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Should I Touch the Customer? Rethinking Interpersonal Touch Effects from the Perspective of

the Touch Initiator

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Previous research has highlighted the effects of *receiving* interpersonal touch on persuasion. In contrast, we examine *initiating* touch. Individuals instructed to touch engage in egocentric projection in which they project their own affective reaction onto their expectations for how the recipient will feel (i.e., empathic forecast), how they appear to the recipient (i.e., metaperception), and the evaluation of the interaction itself (i.e., interaction awkwardness). Touch initiators expect that recipients will feel worse with touch, express concern for how they, themselves, will be perceived, and think interactions are more awkward. Interestingly, touch *recipients* do not evaluate these interactions more negatively and leave higher tips after having been touched; touch initiators do not expect this to be the case. As a result, instructed touch initiators (vs. volitional touch initiators) are less (more) likely to engage in subsequent interactions with customers, potentially undermining future service provided to customers. Across five studies, four of which involve actual dyadic interactions, we test the consequences of initiating touch with an inquiry into the effects of interpersonal touch on the initiator. We discuss theoretical and managerial implications.

Research in marketing has examined *receiving* interpersonal touch, which we know influences consumer attitudes and behaviors. For example, individuals who receive touch leave higher tips for servers in a restaurant (Crusco and Wetzel 1984; Stephen and Zweigenhaft 1986), report more positive affect (Fisher, Rytting, and Heslin 1976), and engage in financial risk-taking (Levav and Argo 2010). When a request is coupled with touch, consumers more frequently comply with that request, whether sampling or buying products (Hornik 1992), allowing a fellow customer to cut in line (Bohm and Hendricks 1997), taking medications as prescribed (Guéguen, Meineri and Chales-Sire 2010), or helping a citizen in need (Guéguen and Fischer-Lokou 2003). Given these positive effects of touch on recipients, it is ironic that little research has examined people who initiate touch, logically without whom there would be no touch. Across prior research, the focus is on how the recipient of interpersonal touch responds to being touched. In contrast, this research focuses on the touch *initiator*.

While the rationale for studying the reception of touch is clear, studying the initiating side of touch is relevant to marketing as well. Human interaction between a service provider and a customer has an immense impact on the outcome of a service encounter (Dion and Borraz 2017; Hogreve et al. 2017; Shostack 1977). Waitstaff and salespeople may decide to use interpersonal touch as a tactic to influence choices, yet compared to other marketing actions that are known to positively influence consumers (e.g., smiling at a customer; Hennig-Thurau et al. 2006), touch occurs with relative infrequence. If such positive effects occur for touch recipients, why is touch not more readily employed? Logically, we wonder whether touch initiators underestimate the effectiveness of a touch-based interaction, expecting recipients to perceive touch more negatively than they actually do. As over 14 million Americans are in sales positions,

and another 2.5 million serve as waitstaff (Bureau of Labor Statistics 2019), these questions regarding the act of initiating touch merit investigation.

In the context of service encounters or exchange-based relationships, we focus on the initiation of interpersonal touch – a light touch directed from the hand of the initiator to the upper arm or shoulder of the recipient – to understand the initiator's interaction evaluations and subsequent behavior. To our knowledge, this work is the first in marketing to *manipulate* interpersonal touch initiation. In studies 1 and 2 individuals are instructed to touch another person, called instructed touch. This touch is not volitional as an individual does not decide if and when to use it. This is done to ensure appropriate manipulation of touch since a selection issue arises when individuals are allowed to self-select out of the condition and decide not to initiate touch. Studies 3, 4, and 5 relax this constraint and include a volitional touch condition. Across five studies, four of which involve actual dyadic interactions, we find that the suggestion to initiate touch prompts an individual to project their own affective reaction onto others. Initiators believe recipients feel worse, express concern for how touch reflects on them, and think interactions are more awkward. These negative effects for the touch initiator influence downstream behaviors (e.g., decreasing the likelihood of engaging in future interactions with the touched customer) but can be attenuated by giving initiators the option to touch. Interestingly, the recipient of touch does not experience the interaction more negatively, and positive effects of touch on the recipient are still evident. We begin with a theoretical discussion of touch initiation in service encounters.

**THEORETICAL BACKGROUND**

Touch Initiation and Imposed Intimacy

The act of initiating touch is fundamentally different from touch reception in that the use of touch is an active, self-initiated behavior, while reception of touch is a passive, other-initiated occurrence. Thus, the initiator is the source of the touch. A light touch on the upper arm is considered to be one of the most neutral places to touch another person (Masson and Op de Beeck 2018). Yet, even this relatively benign touch still requires physical closeness, which is integrally associated with emotional or physical intimacy (Mashek and Aron 2008) and is often preferred to use in interactions with close, rather than distant, others. Among strangers in a service context who may have no desire to form a deeper relationship, touch on the arm may be perceived as a form of imposed intimacy, which is undesirable and/or not personally selected (Schroeder et al. 2017). Whereas previous research shows that individuals are hard-wired to respond favorably to receiving touch from others (Gallace and Spence 2010) and those who receive touch on the arm often infer genuine motives or liking (Rose 1990), a touch initiator faces the risk of appearing too personal or intimate. As the potential cause of discomfort for another person (Batson et al. 2007), a service employee contemplating the use of touch may feel concerned about imposing intimacy on customers since this type of touch is not instrumental to the execution of a service and serves no functional goal.

Increasingly, in U.S. culture, the act of touch has become taboo leading to "touch paranoia" in which people are afraid of using touch and imposing intimacy in interactions (Simmering et al. 2013). Importantly, a notion prevalent in much psychological work is that "bad is stronger than good" (Ames 2005; Baumeister et al. 2001). Negative information, especially negative social information, is more likely to draw attention (Pratto and John 1991) and is weighed more heavily in impressions (Ybarra 2001). This is consistent with the spotlight effect

which demonstrates that people overestimate the salience of their behavior to others (Gilovich, Medvec, and Savitsky 2000; Gilovich and Savitsky 1999; Savitsky, Epley, and Gilovich 2001). In a series of studies, Savitsky et al. (2001) show that one's expectations for negative judgment from others was exaggerated; this was true even before an interaction occurred. Indeed, merely *thinking* about a potentially negative event is often worse than actually *doing* it, and there is a greater likelihood of overestimating the impact of negative affect compared to positive affect (Wilson and Gilbert 2005). The suggestion to initiate touch is tantamount to shining the proverbial spotlight on one's actions, which will increase the salience of touching behavior triggering an individual to feel anxious about the act of initiating touch.

This is further underscored by normative differences in touching behavior across cultures; individuals from "non-contact" cultures such as the UK, Northern Europe, North America, and Asia touch each other far less often than people from "contact" cultures such as Latin or South America, or Southern Europe (DiBiase and Gunnoe 2004; Hall 1966; Henley 1973). Norms govern how people behave in a given situation (Aggarwal and Zhang 2006; Johar 2005) and represent important psychological reference points for evaluating and regulating one's own behavior (Feldman 1984). Taken together, the identifiability of the source of touch, the perceived spotlight on one's own behavior, and the concern over imposing intimacy with a non-normative act provide rationale for why a touch initiator may have a negative affective reaction to a suggestion to use touch in a service context.

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Egocentric Projection and Interaction Evaluations

People experience and rely on affective reactions to form evaluations (Pham 2004; Schwarz and Clore 2007). Much psychological work demonstrates that people frequently assume that others think, want, and feel what they themselves think, want, and feel (Krueger 2000; Krueger and Clement 1994). This is the notion of egocentric projection, which is a tendency to expect similarities between oneself and others, rooted in an egocentric bias (Robbins and Krueger 2005). When considering social interactions, people use their own self assessments as the basis for projection, which provides the underlying rationale for why a touch initiator may assume that a touch recipient will feel as they do. In short, we expect that an initiator's own negative affective reaction to touch will be projected onto their subsequent evaluations of the interaction and interaction partner.

We conjecture that egocentric projection may arise with touch initiation due to limited prior experience driven by differences between communal and exchange relationships. In communal relationships (e.g., with a partner or a child), interpersonal touch is likely normative and frequent. Yet, in our context of exchange relationships (e.g., with a customer in a service context), individuals may have little experience initiating interpersonal touch with strangers. In the absence of prior experiences to draw on, individuals may resort to a "projection-by-default" approach (Ames 2005). Individuals should be more likely to use their own reactions as an informational base the less other information, such as prior experience initiating touch with strangers, is easily accessible. "When the responses of others are not known, people project their own as a first bet" (Krueger 2003, 589). People use themselves as a "source model" for predicting others' thoughts and feelings (Van Boven and Loewenstein 2003).

With egocentric projection operating as a latent theory underlying the model, the congruence between one's self assessments and one's assessments for others is an indication that projection has occurred. In effect, egocentric projection lives "behind" the overall model and is often captured via consistent shifts in downstream consequences. "The more a participant's own responses predicted the target response, the higher his or her measure of projection was" (Ames 2004, 343). Indeed, the congruency or incongruency between the assessments for the self and assessments for others is consistent with how prior literature has documented theoretical support for projection (Ames and Iyengar 2005; Epley et al. 2009; Robbins and Krueger 2005). We give credence to the argument that egocentric projection is intricately linked with self-perception in that our perceptions of how others may feel are formed from one's own dispositions. In essence, we're interested in the downstream effects as indications, or markers, of egocentric projection.

In contemplating interactions with others, social predictions are particularly susceptible to egocentric biases (Van Boven and Loewenstein 2005). Therefore, we investigate three interaction-based social evaluations, distinct in their *target* of assessment, formed by touch initiators: (1) empathic forecast or the consideration for how the *other* will feel, (2) metaperception or the consideration for how *I* will be perceived, and (3) interaction awkwardness or consideration for how the *interaction* went. We further consider how touch initiation will impact downstream interactions with the touch recipient. We propose that an initiator's initial affective reaction, or consideration how oneself feels, will influence these subsequent evaluations and behaviors due to egocentric projection.

*Empathic Forecast*. People form empathic forecasts, or affective forecasts for someone else (Pollmann and Finkenauer 2009). Humans are socially attentive organisms (Silk 2007; Sinha and Nayakankuppam 2014) and have the capability to consider the emotions, thoughts, and

experiences of another (Dunning et al. 1990; Herrmann et al. 2007). When contemplating how another might feel, individuals use their own internal states as the basis for prediction (Van Boven and Loewenstein 2005), which is often miscalibrated since people insufficiently adjust away from their own perceptions (Epley et al. 2004). Due to egocentric processing, an initiator may project their own negative affect onto the recipient, and thus, we anticipate a miscalibration in touch initiators thinking that recipients feel worse than they ultimately do.

*Metaperception.* An egocentric bias also prompts a touch initiator to consider how they, themselves, will be perceived. This is the notion of metaperception, or what people perceive others perceive of them (Frey and Tropp 2006; Kirk, Peck, and Swain 2018; Laing, Phillipson, and Lee 1966). Prior research demonstrates that people use their own private knowledge of themselves to infer how others view them, and thus have difficulty intuiting how they appear to others (Chambers et al. 2008). Therefore, we predict that the initial affective reaction experienced by the initiator influences metaperception (i.e., "what will they think of me?") believing that they will be viewed more negatively with the use of touch.

*Interaction Awkwardness.* Judgments about the interaction itself are also subject to egocentric biases. Previous research has shown that the egocentric bias is responsible for people mispredicting the impact of expressing gratitude to others, overestimating how awkward recipients would feel (Kumar and Epley 2018). In a similarly social context with implications for the recipient of a social act, we expect that initiators will believe that interactions with touch are more awkward than interactions without touch.

*Initiator's Subsequent Interaction.* In a service context, repeated interaction with customers is common and often expected (Price and Arnould 1999). If initiators evaluate an interaction less positively with touch, we expect that initiators will be less likely to want to

further engage with the touch receiver. Since imposed intimacy can result in subsequent avoidant behaviors (Patterson, Mullens, and Romano 1971), this has implications for repeated interaction in service encounters. The suggestion to use touch with customers is expected to result in less subsequent interaction with the customer, compared to an interaction without touch (figure 1).

Overview of Studies

Study 1 reveals that the instruction to touch increases stress arousal measured via skin conductivity. Study 2, a lab simulation experimental study, demonstrates that when individuals are instructed to initiate touch, they think interactions are more awkward. Study 3 increases external validity by incorporating volitional touch and examines the underlying process that empathic forecasts, metaperception, and interaction awkwardness are driven by the projection of one's own affective reaction. Study 4 compares the suggestion to initiate touch to an instructed compliment in order to investigate whether the observed effects from initiating touch are simply due to being *instructed* to act a certain way. Results do not confirm a mere instruction account. Finally, in the context of dining interactions, study 5 uses an incentive-compatible design to show that diners (i.e., touch recipients) leave higher tips for servers, yet servers (i.e., touch initiators) do not anticipate this to be the case. Importantly, this study reveals downstream consequences of touch initiation such that instructed touch initiators (vs. volitional touch initiators) are less (more) likely to engage in subsequent interactions with touched customers, potentially undermining future service provided to customers (table 1).

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**STUDY 1: PHYSIOLOGICAL RESPONSES OF TOUCH INITIATORS TO THE INSTRUCTION TO TOUCH**

In this study, we investigate whether touch initiators exhibit more stress arousal than those not asked to touch. Arousal, a feeling state of activation, can be associated with intense emotional experiences (Pham 1996) and can be influenced by social interactions (Mehrabian and Russell 1974). Physiological arousal is indicative of the body's stress response (Cacioppo, Bernston, and Crites 1996; Duffy 1962; Sanbonmatsu and Kardes 1988). Since merely thinking about a potentially negative event is often worse that actually doing it (Wilson and Gilbert 2005), we expect that stress will emerge with the instruction to touch ahead of the interaction. We measure individuals' physiological reactions when instructed to touch and when engaging in touch, thus capturing arousal measures both ahead of and during an interaction.

Method

*Participants and Design.* Undergraduate students (N = 70, 61% female) participated in this study in exchange for a $10 movie ticket. Initiating touch was manipulated between subjects. For six participants, we did not receive the correct number of time stamps to differentiate between the phases (i.e., instruction and interaction) and two participants in the touch condition chose not to complete the study, resulting in 62 useable responses.

*Measurement of Electrodermal Activity.* The Empatica E4, a Galvanic Skin Response (GSR) wristband, captures changes in the electrical properties of the skin of the touch initiator (Boucsein 2012). When an emotionally arousing stimulus is experienced, sweat is produced, which conducts electrical current (Stern, Ray, and Quigley 2001). Electrodermal activity (EDA)

is measured in microsiemens (µS), and the sampling frequency for the E4 is 4 Hz and the resolution of the wristband is 900 picosiemens. The E4 was chosen since it is less intrusive than other options and allows for movement (appendix A).

Procedure

As participants entered the lab, they were told that the study examines human behavior in a simulated sales interaction. All participants were assigned the role of a salesperson and interacted with a "customer" who was a male confederate. The experimental procedure was carried out in three separate phases: the calibration phase, instruction phase, and interaction phase. While the skin conductance measure was continuous, each phase was marked on the device with a button press in order to clearly distinguish each phase. The following are procedures through each experimental phase (see web appendix A for full procedural details for all studies).

*Calibration Phase.* Since there is individual heterogeneity in electrodermal activity, the calibration phase ensured measurement reliability and determined a baseline stress level for each participant. To obtain this, we followed a procedure whereby participants were asked to count out loud from 500 backwards in intervals of 7 (Kirschbaum, Pirke, and Hellhammer 1993). The calibration phase lasted 75 seconds on average. After this stress-inducing task, the experimenter left the room for 2 minutes to allow for the participant to return to a resting state.

*Instruction Phase.* Next, participants were given the following instructions, "You have been assigned the role of a salesperson. In a minute, you will be led to an adjoining room. In this room you will interact with a customer. Your task is to ask him if he needs any help." In the touch condition, they were further told, "When you ask whether the customer needs help, touch

the customer lightly on the upper arm between the elbow and the shoulder." The experimenter then demonstrated the touch on their own arm.

*Interaction Phase.* To begin the interaction phase, the participant was led to the room where the customer was waiting. The participant approached the customer and either touched or did not touch them while asking if they needed any help. The confederate was given instruction to respond "No, thank you. I am just browsing," maintain a neutral expression, and record whether each participant touched or did not touch him. At the end of the interaction, the participant was led to a separate room to complete a short questionnaire.

Results and Discussion

To ascertain what constitutes peaks of the GSR signal, we followed a similar approach as described in Benedek and Kaerbach (2010). The data was first processed using two filters applying a lowpass Butterworth filter of second order; one using cut-off frequency of 1 Hz (capturing phasic activity) and one using a cut-off frequency of 0.05 Hz (capturing tonic activity). The peaks were then identified from data processed by the former filter by taking the shape and behavior of the adjoining data into consideration and detecting peaks that were significantly different from this data to avoid over-detection of adjacent peaks.

Using a Mann-Whitney U-test, results demonstrate that individuals told to touch (vs. no touch) experienced significantly more stress arousal during the instruction phase of the experiment ($M_{No\ Touch}$ = .16, $M_{Touch}$ = .63, U = 577, $p$ = .03, $\eta^2$ = .075). During the actual interaction, touch initiators did not experience significantly greater stress arousal as compared to those who did not touch ($M_{No\ Touch}$ = .19, $M_{Touch}$ = .60, U = 573, $p$ = .08, $\eta^2$ = .05). Overall, salespeople who were instructed to touch the customer had more peaks in their electrodermal

activity. (For sample graphical representations of electrodermal activity, see web appendix B).

These results did not differ by gender.

Being told to initiate touch increased arousal as measured by GSR. More physiological

stress was experienced by individuals instructed to initiate touch as compared to those not

instructed to touch. This is consistent with our theory that instruction to touch would result in an

immediate affective reaction. We further investigate the underlying psychological processes

explicitly in the following studies.

**STUDY 2: INITIATING TOUCH INCREASES INTERACTION AWKWARDNESS**

From study 1, we know that individuals experience stress arousal when asked to initiate

touch, but how do initiators, themselves, evaluate interactions? The objective of this study is to

examine our proposition that instructing individuals to initiate interpersonal touch negatively

influences the initiator's evaluation of the interaction. To do so, we create a sales simulation to

manipulate the salesperson's use of touch with another individual. To confirm basic assumptions,

a pretest on MTurk (N = 89) revealed that the act of touch (vs. no touch) is perceived to impose

intimacy on the customer ($M_{Touch}$ = 5.35, $M_{No\ Touch}$ = 3.38, $F(1, 87)$ = 34.43, $p < .001$, $\eta_p^2$ = .28)

and is considered non-normative ($M_{Touch}$ = 5.26, $M_{No\ Touch}$ = 2.75, $F(1, 87)$ = 46.29, $p < .001$, $\eta_p^2$

= .35, 7-point scale, web appendix A).

Method

*Participants.* Undergraduate students (N = 295, 58% female) were recruited via an

introductory course and received course credit for participation. Participants were interacting

with another individual from the same population, and those who knew the individual with whom they interacted were eliminated from the dataset (N = 28). Participants who engaged in physical contact aside from the touch manipulation (i.e., used a handshake, N = 3) and were also eliminated from the dataset resulting in 264 usable responses.

*Procedure.* Study procedure was very similar to study 1. Participants were told that they would be engaging in a sales simulation and that they were assigned the role of a salesperson. Participants were randomly assigned to no touch and touch conditions. Upon conclusion of the sales simulation, participants completed a brief questionnaire regarding their encounter.

*Measures.* Measured consistently across all studies, the touch initiator's perception of interaction awkwardness was measured with four items on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree): "the interaction with the customer seemed to flow naturally (reverse-coded)," "the interaction with the customer seemed uncomfortable," "the interaction with the customer seemed awkward," and "personally, I felt comfortable during this interaction (reverse-coded)" (for a full list of measures, see appendix B). All interactions were observed by an experimenter to ensure the proper condition (touch/no touch) occurred. Across all studies, we collected demographics to test whether the gender of the initiator, the gender of the recipient, or the combination of the two qualify the results presented.

Results and Discussion

An ANOVA revealed a significant effect of the touch condition on the salesperson's perception of interaction awkwardness ($M_{\text{No Touch}} = 3.17$ v. $M_{\text{Touch}} = 3.57$, $F(1, 262) = 5.25$, $p = .023$, $\eta_p^2 = .02$). Individuals instructed to initiate touch with another person during an interaction (vs. no touch) thought interactions were more awkward. There were no significant effects of the

salesperson's own gender ($F(1, 260) = .23$, $p = .63$), the gender of the customer ($F(1, 247) = .51$, $p = .47$), or the combination of the two genders on perceptions of the interaction ($F(1, 243) = .72$, $p = .40$). These results reveal that touch initiation increased perceptions of interaction awkwardness. Since the touch was instructed to occur at the beginning of the interaction, this did not allow individuals to first form a relationship and then touch when it felt natural. In order to ensure that this explanation isn't driving the results, we ran an additional study (see supplementary study 1 in web appendix C) allowing the touch to occur *at any point* in the interaction. Results replicated those presented here, and thus, this alternative explanation does not seem to adequately account for our effects.

## STUDY 3: EGOCENTRIC PROJECTION FROM VOLITIONAL TOUCH

The purpose of this study is to test our main proposition that the suggestion to initiate touch prompts a negative affective reaction, which is projected onto one's expectation of how the recipient feels, concern for how oneself is viewed, and the evaluation of interaction awkwardness.

Method

*Participants and Design.* Undergraduate students (N = 315, 46% female) were recruited via an introductory course and received course credit for participation. Participants were randomly placed into a volitional touch scenario or a no touch scenario condition. To understand genuine reactions to the act of touch initiation, participants were made to believe that they would be initiating touch with a stranger. At the end of the study, participants were debriefed and told

that they would not need to interact with another individual. In order to enhance realism,

important for external validity (Lynch 1982), our instructions relaxed the constraint of instructed

touch and used a condition in which touch was volitional. This provides insight into the

underlying psychological process of the touch initiator when given the option to touch. We also

tested this phenomenon in a new domain: dining interactions. Participants were given the

following instructions:

> In this study, you will be participating in a simulated dining experience. You have
> been assigned the role of a SERVER. We are asking you to imagine that you work
> for a new pizza restaurant. In a moment, you will be led to a room where a diner
> will be waiting to be served.

> [No Touch Scenario] There is evidence that engaging in friendly communication is
> a good way to connect with customers. At some point during the interaction, feel
> free to say, 'Thanks for coming in today!' Whether or not you decide to say this to
> the diner is up to you.

> [Volitional Touch Scenario] There is evidence that a light touch on the upper arm
> is a good way to connect with customers. At some point in the interaction, feel free
> to *touch the diner on the upper arm* if you choose to do so. Whether or not you
> decide to touch the diner is up to you.

> *Measures.* Affective reaction was measured on a 7-point semantic differential scale with

four items such as, "I personally feel: anxious – stress-free" (adapted from Schimmack and

Reisenzein 2002). Empathic forecast was measured with three items such as, "I think the diner

will feel: bad – good" (adapted from Pollmann and Finkenauer 2009). Metaperception, or

concern for what the diner will think of '*me,'* was measured with four items such as, "The diner

will think that I am: appropriate – inappropriate" (adapted from Malloy et al. 1997). Interaction

awkwardness was measured as in study 2.


Results

Results revealed that when participants were given the suggestion to touch, they believed that the interaction would be more awkward, replicating results from study 2 ($M_{Touch} = 4.14$, $M_{No\ Touch} = 2.63$, $F(1, 313) = 105.05$, $p < .001$, $\eta_p^2 = .25$). In addition, individuals in the touch scenario expected the other (i.e., the recipient) to feel worse ($M_{Touch} = 3.92$, $M_{No\ Touch} = 5.87$, $F(1, 313) = 196.45$, $p < .001$, $\eta_p^2 = .39$). Similarly, those in the touch condition expressed significantly more concern for what the diner would think of them ($M_{Touch} = 4.29$, $M_{No\ Touch} = 2.13$, $F(1, 313) = 207.66$, $p < .001$, $\eta_p^2 = .40$), anticipating that the diner would think they were inappropriate. Gender does not qualify these effects (all $ps > .20$).

To examine our process explanation, results revealed that the suggestion to initiate touch significantly decreased affective reaction ($M_{Touch} = 3.86$, $M_{No\ Touch} = 5.35$, $F(1, 313) = 110.50$, $p < .001$, $\eta_p^2 = .26$). That is, the suggestion to touch increases self-reported anxiety. Mediation analysis was conducted using PROCESS Model 4 (Hayes 2018), with the touch condition as the predictor (coded -1 = NT, 1 = VT) and affective reaction as the mediator. All Hayes (2018) PROCESS results reported in this research were conducted using 10,000 bootstrap samples. Results revealed a significant indirect effect of the act of touch via affective reaction on empathic forecast (-.4913, $CI_{95\%}$: -.6060, -.3857), metaperception (.4936, $CI_{95\%}$: .3763, .6225) and interaction awkwardness (.5116, $CI_{95\%}$: .3928, .6393, figure 2).

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Discussion

Using an in-person lab scenario study, participants did not actually interact in this study. Being made to believe that they would engage in an interaction, their genuine responses were recorded. In study 1, we documented that the instruction to initiate touch increases physiological arousal; in this study, capturing self-reported felt arousal, we demonstrate that this reaction is negatively valenced. This negative affective reaction is consistent with the notion that arousal can be negatively valenced (Thayer 1989). An initiator's affective reaction is then projected onto their evaluations of the interaction. With one's self-assessment as the basis for evaluation, an initiator expects that the recipient would feel worse with touch, has greater concern that "the recipient will think I am inappropriate," and thinks the interaction would be more awkward. Based on the spotlight effect, we expect that an initiator will consider touch to be disproportionately influential in the interaction. Corroborating this notion, a post-test on MTurk (N = 210, 35% female) confirmed that participants were significantly more likely to think that the act of touch (vs. merely greeting with no touch) would influence how a diner evaluates their dining experience ($M_{\text{Touch}} = 3.13$, $M_{\text{No Touch}} = 2.79$, $F(1, 207) = 4.19$, $p = .042$, $\eta_p^2 = .02$; supplementary study 2, web appendix C for details).

**STUDY 4: TOUCH EFFECTS DRIVEN BY MORE THAN MERE INSTRUCTION**

This study investigates whether the effects found for initiating touch are observed simply due to being *instructed* to act a certain way. We examine whether it is touch, per se, that is causing these negative perceptions, or merely asking participants to engage in a scripted interaction with a stranger. To test this, we include another instructed activity (i.e.,

complimenting) to see whether mere instruction generates a similar pattern of results, or whether these effects are unique to touch.

Method

*Participants and Design.* This study is a 2 (act: touch vs. compliment) x 2 (instructed vs. volitional) study design. Undergraduate students (N = 223, 40% female) were recruited via an introductory course and received course credit for participation. Participants were assigned to dyads for this study and those who interacted with partners whom they knew previously were removed from the dataset (N = 22) resulting in 201 useable responses.

*Procedure.* The study procedure was similar to study 3, but actual interactions occurred. As participants entered the study, they were told that they would be participating in a simulated dining experience and would be playing the role of a server (appendix A). The condition was randomly assigned to study timeslots. Participants were instructed to take a diner's order and serve actual pizza as if in a real restaurant. Based on condition, participants were instructed (or given the option) to interact with the diner using a touch (or complimenting their selection).

> [Instructed Touch] There is evidence that a server who touches a diner on the upper arm when serving food receives higher tips…When you say this we would like you to touch the diner on the upper arm when placing the pizza on the table.
>
> [Instructed Compliment] There is evidence that a server who compliments the diner on their food choice receives higher tips. So, after they respond with cheese or pepperoni, say, "Good choice."
>
> [Volitional Touch] There is evidence that a server who touches a diner on the upper arm when serving food receives higher tips…When you say this, feel free to touch the diner on the upper arm if you choose to do so. Whether or not you decide to touch the diner is up to you.
>
> [Volitional Compliment] There is evidence that a server who compliments the diner on their food choice receives higher tips. So, after they respond

with cheese or pepperoni, say, "Good choice." Whether or not you decide
to compliment the diner is up to you.

After receiving instructions, participants completed a short pre-questionnaire about the

upcoming interaction. Participants were provided with aprons to make the scenario more

realistic. Servers were instructed to take a diner's pizza order, retrieve the type of pizza selected,

and serve the pizza to the diner. All interactions were observed by an experimenter to document

whether touch and/or compliment occurred. Upon completion of the interaction, the participants

were asked to fill out a brief questionnaire regarding their encounter. Participants indicated their

affective reaction, empathic forecast, metaperception, and interaction awkwardness as in study 3.

Results

Four servers in the "instructed touch" condition did not actually use touch in the

interaction. (Results do not change with or without these four participants, thus these four have

been left in the analyses.) No participant in the compliment condition spontaneously touched. In

the volitional compliment condition 36 (70%) participants complimented the diner's choice. In

the volitional touch condition 26 (47%) participants used touch in the interaction. All presented

results are based on the instruction given to the participant and not based on behavior. (For

additional analyses comparing those who actually touched versus did not, see web appendix D.)

Replicating the results from the previous study, there was a significant negative main

effect of the act on affective reaction ($M_{Touch} = 3.51$, $M_{Compliment} = 4.60$, $F(1, 195) = 35.60$, $p <$

.001, $\eta_p^2 = .15$). There was no main effect of the instructed condition ($F(1, 195) = 2.27$, $p = .13$,

$\eta_p^2 = .01$). There was a significant interaction between the act and the instructed condition ($F(1,$

$193) = 3.86$, $p = .05$, $\eta_p^2 = .02$) such that interactions with instructed touch (vs. volitional touch)

decreased affect to a greater extent ($M_{InstructedTouch} = 3.17$ vs. $M_{VolitionalTouch} = 4.82$, $F(1, 193) =$

7.04, $p = .009$, $\eta_p^2 = .04$, see figure 3) while there was no significant difference between the volitional nature of the compliment ($M_{InstructedCompliment} = 4.63$ vs. $M_{VolitionalCompliment} = 4.57$, $F(1, 193) = .04$, $p = .85$, $\eta_p^2 < .001$).

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Examining the outcomes of interest, initiating touch significantly increased interaction awkwardness ($M_{Touch} = 3.88$ vs. $M_{Compliment} = 3.44$, $F(1, 193) = 5.54$, $p = .02$, $\eta_p^2 = .03$). There was no main effect of the instructed condition ($F(1, 193) = 1.29$, $p = .26$). Analyses revealed a significant interaction between act and instructed condition ($F(1, 191) = 5.40$, $p = .021$, $\eta_p^2 = .03$) such that instructed touch (vs. volitional touch) was evaluated as more awkward ($M_{InstructedTouch} = 4.22$ vs. $M_{VolitionalTouch} = 3.58$, $F(1, 191) = 6.19$, $p = .014$, $\eta_p^2 = .03$, figure 4) while there was no significant difference between the volitional nature of the compliment ($M_{InstructedCompliment} = 3.32$ vs. $M_{VolitionalCompliment} = 3.55$, $F(1, 191) = .70$, $p = .403$, $\eta_p^2 = .004$).

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Initiating touch decreases expectations for how the diner will feel ($M_{Touch} = 4.79$ vs. $M_{Compliment} = 5.26$, $F(1, 198) = 7.23$, $p = .008$, $\eta_p^2 = .04$) such that initiators of touch (vs. compliment) expect the recipient to feel worse. There was no main effect of the instructed condition ($F(1, 198) = .34$, $p = .56$), and this was not qualified by an interaction with the

instructed condition ($F(1, 196) = .06$, $p = .81$). The suggestion to initiate touch significantly influenced metaperception ($M_{Touch} = 3.71$ vs. $M_{Compliment} = 2.69$, $F(1, 199) = 29.00$, $p < .001$, $\eta_p^2 = .13$). There is no main effect of the instructed condition ($F(1, 199) = .33$, $p = .57$). This was qualified by a significant interaction with the instructed condition ($F(1, 197) = 9.43$, $p = .002$, $\eta_p^2 = .05$) such that instructed touch (vs. volitional touch) significantly increased concern that they would be viewed as inappropriate ($M_{InstructedTouch} = 4.07$ vs. $M_{VolitionalTouch} = 3.40$, $F(1, 197) = 6.73$, $p = .01$, $\eta_p^2 = .03$) while there was no significant difference between the volitional nature of the compliment ($M_{InstructedCompliment} = 2.44$ vs. $M_{VolitionalCompliment} = 2.91$, $F(1, 197) = 3.11$, $p = .08$, $\eta_p^2 = .02$).

Mediation analyses (PROCESS Model 4, Hayes 2018) revealed a significant indirect effect of act of touch (coded -1 = compliment, 1 = touch) via affective reaction on empathic forecast (-.1034, $CI_{95\%}$: -.1919, -.0261), metaperception (.1874, $CI_{95\%}$: .0918, .3004), and interaction awkwardness (.3298, $CI_{95\%}$: .2091, .4673). Moderated mediation analyses (PROCESS Model 7, Hayes 2018) revealed a significant conditional indirect effect of act of touch and instruction (coded -1 = volitional, 1 = instructed) via affective reaction on empathic forecast (-.0644, $CI_{95\%}$: -.1547, -.0041), metaperception (.1220, $CI_{95\%}$: .0002, .2755), and interaction awkwardness (.2284, $CI_{95\%}$: .0113, .4589).

Discussion

By designing a study in which the comparison condition is a scripted act, the results demonstrate that it is not mere instruction to act in a specific way that is driving perceptions of the interaction. That is, it is not the case that the touch is more awkward and unnatural simply due to the scripted nature of the interaction. Instead, the instruction influences touch initiators'

responses in a unique manner that does not arise for compliments. The instruction to touch

decreases affective reactions, which drives the belief that touch recipients will feel worse in the

interaction, that they will be seen as inappropriate, and that the interaction is more awkward.

Thus, a mere instruction explanation does not adequately account for our findings. The next

study explores behavioral consequences for touch initiators.

**STUDY 5: TOUCH INITIATION AFFECTS DOWNSTREAM SERVICE BEHAVIORS**

This study has three main objectives: (1) to increase external validity, (2) to investigate

the downstream consequences of touch initiation on the initiator's behavior, and (3) to

incentivize touch as a strong test of initiator's interaction evaluations. First, as in studies 3 and 4,

a volitional condition is included in order to better mirror reality in what may occur in a

retail/service context. In addition, to further increase external validity, we introduce an incentive-

compatible dependent variable of diner's tipping behavior.

Second, since touch initiators are less comfortable in the interaction, we expect that

subsequent interaction with the customer will be detrimentally affected. We test downstream

behavior by giving the touch initiating servers the option to check back on the diner after touch

has occurred. Since initiators will feel in the spotlight due to their touch action, and we know that

imposing intimacy encourages avoidant behaviors (Schroeder et al. 2017), it follows that

individuals instructed to initiate touch will be less likely to engage in subsequent interactions

with a touch recipient than those who touch volitionally. This is tested.

Third, we increase the salience of the benefits to the initiator by telling participants that

touching often results in higher tips, and any tip received will be theirs to keep. This incentivizes

the use of touch, which could thereby diminish the concern felt for the recipient or for how oneself is viewed. Theories of attribution would suggest that when one can attribute an action to an external factor, one should feel less responsibility for its effect (Heider 1944). This is a strong test of whether touch truly influences evaluations of the interaction when financial benefits could be a source of attribution.

Method

*Participants and Design.* The study design was similar to study 3 but with a few key exceptions. This was a 3 (instructed touch vs. volitional touch vs. no touch) x 2 (server vs. diner) study design. Undergraduate students (N = 520, 46% female) were recruited via an introductory course and received course credit for participation. Participants were assigned to dyads for actual interaction in this study. Since responses are structured in the standard dyadic design (Kenny, Kashy, and Cook 2006), that is, each participant is linked to one and only one other participant via their interpersonal interaction, we use dyadic data analyses. Those who interacted with partners whom they knew previously were removed from the dataset (N = 38), resulting in 482 useable responses. We intentionally oversampled on the volitional condition to ensure sufficient numbers of participants who would engage in touch. As some servers in the volitional condition decided to touch and others did not, there are, in effect, four conditions: no touch, volitional touch/no touch, volitional touch/actual touch, and instructed touch. See table 2 for a breakdown of participant counts across conditions.

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Insert Table 2 about here
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*Procedure.* As participants entered the study, they were randomly assigned to either a server or diner condition. The instructed touch/no touch condition was randomly assigned to study timeslots. In this study, the utility of touch was made salient. Participants were told that there is evidence that a server who touches a diner on the upper arm when serving food receives higher tips and that any tip would be theirs to keep.

*Measures.* Interaction awkwardness was measured as previously. Both touch initiators and recipients responded to the same measure, "During the interaction I felt (I think that the diner felt): bad-good, negative-positive, unpleasant-pleasant" to contrast the initiator's empathic forecast with how the recipient *actually* felt. An incentive-compatible dependent variable of tipping behavior was measured. Diners were given real money with the option to allocate a tip to the server if desired. The instructions read:

> "Please imagine that your total bill came to **$4.40**, which you have already paid. In this envelope, you will find $1.70 (17 dimes). These dimes are for you to keep as a token of appreciation for participating in this study. In case you want to leave a tip for the server, you may take any of the dimes and place them in the TIP envelope. Based on the service that you received today, you may decide to leave none of it, all of it, or any amount in between."

Diners were asked to allocate a tip based on the service immediately after being served. Diners were provided with a small manila envelope to leave a tip for the service provider similar to previous incentive-compatible measures (Kirk et al. 2018). An odd number of dimes was chosen so that the diners needed to allocate more money to themselves or the server. Given that the tip was on a $4.40 bill, the diners could tip between 0 to 38.6% of the bill; an adequate range to capture tipping behavior.

To assess another behavioral outcome relevant to a service context, we measured server's checking behavior. The servers read the following instructions:

(Optional) Now, if you want, feel free to go back and check to see how the diner's first few bites are tasting. It's entirely up to you whether you want to do this. Otherwise, continue on with the questionnaire. Once you begin the questionnaire, please complete all of the remaining questions in this packet.

We presented the option for the servers to check back on the diner in the middle of the questionnaire. The servers reached this point in the questionnaire after 8-10 minutes, allowing enough time for the diners to have made their tip allocation independent of the checking behavior. This was to ensure that checking behavior did not affect diner's tipping behavior.

Results

Across our touch conditions, all servers who were instructed to touch did so, and those in the no touch condition did not spontaneously touch. To investigate whether our results replicate prior research (Crusco and Wetzel 1984), we first investigate tipping behavior based on actual touching behavior. Using an incentive-compatible dependent variable, a linear mixed effect model reveals that diners who were touched on the arm left higher tips than those not touched ($M_{\text{No Touch}} = \$1.09$, $M_{\text{Touch}} = \$1.22$, $\beta = .06$, $t(469.70) = 2.19$, $p = .029$). Interestingly, asked to anticipate the amount of tip that they would receive, servers did not expect to receive more tip if they touched the diner compared to no touch ($M_{\text{No Touch}} = .86$, $M_{\text{Touch}} = .94$, $\beta = .04$, $t(469.60) = 1.38$, $p = .17$). Servers did not expect higher tips despite the fact that diners actually do leave higher tips after being touched *and* despite having just been explicitly told that research suggests that touch increases tips.

Diners reported interactions to be less awkward than did servers ($M_{\text{Diner}} = 3.30$, $M_{\text{Server}} = 3.52$, $\beta = -.11$, $t(239.59) = -2.19$, $p = .029$). Planned comparisons demonstrate no significant differences in diner's perceptions of awkwardness across conditions ($M_{\text{Diner\_NT}} = 3.01$, $M_{\text{Diner\_IT}} = 3.39$, $M_{\text{Diner\_VT\_NT}} = 3.23$, $M_{\text{Diner\_VT\_AT}} = 3.53$, all $p$s $> .05$). As expected, servers believed the

diners felt less positive than they ultimately did ($M_{Server} = 5.41$, $M_{Diner} = 6.02$, $\beta = .30$, $t(239.82) =$ 6.11, $p < .001$), and those servers instructed to touch expected diners to feel significantly worse than those not instructed to touch ($M_{Server\_NT} = 5.66$, $M_{Server\_IT} = 5.10$, $M_{Server\_VT\_NT} = 5.48$, $M_{Server\_VT\_AT} = 5.40$, pairwise comparison NT vs. IT, $p = .036$). This was a strong test of our theory that initiators and receivers perceive interactions differently and that initiators persist in their underestimation of diner's experiences even after being given an external source of attribution for touch.

We next investigate the downstream consequences of touch initiation on checking behavior. Results of a generalized linear model using the binomial family with the logit link function suggest that checking behavior was not simply a function of whether the server touched the diner ($\beta = .155$, SE = .262, Wald $\chi^2(1) = .35$, $p = .554$, table 3). Rather, checking behavior was a function of the touch condition (volitional or instructed). Specifically, planned contrasts reveal that those instructed to touch were significantly less likely to check back as compared to all other conditions ($\beta = -1.13$, SE = .371, Wald $\chi^2(1) = 9.31$, $p = .002$, figure 5). Interestingly, those who decided to touch of their own volition were significantly more likely to check back as compared to all other conditions ($\beta = 1.12$, SE = .328, Wald $\chi^2(1) = 11.60$, $p = .001$). This was not qualified by gender ($\beta = .288$, SE = .88, $\chi^2(3) = 3.591$, $p = .309$). In essence, we see divergence in the subsequent behavior of volitional and instructed touchers.

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Insert Figure 5 about here
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Insert Table 3 about here
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Discussion

This study is important in its demonstration of behavioral consequences of touch initiation. First, we replicate a prior result in the literature that receiving touch increases tipping behavior (Crusco and Wetzel 1984). We do so with *actual* money, strengthening our external validity. We replicate this effect with an additional study using hypothetical tipping behavior (supplementary study 3, web appendix C). This incentive-compatible dependent variable demonstrates that servers receive higher tips from diners who were touched, but servers do not anticipate this to be the case. By incentivizing touch with higher tips, it could be argued this gives initiators an external reason to justify the act, which would reduce concern for the diner. This was not the case. Servers continued to expect diners to feel worse than they actually did, particularly for instructed touch initiators. We further show consequences on *actual* behavior: checking back on the diner. This reveals that the negative effects of touch initiation can spillover to subsequent interaction.

Investigating the difference between instructed and volitional touch on checking behavior, we see that, as predicted, those instructed to touch were significantly less likely to check back on the touch recipient than all other conditions. We expected to nullify this negative effect for volitional touchers. However, we see a surprising finding that volitional touchers were actually *more* likely to check back on the touch recipient than all other conditions. While not explicitly measured, we suspect that volitional touchers felt a greater sense of responsibility over what happened in the service encounter. Uncertain of how the touch interaction will be perceived, the volitional touchers recognized that it was their own decision to touch the customer, and these individuals checked back on the diner because of this heightened investment in the interaction and to make sure the service encounter was a positive one. These results

suggest that the instruction to touch may undermine subsequent service provided to customers, while giving employees the option to touch heightens the likelihood of subsequent service.

**GENERAL DISCUSSION**

Across five in-person studies, we advance scientific understanding of interpersonal touch by studying the initiators of touch in exchange-based relationships. We find evidence for an initial negative affective reaction to the suggestion to initiate touch, revealed via physiological and stated affect. Consistent with an egocentric bias and spotlight effect, potential touch initiators overestimate the salience of touch to the recipients. They then project their own feelings onto their assessments of the interaction and underestimate how the recipient will feel (i.e., empathic forecast), believe the recipient will perceive them more negatively (i.e., metaperception), and evaluate interactions as being more awkward. Touch initiation also decreases the likelihood of subsequent interactions, such as checking back on a diner, but can be attenuated by allowing touch to be volitional. Importantly, we show differences in how touch initiators and touch recipients evaluate these interactions; touch recipients do not view interactions as awkward and leave higher tips as a result of receiving touch.

To summarize our findings across studies, we conducted a single paper meta-analysis (McShane and Böckenholt 2017). The total effect size estimate from the suggestion to initiate touch of interaction awkwardness is 1.08 ($CI_{95\%} = [.5956, 1.5636]$), metaperception is 2.31 ($CI_{95\%} = [1.5928, 3.0252]$), and empathic forecast is -1.54 ($CI_{95\%} = [-2.3064, -.7663]$), demonstrating the robustness of the effects (for plots, see Web Appendix B).

Theoretical Contributions

With few exceptions (Martin 2012; Orth, Bouzdine-Chameeva, and Brand 2013; Webb and Peck 2015), previous work in marketing has focused on product touch (Argo, Dahl and Morales 2006; Brasel and Gips 2014; Grohmann, Spangenberg, and Sprott 2007; Krishna and Morrin 2008; McCabe and Nowlis 2003; Peck, Barger, and Webb 2013; Peck and Shu 2009) in which understanding the effects of touch, the motivations to touch, and how to compensate for an inability to touch are important for understanding consumer purchase decisions. While there is theoretical overlap with literature on product touch (e.g., both rely on haptics, or touch with the hand), our work fits into a broader theoretical context of source effects of social influence in consumer experiences.

Interpersonal touch necessitates the inclusion of social processing, as the target of the initiator's touch is another person. Understanding the social interactions that occur in retail and service contexts are critical to understand in-store decision making (Inman, Winer, and Ferraro 2009). We contribute to research on nonverbal communication and social processing (Knapp, Hall, and Horgan 2014) by uncovering the underlying psychology of touch initiators. While the benefits of receiving touch have been extensively documented in the literature, our research underscores the need for differing psychological models of touch based on the role (i.e., the initiator or the recipient) that an individual assumes in a touch encounter. As a self-initiated and fundamentally social action, contemplating the use of touch heightens the salience of oneself in a social interaction. This egocentric processing sheds light on why a person may be hesitant to initiate touch, even an unobtrusive touch on the arm, and accounts for how an initiator evaluates interactions. Unlike interacting with a product, the social nature of interpersonal touch impacts the initiator's reactions, predictions, and behaviors.

We further contribute to an area of work documenting social miscalibration in which people mispredict the responses of others. Prior work, for example, documents that people underestimate the hedonic benefit of spending money on others (Dunn et al. 2008), acting more extraverted (Zelenski et al. 2013), or expressing gratitude to others (Kumar and Epley 2018). No work to our knowledge has investigated this miscalibration in the context of interpersonal touch. Advancing the literature on social misprediction, our research documents an asymmetry in evaluations formed by touch initiators and receivers in which the initiators underestimate the positive response of touch on the arm for recipients.

Finally, among many types of behaviors thought to be intimate, our work is situated in a specific area of work on imposed intimacy. Theoretically, we contribute to an understanding of imposed intimacy from the perspective of the source of imposition. Prior research demonstrates effects on recipients of imposed intimacy (Patterson, Mullens, and Romano 1971) in which the dominant response of a recipient is to engage in avoidant behavior (e.g., leaving the interaction, shifting body orientation away). Interestingly, our instructed touchers mirror this avoidant response by being less likely to check back on the customer, a form of avoidant behavior. Thus, we advance knowledge about how the imposition of intimacy affects those who feel as if they have imposed.

Practical Implications

Increasingly, concern around the effects of touch have become prominent in cultural discourse. For example, American teachers are actively discouraged from using touch with students due to perceptions of potentially offensive behavior and for fear of lawsuits (Field 2014). Recent conversations around the #MeToo movement have brought to public

consciousness issues around inappropriate use of touch and its damaging effects for victims of sexual harassment. Certainly, these issues are important for managers (Williams and Lebsock 2018). It is essential to acknowledge that we do not consider sexual harassment or touch with malevolent intent, but instead investigate how one unobtrusive touch on the upper arm can influence the initiators of that touch. However, it is likely that these cultural issues have heightened the salience of imposed intimacy of interpersonal touch with strangers. While there should be concern around misuse, it is critical to remember that touch is necessary for proper development and socialization (Bowlby 1988). Some research suggests that the heightened concern with touch results in a shortage of touch, referred to as "touch hunger" (Field 2010); that as a society, we are deprived of the positive benefits of touch. This is especially true of nurturing, positive forms of touch (Owen and Gillentine 2011). People may actually benefit from engaging in interactions that involve touch more than we realize.

Given literature documenting positive effects of receiving touch (i.e., diners leave higher tips and do not experience interactions more negatively with touch), marketing managers heeding the advice of prior literature would recommend instructing service providers to use touch with customers (Crusco and Wetzel 1984; Hornik 1992). However, by looking at both sides of the interaction, we can more fully understand the implications for employee training and awareness of interactional communication tactics. Importantly, we illuminate consequences when touch is instructed as it is generally not well received. That is, employees experience stress when instructed to touch customers which may be emotionally costly and should be approached with caution. In addition, while touch (and particularly instructed touch) can be stress inducing, these same effects are not seen for the use of compliments. Managers can encourage employees to compliment customers without concern for how an initiator would feel. This is likely because

a compliment in a service encounter may not be imposing intimacy, like touch. Social encounters are complex, but studying both sides of dyadic encounters contributes to our overall understanding of the customer experience (Lemon and Verhoef 2016).

Managers may also use information on touching behavior as an indicator for how attentive an employee may be with customers. Our results reveal that, when given the option, those who volitionally touch are much more likely to further engage with and check back on the customer. If a manager identifies individuals who are frequently initiating touch with customers (of their own volition), this could signal that this individual is also more likely to spend additional time and energy to be attentive to customer needs.

Limitations and Future Research

Our research only constitutes the first step toward understanding this complex phenomenon. By studying initiating touch experimentally, the manipulation of touch initiation was necessary to test causality. Our initiating touch conditions were derived from the suggestion to touch, rather than having it occur organically in interaction, a potential concern for generalizability. Historically, the predominant method for studying touch is via observational research (Jourard 1966), which does not provide an understanding of the causal processes of how touch initiation influences the initiator's thoughts, their assessments of other's thoughts, or subsequent behaviors. We attempted to mitigate this limitation making our inquiry as realistic as possible by allowing for volitional touch initiation, investigating this process implicitly using physiological responses (e.g., electrodermal activity), measuring actual behavior (i.e., checking back), and including an incentive-compatible dependent variable (i.e., tipping behavior). While we acknowledge the common tradeoff between external validity and control in experimental

investigations, future research should continue to investigate the decision and effects of touch initiation with new methods or data sources.

In this work, we predicted that the instruction to initiate touch drives negative interaction evaluations. To verify whether it was touch, itself, actually driving the pattern of results, we compared it to another scripted act (i.e., a compliment, study 4). Our prediction was supported undermining a mere instruction account. However, while both acts were false or prescribed, it is possible that these results could be driven by differences in valence between a compliment and a touch. Future research could consider how the degree of normativity or valence of a message fosters a miscalibration in predicting outcomes for others.

Our experiments examined the consequences of only one touch-based interaction. Further research should more fully understand the long-term implications of an initiator's use of touch with customers. It could be that touch initiators become more comfortable with touch as they use touch repeatedly in interactions and observe its positive effects. Research in the attachment literature supports this notion by suggesting that desensitization may occur over time to make a person more comfortable with tactile stimuli (Kinnealey, Oliver, and Wilbarger 1995). In fact, with experience, we would expect that touch initiators would become increasingly adept at empathic forecasting and would accurately gauge when to use or avoid touch.

This suggests that another interesting direction for future research relates to the cues that someone may be more amenable to touch or more likely to use touch. Are there certain facial expressions or nonverbal cues that suggest an openness to touch? Perhaps self-touch cues could be a source of information. Some self-touches are indicators of discomfort and can be used for soothing oneself such as such as touching one's neck, self-caressing, or running the hands through hair (Field 2014). What is especially compelling about this area is that self-touch is often

unconscious so these types of touches can give insight into what a person is actually feeling and can be a signal of emotional leakage. Understanding factors predicting when touch initiation will be used by a service provider and who is amenable to it are ripe areas for future research.

More generally, these results raise interesting questions about the conscious and nonconscious processing of touch. If the use of touch is brought to consciousness and made salient to the recipient, it may negate the positive effects of touch reception. Indeed, a similar phenomenon occurs when people become consciously aware that they are being mimicked (i.e., the mimicry has become excessive enough to be noticed), it has the undesired effect of alienating an interaction partner (Lakin and Chartrand 2003). If the use of interpersonal touch is made salient to the receiver, it may be viewed as a manipulative persuasive attempt (Friestad and Wright 1994). Further, the awareness of touch can have implications for observing touching behavior as well. In a legal context, defense lawyers often make a point to touch the defendant on the arm in front of the jury. The idea is that the accused is not so reprehensible that the lawyer will initiate touch. Conscious awareness of this tactic would likely negate the positive effects from touch. Researchers should consider the use of touch across contexts and under conditions of heightened or lessened awareness.

Finally, computer-mediated touch is a nascent but growing area, and prior work investigates how the reception of haptic vibrations affects responsiveness to consumer-directed communications (Hadi and Valenzuela *forthcoming*). Since haptic cues can be received or sent electronically, our research offers intriguing questions regarding the initiators of digital touch mediated by technology. It's plausible that perceptions of imposed intimacy of touch initiation would be lessened since direct person-to-person contact is absent. Haptic technology interfaces in the context of initiating touch is an open area for further research.

Conclusion

"Stores do not only contain things for sale, but they also contain other consumers" (O'Guinn, Tanner, and Maeng 2015, 14). Often the focus is on products or choice, while the social impact of the presence of others is neglected. The sense of touch is our fundamental connection with the external world and has a profound impact on how we make sense of other people and our environment. Initiators of interpersonal touch underestimate the positive impact that a light touch on the arm will have on a recipient in a service encounter. We highlight touchpoints, both literal and figurative, that contribute to our understanding of the nonverbal social influences embedded in these consumer experiences.

Data Collection Paragraph: Study 1 was conducted Spring of 2017 at Karlstad University in Sweden with Joann Peck and Anders Gustafsson. Data was analyzed by Anders Gustafsson. Pretest to Study 2 was conducted on Amazon's Mechanical Turk in November of 2019. Study 2 was conducted in waves beginning November 2012 and ending April 2015 at the University of Wisconsin – Madison. Data was analyzed by Andrea Luangrath and Joann Peck. Study 3 was conducted September of 2019. Data was analyzed by Andrea Luangrath and Joann Peck. Study 4 was conducted April of 2019 at the University of Wisconsin – Madison. Data was analyzed by Andrea Luangrath and Joann Peck. Study 5 was conducted at the University of Wisconsin – Madison in the Spring of 2018. Data was analyzed by Andrea Luangrath and Joann Peck.

# APPENDIX A: IMAGES OF STUDIES

Figure A1. Image of the Empatica E4 Device  (Study 1)

Figure A2. Apron Given to Servers to Wear During Interaction (Study 4, 5)

Figure A3. Individual Rooms where Interactions Occurred (Study 2, 4, 5)

Figure A4. Sample Server/Diner Interaction (Study 4, 5)

Figure A5. Pizza Oven Used to Keep Pizza Warm For Simulated Dining Studies (Study 4, 5)

**APPENDIX B: MEASURES APPENDIX**

All measures were conducted on a 7-point Likert scale (1= strongly disagree to 7 = strongly agree) unless otherwise noted.

**Affective Reaction**
(adapted from Schimmack and Reisenzein 2002; α studies 3, 4: .90, .81)
I, personally, feel:
1. tense – relaxed
2. anxious – stress-free
3. jittery – calm
4. unnatural – natural

**Empathic Forecast**
(adapted from Pollmann et al. 2009; 7-point semantic differential, α studies 3, 4: .96, .91)
I think the diner [interaction partner] will feel:
1. Bad-Good
2. Unpleasant-Pleasant
3. Negative-Positive

**Metaperception**
(adapted from Malloy et al. 1997; 7-point semantic differential, α studies 3, 4: .96, .89)
The diner [interaction partner] will think that I am:
1. Not Weird-Weird
2. Not Creepy-Creepy
3. Normal-Abnormal
4. Appropriate-Inappropriate

**Interaction Awkwardness**
(α studies 2, 3, 4, 5: .84, .91, .87, .79)
1. The interaction with the diner [interaction partner] seemed to flow naturally (reverse-coded)
2. The interaction with the diner [interaction partner] seemed uncomfortable
3. The interaction with the diner [interaction partner] seemed awkward
4. Personally, I felt comfortable during this interaction (reverse-coded)

**Perception of Imposed Intimacy**
(α study 2 pretest = .93)
To me, the act of touching [saying 'Nice to see you'] to the customer:
1. implies intimacy – does not imply intimacy
2. seems to impose intimacy on the customer – does not seem to impose intimacy on the customer
3. seems too personal – does not seem too personal
4. is undesired by the customer – is desired by the customer

**Perception of Normativity**
(α study 2 pretest = .97)
To me, the act of [touching the diner on the upper arm/greeting the diner by saying 'Thanks for coming in today!':
1. is not normal – is normal
2. occurs infrequently – occurs frequently
3. is atypical – is typical
4. is unacceptable – is acceptable

**Perceived Importance of Act**
(study 3 post-test)
To what extent do you think that (having said, "thanks for coming in today" to the diner/having touched the diner on the arm) will influence the diner's evaluation of their dining experience? (1 = not at all, 5 = a great deal)

**Recipient Affective State**
(adapted from Pollmann et al. 2009; α study 5 = .95)
During the interaction, I felt [I think the diner felt]:
1. Bad-Good
2. Unpleasant-Pleasant
3. Negative-Positive

**Diner Tipping Behavior**
(study 5; incentive-compatible measure)
Please imagine that your total bill came to **$4.40**, which you have already paid. In this envelope, you will find $1.70 (17 dimes). These dimes are for you to keep as a token of appreciation for participating in this study. In case you want to leave a tip for the server, you may take any of the dimes and place them in the TIP envelope. Based on the service that you received today, you may decide to leave none of it, all of it, or any amount in between." [Actual amount ($) counted by experimental assistants] Tip amount was also verified by asking diners: How much tip did you leave in the envelope for the server?

**Server Anticipated Tip**
(study 5)
Imagine that the diner's total bill came to: **$4.40**, which they paid for with cash. The diner had an additional $1.70 (17 dimes) in their pocket that they could leave as a tip for you. Based on the service that you provided today, how much tip do you anticipate that the diner would leave for you? ($0.00 - $1.70, in $.10 increments)

**Checking Behavior**
(study 5, posed to servers)
(Optional) Now, if you want, feel free to go back and check to see how the diner's first few bites are tasting. It's entirely up to you whether you want to do this. Otherwise, continue on with the questionnaire. Once you begin the questionnaire, please complete all of the remaining questions in this packet.

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**TABLES**

TABLE 1

OVERVIEW OF STUDIES AND FINDINGS

| | Study | Context | Design | Findings |
|---|---|---|---|---|
| **Study 1** | Lab Simulation Study Capturing Physiological Responses | Sales Interaction Simulation | 2 x 2 IT vs. NT Instruction Phase vs. Interaction Phase | Instructed touch increases stress arousal (i.e., measured via skin conductivity) during instruction phase, suggestive of an immediate affective reaction ahead of the interaction. |
| **Study 2** | Lab Simulation Study | Sales Interaction Simulation | IT vs. NT | Instructed touch increases interaction awkwardness. |
| **Study 3** | Lab Scenario Study | Restaurant Hypothetical Scenario | VT Scenario vs. NT Scenario | One's empathic forecast, metaperception, and assessment of interaction awkwardness are driven by their affective reaction to the suggestion to initiate touch. |
| **Study 4** | Lab Simulation Study | Restaurant Interaction Simulation | 2 x 2 Touch vs. Compliment Instructed vs. Volitional | Replicates and extends study 3. Demonstrates the same underlying causal process. This study rules out a mere instruction account with the inclusion of a similarly scripted act (i.e., complimenting). |
| **Study 5** | Lab Simulation Study | Restaurant Server/Diner Interaction Simulation | 3 x 2 IT vs. VT vs. NT Server vs. Diner | After touch, diners leave higher tips for servers; servers do not anticipate receiving higher tips. Servers who are instructed to touch are significantly less likely to engage in future interactions (i.e., checking back on diners) than those who touch volitionally. |

NOTE: IT = Instructed Touch, VT = Volitional Touch, NT = No Touch

TABLE 2

INITIATORS BY CONDITION AND TOUCHING BEHAVIOR

| | | Condition | | | |
|---|---|---|---|---|---|
| | | No Touch | Volitional Touch | Instructed Touch | Total |
| **Actual Touch** | No Touch | 34 | 103 | 0 | 137 |
| | Touch | 0 | 56 | 48 | 104 |
| Total | | 34 | 159 | 48 | 241 |

Note: These are initiator (server) counts. Each initiator was paired with a receiver (diner). Due to unequal cell sizes, we ensured homogeneity of variance was not a problem for our measured outcome variables (interaction awkwardness: $F(3, 473) = 1.20$, $p = .31$; empathic forecast: $F(3, 476) = .91$, $p = .44$; tipping behavior: $F(3, 473) = .97$, $p = .41$).

TABLE 3

REGRESSION RESULTS FOR SERVERS' CHECKING BEHAVIOR (STUDY 5)

*Dependent Variable: Checking Behavior*

| Variable | β | Exp(β) (odds ratio) | SE | $\chi^2$ | *df* | *p* | 95% CI for Exp(β) | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower | Upper |
| ACTUAL TOUCH | .155 | 1.167 | .262 | .350 | 1 | .554 | .699 | 1.951 |
| TOUCH CONDITION (IT vs. ALL) | -1.13 | .323 | .371 | 9.312 | 1 | .002 | .156 | .667 |
| TOUCH CONDITION (VT_AT vs. ALL) | 1.12 | 3.058 | .328 | 11.60 | 1 | .001 | 1.607 | 5.818 |

NOTE: Predictors tested in independent models. NT = No Touch, VT_NT = Volitional Touch, No Touch, VT_AT = Volitional Touch, Actual Touch, IT = Instructed Touch. **Helmert contrasts *p* < .01.

**FIGURES**

FIGURE 1

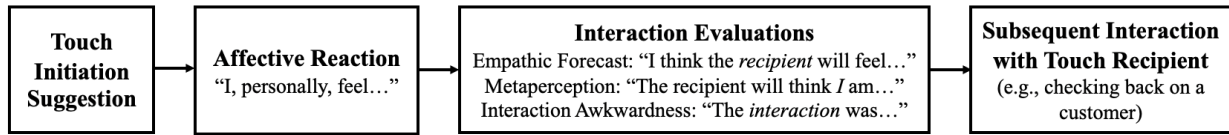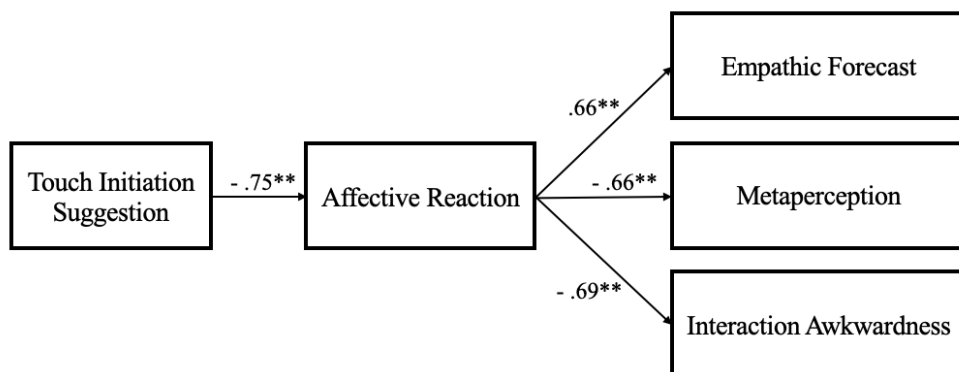THEORETICAL MODEL OF TOUCH INITIATION

| **Touch Initiation Suggestion** | **Affective Reaction** "I, personally, feel…" | **Interaction Evaluations** Empathic Forecast: "I think the *recipient* will feel…" Metaperception: "The recipient will think *I* am…" Interaction Awkwardness: "The *interaction* was…" | **Subsequent Interaction with Touch Recipient** (e.g., checking back on a customer) |
|---|---|---|---|

FIGURE 2

AFFECTIVE REACTION MEDIATES THE EFFECT OF TOUCH ON EMPATHIC

FORECAST, METAPERCEPTION, AND INTERACTION AWKWARDNESS



*p* < .01**

FIGURE 3

INSTRUCTED TOUCH INITIATION DECREASES AFFECTIVE REACTION
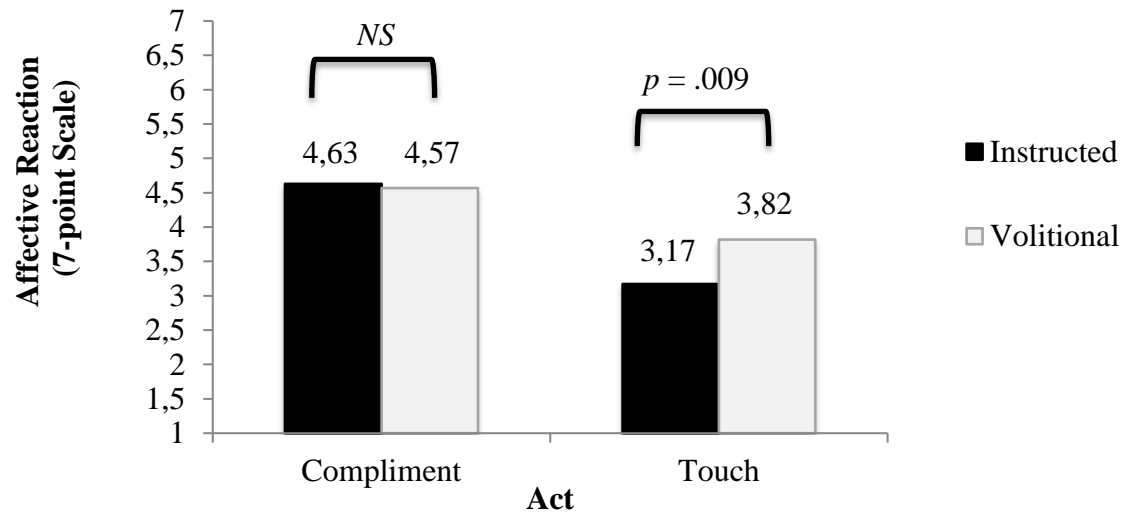
FIGURE 4

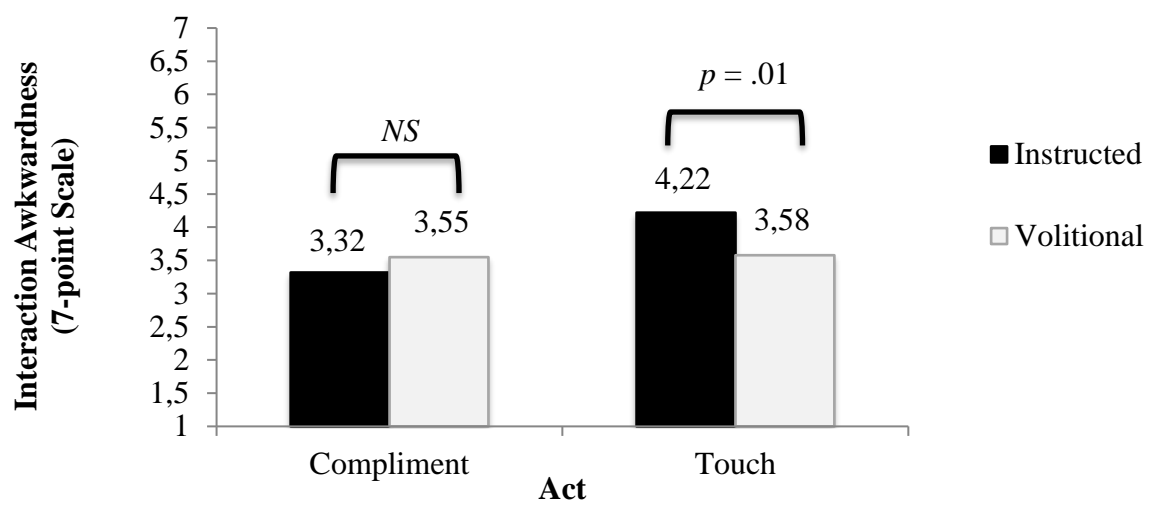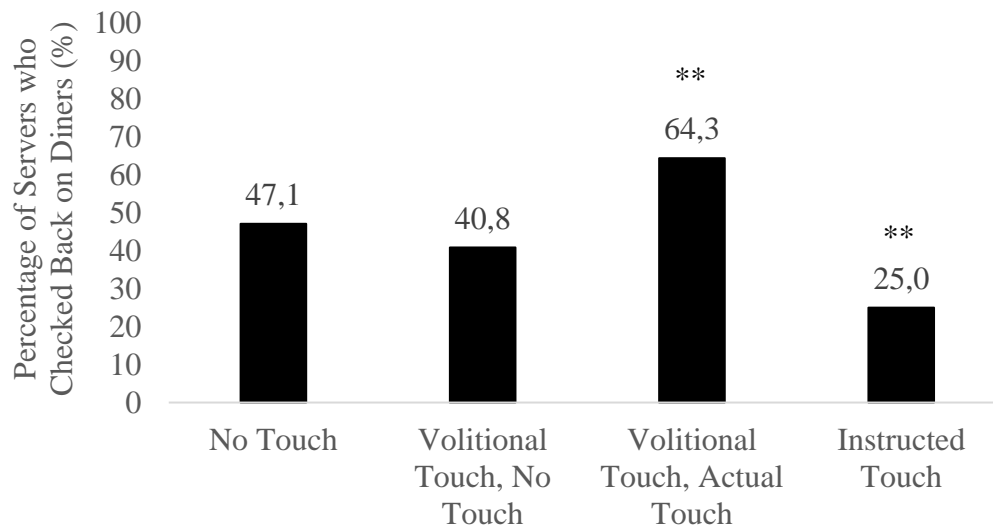INSTRUCTED TOUCH INITIATION INCREASES INTERACTION AWKWARDNESS

FIGURE 5

CHECKING BEHAVIOR – LIKELIHOOD OF FUTURE SERVICE INTERACTIONS



Note: ** Helmert contrasts $p < .01$

**Headings List**

**1) THEORETICAL BACKGROUND**
2) Touch Initiation and Imposed Intimacy
2) Egocentric Projection and Interaction Evaluations
*3) Empathic Forecast*
*3) Metaperception*
*3) Interaction Awkwardness*
*3) Initiator's Subsequent Interaction*
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**1) STUDY 5: TOUCH INITIATION AFFECTS DOWNSTREAM SERVICE BEHAVIORS**
2) Method
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# 1) GENERAL DISCUSSION
## 2) Theoretical Contributions
## 2) Practical Implications
## 2) Limitations and Future Research
## 2) Conclusion