation checks. For brevity, we report the manipulation check analyses in the Web Appendix.

After shoppers completed the survey, they received the lottery ticket and a coupon that was valid for a twenty percent discount on any item that was purchased the same day. Importantly, each coupon contained the shopper’s unique identification number, which was identical to the one found on his or her survey. To redeem the coupon, shoppers were asked to turn it in at the cash register to receive their discount, which the cashier then stapled to the receipt, thereby enabling us to capture actual sales data.

3.1 | Results and discussion

3.1.1 | Spending

Consistent with H1, a one-way analysis of variance (ANOVA) on the actual amount spent in the store revealed a significant effect of proximity, such that shoppers spent significantly less when the salesperson maintained a close (vs. far) distance ($M_{close} = 19.26, SD = 33.72$ vs. $M_{far} = 35.19, SD = 51.28$; $F(1, 118) = 4.05, p = 0.047$).

3.1.2 | Psychological discomfort

The same analysis on psychological discomfort revealed a significant effect of proximity, such that shoppers experienced significantly greater discomfort when the salesperson maintained a close (vs. far) distance ($M_{close} = 2.94, SD = 1.96$ vs. $M_{far} = 1.67, SD = 1.00$; $F(1, 118) = 20.01, p < 0.001$).

3.1.3 | Persuasion knowledge

The same analysis on persuasion knowledge revealed a significant effect of proximity, such that shoppers were more likely to activate persuasion knowledge when the salesperson maintained a close (vs.

---

5The discrepancies in amount spent cannot be explained solely by different rates of making a purchase, as we did not find a significant difference on this metric when the salesperson maintained a close (48.33%) versus far distance (61.67%; $\chi^2(1) = 2.16, p = 0.142$), although customers in the close condition were directionally less likely to make a purchase. However, analyses based on binary dependent variables tend to have lower statistical power than those based on continuous dependent variables given an equivalent sample size (e.g., Demidenko, 2007; Faul et al., 2009; Gomila, 2020). As such, the somewhat weaker results on purchase incidence should be interpreted with appropriate caution.
far) distance ($M_{\text{close}} = 2.54$, $SD = 1.56$ vs. $M_{\text{far}} = 1.70$, $SD = 0.94$; $F(1, 118) = 12.93$, $p < 0.001$).

3.1.4 | Mediation

Based on our conceptualization, the negative impact of salesperson proximity on spending should be driven by psychological discomfort rather than the activation of persuasion knowledge. To this end, we conducted a mediation analysis by including psychological discomfort and persuasion knowledge into the model as parallel drivers (Model 4; Hayes, 2018). Results revealed that psychological discomfort emerged as a marginally significant driver of spending ($b = 4.94$, 90% confidence interval $[CI] = [0.27, 10.09]$), whereas persuasion knowledge did not ($b = 0.76$, 90% CI $= [-3.23, 4.94]$). Importantly, although a 90% CI can be justified given our one-tailed hypotheses (Cho & Abe, 2013; Jones, 1954; Lakens et al., 2018), the indirect effect through psychological discomfort was significant when included in the model by itself ($b = 5.60$, 95% CI $= [0.71, 11.53]$). These results suggest that psychological discomfort, rather than persuasion knowledge activation, is the most plausible mechanism driving our effect. Thus, H2 was supported.6

3.1.5 | Discussion

Across two studies conducted in a real-world retail environment, we found that consumers expressed lower store loyalty (Study 1) and reduced their spending (Study 2) when they encountered a salesperson standing close by (vs. farther away) while they shopped, a pattern of results that held regardless of whether proximity was measured or manipulated. Moreover, psychological discomfort appears to be the main driver of this phenomenon, suggesting that attributions of persuasive intent does not appear to be the primary psychological process underlying these results.

4 | STUDY 3: REPLICATION AND LINEAR TREND EXAMINATION

Study 3 has three main objectives. First, we examine whether there is a direct linear relationship between salesperson proximity and consumer responses. While we have thus far focused on comparing closer and farther distances, it remains unclear how consumers might respond to intermediate levels of physical proximity and whether a salesperson who is standing even farther away could yield differential responses. To this end, we turn to the proxemics literature (Aiello & Aiello, 1974; Hall, 1966; McElroy et al., 1990) to identify three distances, each representing a distinct personal space zone (i.e., the personal, social, and public zone), to systematically gauge the impact of salesperson proximity across these distances. Specifically, we compare consumer responses at distances of 1–2 feet ($≈30–60$ cm), 5–6 feet ($≈1.5–1.8$ m), and 13–14 feet ($≈4.3$ m). Our close distance falls within the personal space zone, our medium distance falls within the social zone (4–12 feet), and our far distance belongs to the public zone (beyond 12 feet), which usually characterizes formal speeches and passersby (Hall, 1966; McElroy et al., 1990; Welsch et al., 2019). Note that the distinction between the close and medium distance conditions is substantially smaller than those examined in previous related work, which has typically contrasted distances of 1 foot (30 cm) with distances of 10 feet ($≈3$ m; Esmark & Noble, 2018) or even 15 feet ($≈4.6$ m; Esmark et al., 2020). Our medium proximity condition arguably represents a more typical interpersonal distance in retail settings, thus adding further theoretical insights and strengthening the practical implications of our work.

Second, to provide convergent support for our two initial hypotheses (H1–H2), we conceptually replicate our proposed mechanism, psychological discomfort, in a more experimentally controlled setting using empirically validated measures to capture this aversive state (Jiang et al., 2013). Relatedly, while Studies 1 and 2 offered exceptional external validity, in Study 3, we examine whether the sole provision of verbal information about the salesperson’s proximity is sufficient to elicit the phenomenon, thereby isolating the role of salesperson proximity.

A total of 602 participants were recruited from an online panel managed by CloudResearch to participate in a single-factor (proximity: close vs. medium vs. far) between-subjects study for payment. Two individuals did not complete the survey and were excluded from further analyses, yielding a final sample of 600 participants (53% female; median age = 37 years).

Participants were presented with a hypothetical shopping scenario, where they imagined they were at the mall shopping for a jacket and decided to check out a sporting goods store (scenario adapted from Campbell & Kirmani, 2000). When they entered the store, they were greeted by a male salesperson named David, who asked if they needed any assistance. After telling the salesperson that they were simply browsing, they began looking around.

While browsing the section of the store with coats and jackets, participants noticed that David, the same salesperson that had greeted them earlier on, was busy folding clothes and organizing displays. Participants in the close condition were told he was standing just 1–2 feet away from them, those in the medium condition were told he was standing 5–6 feet away from them, and those in the far condition were told he was standing 13–14 feet away from them.

After reading the scenario, participants were asked to indicate whether they would make a purchase from this salesperson ($1=\text{definitely no}$, $7=\text{definitely yes}$), how likely they would be to make a

---

6An anonymous reviewer asked us to clarify whether our underlying process occurred primarily through psychological discomfort or alternatively, through perceptions of physical proximity. Replacing our discomfort measure with the shoppers’ subjective proximity perceptions revealed no significant mediation of the proximity-spending link, either in isolation ($b = 4.96$, 95% CI $= [-2.19, 14.49]$) or in parallel with persuasion knowledge ($b = 4.07$, 95% CI $= [-3.51, 13.68]$). These findings further underscore how psychological discomfort is the most plausible mechanism underlying the pattern of results.
purchase from this salesperson (1 = not likely at all, 7 = very likely), how interested they would be in making a purchase from this salesperson, and how much they would want to make a purchase from this salesperson (both anchored at 1 = not at all, 7 = very much so), which we combined to form a purchase intentions index (α = 0.96). Next, participants indicated to what degree they felt uncomfortable, bothered, uneasy, and awkward during their shopping experience (1 = not at all, 7 = very much; adapted from Jiang et al., 2013), which we combined to form a psychological discomfort index (α = 0.97). Afterward, participants responded to four items capturing persuasion knowledge activation (1 = strongly disagree, 7 = strongly agree; adapted from Campbell & Kirmani, 2000): (1) While I read the story, I thought it was pretty obvious that David was trying to make a sale, (2) David’s ultimate goal was to persuade me to purchase something, (3) David wanted me to give more favorable evaluations of the products, and (4) I am skeptical that David genuinely wanted to help me, which we combined to form a persuasion knowledge index (α = 0.78). Additionally, they responded to an item capturing the presence of ulterior motives (also adapted from Campbell & Kirmani, 2000): David had an ulterior motive for standing in my vicinity (1 = strongly disagree, 7 = strongly agree). Finally, participants indicated how far away they thought the salesperson was standing from them (1 = very close, 7 = very far away), which served as a proximity manipulation check, before completing demographic measures. See Web Appendix for the manipulation check analyses.

4.1 | Results and discussion

4.1.1 | Purchase intentions

In further support of H1, a one-way ANOVA on purchase intentions revealed a significant main effect of proximity (F(2, 597) = 6.79, p = 0.001, see Figure 2A). Participants were less inclined to make a purchase when the salesperson maintained a close (vs. far) distance (M_{close} = 3.93, SD = 1.59 vs. M_{far} = 4.46, SD = 1.32; F(1, 597) = 13.57, p < 0.001), conceptually replicating prior studies. Importantly, participants were also marginally less inclined to make a purchase when the salesperson maintained a close (vs. medium) distance (M_{medium} = 4.18, SD = 1.37; F(1, 597) = 3.09, p = 0.079), indicating that negative consumer responses can emerge even with smaller differences in proximity. Finally, participants were less inclined to make a purchase when the salesperson maintained a medium (vs. far) distance (F(1, 597) = 3.68, p = 0.055), suggesting a direct linear relationship between salesperson proximity and consumer reactions. Indeed, a linear trend test was significant (F(1, 597) = 13.57, p < 0.001).

4.1.2 | Psychological discomfort

The same analysis on psychological discomfort revealed a significant main effect of proximity (F(2, 597) = 18.46, p < 0.001, see Figure 2B). Participants experienced greater discomfort when the salesperson maintained a close distance compared to a far (M_{close} = 3.99, SD = 1.99 vs. M_{far} = 2.82, SD = 1.81; F(1, 597) = 36.89, p < 0.001) or medium distance (M_{medium} = 3.38, SD = 1.96; F(1, 597) = 9.98, p = 0.002). Furthermore, participants experienced great discomfort when the salesperson maintained a medium (vs. far) distance (F(1, 597) = 8.43, p = 0.004), also suggesting a direct linear relationship between salesperson proximity and discomfort. Indeed, mirroring the findings on purchase intentions, a linear trend test was significant (F(1, 597) = 36.89, p < 0.001).

4.1.3 | Persuasion knowledge

The same analysis on persuasion knowledge revealed a significant main effect of proximity (F(2, 597) = 8.02, p < 0.001). Participants were more likely to activate persuasion knowledge when the salesperson maintained a close distance compared to a far (M_{close} = 4.14, SD = 1.39 vs. M_{far} = 3.60, SD = 1.38; F(1, 597) = 16.04, p < 0.001) or medium distance (M_{medium} = 3.88, SD = 1.33; F(1, 597) = 3.72, p = 0.054). Further, participants were more likely to activate persuasion knowledge when the salesperson maintained a medium (vs. far) distance (M_{medium} = 4.13, SD = 1.35 vs. M_{far} = 3.64, SD = 1.32; F(1, 597) = 13.68, p < 0.001).
that customers became less inclined to make a purchase as the salesperson maintained a closer distance to them, a pattern of results driven by psychological discomfort. In doing so, we find the same pattern of results using empirically established discomfort measures in a more experimentally controlled setting, which attests to the robustness of our phenomenon.

Importantly, Studies 1–3 were conducted in an expressive consumption context (i.e., a sporting goods store), where identity-relevance is arguably more salient, given that purchases in this setting would have likely enabled shoppers to express their identities. This awareness, in turn, may have led to greater psychological discomfort when a salesperson was standing close by and could potentially observe their shopping behaviors. Accordingly, we predict that the negative impact of salesperson proximity occurs when products are framed as identity relevant, a boundary condition we examine in our final study.

5 | STUDY 4: IDENTITY RELEVANCE MODERATION

In our final study, we test whether the explicit activation of identity relevance would moderate our focal effect, such that negative reactions to salesperson proximity specifically emerge when consumers think about products in terms of their ability to signal who they are, rather than their ability to perform functional tasks (H3). Such moderation is plausible considering the inextricable associations between expressive consumption contexts and identity relevance (Chernev et al., 2011; Mathery et al., 2018). As a result, if a salesperson encroaches on a customer’s personal space when identity-relevant (vs. functionally-focused) cognitions are salient, shoppers should be particularly prone to self-presentation concerns and thus experience greater psychological discomfort (Argo et al., 2005; Griskevicius et al., 2006; Jiang et al., 2013), which, in turn, elicits more negative consumer responses (Berger & Heath, 2007). Notably, this is a particularly conservative test of our predictions given that we hold the purchase context itself constant (i.e., a sportswear purchase) and systematically highlight the identity-signaling versus functional nature of products. Additionally, given prior work demonstrating that the mere perception of being watched can generate negative consumer responses (Esmark et al., 2017; Esmark Jones et al., 2020), we hold salesperson gaze constant in this study to isolate the impact of salesperson-customer proximity. Finally, we aim to further rule out persuasion knowledge and ulcer motives as alternative explanations for our results.

A total of 297 undergraduate students from a U.S. university participated in a 2 (proximity: close vs. far) × 2 (prime: identity relevance vs. functional) between-subjects study for partial course credit. One participant had missing data on the key dependent variables and was excluded from the analyses, yielding a final sample of 296 participants (40% female; median age = 20 years).

Participants were informed that they would be completing two (ostensibly unrelated) studies. First, they completed a “Product
Ownership Survey” that was designed to prime identity relevance and involved writing several sentences about their own possessions (procedure adapted from Berger & Heath, 2007). Specifically, those in the identity-relevant condition were told to write about products they own that express who they are to others around them, whereas those in the functional condition were told to write about products they own that perform a specific function. Participants were further asked to explain why they decided to purchase those products.

Subsequently, participants were presented with a hypothetical shopping scenario similar to Study 3’s, where they imagined they were at the mall shopping for a jacket and decided to check out a sports-wear store. However, unlike Study 3, which relied solely on verbal descriptions, participants in Study 4 were also presented with images of the scenario to enhance realism of the guided visualization task. Participants in the close condition were told the salesperson was standing just one to two feet away from them, whereas those in the far condition were told he was standing 7–8 feet away from them. These distances are consistent with those used in Study 2 and extant research investigating physical proximity in retail environments (Argo et al., 2005). Each verbal description was accompanied by an image depicting the salesperson’s respective distance from the target.

After reading the scenario, participants completed the same purchase intentions ($\alpha = 0.96$), psychological discomfort ($\alpha = 0.95$), persuasion knowledge ($\alpha = 0.81$), and presence of ulterior motives measures as Study 3. Additionally, participants were asked to rate their overall impressions of the salesperson by completing three semantic differential items on 7-point scales: “Very unfavorable/Very favorable,” “Very unlikable/Very likable,” and “Very negative/Very positive,” which were combined to form an index capturing salesperson evaluations ($\alpha = 0.95$). Finally, participants completed the same proximity manipulation check as Study 3 before rating their agreement with the following statements (1 = strongly disagree, 7 = strongly agree): (1) I thought about products I own that express my identity to the people around me, and (2) I thought about products I own that perform a specific function, which served as manipulation checks for the identity relevance prime. See Web Appendix for the manipulation check analyses.

5.1 Results and discussion

5.1.1 Purchase intentions

A 2 (proximity) × 2 (identity relevance) ANOVA on purchase intentions revealed a marginal proximity × identity relevance interaction ($F(1, 292) = 2.72, p = 0.100$; see Figure 3A). While the interaction did not reach conventional levels of statistical significance, we performed follow-up planned contrasts to examine our study-specific predictions, as recommended by Meyvis and Van Osselaer (2018). Consistent with H1, and replicating the results from prior studies that focused on expressive consumption contexts, participants were less inclined to make a purchase from the close (vs. far) salesperson when the products were framed as identity relevant ($M_{\text{identity, close}} = 3.19, SD = 1.38$ vs. $M_{\text{identity, far}} = 3.67, SD = 1.26$; $F(1, 292) = 5.31, p = 0.022$); however, this effect was nonsignificant when the products were framed as functional ($F < 1$).

5.1.2 Psychological discomfort

The same analysis on psychological discomfort revealed a significant proximity × identity relevance interaction ($F(1, 292) = 7.43, p = 0.007$; see Figure 3B). Planned contrasts revealed that participants experienced greater discomfort around the close (vs. far) salesperson in the identity relevant condition ($M_{\text{identity, close}} = 4.44, SD = 1.56$ vs. $M_{\text{identity, far}} = 3.82, SD = 1.56$; $F(1, 292) = 5.75, p = 0.017$), but this effect was nonsignificant and in fact directionally reversed in the functional condition ($M_{\text{functional, close}} = 4.01, SD = 1.59$ vs. $M_{\text{functional, far}} = 4.40, SD = 1.59$; $F(1, 292) = 2.14, p = 0.144$).

5.1.3 Salesperson evaluations

The same analysis on salesperson evaluations revealed no significant main effects or interaction (all $p > 0.34$). As such, while salesperson-customer proximity was negatively associated with overall
evaluations of the retail staff (Study 1), it did not negatively influence participants’ evaluations of the specific salesperson involved in the interaction.

5.1.4 | Persuasion knowledge

The same analysis on persuasion knowledge revealed no significant main effects or interaction (all $p > 0.31$).

5.1.5 | Presence of ulterior motives

The same analysis on presence of ulterior motives revealed no significant main effects or interaction (all $p > 0.81$).

5.1.6 | Moderated mediation

Finally, we conducted a moderated mediation analysis (Model 8; Hayes, 2018) to test our proposed mediation path, whereby psychological discomfort, rather than persuasion knowledge or ulterior motives, mediates the effect of salesperson proximity on purchase intentions, contingent on identity relevance. In support of H3, the index of moderated mediation for discomfort was significant ($b = 0.30$, 95% CI = [0.08, 0.55]). In the identity relevant condition, replicating prior studies, the indirect effect of salesperson proximity on purchase intentions through discomfort was significant ($b = 0.18$, 95% CI = [0.04, 0.36]), corroborating H2, but in the functional condition, it was not ($b = −0.11$, 95% CI = [−0.27, 0.05]). Importantly, the indirect effects through persuasion knowledge activation and the presence of ulterior motives were not significant in either the identity relevant condition (persuasion knowledge: $b = 0.05$, 95% CI = [−0.04, 0.16]; ulterior motives: $b = 0.01$, 95% CI = [−0.05, 0.07]) or the functional condition (persuasion knowledge: $b = −0.01$, 95% CI = [−0.10, 0.08]; ulterior motives: $b = 0.00$, 95% CI = [−0.06, 0.06]), thereby further ruling out these alternative accounts.

5.1.7 | Discussion

Study 4 provides additional support for our conceptualization by showing that the negative impact of salesperson proximity importantly hinges on the nature of the consumption context, such that this phenomenon emerges when consumers are primed to think about the identity-signaling capabilities of their purchases, but not when people are prompted to think about the functional aspects of their purchases. Additionally, using more empirically validated measures (Jiang et al., 2013), we again demonstrate that psychological discomfort underlies these effects, thereby highlighting the robustness of our findings. In so doing, we also further rule out the activation of persuasion knowledge and the presence of ulterior motives as alternative explanations for our effects, showing that the experience of psychological discomfort, rather than attributions of persuasive intent or ulterior motives, is responsible for driving negative consumer responses to salesperson-customer proximity.

6 | GENERAL DISCUSSION

Salespeople intuitions and books on personal selling both suggest that maintaining close physical distance to one’s customers is desirable. However, across four studies with a total sample of over 1200 participants, we demonstrate that the presence of a salesperson standing close by (vs. farther away) significantly decreases store loyalty, purchase intentions, and actual spending in expressive consumption contexts. This effect is robust across ecologically valid settings and controlled lab conditions and holds regardless of whether salesperson-customer proximity was measured or experimentally manipulated. Further, we find that even intermediate levels of proximity can produce negative consumer responses compared to farther interpersonal distances in expressive consumption settings. Results reveal psychological discomfort as the underlying mechanism, an effect moderated by identity relevance. In other words, consumers experience greater discomfort and respond more negatively to a salesperson who is standing close by (vs. farther away), but importantly, this effect specifically emerges when consumers are thinking about products in terms of their ability to express their identities, not when the products’ functional features are highlighted.

Our research makes four key contributions. First, we document the real-world financial consequences of salesperson-customer proximity. While the extant literature has explored how consumers are affected by aspects of the retail environment related to physical proximity, such as narrow in-store aisles (Levav & Zhu, 2009), social crowding (Maeng et al., 2013), population density (Matherly et al., 2018), and interpersonal distances from other customers (Argo et al., 2005), we are the first to document the (negative) impact of salesperson-customer proximity on actual spending. Importantly, our findings diverge from previous related research, which has documented the benefits of maintaining proximity to one’s customers (Esmark & Noble, 2018). We contend that these divergent findings can be attributed, at least in part, to the distinct consumption contexts being examined (expressive vs. nonexpressive) and the corresponding nature of the products in question (i.e., identity relevant vs. functional).

Second, given that our research elucidates psychological discomfort as the underlying process driving our effects, while simultaneously identifying identity relevance as a theoretically relevant moderator, the current findings enhance our understanding of when and how physical proximity between salespeople and shoppers can negatively influence key customer outcomes.

Third, unlike prior work in this area that has only examined the divergent influence of two personal space zones on consumer outcomes (e.g., Argo et al., 2005; Esmark & Noble, 2018; Esmark Jones et al., 2020; Jacob & Guéguen, 2012; Xu et al., 2012), we investigated consumer responses to salesperson-customer proximity across three
distinct personal space zones (i.e., the personal, social, and public zone) and uncover a linear relationship between the two. Interestingly, our findings suggest that the most positive consumer responses occur in the largely overlooked public zone, even compared to the more common social zone in which most interactions with salespeople take place. These results indicate that spacious interpersonal distances may be even more essential in expressive consumption contexts than what has previously been assumed.

Additionally, our results contribute to a growing body of literature highlighting systematic discrepancies between intuition-based managerial beliefs and actual consumer reactions (e.g., Kristensson et al., 2017; Otterbring et al., 2018). Specifically, despite the belief held by retail personnel that remaining in consumers’ immediate vicinity is desirable, our research demonstrates that such a strategy could backfire and produce negative consumer responses, such as reduced store loyalty and decreased spending. More broadly, the present work addresses multiple calls for research to examine marketing-relevant topics “in the wild,” using real consumers and actual behavioral outcomes to capture the focal dependent variables of interest (e.g., Gneezy, 2017; Li et al., 2015; List, 2011; Morales et al., 2017; Otterbring et al., 2020; Pham, 2013).

From a managerial perspective, our results suggest that salespeople should receive proper training on how much personal space to provide shoppers, as offering too little personal space may inadvertently repel consumers in certain situations. Specifically, retail personnel should maintain a sufficient amount of space between themselves and their customers, particularly for retailers specializing in more identity-relevant and expressive products (e.g., clothing). Such an approach differs markedly from earlier scholarly recommendations (e.g., Esmark & Noble, 2018), which focused on nonexpressive consumption settings, as well as salespeople’s own intuitions, who have espoused the benefits of maintaining close distances to their customers.

Notably, given our studies were conducted in individualistic, noncontact cultures such as North America and Northern Europe, where people generally value and appreciate their own personal space (Hall, 1966; Høgh-Olesen, 2008), it is possible that the negative impact of salesperson-customer proximity could be attenuated or even reversed in other cultures. Indeed, in collectivistic, high contact cultures such as Latin America, Southern Europe, and East Asia, people tend to ascribe less importance to personal space and prefer to be in closer proximity of one another (Sorokowska et al., 2017). Thus, a fruitful avenue for future research would be to explore the potentially moderating role of culture (e.g., contact vs. noncontact) in shaping consumer responses to salesperson-customer proximity. Additionally, given the social distancing guidelines mandated by public health officials since the onset of the COVID-19 pandemic, it would be interesting to examine whether and how the effects we have documented could shift as the norm of maintaining a safe distance between oneself and others becomes more commonplace (Otterbring, 2021; Roggeveen & Sethuraman, 2020). Indeed, research on the downstream effects of physical proximity on customers’ purchase behavior is likely prone to contextual sensitivity (Van Bavel et al., 2016) and may thus vary not only as a function of culture, but also due to pandemic-induced societal norms. While we would expect the negative impact of salesperson-customer proximity to be even more pronounced in a postpandemic society, making this a rather conservative test of our predictions, future research should examine how this phenomenon might shift over time across cultures.

Another interesting avenue for future research would be to investigate when and why consumers experience discomfort as a result of salesperson proximity and what psychological processes could potentially account for this aversive state. We contend that self-presentation concerns and perceived self-threats are two potential explanations for why salesperson proximity generates negative customer responses in expressive (vs. nonexpressive) consumption contexts. Although several scholars have attempted to capture these processes via self-report (Granulo et al., 2019; Zwebner & Schrift, 2020), it should be noted that they are often assumed to operate at a subconscious level, implying that self-report measures may not always be the best way to capture these underlying mechanisms (Griskevicius & Kenrick, 2013; Lisjak et al., 2015; Mandel et al., 2017; Proulx & Heine, 2010). As such, future work could supplement self-report measures with physiological indicators following encroachment of customers’ personal space, including pupil dilation, galvanic skin conductance, and heart rate.

Finally, the retail layout likely plays an important role in shaping the impact of salesperson proximity, so consumer reactions to a physically close salesperson may therefore depend on, for instance, whether the service encounter takes place in a store characterized by narrow or wider spaces (Levav & Zhu, 2009). It is possible that the downsides of close interpersonal distances could either be attenuated or further exacerbated in shopping settings where salesperson-customer proximity is clearly required by the store layout. Future research should address this possibility. While additional scholarly work is required to gain a deeper understanding of the proximity effects reported herein, the present research represents an important first step in uncovering the impact of salesperson-customer proximity on consumers’ actual spending in expressive consumption contexts.

DATA AVAILABILITY STATEMENT

Data will be available upon reasonable request.

ORCID

Tobias Otterbring (https://orcid.org/0000-0002-0283-8777)

REFERENCES

Ahmed, S. M. S. (1979). Invasion of personal space: A study of departure time as affected by sex of the intruder, sex of the subject, and saliency condition. Perceptual and Motor Skills, 49(1), 85–86.

Aiello, J. R., & Aiello, T. D. C. (1974). The development of personal space: Proxemic behavior of children 6 through 16. Human Ecology, 2(3), 177–189.

Aiello, J. R., Nicosia, G., & Thompson, D. E. (1979). Physiological, social, and behavioral consequences of crowding on children and adolescents. Child Development, 50(1), 195–202.
Altman, I. (1975). *The environment and social behavior: Privacy, personal space, territory, crowding*. Brooks/Cole.

Argo, J. J., Dahl, D. W., & Manchanda, R. V. (2005). The influence of a mere social presence in a retail context. *Journal of Consumer Research*, 32(2), 207–212.

Back, M. D., Schmukle, S. C., & Egloff, B. (2008). Becoming friends by chance. *Psychological Science*, 19(5), 439–440.

Van Bavel, J. J., Mende-Siedlecki, P., Brady, W. J., & Reinerо, D. A. (2016). Contextual sensitivity in scientific reproducibility. *Proceedings of the National Academy of Sciences*, 113(23), 6454–6459.

Belk, R. W. (1988). Possessions and the extended self. *Journal of Consumer Research*, 15(2), 139–168.

Bellezza, S., Gino, F., & Keinan, A. (2014). The red sneakers effect: Inferring status and competence from signals of nonconformity. *Journal of Consumer Research*, 41(1), 35–54.

Berger, J., & Heath, C. (2007). Where consumers diverge from others: Identity signaling and product domains. *Journal of Consumer Research*, 34(2), 121–134.

Berger, J., & Ward, M. (2010). Subtle signals of inconspicuous consumption. *Journal of Consumer Research*, 37(4), 555–569.

Campbell, M. C., & Kirmani, A. (2000). Consumers’ use of persuasion knowledge: The effects of accessibility and cognitive capacity on perceptions of an influence agent. *Journal of Consumer Research*, 27(1), 69–83.

Chan, C., Berger, J., & Van Boven, L. (2012). Identifiable but not identical: Combining social identity and uniqueness motives in choice. *Journal of Consumer Research*, 39(3), 561–573.

Chandon, P., Morwitz, V. G., & Reіnartz, W. J. (2005). Do intentions really predict behavior? Self-generated validity effects in survey research. *Journal of Marketing*, 69(2), 1–14.

Chernev, A., Hamilton, R., & Gal, D. (2011). Competing for consumer identity: Limits to self-expression and the perils of lifestyle branding. *Journal of Marketing*, 75(3), 66–82.

Cho, H. C., & Abe, S. (2013). Is two-tailed testing for directional research hypotheses tests legitimate? *Journal of Business Research*, 66(9), 1261–1266.

Dahl, D. W., Argo, J. J., & Morales, A. C. (2012). Social information in the retail environment: The importance of consumption alignment, referent identity, and self-esteem. *Journal of Consumer Research*, 38(5), 860–871.

Demidenko, E. (2007). Sample size determination for logistic regression revisited. *Statistics in medicine*, 26(18), 3385–3397.

Ernest, R. C., & Cooper, R. E. (1974). “Hey mister, do you have any change?”. Two real world studies of proxemic effects on compliance with a mundane request. *Personality and Social Psychology Bulletin*, 1(1), 58–59.

Esmark, C. L., & Noble, S. M. (2018). Retail space invaders: When employees’ invasion of customer space increases purchase intentions. *Journal of the Academy of Marketing Science*, 46(3), 477–496.

Esmark, C. L., Noble, S. M., & Breazeale, M. J. (2017). I’ll be watching you: Shoppers’ reactions to perceptions of being watched by employees. *Journal of Retailing*, 93(3), 326–349.

Esmark Jones, C. L., Stevens, J. L., Noble, S. M., & Breazeale, M. J. (2020). Panic attack: How illegitimate invasions of privacy cause consumer anxiety and dissatisfaction. *Journal of Public Policy & Marketing*, 39(3), 334–352.

Evans, G. W., & Howard, R. B. (1973). Personal space. *Psychological Bulletin*, 80(4), 334–344.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149–1160.

Fay, A. J., & Maner, J. K. (2012). Warmth, spatial proximity, and social attachment: The embodied perception of a social metaphor. *Journal of Experimental Social Psychology*, 48(6), 1369–1372.

Ferraro, R., Escalas, J. E., & Bettman, J. R. (2011). Our possessions, our selves: Domains of self-worth and the possession–self link. *Journal of Consumer Psychology*, 21(2), 169–177.

Fisher, J. D., & Byrne, D. (1975). Too close for comfort: Sex differences in response to invasions of personal space. *Journal of Personality and Social Psychology*, 32(1), 15–21.

Fristad, M., & Wright, P. (1994). The persuasion knowledge model: How people cope with persuasion attempts. *Journal of Consumer Research*, 21(1), 1–31.

Funder, D. C., & Ozer, D. J. (2019). Evaluating effect size in psychological research: Sense and nonsense. *Advances in Methods and Practices in Psychological Science*, 2(2), 156–168.

Gneezy, A. (2017). Field experimentation in marketing research. *Journal of Marketing Research*, 54(1), 140–143.

Gomila, R. (2020). Logistic or linear? Estimating causal effects of experimental treatments on binary outcomes using regression analysis. *Journal of Experimental Psychology: General*, 150, 1–27.

Granulo, A., Fuchs, C., & Puntoni, S. (2019). Psychological reactions to human versus robotic job replacement. *Nature Human Behaviour*, 3(10), 1062–1069.

Griskevicius, V., Goldstein, N. J., Mortensen, C. R., Cialdini, R. B., & Kenrick, D. T. (2006). Going along versus going alone: When fundamental motives facilitate strategic (non) conformity. *Journal of Personality and Social Psychology*, 92(1), 281–294.

Griskevicius, V., Goldstein, N. J., Mortensen, C. R., Sundie, J. M., Cialdini, R. B., & Kenrick, D. T. (2009). Fear and loving in Las Vegas: Evolution, emotion, and persuasion. *Journal of Marketing Research*, 46(3), 384–395.

Griskevicius, V., & Kenrick, D. T. (2013). Fundamental motives: How evolutionary needs influence consumer behavior. *Journal of Consumer Psychology*, 23(3), 372–386.

Griskevicius, V., Tybur, J. M., Ackerman, J. M., Delton, A. W., Robertson, T. E., & White, A. E. (2012). The financial consequences of too many men: Sex ratio effects on saving, borrowing, and spending. *Journal of Personality and Social Psychology*, 102(1), 69–80.

Guiry, M., Mägi, A. W., & Lutz, R. J. (2006). Defining and measuring recreational shopper identity. *Journal of the Academy of Marketing Science*, 34(1), 74–83.

Hall, E. T. (1966). *The hidden dimension*. Doubleday.

Hayes, A. F. (2018). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. Guilford publications.

Hewitt, J., & Henley, R. (1987). Sex differences in reaction to spatial invasion. *Perceptual and Motor Skills*, 64(3), 809–810.

Hagih-Olesen, H. (2008). Human spatial behaviour: The spacing of people, objects and animals in six cross-cultural samples. *Journal of Cognition and Culture*, 8(3–4), 245–280.

Ijzerman, H., & Semin, G. R. (2009). The thermometer of social relations: Mapping social proximity on temperature. *Psychological Science*, 20(10), 1214–1220.

Jacob, C., & Guéguen, N. (2012). The effect of physical distance between patrons and servers on tipping. *Journal of Hospitality & Tourism Research*, 36(1), 25–31.

Jiang, L., Hoega, J., & Dahl, D. W. (2013). Consumer reaction to unearned preferential treatment. *Journal of Consumer Research*, 40(3), 412–427.

Jones, L. V. (1954). A rejoinder on one-tailed tests. *Psychological Bulletin*, 51(6), 585–586.

Kaitz, M., Bar-Haim, Y., Lehrer, M., & Grossman, E. (2004). Adult attachment style and interpersonal distance. *Attachment & Human Development*, 6(3), 285–304.

Kirmani, A., & Zhu, R. (2007). Vigilant against manipulation: The effect of regulatory focus on the use of persuasion knowledge. *Journal of Marketing Research*, 44(4), 688–701.
Kristensson, P., Wästlund, E., & Söderlund, M. (2017). Influencing consumers to choose environment friendly offerings: Evidence from field experiments. *Journal of Business Research, 76*, 89–97.

Kroczek, L. O., Pfaller, M., Lange, B., Müller, M., & Mühlberger, A. (2020). Interpersonal distance during real-time social interaction: Insights from subjective experience, behavior, and physiology. *Frontiers in Psychiatry, 11*, 561.

Lakens, D., Scheel, A. M., & Isager, P. M. (2018). Equivalence testing for psychological research: A tutorial. *Advances in Methods and Practices in Psychological Science, 1*(2), 259–269.

Leary, M. R., & Kowalski, R. M. (1990). Impression management: A literature review and two-component model. *Psychological Bulletin, 107*(1), 34–47.

Levav, J., & Zhu, R. (2009). Seeking freedom through variety. *Journal of Consumer Research, 36*(4), 600–610.

Li, J. Q., Rusmevichientong, P., Simester, D., Tsitsiklis, J. N., & Zoumpoulis, S. I. (2015). The value of field experiments. *Journal of Consumer Research, 41*(5), 1186–1203.

List, J. A. (2011). Why economists should conduct field experiments and 14 tips for pulling one off. *Journal of Economic Perspectives, 25*(3), 3–16.

Luck, M., & Benkenstein, M. (2015). Consumers between supermarket shelves: The influence of inter-personal distance on consumer behavior. *Journal of Retailing and Consumer Services, 26*, 104–114.

Maeng, A., Tanner, R. J., & Soman, D. (2013). Conservative when crowded: Social crowding and consumer choice. *Journal of Marketing Research, 50*(6), 739–752.

Main, K. J., Dahl, D. W., & Darke, P. R. (2007). Deliberative and automatic bases of suspicion: Empirical evidence of the sinister attribution error. *Journal of Consumer Psychology, 17*(1), 59–69.

Mandel, N., Rucker, D. D., Levav, J., & Galinsky, A. D. (2017). The compensatory consumer behavior model: How self-discrepancies drive consumer behavior. *Journal of Consumer Psychology, 27*(1), 133–146.

Matherly, T., Arens, Z. G., & Arnold, T. J. (2018). Big brands, big cities: How the population density affects common, identity relevant brands in densely populated areas. *International Journal of Research in Marketing, 35*(1), 15–33.

McElroy, J. C., Morrow, P. C., & Eroglu, S. (1990). The atmospherics of personal selling. *Journal of Personal Selling & Sales Management, 10*(4), 31–43.

Meyvis, T., & Van Osselaer, S. M. (2018). Increasing the power of your study by increasing the effect size. *Journal of Consumer Research, 44*(5), 1157–1173.

Morales, A. C., Amir, O., & Lee, L. (2017). Keeping it real in experimental research—Understanding when, where, and how to enhance realism and measure consumer behavior. *Journal of Consumer Research, 44*(2), 465–476.

Otterbring, T. (2020). Appetite for destruction: Counterintuitive effects of attractive faces on people’s food choices. *Psychology & Marketing, 37*(11), 1451–1464.

Otterbring, T. (2021). Evolutionary psychology in marketing: Deep, debated, but fancier with fieldwork. *Psychology & Marketing, 38*(2), 229–238.

Otterbring, T., & Lu, C. (2018). Clothes, condoms, and customer satisfaction: The effect of employee mere presence on customer satisfaction depends on the shopping situation. *Psychology & Marketing, 35*(6), 454–462.

Otterbring, T., Ringler, C., Siriani, N. J., & Gustafsson, A. (2018). The Abercrombie & Fitch effect: The impact of physical dominance on male customers’ status-signaling consumption. *Journal of Marketing Research, 55*(1), 69–79.

Otterbring, T., Sundie, J., Li, Y. J., & Hill, S. (2020). Evolutionary psychological consumer research: Bold, bright, but better with behavior. *Journal of Business Research, 120*, 473–484.

Patterson, M. L., & Sechrest, L. B. (1970). Interpersonal distance and impression formation. *Journal of Personality, 38*(2), 161–166.

Pham, M. T. (2013). The seven sins of consumer psychology. *Journal of Consumer Psychology, 23*(4), 411–423.

Preciado, P., Snijders, T., Burk, W. J., Stattin, H., & Kerr, M. (2011). Does proximity matter? Distance dependence of adolescent friendships. *Social Networks, 34*(1), 18–31.

Proulx, T., & Heine, S. J. (2010). The frog in Kierkegaard’s beer: Finding meaning in the threat-compensation literature. *Social and Personality Psychology Compass, 4*(10), 889–905.

Roggeveen, A. L., & Sethuraman, R. (2020). How the COVID Pandemic may change the world of retailing. *Journal of Retailing, 96*(2), 169–171.

Saenger, C., Thomas, V. L., & Bock, D. E. (2020). Compensatory word of mouth as symbolic self-completion. *European Journal of Marketing, 54*, 671–690.

Schlenker, B. R. (1980). *Impression management*. Brooks/Cole Publishing Company

Shavitt, S., Torelli, C. J., & Wong, J. (2009). Identity-based motivation: Constraints and opportunities in consumer research. *Journal of Consumer Psychology, 19*(3), 261–266.

Smith, R. J., & Knowles, E. S. (1979). Affective and cognitive mediators of reactions to spatial invasions. *Journal of Experimental Social Psychology, 15*(5), 437–452.

Smith, T. S., & Seymour, B. D. (2014). *Bulletproof salesman: A lively guide to enhance your sales techniques*. Productive Publications.

Sorokowska, A., Sorokowski, P., Hilpert, P., Canteraro, K., Frackowiak, T., Ahmadi, K., Alghraibeh, A. M., Aryeetey, R., Bertoni, A., Bettache, K., Blumen, S., Blażejewska, M., Bortolini, T., Butovskaya, M., Castro, F. N., Cetinkaya, H., Cunha, D., David, D., David, O. A., ... Pierce, J. D. (2017). Preferred interpersonal distances: A global comparison. *Journal of Cross-Cultural Psychology, 48*(4), 577–592.

Söderlund, M. (2016). Employee mere presence and its impact on customer satisfaction. *Psychology & Marketing, 33*(6), 449–464.

Thomas, V. L., Saenger, C., & Bock, D. E. (2017). Do you want to talk about it? When word of mouth alleviates the psychological discomfort of self-threat. *Psychology & Marketing, 34*(9), 894–903.

Thompson, D. E., Aiello, J. R., & Epstein, Y. M. (1979). Interpersonal distance preferences. *Journal of Nonverbal Behavior, 1*(2), 113–118.

Thorbjarns, H., Pedersen, P. E., & Nysveen, H. (2007). “This is who I am”: Identity expressiveness and the theory of planned behavior. *Psychology & Marketing, 24*(9), 763–785.

Wang, L., & Yao, W. (2016). So near, so good: Does near-distance perception reduce interpersonal psychological distance? *Social Behavior and Personality, 44*(6), 889–899.

Welsch, R., van Castell, C., & Hecht, H. (2019). The anisotropy of personal space. *PLoS One, 14*(6), e0217587.

White, K., & Dahl, D. W. (2007). Are all out-groups created equal? Consumer identity and dissociative influence. *Journal of Consumer Research, 34*(4), 525–536.

Xu, J., Shen, H., & Wyer, R. S. (2012). Does the distance between us matter? Influences of physical proximity to others on consumer choice. *Journal of Consumer Psychology, 22*(3), 418–423.

Zwebner, Y., & Schrift, R. Y. (2020). On my own: The aversion to being observed during the preference-construction stage. *Journal of Consumer Research, 47*(4), 475–499.
WEB WEB

How to cite this article: Otterbring, T., Wu, F., & Kristensson, P. (2021). Too close for comfort? The impact of salesperson-customer proximity on consumers’ purchase behavior. Psychology & Marketing, 1–15. https://doi.org/10.1002/mar.21519

Manipulation check results, Study 2
A one-way ANOVA on the observer’s estimated distance between the salesperson and the shopper revealed a significant effect of proximity (F(1, 117) = 1143.01, p < 0.001), such that the estimated distance between the salesperson and the consumer was approximately 2 feet in the close condition (Mclose = 58 cm, SD = 18 cm) and approximately 8 feet (Mfar = 232 cm, SD = 36 cm) in the far condition.

The same pattern of results emerged when we assessed shoppers’ subjective proximity perceptions (F(1, 118) = 18.83, p < 0.001), such that the salesperson was perceived to be standing closer to them in the close condition (Mclose = 5.58, SD = 1.74) compared to the far condition (Mfar = 4.15, SD = 1.88). We note that the observer’s distance ratings were almost identical to those used by Argo et al. (2005) and corroborated shoppers’ own subjective assessments of salesperson proximity, thereby validating the effectiveness of our proximity manipulation.

Manipulation check results, Study 3
A one-way ANOVA on the proximity manipulation check revealed the predicted main effect of proximity (F(2, 597) = 179.94, p < 0.001). The salesperson was perceived to be standing closer when he maintained a close distance compared to a medium (Mclose = 1.67, SD = 0.82) or far distance (Mfar = 3.07, SD = 1.26; F(1, 597) = 155.65, p < 0.001) or far distance (Mfar = 3.75, SD = 1.23; F(1, 597) = 346.20, p < 0.001). The salesperson was perceived to be standing closer when he maintained a medium (vs. far) distance (F(1, 597) = 37.21, p < 0.001). Overall, these results verify the effectiveness of our proximity manipulation.

Manipulation check results, Study 4
A 2 (proximity) × 2 (identity relevance) ANOVA on the proximity manipulation check revealed the predicted main effect of proximity (F(1, 292) = 140.95, p < 0.001; Mclose = 1.95, SD = 0.94 vs. Mfar = 3.43, SD = 1.20), verifying the effectiveness of our manipulation. Results also revealed a marginal main effect of identity relevance (F(1, 292) = 2.74, p = 0.099; Midentity = 2.79, SD = 1.37 vs. Mfunctional = 2.59, SD = 1.23) and a significant proximity × identity relevance interaction (F(1, 292) = 3.88, p = 0.050). While the close (vs. far) salesperson was perceived to be standing closer to participants in the functional condition (Mfunctional, close = 1.97, SD = 0.96 vs. Mfunctional, far = 3.20, SD = 1.16; F(1, 292) = 48.37, p < 0.001), this difference was even more pronounced in the identity relevant condition (Midentity, close = 1.93, SD = 0.92 vs. Midentity, far = 3.65, SD = 1.20; F(1, 292) = 97.12, p < 0.001).

A 2 (proximity) × 2 (identity relevance) ANOVA on the identity relevance manipulation check revealed the predicted main effect of identity relevance (F(1, 292) = 42.78, p < 0.001; Midentity = 5.19, SD = 1.40 vs. Mfunctional = 3.96, SD = 1.82), verifying the effectiveness of our manipulation. Results also revealed a marginal proximity × identity relevance interaction (F(1, 292) = 3.24, p = 0.073). While participants in the far condition were more likely to think about the identity-expressing nature of products after completing the identity (functional) prime, (Midentity, far = 5.01, SD = 1.49 vs. Mfunctional, far = 4.12, SD = 1.97; F(1, 292) = 11.32, p < 0.001), this difference was even more pronounced in the close condition (Midentity, close = 5.36, SD = 1.28 vs. Mfunctional, close = 3.79, SD = 1.65; F(1, 292) = 34.53, p < 0.001).

Ruling out gender as a moderator, Study 1
In addition to the bivariate correlation analyses reported in the main manuscript, we conducted additional regression analyses (Model 1; Hayes, 2018) to rule out gender as a potential moderating variable and to establish the generalizability of our phenomenon. Specifically, we regressed each of our focal outcome variables (store loyalty and salespeople evaluations) on our proximity measure, gender, and their interaction.

The regression-based analyses produced similar results as those reported in the main manuscript. Customer gender did not significantly affect store loyalty (b = −0.13, t = −1.43, p = 0.156). However, in further support of H1, our proximity measure significantly predicted store loyalty (b = −0.13, t = −2.32, p = 0.021). Moreover, customer gender did not moderate the proximity-store loyalty link (b = −0.04, t = −0.36, p = 0.717), suggesting that gender is unlikely to account for our findings. Customer gender (b = −0.33, t = −3.15, p = 0.002) and salesperson proximity (b = −0.13, t = −1.99, p = 0.048) significantly predicted salespeople evaluations, such that female (vs. male) shoppers formed more favorable evaluations of the store employees, as did customers who perceived that the salesperson was standing farther away (vs. close-by). Critically, customer gender did not moderate the proximity-salespeople evaluations link (b = −0.10, t = −0.70, p = 0.484), thus further ruling out a gender account as the main driver of our results.

Ruling out gender as a moderator, Study 2
As requested by an anonymous reviewer, we examined potential gender differences by conducting a series of 2 (proximity) × 2 (shopper gender) ANOVAs on our focal variables. Shopper gender did not interact with physical proximity on spending (F < 1), psychological discomfort (p = 0.259), nor did it significantly interact with persuasion knowledge activation (p = 0.310). Furthermore, the inclusion of shopper gender as a covariate in the mediation analyses did not change the pattern and significance of our results. Thus,
consistent with Study 1, shopper gender does not appear to strongly impact our findings. We thank the reviewer for this suggestion.

**Ruling out gender as a moderator, Study 3**
Similar to previous studies, we examined potential gender differences by conducting a series of 3 (proximity) × 2 (participant gender) ANOVAs on our focal variables. Participant gender did not significantly interact with physical proximity on purchase intentions (F < 1) or psychological discomfort (p = 0.367), nor did it significantly interact with persuasion knowledge activation (p = 0.068) or inferences of ulterior motives (F < 1). Furthermore, the inclusion of gender as a covariate in the mediation analyses did not change the pattern or significance of our results, again suggesting that gender is unlikely to play a major role in shaping our findings. Of note, three participants did not specify their gender and were excluded from these analyses.

**Ruling out gender as a moderator, Study 4**
As in our former studies, we examined potential gender differences by conducting a series of 2 (proximity) × 2 (identity relevance) × 2 (participant gender) ANOVAs on our focal variables. Results revealed no three-way interactions for purchase intentions (p = 0.252), psychological discomfort (p = 0.170), salesperson evaluations (F < 1), persuasion knowledge (F < 1) or inferences of ulterior motives (F < 1). Furthermore, the inclusion of gender as a covariate in the moderated mediation analyses did not change the pattern or significance of our results, yet again suggesting that gender is unlikely to play a major role in shaping our findings.