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Hurting or Helping? The Effect of Service Agents' Workplace Ostracism on Customer Service Perceptions

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ABSTRACT

Extant research confirms the importance of cocreating value with customers in service marketing, yet little is known about the impact of service agents' work experiences on customers' service perceptions. This research examines how service agents' workplace ostracism from different sources (supervisors versus coworkers) influences customers' perceived coproduction value, perceived service performance, and actual purchases. Three laboratory experiments and one survey reveal a double-edged sword effect of workplace ostracism and its contingency such that (1) supervisor ostracism *reduces* customers' perceived control value in customer-agent coproduction through threatening service agents' efficacy needs when the agents experience low servicing empowerment; (2) coworker ostracism *enhances* customers' perceived relational value in coproduction through threatening service agents' relational needs when they expect a long-term relationship with customers; and (3) customers' perceived control and relational values increase their perceived service performance, and customer relational value also increases the amount of purchases. Our findings reveal that service agents' workplace ostracism may actually help or harm customers' service perceptions, depending on the *source* of ostracism. The results provide significant implications for how organizations can better manage employees' perceived ostracism in the workplace and strategically improve customers' experience in service coproduction with excluded agents.

Keywords: workplace ostracism, efficacy and relational needs, customer service perceptions, customer coproduction, customer control and relational values

Marketing theory recognizes the increasing importance of customer collaboration in service provision (Fang et al. 2008; Vargo and Lusch 2004). Customer collaboration enables organizations to understand customer needs better and improves performance (Blazevic and Lievens 2008; Prahalad and Ramaswamy 2004). Research on customer collaboration has investigated customer coproduction (Bendapudi and Leone 2003) and suggested that customers attain two types of value through coproduction: more control or power over the service coproduction process and outcome (hereafter, “control value”) and greater opportunities to build relational bonds with service agents (hereafter, “relational value”) (Chan et al. 2010; Donthu and Yoo 1998; Prahalad and Ramaswamy 2000).

Customers’ participation can influence the value they perceive in their coproduction (Chan et al. 2010; Yim et al. 2012), yet scant research has examined how service agents’ work experiences might influence customers’ perceptions of this value (e.g., control vs. relational value). In particular, the question of how the experience of being ostracized at work influences service agents’ subsequent interactions with customers and those customers’ service perceptions, including their perceived coproduction value with the agents and the downstream outcomes of customers’ perceived service performance and their actual purchases, remains unanswered. This question is important, in that coproduction involves intense, interpersonal interactions between employees and customers. Work experiences, such as being socially mistreated in the workplace, should have a potent effect on agents’ subsequent interactions with customers as well as customers’ ultimate service perceptions.

Ostracism is an important social phenomenon that substantially affects the way people treat and are treated by others (Williams 2001, 2007). The relatively little research attention devoted to workplace ostracism is surprising, because the workplace is a prominent social context in which ostracism occurs (Ferris et al. 2008). In surveying 1,015 employees of various organizations, O’Reilly and Robinson (2009) find that more than 70% report being

ostracized in the workplace, implying that it is far more common than other social mistreatments, such as sexual harassment or bullying. Workplace ostracism refers to the extent to which a person perceives that he or she is ignored or excluded by others within the workspace (Ferris et al. 2008; Hitlan and Noel 2009; Leung et al. 2011). It is distinct from other forms of social mistreatment in that workplace ostracism involves the omission of desired behavior rather than the commission of unwanted behavior, and its motive can be ambiguous, without necessarily including any intent to cause harm (Ferris et al. 2008; O'Reilly and Robinson 2009; Robinson et al. 2013; Williams 2001, 2007).

Despite a conventional perception that ostracism is a relatively benign form of mistreatment, initial evidence suggests that workplace ostracism has significant detrimental effects on both employees and organizations, including deteriorated psychological well-being (Hitlan et al. 2006; O'Reilly et al. 2014), reduced job satisfaction and commitment (Hitlan et al. 2006; O'Reilly et al. 2014), job withdrawal (O'Reilly et al. 2014), workplace deviance (Hitlan and Noel 2009), and decreased organizational citizenship behaviors (Ferris et al. 2008; Hitlan et al. 2006; Wu et al. 2011). As a unique feature, workplace ostracism, unlike most other negative workplace experiences, can also lead to some positive and prosocial behaviors, such as enhancing compliance with group opinions (Carter-Sowell et al. 2008), expressing liking for new groups (Wheaton 2001), or increasing effort to work for the group (Williams and Sommer 1997).

These varying and even paradoxical consequences of workplace ostracism suggest an intriguing line of research, pertaining to *when* and *why* ostracized employees might be more likely to engage in negative or positive behavioral responses. Existing research mainly documents the direct, downstream impact of workplace ostracism; however, the mechanisms underlying these different (or even conflicting) effects remain largely unexplored. In addition, despite some recent progress in understanding the consequences of workplace

ostracism, there has been scant effort to bridge ostracism research with service outcomes in general or customers' coproduction experiences with employees in particular. Yet customer service experiences must be examined in their entirety to untangle the complexities of coproduction.

Emerging service research considers how employees' job satisfaction, job stress, and perceived empowerment (Chan and Lam 2011; Chan and Wan 2012; Homburg and Stock 2004) influence customers' perceptions of service performance, but no studies address the impact of employees' experience of being socially mistreated at work on customers' coproduction experiences. When research does include workplace ostracism, it usually assumes a general phenomenon, without clearly specifying its source (Hitlan et al. 2006). However, considering the source of the ostracism (e.g., supervisor, coworkers) might better clarify its behavioral outcomes. We know of no studies that specify the differential effects of different sources of workplace ostracism on customers' coproduction experiences and service perceptions. Finally, most existing studies consider personality traits like extroversion, gender, or employees' job tenure as boundary conditions for the impacts of workplace ostracism (Hitlan and Noel 2009; Hitlan et al. 2006; Leung et al. 2011) but ignore organizational factors, such as the level of empowerment or employees' perceptions of the extendedness of their customer relationships, as potential moderators of the impact of workplace ostracism.

Against this backdrop, we seek to bridge the gap between research on ostracism and customer coproduction by examining the impact of service agents' workplace ostracism, due to different sources, on customers' perceived value in the coproduction (i.e., control and relational values), as well as downstream outcomes such as customers' perception of service performance and their actual purchases. We not only detail the mechanisms underlying these effects but also explore their boundary conditions. As our key proposition, we posit that when

service agents are ostracized by different sources, namely, supervisors versus coworkers (Jaworski and Kohli 1991; Kohli and Jaworski 1994), the effects on customers' perceived value of the coproduction experience with the agents differs. These differentiated effects likely are driven by different threatened human needs (i.e., threatened efficacy and relational needs). Consistent with the notion that motivated behaviors can fortify these threatened needs, we identify servicing empowerment and the extendedness of customer relationships as two key resources that help agents cope with workplace ostracism.

In turn, we contribute to existing literature in four ways. First, this research extends literature on marketing and services by identifying workplace ostracism as a new factor, from the service agent's perspective, that influences customers' attainment of different values in service coproduction. A better understanding of the impact of agents' suffering from mistreatment at work on customers' service perceptions can help managers meet the challenges of managing the satisfaction of both parties. Second, this study represents an initial service literature effort to identify how different sources of exclusion (supervisor vs. coworker ostracism) threaten different types of needs (efficacy vs. relational), which then mediate the differentiated impacts on customers' perceived values in coproduction. Taking this threatened human needs perspective addresses the existing equivocation surrounding the effect of workplace ostracism, in that we uncover a double-edged sword effect of workplace ostracism on customers' coproduction experience. Supervisor ostracism reduces customers' perceived control value (negative consequence), but coworker ostracism helps enhance customers' relational value attainment (positive consequence). Third, we extend previous findings on the effect of workplace ostracism with our contingency approach, such that we examine employees' servicing empowerment and perceived extendedness of customer relationships as key coping resources. In so doing, we provide new insights on the conditions in which employees can restore threatened needs. We also reinforce a key premise of the

need-threat/need-fortification framework, demonstrating that when socially excluded people's needs are threatened, they find ways for restoration. Fourth, we extend our model to examine customers' actual purchases (after a year lag) and their perceived service performance as two ultimate outcomes of customers' value attainment during coproduction. These assessments have significant implications for helping firms manage employees' behavior so as to enhance customers' service perceptions.

Theoretical background

Customer service perceptions: Coproduction value, perceived service performance, and actual purchases

A plethora of studies in service marketing have investigated the effect of customer coproduction (Bendapudi and Leone 2003; Bettencourt 1997; Chan et al. 2010). Ramirez (1999) notes that firms must create and sustain an effective coproduction experience between service agents and customers. Customers can cocreate two key values with service agents: *control value* and *relational value* (Chan et al. 2010; Donthu and Yoo 1998; Fleming et al. 2005). First, coproduction enables customers to provide direct input into service provision, such that they gain relatively more power and control over the service process and its final outcomes (Chan et al. 2010; Dabholkar 1990). Chan et al. (2010) identify control as a form of economic value that customers attain through coproduction. Customers desire control in the service setting, and they enjoy their participation more when they perceive more control during the coproduction process (Schneider and Bowen 1995). Second, intense interactions between service agents and customers represent opportunities to build relationships and cocreate relational value (Fleming et al. 2005). Chan et al. (2010) find that customers' participation increases their communication and relationship building with employees.

Prior research mainly examines the antecedents of coproduction value from the customer's perspective, such as their level of participation and self-efficacy (e.g., Chan et al. 2010; Yim et al. 2012). Relatively few studies take the employee's perspective to understand the impact of their working experiences on customers' service perceptions. Specifically, we know of no study that assesses the impact of negative job experiences, such as workplace ostracism, on customers' service perceptions including their perceived coproduction value and the downstream outcomes of customers' perceived service performance and repurchases, which have profound impacts on firms' profitability (e.g., Zeithaml et al. 1996).

Workplace ostracism and different sources

Workplace ostracism is often described as “being given the cold shoulder” or “receiving the silent treatment” from colleagues (Leung et al. 2011). Existing literature identifies multiple consequences of workplace ostracism in terms of employees' job performance, psychological well-being, organizational commitment, citizenship, or deviance behaviors (Hitlan et al. 2006; O'Reilly et al. 2014; Wu et al. 2011). However, there has been less effort to understand the impact of employees' workplace ostracism on customers' service experiences. Moreover, existing findings about the impact of workplace ostracism are inconclusive. On the one hand, workplace ostracism is associated with greater withdrawal behaviors, both psychologically (e.g., thinking of being absent) and physically (e.g., leaving work early without permission) (O'Reilly and Robinson 2009), decreased performance on formal job tasks, and lower engagement in informal organizational citizenship behaviors (Ferris et al. 2008). On the other hand, in Williams and Sommer's (1997) study, ostracized (vs. non-ostracized) female participants work harder collectively with other people in a ball game. Ferris et al. (2008) further find that workplace ostracism contributes positively to the

organization's social and psychological environment (e.g., protecting organizational property) (see also Martinez 2012).

These paradoxical consequences suggest the need to investigate the impact of workplace ostracism by concerning its *source*. To our knowledge, Hitlan and Noel (2009) offer the only study to distinguish ostracism from supervisors versus coworkers. They define *supervisor ostracism* as the extent to which the employees feel ignored or rejected by their supervisor such that the supervisor ignores their views, avoids eye contact with them, or does not involve them in work activities. They define *coworker ostracism* as their perception of the degree to which they are ignored or rejected by peers, such that they receive the silent treatment, get shut out of conversations, or are left out of group activities. In a survey study, these authors find that supervisor ostracism and coworker ostracism invoke different types of counterproductive work behaviors (CWB): supervisor ostracism increases organizational CWB (e.g., arriving at work late), but coworker ostracism increases interpersonal CWB (e.g., speaking badly about another coworker). Despite the contributions of this first attempt to examine the differential effects of supervisor versus coworker ostracism, the behavioral outcomes Hitlan and Noel examine are confined to organizational outcomes, rather than customers' experiences. Moreover, their work does not illuminate the underlying mechanisms for why supervisor and coworker ostracism exert different impacts. To fill these research gaps, we adopt the need-threat/need-fortification framework proposed by Williams (2007) as a basis for theorizing about the differentiated psychological processes that could be triggered by workplace ostracism from the source of supervisor versus coworkers. In the next section, we discuss the need-threat/need-fortification framework and its contingency factors.

Ostracism and the need-threat/need-fortification framework

In the social psychology literature, Williams (2007) proposes the need-threat/need-fortification framework to explain how ostracism influences people's psychological processes and behavioral responses. This framework suggests that ostracism threatens two types of fundamental needs—*efficacy needs* and *relational needs*—which motivates socially excluded people to behave in ways that might restore or fortify the corresponding needs. First, ostracism robs people of their efficacy needs, including needs for control and meaningful existence (Bernstein et al. 2010; Lee and Shrum 2012). Social exclusion reduces a sense of control, because it makes people believe they are not capable of mastering the environment (Burger 1989). A lack of perceived control motivates behaviors to restore it, such as aggression (e.g., gave more hot sauce to people who did not like spicy food, Twenge et al. 2001). Ostracism also symbolizes social death and makes people feel socially invisible (Williams 2007). A reduced sense of meaningful existence motivates behavior to gain attention, such as using conspicuous consumption to impress others (Lee and Shrum 2012).

Second, ostracism thwarts people's relational needs, including their need for belongingness and self-esteem¹ (Bernstein et al. 2010; Lee and Shrum 2012). The need to belong refers to a desire for frequent, positive, stable interactions with others. A loss of belongingness likely increases efforts to reconnect with others. Self-esteem refers to the belief that the self is good and worthwhile. The self-esteem system thus functions as a sociometer to monitor the degree to which a person is included by others, and it motivates behavior that minimizes the possibility of exclusion (Leary et al. 1995). Low self-esteem

¹ We base our conceptualization of self-esteem, as a type of threatened relational need, on the theoretical foundation of Williams's (2007) and other researchers' (e.g., Bernstein et al. 2010; Lee and Shrum 2012) work. We acknowledge that self-esteem also can relate to efficacy. However, a review of prior literature shows that self-esteem and efficacy differ conceptually on several dimensions. Gardner and Pierce (1998) suggest that self-esteem can be defined as a personal judgment of worthiness, whereas self-efficacy refers to a belief about one's own ability to execute a future action. Moreover, self-esteem represents a self-perception about competence and value, whereas self-efficacy reflects beliefs about performance ability. These two concepts also differ in their time perspectives (i.e., current assessment of the self vs. future assessment of performance). In addition, the empirical results of our factor analyses reveal the discriminant validity of this self-esteem construct, relative to threatened efficacy needs. We therefore categorize self-esteem as a relational need. We thank an anonymous reviewer for raising this concern.

increases people's sensitivity to socially relevant cues. Therefore, when relational needs are threatened, people are motivated to restore them by building social bonds and cultivating interpersonal relationships (Lee and Shrum 2012; Mead et al. 2011; Williams and Sommer 1997). Depending on how ostracism occurs, one category of needs (i.e., efficacy or relational) might be more salient (Williams 2007), which would lead to specific behaviors designed to fortify the threatened, salient need.

Contingency of motivated behavior to satisfy threatened needs

Although people likely engage in activities to restore needs thwarted by social exclusion, prior research also cautions that such behaviors may be contingent on two notable factors (Baumeister and Leary 1995; Williams 2007): *satiation* and *relationship expectation*. First, when ostracized people have already expended some resources to satisfy their threatened needs, they have diminished motivation to use other resources to fortify the same needs (Lee and Shrum 2012; Warburton et al. 2006). Second, because belongingness involves needs for an enduring, affectively positive interaction with others (Baumeister and Leary 1995), ostracized people's efforts to build relationships depend on their expectations of having relatively stable, meaningful interactions (Maner et al. 2007; Mead et al. 2011). Accordingly, we reason that the effects of supervisor versus coworker ostracism on customers' perceived coproduction value are subject to moderation by two resources that service agents use to cope with workplace ostracism: *servicing empowerment* and *extendedness of the customer relationship*. Servicing empowerment is a perceived personal resource, related to the sense of autonomy to provide effective services to customers (Chan and Lam 2011), which provides alternative resources for service agents to fortify their efficacy needs. The extendedness of the customer relationship is a perceived social resource. Long-term customers will represent a meaningful, enduring source of interaction that can

restore the agents' relational needs. We identify these contingencies in services and investigate the boundary conditions of our proposed effects. In the next section, we rely on the need-threat/need-fortification framework to develop our research hypotheses. We depict our conceptual framework in Figure 1.

Hypotheses development

Impact of supervisor and coworker ostracism on coproduction value

Effects of supervisor ostracism on service agents' threatened efficacy needs and

customer control value Supervisors have authority and are of higher ranks, and they determine the resources allocated to employees, control task assignments, and assess employees' performance (Jaworski and Kohli 1991). Liu and Wang (2013) find that employees with a high-quality relationship with supervisors tend to gain advantages, such as access to valuable resources, important activities, or even decision-making processes. In contrast, employees ostracized by a supervisor do not receive such supervisory support, feel a lack of competence in completing work tasks, and cannot manage the expectations for their job assessment, which threatens their sense of control. Without supervisor attention, they also receive fewer indications of their meaningful work existence. Collectively, supervisor ostracism primarily threatens service agents' efficacy needs, such as control and meaningful existence (Williams 2007).

The need-threat/need-fortification framework (Williams 2007) suggests that people whose efficacy needs are threatened engage in behaviors to restore their sense of control (Warburton et al. 2006) and catch others' attention (Lee and Shrum 2012). Such behaviors do not need to be directed at the people who have ostracized them (Warburton et al. 2006). We thus expect that agents suffering from supervisor ostracism engage in controlling, provocative, or attention-grabbing behavior in their interactions with customers during the

process of service coproduction, because doing so provides them with an opportunity to restore their sense of control and meaningful existence. For example, agents may attempt to boost their sense of control by boasting about their knowledge and expertise through dominating the conversation or controlling decisions and limiting customers' input. These actions also help the agents gain others' attention, restore their social visibility, and reaffirm their meaningful existence. These dominating behaviors ultimately reduce customers' perceived control in coproduction.

Our predictions align with Schneider and Bowen's (1995) assertion that the organizational climate experienced by service agents gets reflected in how they treat customers, as well as Yagil and Gal's (2002) argument that employees feeling a lack of control seek to compensate with increased domination of the customer relationship. Thus, service agents suffering from supervisor ostracism likely decrease customers' perceived control value, due to their increased feelings of threatened efficacy needs. Formally,

H1: Supervisor ostracism decreases the customer control value of coproduction.

H2: Threatened efficacy needs mediate this effect, such that supervisor ostracism increases the perceived threat to service agents' efficacy needs, which then decreases the customer control value of coproduction.

Effects of coworker ostracism on service agents' threatened relational needs and

customer relational value Coworkers are the primary participants in interpersonal relationships in the workplace (Hitlan and Noel 2009). Employees who share roughly the same organizational rank may have a communal relationship, feel unity in their common identity, and treat one another as socially equivalent (Kohli and Jaworski 1994). Because group membership provides a solid basis for belonging, security, and self-esteem (Baumeister and Leary 1995), suffering ostracism from coworkers challenges employees' sense of belonging and self-esteem, two key forms of relational needs (Williams 2007).

Based on the need-threat/need-fortification framework (Williams 2007), people whose relational needs are threatened are motivated to act in affiliated ways with others (but *not* with those who ostracize them). They become more conforming, cooperative, and helpful, which makes them feel more interpersonally attractive (Leung et al. 2011; Williams and Sommer 1997). We thus expect that service agents ostracized by their coworkers will engage in more affiliated behaviors in their interactions with customers, which can provide them with an opportunity to restore their relational needs. For example, agents might expend extra effort to help customers, be more willing to listen to them, and exhibit more courtesy. This behavior should enhance customer relational value, because customers perceive that the agents show greater intent and efforts to build a closer relationship with them. Therefore,

H3: Coworker ostracism increases the customer relational value of coproduction.

H4: Threatened relational needs mediate this effect, such that coworker ostracism increases the perceived threat to service agents' relational needs, which then increases the customer relational value of coproduction.

In summary, service agents who suffer from supervisor versus coworker ostracism exert different influences on customers' perceived control and relational values during coproduction, through the mediation of threatened efficacy and relational needs, respectively.

Boundary conditions for the impact of workplace ostracism

Because behaviors to satisfy needs being threatened by social exclusion are contingent on the factors of satiation and the expected quality of the interaction (Williams 2007), we examine two key personal and social resources that figure prominently in general models of role stress and coping to mitigate the impact of threats at work: servicing empowerment and the extendedness of the customer relationship (Lazarus and Folkman 1984; Singh 2000).

Servicing empowerment People express diminished desires to fortify their threatened needs when they already use alternative resources to satisfy the same needs. For example, Warburton et al. (2006) show that ostracized people do not use aggression to satisfy their

control needs if they have fortified their sense of control in a prior task by controlling the onset of noise (see also Lee and Shrum 2012). In the workplace, employees can use servicing empowerment to regain a threatened sense of efficacy; this form of empowerment implies the employee believes he or she has control and can influence decisions related to customer services (Chan and Lam 2011). When servicing empowerment is high, ostracized service agents have access to this alternative resource and thus better chances to restore their sense of control in other work contexts, after confronting supervisor ostracism (Hui et al. 2004). Consequently, their motivation to restore their efficacy needs by exerting control in their interactions with customers should diminish, due to the satiation of their control needs.

Formally,

H5a: A high perceived level of servicing empowerment by the service agent attenuates the negative effect of supervisor ostracism on the customer control value of coproduction.

In line with this hypothesis, a low perceived level of servicing empowerment implies a lack of alternative resources to restore agents' efficacy needs, which explains why supervisor ostracism reduces customers' perceived control value from coproduction. When the level of servicing empowerment is high, this mediation does not occur, because agents restore their sense of control and meaningful existence from their autonomy in other tasks. As a result, they are less likely to fortify their efficacy needs by depriving customers of control. Formally,

H5b: Service agents' threatened efficacy needs mediate the interaction effect of supervisor ostracism and servicing empowerment on the customer control value of coproduction.

Extendedness of the customer relationship Ostracized people are less motivated to build relationships with targets who do not provide opportunities for enduring, positive interactions (Baumeister and Leary 1995). For example, Mead et al. (2011) find that socially excluded people tend to conform with their partners in choice, but they do not do so when they anticipate having no future interactions with them (see also Maner et al. 2007). In a customer

coproduction context, the customer is an important social resource for service agents who suffer from coworker ostracism. However, service agents may encounter customers with varying levels of relationship extendedness: when dealing with customers with whom they expect to have substantial, long-term connections (Heide and Miner 1992), agents will be more motivated and feel more capable of restoring their relational needs by being friendly and cooperative with them. But agents will not be motivated to make such extra efforts if they are dealing with customers of short-term relationships. Formally,

H6a: Perceived low extendedness of the customer relationship by the service agent attenuates the positive effect of coworker ostracism on the customer relational value of coproduction.

In line with this hypothesis, when service agents perceive a high level of extendedness in their customer relationships, threatened relational needs can explain why coworker ostracism increases the customer's relational value during coproduction. However, if the agents do not foresee a long-term relationship, this mediation does not occur, because they have little opportunity to restore their relational loss with these customers. As a result, agents are less motivated to build closer bonds with these customers. Formally,

H6b: Service agents' threatened relational needs mediate the interaction effect of coworker ostracism and extendedness of the customer relationship on the customer relational value of coproduction.

Outcomes of customers' coproduction value

We also examine customers' perception of service performance and customers' actual purchases as two important downstream outcomes of the previously hypothesized effects.

First, customers' attainment of control value in coproduction should relate positively to both customers' perceived service performance and their actual purchases. Providing customers with more control and decision power helps them enjoy the service better (Schneider and Bowen 1995; Surprenant and Solomon 1987), which should enhance their perceptions of the service and their loyalty, manifested as increased purchases (Van Raaij and Pruyn 1998).

Happy customers also lead to more satisfied employees (Heskett et al. 1994), which motivates their better performance to assist customers (Deci and Ryan 1985). Customers with more control likely perceive employees as more adaptive to their needs and requests, which leads to higher perceptions of service performance (Bitner et al. 1990; Hartline and Ferrell 1996). Second, greater relational value attained by customers can increase their repurchase likelihood and their perception of service performance (Chan et al. 2010). Formally,

H7: Customer control value of coproduction increases (a) customers' perceived service performance and (b) customers' actual purchases.

H8: Customer relational value of coproduction increases (a) customers' perceived service performance and (b) customers' actual purchases.

We conducted three studies to test these hypotheses. Study 1, a controlled, laboratory experiment in the educational service context, tests the basic predictions that supervisor (coworker) ostracism decreases (increases) customer control (relational) value of coproduction (H1, H3) and rules out mood as an alternative explanation. Study 2 uses the same experimental context and tests the moderating effects of servicing empowerment and extendedness of customer relationship (H5a, H6a). With a survey approach, Study 3 (a) tests the robustness and generalizability of the findings from Studies 1 and 2 by examining naturally occurring levels of workplace ostracism in a real professional service context, (b) reveals the underlying threatened needs mechanism with mediation (H2, H4) and mediated moderation (H5b, H6b) analyses, (c) documents downstream impacts (H7, H8), and (d) rules out alternative explanations associated with the service agents' personalities.

Study 1

To test the different effects of sources of ostracism on customers' perceived coproduction value in a controlled, laboratory experiment, Study 1 employs a 2 (ostracism: *exclusion* vs. *nonexclusion*) \times 2 (ostracism source: *supervisor* vs. *coworker*) between-subject design.

Procedure

Eighty-six administrative staff (69% female), in charge of serving students, faculty members, and alumni of a major university in Hong Kong, participated in return for HK\$100 each. We manipulated the source of ostracism through an online group discussion between the participants and other administrative staff (computer programmed), designated as either a supervisor or coworkers. Their perceptions of value in a coproduction task were assessed in relation to the task of codesigning a t-shirt with an alumnus (computer programmed). In this task, the alumnus was the customer, and the design of the t-shirt was jointly produced by the participant (service agent) and alumnus (customer). All tasks were completed on computers.

Manipulation of workplace ostracism First, participants read a cover story:

The University is planning an “Alumni Visiting Program,” in which students will visit the university alumni all over the world in summer. By promoting the mutual communication between university students and alumni, alumni could forge a better relationship with the university, and students may leverage the university network in advancing their study or future career path. This program is currently in the initial discussion stage, and the university would like to know more about the opinions and suggestions from the staff.

Then they were invited to express their opinions, through an online group discussion with other staff. Unbeknownst to the participants, these other staff members were fictitious, and the conversations were preprogrammed by the computer.² Next, participants were randomly assigned to an online group with four other administrative staff members and one program supervisor. To strengthen the role of the program supervisor in participants’ minds, they were told that the program supervisor had the authority to guide the discussion and the power to evaluate the contribution of each group member in the group discussion. To highlight the coworker relationships, the instructions emphasized that participants shared a similar rank with the other four administrative staff members and that they should work closely to

² Fictitious participating partners and preprogrammed conversations are effective in manipulating ostracism. For example, Williams et al. (2000) manipulate ostracism using a “cyberball” game, in which the participants play a virtual ball-tossing game with other two fictitious players online.

generate constructive ideas for the program supervisor. In the online group discussion, the supervisor (computer programmed) first organized a self-introduction session in which all five staff members (i.e., participant and four fictitious staff members) greeted one another and introduced themselves.³ The supervisor then raised three questions for discussion: “Please propose a slogan for this alumni visiting program,” “In which area(s) do you think we can implement this program?” and “Do you support the alumni visiting program to be implemented in our university and why?” Participants typed their answers, sent them to the other discussants, and received the others’ responses.

Manipulation of ostracism source Participants sent their answers either to the program supervisor (supervisor ostracism condition) or to an administrative staff member (coworker ostracism condition). Those in the exclusion condition always received rejections from other discussants (e.g., “I don’t think so,” “I don’t like your idea”) or were ignored (e.g., asked to wait but never received a response; Gardner et al. 2000; Williams 2007). Those in the nonexclusion condition received neutral feedback (e.g., “Your view is well noted”). Participants repeated this procedure for the other two questions. Upon completing the group discussion, participants answered three ostracism manipulation check questions, “I felt excluded/rejected/ignored” (Zadro et al. 2004). Finally, to test if participants were suspicious about our cover story, we asked them to indicate the likelihood that the program would be implemented, on a scale of 1 (“not at all”) to 7 (“very much”). A one-sample t-test analysis confirmed that the task was believable ($t(85) = 10.42, p < .001$).

³ To enhance the realism of this online group discussion, we preset the greetings from the four fictitious staff members: one greeting appeared immediately, and then another greeting appeared as the participant was writing his or her own introduction. When the participant finished his or her input, the greetings from the third and fourth fictitious staff members arrived. This procedure enabled the focal participant to become familiar with the four staff members and helped strengthen the perception that the other staff members were coworkers. Web Appendix A provides screenshots from this experiment.

Measuring coproduction value Participants then proceeded to the second part of the study, which required them to codesign a t-shirt with an alumnus contact who would be available for any follow-up events. Unbeknownst to participants, this alumnus (“Albert”) was fictitious, and his responses were preprogrammed by the computer. The cover story stated:

The t-shirt will be given as a souvenir to the alumni in the “Alumni Visiting Program”, and the goal of this task is to obtain participants’ opinions on the t-shirt design. Importantly, in order to ensure that the t-shirt will fit well with the needs of its “customers” (i.e., the university alumnus), you will codesign the t-shirt with an alumni representative through the Internet.

To simplify the codesign process, participants considered several shirt attributes (e.g., collar shape) and were asked to select one of two options (e.g., v-shaped or round) displayed on their computer screen. After choosing each attribute, the fictitious alumnus provided feedback. For certain attributes, the alumnus (i.e., customer) expressed disagreement with the choices, and the participants (i.e., service agents) had to handle the dispute by typing responses and sending them to the alumnus. Two judges, unaware of the study hypotheses, reviewed the responses from the participants, imagining that they were Albert, the alumnus. The judges indicated their perceived control and relational values in the codesign task, based on the participants’ written responses to the dispute over the collar shape design on a scale of 1 (strongly disagree) to 7 (strongly agree) (e.g., low customer control: “Trust me, round neck is more commercial. Not all the people can wear a v-neck tee, like me”; high relational value: “That’s fine. I agree with you. Good to hear your opinions. I can get back to you if you need more suggestions”). Specifically, the judges evaluated the level of control with two items: “This staff member insists on his/her own opinion/wants to control the final decision in the conversation” (Yagil and Gal 2002). We averaged these two questions ($r = .93$) to form a customer control value score. Similarly, the judges assessed the alumnus’s perceived level of relationship building with the participants on two items: “This staff member uses a friendly

tone in the conversation/wants to maintain a good relationship” (Chan et al. 2010). We averaged these two questions ($r = .84$) to form a customer relational value score.

Because previous research indicates that social exclusion worsens a person’s mood (Warburton et al. 2006), which may influence subsequent behaviors (Williams 2007), we measured participants’ moods right after the group discussion to test whether mood might influence our effect, with two items adopted from Mead et al. (2011): “I felt unhappy/sad” (1 = “not at all”; 7 = “very much”). We averaged the two items ($r = .65$) to form a mood score.

Results

Manipulation checks The ostracism score was the average of participants’ responses to the three ostracism manipulation check questions ($\alpha = .92$). Confirming the success of this manipulation, a 2×2 analysis of variance (ANOVA) indicated a main effect of the ostracism manipulation only. Participants who were excluded reported greater feelings of exclusion ($M = 4.12$) than those in the nonexclusion condition ($M = 2.72$; $F(1, 82) = 18.43, p < .01$). The main effect of ostracism source was not significant ($p > .30$), and the interaction effect was not significant either ($p > .20$).

Customer control value (H1) The 2×2 ANOVA of the alumnus’s perceived control value score (rated by judges) showed nonsignificant main effects of ostracism (exclusion or nonexclusion; $p > .60$) and source (supervisor or coworkers; $p > .05$), yet their interaction was significant ($F(1, 82) = 7.90, p < .01$). Simple contrasts revealed that the alumnus (customer) perceived less control value in coproduction when participants (service agents) were excluded by the supervisor ($M = 2.82$) than when they were not ($M = 3.71; p < .05$). However, the perceived control value did not differ according to whether participants were excluded by coworkers ($M = 4.09$) or not ($M = 3.48; p > .10$) (see Figure 2, Panel A). The rated control value was lower when participants were ostracized by a supervisor than by

coworkers ($p < .01$). In the nonexclusion condition, the rated control value was similar, regardless of the ostracism source ($p > .50$). These results support our prediction that supervisor ostracism decreases customer control value in the coproduction task (H1).

Customer relational value (H3) The 2×2 ANOVA of the alumnus's perceived relational value score, rated by judges, resulted in nonsignificant main effects of ostracism (exclusion or nonexclusion, $p > .05$) and source (supervisor or coworkers, $p > .40$), but their interaction was significant ($F(1, 82) = 4.56, p < .05$). Simple contrasts (Figure 2, Panel B) revealed that the rated relational value was higher when participants were excluded by the coworker ($M = 4.86$) than when they were not ($M = 4.43; p < .01$). However, there was no difference in the rated relational value, whether participants were excluded by supervisor ($M = 4.54$) or not ($M = 4.58; p > .70$). The rated relational value was higher when participants were excluded by coworkers than by supervisors ($p < .05$). In the nonexclusion condition, the relational value was similar regardless of the source of ostracism ($p > .30$). The results support our prediction: Coworker ostracism enhances customer relational value in the coproduction task (H3).

Alternative explanation: mood Another 2×2 ANOVA with the mood score resulted in a significant main effect of ostracism only. Participants in the exclusion condition were in a worse mood ($M = 3.98$) than those in the nonexclusion condition ($M = 2.59; F(1, 82) = 16.70, p < .001$), consistent with prior research (Warburton et al. 2006). The main effect of source and the interaction effect were not significant ($ps > .20$), and adding mood as a covariate in the ANOVAs on the control and relational values scores did not change the significance of the interactions ($ps < .05$). Therefore, the effects cannot be explained by mood. We measured mood again in the subsequent studies and found that its effects were systematically not significant. We thus will not discuss it further.

Discussion

The Study 1 results support our predictions about the effects of ostracism by different sources on customers' perceived coproduction value. Compared with the condition in which participants (service agents) were not ostracized, participants ostracized by their supervisor signaled lower control value in the coproduction task to their customers, according to the judges (customers). In contrast, when participants were ostracized by coworkers, the judges perceived a higher level of relational value. We also ruled out mood as an alternative explanation. However, this study does not explicate the mechanism that underlies this effect. In Study 2, we therefore take a moderation approach (Spencer et al. 2005) to reveal the mechanism.

Study 2

With Study 2, we pursue two research goals with two parallel laboratory experiments (Study 2a and Study 2b). First, we aim to replicate the effect of supervisor and coworker ostracism on customer control and relational values, respectively. Second, using the moderation-of-process design, we attempt to demonstrate the mechanism that underlies the proposed effect (Spencer et al. 2005). If the effect of supervisor ostracism on customer control value in coproduction is driven by threats to agents' efficacy needs, priming a high level of servicing empowerment should mitigate the effect, because excluded agents can restore their efficacy needs through servicing empowerment and do not need to exhibit controlling behaviors in their coproduction with customers. Similarly, if the effect of coworker ostracism on customer relational value is driven by threats to agents' relational needs, then this effect should not occur when agents perceive low extendedness of the customer relationship, because such customers are not effective targets for relational

building. In Study 2a, we examine the moderating role of servicing empowerment for the effect of supervisor ostracism on customer control value specifically, and then in Study 2b, we investigate the moderating role of the extendedness of the customer relationship on the effect of coworker ostracism on customer relational value in coproduction.

Study 2a: Moderation of servicing empowerment

Procedure One hundred twelve administrative staff (79% female) from a major university in Hong Kong participated, in return for HK\$100 each. They were randomly assigned to a 2 (supervisor ostracism: *exclusion* vs. *non-exclusion*) \times 2 (servicing empowerment: *high* vs. *low*) between-subjects design. The procedure was the same as that for Study 1, except that we added a writing task to manipulate servicing empowerment between the group discussion and the t-shirt codesign task. That is, participants completed the group discussion, identical to the supervisor ostracism conditions of Study 1, which manipulated supervisor exclusion versus non-exclusion. Next, participants proceeded to a writing task, which manipulated servicing empowerment. The instructions indicated that the university planned to organize an information session to introduce the alumni visiting program and wanted to hear the staff's opinion. Participants in the *high* servicing empowerment condition were instructed to imagine themselves as the organizer of the information session and provide their decisions for organizing the information session, such as the location, time, size, and activities. We emphasized that they could use discretion in determining and judging all aspects of these decisions. Participants in the *low* service empowerment condition instead were instructed to simply think about the information session and write down their thoughts about the same aspects (location, time, size, and activities), without any decision power. After completing the empowerment task, participants responded to three manipulation check questions (Chan and Lam 2011; e.g., "I have significant autonomy in determining how the information session should be organized"; 1 = "strongly disagree," 7 = "strongly agree"), then proceeded to the t-

shirt codesign task from Study 1. Two independent judges used the same two questions ($r = .91$) to code the control value, based on participants' feedback.

Manipulation checks We formed the ostracism score by averaging participants' responses to three questions ("I felt excluded/rejected/ignored"; $\alpha = .92$). The 2×2 ANOVA of this score indicated a main effect of supervisor ostracism, such that participants in the exclusion condition ($M = 3.56$) felt more ostracized than those in the non-exclusion condition ($M = 2.39$; $F(1, 108) = 23.30, p < .001$). The main effect of servicing empowerment was not significant ($p > .50$), and the interaction effect was not significant either ($p > .60$). For the servicing empowerment score, we averaged participants' responses to the three questions measuring empowerment ($\alpha = .90$). The 2×2 ANOVA on this score indicated a main effect of servicing empowerment. That is, participants in the high empowerment condition felt more empowered ($M = 5.26$) than those in the low empowerment condition ($M = 4.63$; $F(1, 108) = 6.50, p < .05$). The main effect of supervisor ostracism was not significant ($p > .30$), and the interaction effect was not significant either ($p > .70$).

Customer control value A 2×2 ANOVA of the alumnus's perceived control value score (rated by judges) indicated that the main effects of ostracism ($p > .50$) and empowerment ($p > .20$) were not significant but their interaction was ($F(1, 108) = 5.62, p < .05$). To deconstruct the interaction, we first examined the effects of social exclusion in the low empowerment condition. Replicating the findings from Study 1, the alumnus (i.e., customer) perceived less control value in the coproduction task when participants (i.e., service agents) were excluded by the supervisor ($M = 2.96$) than when they were not ($M = 4.03$; $p < .05$). This effect disappeared when participants achieved high empowerment though: Customers' perceived control value in the coproduction task did not differ whether participants were

excluded ($M = 4.23$) or not ($M = 3.61$; $p > .20$; Figure 2, Panel C) by the supervisor. These results support our prediction that supervisor ostracism decreased customer control value in the coproduction task, but this negative effect was attenuated when excluded service agents received empowerment after supervisor ostracism.

Study 2b: Moderation of extendedness of customer relationship

Procedure One hundred thirteen administrative staff (88% female) from a different university in Hong Kong participated, in return for HK\$100 each. They were randomly assigned to a 2 (coworker ostracism: *exclusion* vs. *non-exclusion*) \times 2 (extendedness of customer relationship: *high* vs. *low*) between-subjects design. The procedure was the same as that for the coworker conditions in Study 1 (group discussion, followed by t-shirt codesign). The stimuli and procedure for the relationship extendedness conditions were the same, except that in the *high* relationship extendedness condition, Albert would be available for any follow-up events, whereas in the *low* relationship extendedness condition, participants read that they would have few chances to interact with Albert again.⁴ As in Study 1, two judges used two questions ($r = .97$) to code the relational value, as signaled by participants' responses in the t-shirt codesign task. Finally, we checked the manipulation of relationship extendedness using three questions (Heide and Miner 1992; e.g., "The alumni representative may be served by me in the future"; 1 = "strongly disagree," 7 = "strongly agree").

Manipulation checks The ostracism score averaged participants' responses to three questions ("I felt excluded/rejected/ignored"; $\alpha = .97$). Validating the ostracism manipulation, the 2 \times 2 ANOVA showed a main effect of coworker ostracism such that excluded

⁴ Specifically, participants read the following: "Albert is only responsible for the t-shirt codesign task, and will not be available for further interactions with you. You are expected to contact the experimenter for any further questions rather than Albert."

participants felt more ostracized ($M = 4.33$) than those who were not excluded ($M = 1.97$; $F(1, 109) = 88.35, p < .001$). The main effect of relationship extendedness was not significant ($p > .10$), and the interaction effect was not significant either ($p > .70$). After averaging participants' responses to the three relationship extendedness questions ($\alpha = .79$), the 2×2 ANOVA revealed a main effect of relationship extendedness such that participants in the high extended relationship condition felt that they were more likely to build a continuous relationship with the alumnus ($M = 5.06$) than those in the low relationship extendedness condition ($M = 4.41$; $F(1, 109) = 16.03, p < .001$), so the manipulation appeared successful. The main effect of coworker ostracism was not significant ($p > .20$) and the interaction effect was not significant either ($p > .20$).

Customer relational value The 2×2 ANOVA showed non-significant main effects of ostracism ($p > .30$) and relationship extendedness ($p > .30$), but their interaction was significant ($F(1, 109) = 4.71, p < .05$). To deconstruct the interaction, we first examined the effects of social exclusion in the high extended relationship condition. Replicating the findings from Study 1, we found that the alumnus (customer) perceived more relational value in the coproduction task when participants (service agents) were excluded by coworkers ($M = 5.31$) than when they were not ($M = 4.10$; $p < .05$). This effect disappeared when participants expected low relationship extendedness with the alumnus, such that customers' perceived relational value did not differ whether participants were excluded ($M = 4.11$) or not ($M = 4.54$; $p > .40$; Figure 2, Panel D). These results support our prediction. Coworker ostracism increased customer relational value during coproduction, but the positive effect was attenuated when excluded service agents expected low relationship extendedness.

Discussion

The Study 2 results reaffirm our hypotheses about the effect of ostracism from different sources on customer coproduction value. Importantly, Study 2 demonstrates the underlying mechanism, using a moderation approach. High servicing empowerment mitigated the negative effect of supervisor ostracism on customer control value, by buffering the threats to agents' efficacy needs, and low extendedness of the relationship with customers reduced the positive impact of coworker ostracism on customer relational value.

Testing our hypotheses in controlled laboratory experiments allowed us to observe the effect of the manipulation of ostracism on the dependent measures (i.e., customers' perceived coproduction value). Nevertheless, experiments have limitations. First, we manipulated workplace ostracism in a temporary working group rather than a naturally occurring service context. Second, customers' perceived coproduction value was not directly reported by customers. Third, the experiments did not measure the mediating mechanism of threatened needs directly; asking participants to self-report their threatened efficacy and relational needs right after the group discussion task likely would alert them to the purpose of the experiment (Spencer et al. 2005). We thus conducted a survey study to address these limitations.

Study 3

Study 3 uses a survey to pursue five major goals. First, we seek to enrich the generalizability of the Study 1 and 2 results, by examining the impact of naturally occurring levels of workplace ostracism, servicing empowerment, and extendedness of the customer relationship in a real professional service context (i.e., insurance services). Second, we investigate the mediating mechanism underlying the effects of workplace ostracism on customers' perceived value by examining service agents' threatened efficacy and relational needs. Third, this study examines the impacts of control and relational values on customers' actual purchases and their perceived service performance. Fourth, we test alternative

explanations associated with service agents' personalities and customers' prior purchase volumes. Fifth, this study uses data from multiple informants, including service agents, their customers, and immediate supervisors.

Procedure

We conducted the survey in a professional insurance services context for several reasons. First, insurance services involve frequent interactions (e.g., regular meetings) among supervisors, service agents, and their coworkers (Tsai et al. 2007). Agents frequently interact with their coworkers, helping with administrative paperwork or orienting new coworkers. Agents also report to supervisors on a regular basis. Such frequent interactions increase the chances that agents might experience ostracism from supervisors or coworkers. Second, insurance services are complex, customized, and delivered over a continuous stream of transactions, and many customers are relatively unsophisticated (Crosby et al. 1990). The insurance agent thus assumes a key role in service delivery. Third, interactions typically recur between the customer and the same agent, because agents need to get to know their customers to meet their diverse needs (Tsai et al. 2007). Therefore, during intense customer-agent interactions, agents' workplace experiences likely influence customers' evaluations and choices (Homburg and Stock 2004).

We collected a dataset of 220 matched pairs of customers and service agents from a global insurance institution located in a metropolitan city adjacent to Hong Kong. The primary services of this institution were personal health and life insurance. In the multistep data collection, we began by randomly selecting 325 service agents and inviting them, by telephone or e-mail, to take part in the survey; 242 agreed to participate. Before sending the questionnaire, we asked for the contact information of three customers for whom they were

responsible⁵ (e.g., Homburg and Stock 2004). In response, 220 agreed to provide the contact information of their customers, including names, telephone numbers, and/or addresses (response rate = 67.7%), for a total of 660 customers. We were advised by the manager of the firm to contact only *one* of the three customers identified. In 82% (181/220) of the cases, the first randomly selected customer agreed to participate, 90% (35/39) of the second randomly selected customers agreed to participate, and all of the third randomly selected customers (4/4) agreed.⁶

Next, we sent each employee respondent a survey package that contained a cover letter and questionnaire, with a brief description of our research aims. The respondents answered questions about their current workplace ostracism experiences, their perceived levels of threatened needs, and servicing empowerment. They also evaluated the length and strength of their relationships with the client that we had randomly selected and answered personality questions (i.e., extroversion and optimism). We sent another survey to the 220 randomly chosen customers and asked them to evaluate their coproduction experiences with that agent in terms of their perceived control, the agent's willingness and effort to communicate and build a close relationship with them, and their evaluations of the agent's service performance. Finally, the immediate supervisor of each agent helped provide the corresponding customer's actual purchases in the years before and after our data collection.

To assess nonresponse bias, we compared the data from customer and agent respondents (including supervisors) with company data for similar customers and service agents and found no significant differences in tenure, gender, or age. The agent (customer,

⁵ In the insurance industry, some customers meet their agent sporadically; to facilitate fresh recall of recent interactions, we asked agents to select customer respondents whom they had visited in the previous year.

⁶ We attribute this relatively high response rate to three reasons. First, we received generous support from the top management of this organization, and we promised a brief report of our findings on request. Second, all respondents were told that their participation was voluntary and essential for improving insurance services. We assured them that their responses would be kept confidential, with only aggregated data used for the analyses. All envelopes were sealed and collected by the researchers. Third, we provided a cash voucher of HK\$80 and HK\$20 for each completed service agent and customer questionnaire, respectively.

supervisor) respondents had a mean tenure of 4.0 (2.5,⁷ 6) years, 42.7% (49.1%, 45.3%) were men, and 55.0% (33.2%, 71.4%) fell within the age range of 31 to 40 years.

Measure operationalization

Because the questionnaire was originally prepared in English, we adopted a widely used translation/back-translation approach (Brislin 1980; Mullen 1995; Van Auken et al. 2006). To ensure measurement equivalence, confirm that the survey instrument is natural and acceptable to respondents in both languages, and determine it performs the same way in bilingual settings (Brislin 1980), we followed the process described by Chapman and Carter (1979) and Mullen (1995). That is, we first prepared the instrument in English, and then all three bilingual project researchers translated it into Chinese. Two independent translators translated this instrument back into English. Any discrepancies were resolved through discussion. One project researcher and one research assistant also conducted in-depth interviews with three senior managers and pretested the questionnaires with ten service agents and five customers. During this process, respondents did not indicate any difficulty in understanding the items. We made some minor changes based on their feedback and finalized the questionnaire.

As further assurance of the similarity of the measures across languages, we performed an empirical verification⁸ (Chapman and Carter 1979) and administered both versions of the instrument to 20 participants (10 service agents and their corresponding clients in a global financial institution) who were fluent in both languages. In the counterbalanced design, half of the respondents received the original English language version first, whereas the other half received the translated version first. We computed the construct correlations between participants' responses on each form of the instrument. The correlations were very high

⁷ The mean of 2.5 refers to customers' relationship length with the service agents, not with the company.

⁸ We thank an anonymous reviewer for this suggestion.

(.89–.99) between bilingual respondents' answers on the English and Chinese versions.

Therefore, the translated measure appears comparable to the original version. We describe the scales for the key constructs and their measurement reliability and validity in the Appendix; the descriptive statistics are in Table 1.

Responses from service agents We measured workplace ostracism with 12 items to capture service agents' perceived level of ostracism from their supervisor and coworkers in the previous six months (Ferris et al. 2008). According to Molden et al. (2009), social exclusion can be communicated in either an explicit, active, and direct manner (e.g., "My supervisor explicitly criticizes my suggestions at work") or an implicit, passive, and indirect manner (e.g., "My supervisor ignores me at work"). These two forms are generally applicable across a wide range of circumstances.

For the measures of threatened needs, we followed Williams's (2001, 2007) conceptualization (Zadro et al. 2004). For threatened efficacy needs, we used 10 items to capture the underlying needs for control (e.g., "I felt powerless") and meaningful existence (e.g., "I felt unimportant"). For the threatened relational needs construct, we used 10 items that captured its essence, as the needs for belongingness (e.g., "I felt being isolated by others") and self-esteem (e.g., "I felt disliked").

To examine the boundary conditions, we followed Chan and Lam (2011) and measured service agents' perceived levels of autonomy in serving customers. Moreover, we adopted measures from Heide and Miner (1992) to capture the agents' perceived extendedness of relationships with their customers.

Responses from customers For the coproduction value construct, we first briefed the customers about the concept of coproduction, as follows:

In the following questions, we would like to know your feelings toward the service coproduction process with the insurance agent. ‘Coproduction’ here refers to the process and extent of interaction with the insurance agent for the services to be completed. The interactions might include (a) your perceived control in the process of providing information, feedback, or suggestions to the insurance agents relating to the insurance products or services and (b) your perceived intent and efforts of the agent in building a closer relationship with you for achieving a joint satisfactory service outcome.

Then we asked for the customers’ views of their perceived control and relational values in their interaction with the agents, using items from prior research (Chan et al. 2010; Dabholkar 1990). For customer control value, we captured the extent of control or dominance of the conversation that the customers perceived during their interaction with the service agents, such as “I have opportunities to voice my personal view on their products and services” (six items). For the relational value, we measured customers’ perception of the service agent’s intent and effort to build a close and enjoyable relationship with them, such as “I have an enjoyable relationship with this service agent because he/she is always willing to go out of his/her way to satisfy my needs” (four items).

Moreover, in insurance services, customers closely interact with service agents and are able to directly observe and evaluate their job performance. Following prior research, we asked customers to evaluate the service performance of the agents with three items, such as “This agent’s service performance is better than I expected” (Hartline and Ferrell 1996).

Response from supervisor The supervisor reported the amount of insurance that the customer purchased from the corresponding service agent the year after our survey, which serves as the dependent variable, and the purchase amount in the year before our survey, which serves as the control variable.

Control variables We controlled for several personal characteristics of all three parties. First, we included employees’ gender and tenure with the company. Social exclusion may be more

self-defining for men than for women (Cross and Madson 1997), and newcomers may expect some degree of inattention, such that they might dismiss ostracism more readily than long-time employees (Greenglass and Burke 1988). Second, we controlled for customers' age and education. Highly educated customers are more attentive to service delivery (Malhotra et al. 1994), so they might perceive more control and relational values in their interaction with the service agent. Third, we controlled for the length of the agents' relationships with their supervisor, coworkers, and customers, as well as the frequency of customer interactions, in face-to-face meetings and by telephone. More frequent interactions between customers and agents might promote their closer connection and thus improve customers' service evaluations or loyalty (Homburg and Stock 2004). Fourth, prior research shows that more extroverted and optimistic people prefer more interpersonal interactions, which may increase customer relational value (Ekinici and Dawes 2009). Therefore, we controlled for the agents' extroversion (eight items, e.g., "I see myself as someone who is talkative," $\alpha = .97$; Benet-Martinez and John 1998) and optimism (i.e., "I am always optimistic about my future"; Scheier et al. 1994). Fifth, we controlled for customers' purchases in the previous year.⁹

Results

Measurement model tests We ran a confirmatory factor analysis with LISREL 8 (Jöreskog and Sörbom 1993) to assess the measurement properties of the latent constructs. The large number of indicators for the latent constructs and the sample size constraints in relation to the number of parameters to be estimated (Bentler and Chou 1987) led us to follow prior practices and run two separate confirmatory factor analyses (CFA) models (see the Appendix), one containing the predictors and the mediators (Model 1) and another containing the moderators and outcome variables (Model 2) (Reynolds and Harris 2009). Analyses of the

⁹ We thank an anonymous reviewer for suggesting that we control for the employees' personality characteristics and customers' previous purchase amounts.

fit indexes suggested satisfactory model fit (Model 1: $\chi^2_{(896)} = 1941.30, p < .001$; comparative fit index [CFI] = .92; Tucker-Lewis index [TLI] = .91; incremental fit index [IFI] = .92; and root mean square error of approximation [RMSEA] = .079; Model 2: $\chi^2_{(156)} = 269.84, p < .001$; CFI = .97; TLI = .96; IFI = .97; RMSEA = .062).

In each measurement model, the CFA results indicated good psychometric properties for all constructs. All loadings and corresponding t-values were significant, in support of convergent validity. Furthermore, we scrutinized the Cronbach's alphas, composite reliability (CR), and average variance extracted (AVE) for each scale. The lowest Cronbach's alpha value was .89, and the lowest CR was .89. We assessed the discriminant validity of the constructs by running chi-square difference tests for all constructs in pairs to test whether the restricted model (correlation fixed at 1) fits significantly worse than the freely estimated model (correlation estimated freely). All chi-square differences were highly significant, indicating the sufficient discriminant validity of our constructs. We applied Fornell and Larcker's (1981) test and compared each construct's AVE with the squared correlation between the two constructs. In all cases, the AVE was greater than the squared structural link, in further support of the constructs' discriminant validity. Finally, we assessed common method bias and determined that it was not a concern.¹⁰

¹⁰ Our study design and statistical controls provided the two main ways we controlled for potential common method bias (Podsakoff et al. 2003). In terms of the study design, we (a) assured respondents of their anonymity and confidentiality and emphasized that there were no right or wrong answers, which helps reduce the possibility of bias due to self-presentation (Singh 2000); (b) collected data from multiple sources, such that the exogenous variables, mediators, and moderators were rated by service agents, whereas the key dependent variables were rated by customers and supervisors; and (c) pretested the questionnaire with three marketing research experts, ten company managers, and five customers to avoid any flaws in the structure, question sequence, wording, or ambiguous or unfamiliar terms. For the statistical control, we used the general factor covariate technique to estimate possible method effects. After we partialled out an unrotated factor (the best approximation of common method variance if it is a general factor on which all variables load), the factor loadings all remained significant and valid. Then we applied a marker variable technique (Bagozzi 2011), using the item, "If the company is organizing a donation activity for charity purpose, how likely are you to donate?" (7-point scale), which should be conceptually unrelated to both our predictors and the criterion variables. All coefficients remained statistically significant after we controlled for this marker variable. In addition, common method bias is less of a concern for studies with significant interaction effects, because these effects indicate that respondents did not unthinkingly rate all items as either high or low.

Effects of workplace ostracism on customers' perceived value We employed regressions to enter the control variables and main effects in the model estimation. As Panel A of Table 2 shows, supervisor ostracism related negatively to customer control value ($\beta = -.22, p < .05$), in support of H1. Coworker ostracism related positively to customer relational value ($\beta = .22, p < .05$; Panel B of Table 2), in support of H3.

Mediating effect of threatened needs We used Baron and Kenny's (1986) procedures to test for the mediating effect of threatened efficacy and relational needs. As Panel A of Table 2 shows, supervisor ostracism related significantly to threatened efficacy needs (but not to threatened relational needs) and customer control value. Threatened efficacy needs also related significantly to the control value of coproduction. When both workplace ostracism and threatened needs appeared as predictors of control value, only threatened efficacy needs had a statistically significant effect ($\beta = -.15, p < .10$). The effect of supervisor ostracism on control value, after we controlled for threatened needs, became nonsignificant ($\beta = -.14, n.s.$). Therefore, threatened efficacy needs fully mediated the impact of supervisor ostracism on customer control value, in support of H2. Similarly, as we show in the Panel B of Table 2, threatened relational needs fully mediated the effect of coworker ostracism on customer relational value, in support of H4.

Moderating effects To test the moderating effects, we included the control variables, main effects, and interaction terms in the regression. In support of H5a, our results in Model 1 (Table 3, top panel) revealed that service agents' level of servicing empowerment positively moderated the negative impact of supervisor ostracism on customer control value ($\beta = .178, p < .05$). The extendedness of customer relationship also positively moderated the positive

effect of coworker ostracism on customer relational value ($\beta = .200, p < .01$), in support of H6a (Model 1, Table 3, bottom panel).

Simple slope tests helped us examine the nature of the significant interactions (Aiken and West 1991). Supervisor ostracism reduced customer control value only if the agents experienced low levels of servicing empowerment (one standard deviation below the mean, $t(216) = 3.01, p < .01$). In contrast, supervisor ostracism did not significantly affect customer control value when servicing empowerment was high (one standard deviation above the mean; $t(216) = .17, n.s.$). Similarly, the positive effect of coworker ostracism on customer relational value was significant only when the agents perceived a long-term relationship with customers ($t(216) = 3.24, p < .01$). Coworker ostracism did not exert any significant impact on customer relational value when agents perceived short-term relationships with their customers, in further support of H5a and H6a.

Mediated moderation We adopted Muller et al.'s (2005) approach to test the mediated moderation hypotheses (H5b and H6b) with Models 1–3 in Table 3. For example, to test the mediating role of threatened efficacy needs (Table 3, top panel), we used the following:

- (1) Customer control value = $\beta_{10} + \beta_{11}\text{Supervisor ostracism} + \beta_{12}\text{Servicing empowerment} + \beta_{13}\text{Supervisor ostracism} \times \text{Servicing empowerment} + \varepsilon_1$.
- (2) Threatened efficacy needs = $\beta_{20} + \beta_{21}\text{Supervisor ostracism} + \beta_{22}\text{Servicing empowerment} + \beta_{23}\text{Supervisor ostracism} \times \text{Servicing empowerment} + \varepsilon_2$.
- (3) Customer control value = $\beta_{30} + \beta_{31}\text{Supervisor ostracism} + \beta_{32}\text{Servicing empowerment} + \beta_{33}\text{Supervisor ostracism} \times \text{Servicing empowerment} + \beta_{34}\text{Threatened efficacy needs} + \beta_{35}\text{Threatened efficacy needs} \times \text{Servicing empowerment} + \varepsilon_3$.

In Model 1, the supervisor ostracism \times servicing empowerment interaction (β_{13}) was significant, indicating an overall moderation by servicing empowerment. In Model 2, the supervisor ostracism \times servicing empowerment interaction effect ($\beta_{23} = -.134, p < .10$) on threatened efficacy needs was significant. In Model 3, the threatened efficacy needs \times servicing empowerment interaction ($\beta_{35} = .150, p < .10$) was significant. However, the

supervisor ostracism \times servicing empowerment interaction ($\beta_{33} = .105, n.s.$) decreased in magnitude and became nonsignificant, compared with β_{13} in Model 1. We also used 5,000 bootstrap samples to test the mediation (Hayes 2013). The 95% bootstrap confidence interval for this indirect effect (.008 to .140) indicated that threatened efficacy needs fully mediated the moderating role of servicing empowerment. To assess the total indirect effect of supervisor ostracism on customer control value, through threatened efficacy needs, we calculated the simple effects for each moderator value. As the top panel of Table 3 shows, for agents with a low level of servicing empowerment (-1 standard deviation), supervisor ostracism had a negative effect ($-.23$) on customer control value, through service agents' increased level of threatened efficacy needs. In contrast, supervisor ostracism had a negligible effect (.01) on customer control value when the agents enjoyed a high level of servicing empowerment ($+1$ standard deviation).

We used the same procedure to test the mediating role of threatened relational needs—that is, the role of extendedness of customer relationship in moderating the impact of coworker ostracism on customer relational value of coproduction. The analysis supports H6b (95% bootstrap confidence interval of .012 to .081; Table 3, bottom panel).

In summary, the mediated moderation analyses show that high levels of servicing empowerment reduce the dysfunctional impact of supervisor ostracism on customer control value through threatened efficacy needs. In addition, the positive effect of coworker ostracism on customer relational value through threatened relational needs exists only when the agents perceive a more enduring customer relationship. Thus, H5b and H6b are supported.

Downstream outcomes of customer coproduction values To examine the effect of perceived coproduction value on customers' perceived service performance and actual purchases, we ran a series of regression models. As shown in Table 4, customer control value

exerted a positive impact on customers' perceived service performance ($\beta = .16, p = .06$), in support of H7a.¹¹ However, there was no significant effect of control value on actual purchases ($\beta = .08, n.s.$), inconsistent with H7b. This result echoes prior findings that not all customers prefer having control. The opportunity to customize products or services increases complexity for consumers, requiring their greater cognitive effort, which can cause irritation and decrease satisfaction if customers prefer not to exert such effort (Surprenant and Solomon 1987).

In contrast, customer relational value enhanced both customers' perceived service performance ($\beta = .44, p < .01$) and purchases ($\beta = .25, p < .01$), in support of H8a and H8b, respectively. These results match prior findings that both customers and service agents appreciate relationship-building opportunities during coproduction (Chan et al 2010). Taken together, our findings reveal that granting customers with more control in the service coproduction process might only help enhance their perceived service performance of the agents, but not necessarily lead to their repurchases. However, consistent with the view of those relationship marketing theorists, fostering a closer relational bond with the customers is crucial because it improves both customers' perceived service performance and repurchases.

Discussion

Study 3 provides convergent evidence for the proposed effects of workplace ostracism on customer value, through their collaboration with service agents, as well as for the boundary conditions, in a survey study with naturally varying levels of workplace ostracism. Supervisor (coworker) ostracism was associated with reduced (increased) levels of customer perceived control (relational) value in the coproduction task. The negative (positive) effect of

¹¹ We also applied supervisor-rated service performance in the analysis (e.g., Chan et al. 2010), using the item of "Overall, the service performance of this agent in the past twelve months is..." (1 = "poor," 5 = "excellent"). The results remained unchanged.

supervisor (coworker) ostracism decreased when service agents perceived a high level of servicing empowerment (expected a short-term relationship with customers).

Thus Study 3 reveals a mechanism underlying these effects in the mediation analyses: Threatened efficacy needs mediate the moderating effect of servicing empowerment on the impact of supervisor ostracism on customer control value, such that the mediation occurred only when servicing empowerment was low (vs. high). Threatened relational needs mediate the moderating effect of the extendedness of customer relationship on the impact of coworker ostracism on customer relational value, such that this mediation arose only when the agents perceived a long-term relationship with the customers. In addition, Study 3 documents the impact of customer value attainment on service outcomes. Customer relational value was positively associated with actual purchases and customers' perceived service performance; customer control value was positively associated only with perceived service performance. We found support for the hypothesized effects, even after controlling for agents' personal characteristics.

General discussion

Prior research recognizes that the interaction between service agents and customers in coproduction tasks significantly influences customers' service evaluations. Research on the service–profit chain acknowledges essential spillover effects of employees' positive job experiences on customers' service evaluations, but our understanding of how service employees' *negative* working experiences influence service interactions is underdeveloped. This research takes a new angle to examine how service agents' workplace ostracism, resulting from different sources, affects customers' value attainment during coproduction.

Theoretical contributions

Our research contributes to literature in multiple fields. For service coproduction research, we offer two insights. First, we identify a new organizational factor that influences customers' perception of the value of coproduction with service agents: service agents' psychological state of ostracism. Building on research into social exclusion, we differentiate ostracism from supervisors and ostracism from coworkers; they lead to different consequences on the control and relational values that customers attain from coproduction with service agents. Second, we extend understanding of the drivers of customers' value attainment by demonstrating that threatened efficacy, versus relational, needs are underlying mechanisms for these effects.

Our work also extends literature on workplace ostracism by specifying the double-edged sword effect. On the one hand, workplace ostracism is harmful: we find a negative chain effect, such that supervisor ostracism threatens service agents' efficacy needs and thus harms customers' perceived control value during the coproduction task, which ultimately hampers customers' perception of service performance. On the other hand, we identify a positive chain effect of workplace ostracism: ostracism from coworkers threatens service agents' relational needs and thus improves customers' perceived relational value, which ultimately enhances customers' actual purchases and customers' perception of service performance.

We also find a contingency associated with these contrasting effects of workplace ostracism. Specifically, agents' high servicing empowerment reduces the negative effect of supervisor ostracism on customer control value in coproduction, through the satiation of the threatened efficacy needs. With higher levels of autonomy, employees ostracized by their supervisor can reinforce their threatened efficacy needs by exercising control in other service tasks. Once their efficacy needs have been met, their desire to exert control over customers in the coproduction process diminishes. In addition, agents' perceptions of low extendedness of

customer relationships mitigate the positive effect of coworker ostracism on customer relational value, because agents are not motivated to build relationships with customers with whom they expect no enduring interactions. Prior research similarly shows that ostracized people's motivation to pursue relationships depends on their expectation of relatively stable interactions with the target source (Maner et al. 2007). We clarify that ostracized service agents are sensitive to whether the customer offers opportunities for enduring relationships. When they expect short-term interactions, they are not motivated to engage in behaviors to fortify relational needs.

Managerial implications

Effective customer coproduction can contribute positively to customer satisfaction, enhance a firm's productivity, and help build a competitive advantage. Our findings offer significant insights and implications to firms for which service coproduction is central.

Train supervisors to avoid ostracism Supervisor ostracism undermines customers' control value during the coproduction, which decreases customers' perceived service performance. To address this negative impact, firms should train supervisors who might be sources of this type of ostracism. With proper training, supervisors can detect if their behaviors unintentionally make employees feel ostracized. Moreover, they should be cognizant of the potential negative influence of their exclusionary attitudes on customers' perceived coproduction value and, ultimately, on product sales.

Boost service agents' sense of control and meaningful existence Managers should set up programs to elevate service agents' sense of control and meaningful existence. Lee and Shrum (2012) argue that products symbolic of high status (e.g., luxury) can help remedy ostracized people's threatened efficacy needs. In an organizational context, managers might

emphasize the high status of their brands or highlight the competence of the firm to help employees feel that they enjoy high status, competence, and influence. Managers also could redesign employees' jobs to provide them with more autonomy in service tasks. Allowing service agents to enjoy a high degree of autonomy and power could reduce their desire to obtain control over customers and thus enhance customers' perceptions of control value.

Emphasize relational aspects of service coproduction The positive effect of coworker ostracism on customer value attainment depends on service agents' perceptions of an enduring relationship with customers, so firms should emphasize that any customer potentially represents a long-term relationship, to prompt service agents to behave in a friendly, cooperative manner while coproducing with customers, with the goal of building long-term bonds. Finally, managers could consider assigning employees who feel ostracized by coworkers to collaborate with long-term customers, which would help buffer their psychological pain and have positive impacts on their work performance.

Limitations and further research

We note a few limitations of this research. First, insurance services offered an appropriate context for our study, but further work is necessary to generalize our findings to other service contexts, such as retailing. Second, our two-part categorization of the four basic needs into threatened relational and efficacy needs builds on Williams's (1997) framework, which has been supported by many studies (e.g., Bernstein et al. 2010; Lee and Shrum 2012; Zadro et al. 2004), theoretically and empirically. However, the conceptual boundaries of these needs still demand clarification and confirmation. For example, self-esteem could relate to efficacy, such that people who perceive themselves as highly capable, significant, and worthy (high self-esteem) generally predict higher probabilities of task success (high self-efficacy) than those who see themselves as less capable, successful, or worthy (low self-

esteem).¹² Third, ostracism might result from internal causes, such as the service agent's personality traits (e.g., being withdrawn and non-social), or external factors such as a competitive work environment. Additional research should explore the impact of different causes of workplace ostracism on service performance. Fourth, we differentiated workplace ostracism by its source (supervisor versus coworker); it also might be interesting to examine how different forms of ostracism, such as active criticism versus passive neglect, influence service agents' threatened needs differently.¹³ Fifth, additional research should examine the impact of workplace ostracism using respondents from different cultures. Social exclusion could be a more relevant factor in countries marked by high collectivism, because collectivist cultures tend to emphasize close interpersonal relationships (Leung et al. 2011).

¹² We performed additional analyses in which we removed the self-esteem items from the threatened relational needs construct and reran our analyses. The results remained unchanged (see Web Appendix B). To maintain the solid theoretical foundation provided by Williams (2007) and other researchers (e.g., Bernstein et al. 2010; Lee and Shrum 2012), we kept self-esteem as a subcategory of threatened relational needs. We thank an anonymous reviewer for raising this question.

¹³ We split the ostracism constructs into active criticism and passive neglect, for both supervisors and coworkers, then performed regressions to examine the effects on threatened efficacy and relational needs. The pattern of findings generally matched our hypotheses that coworker ostracism exerted more impacts on threatened relational needs, whereas supervisor ostracism had more influence on threatened efficacy needs. We also noted though that active criticism appeared to influence threatened relational needs more, whereas passive neglect seemed to influence threatened efficacy needs more. The differentiation between active criticism and passive neglect falls outside the scope of our study, but we present some additional findings in Web Appendix C. This area deserves further in-depth investigation. We thank an anonymous reviewer for this suggestion.

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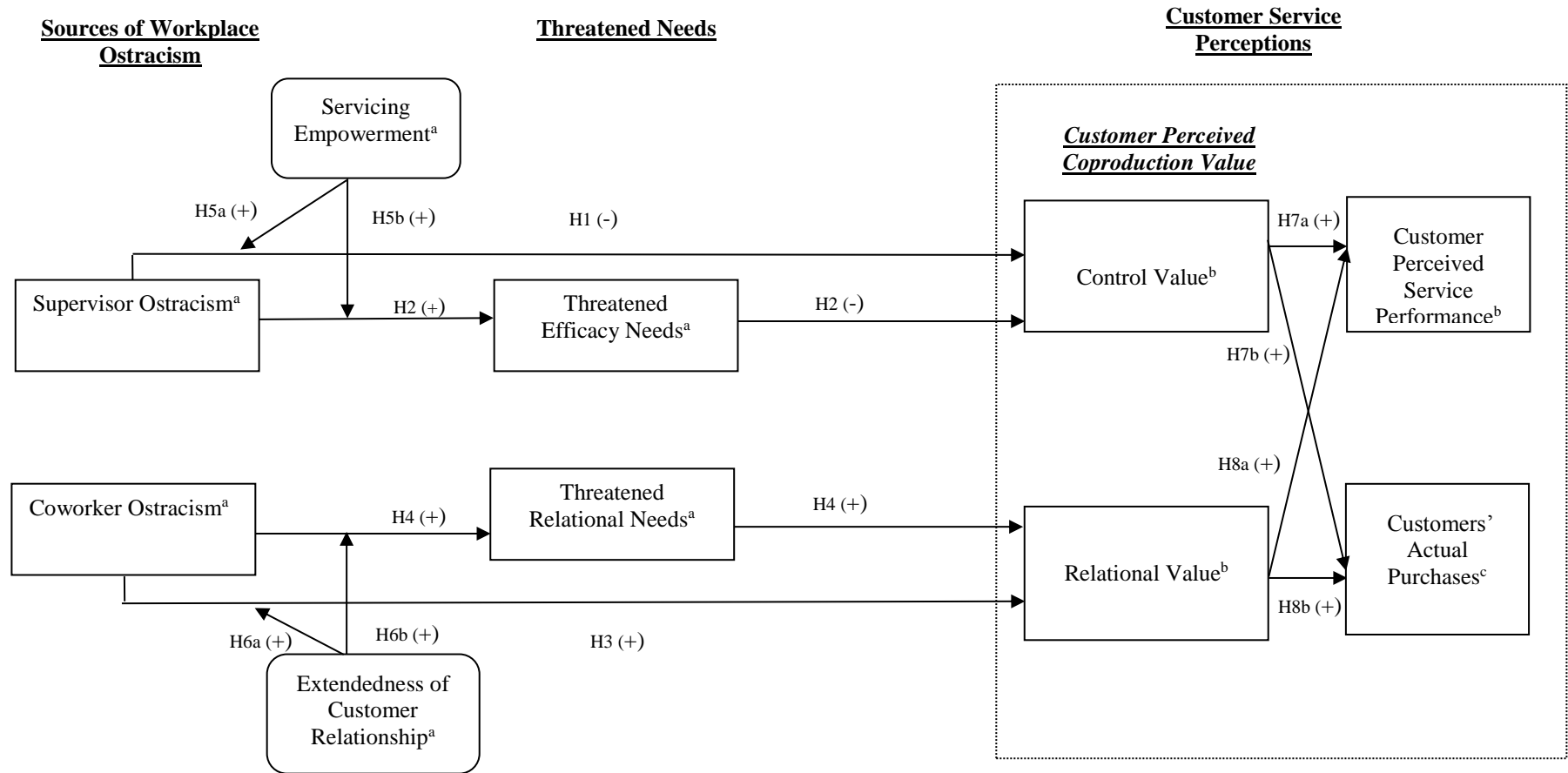
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Figure 1 Conceptual framework



Notes: ^aRatings by service agent respondents; ^bRatings by customer respondents; ^cRatings by supervisor respondents.

Figure 2 Interaction plots: coproduction value (Studies 1 and 2)

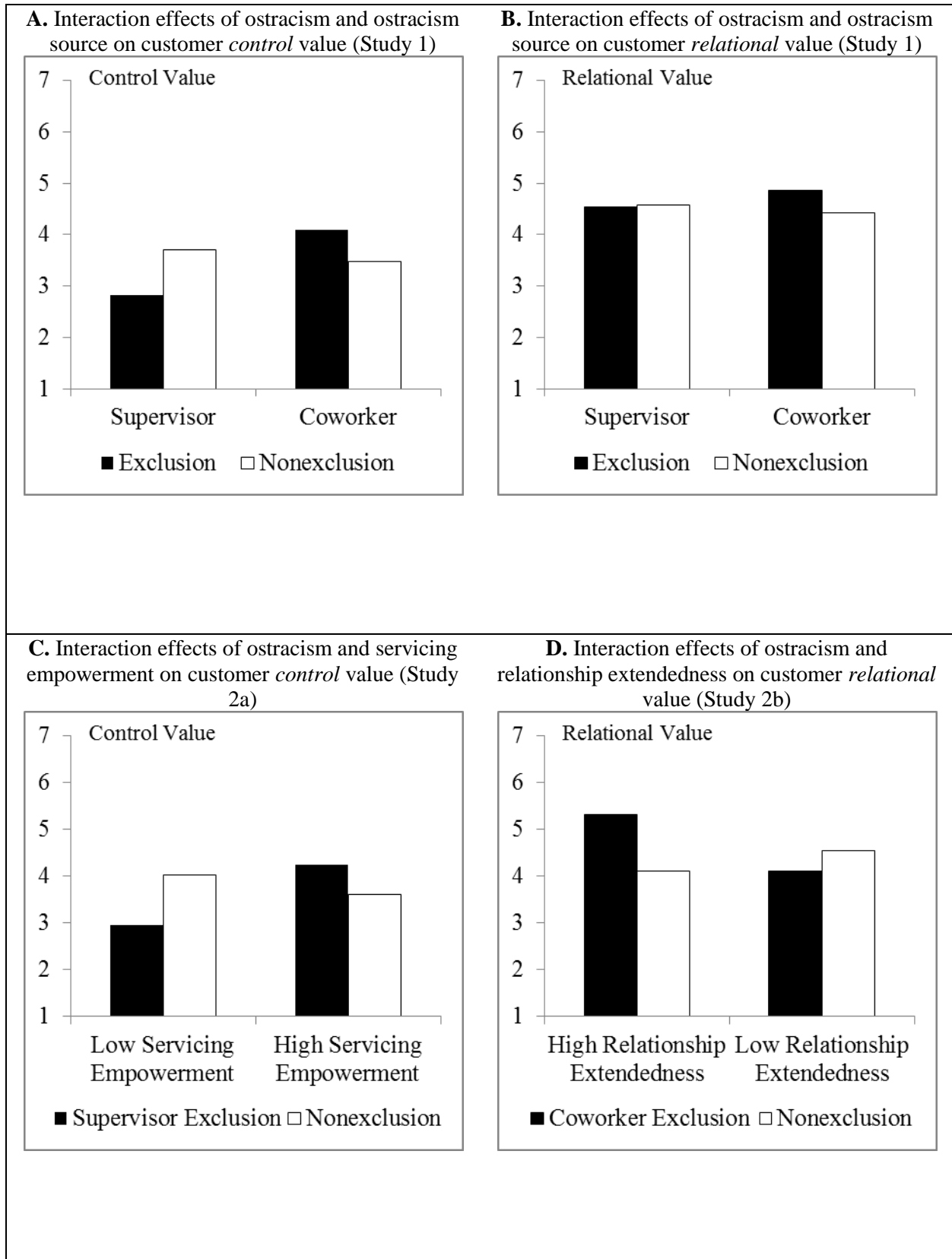


Table 1 Basic descriptive statistics (Study 3)

Construct	1	2	3	4	5	6	7	8	9	10
1. Supervisor ostracism	1.000									
2. Coworker ostracism	.468**	1.000								
3. Threatened efficacy needs	.343**	.257**	1.000							
4. Threatened relational needs	.242**	.378**	.234**	1.000						
5. Servicing empowerment	-.028	-.110	-.165*	-.027	1.000					
6. Extendedness of customer relationship	-.247**	-.210**	-.458**	-.042	.383**	1.000				
7. Customers' perceived control value	-.112 [†]	.031	-.135*	.023	-.138*	-.015	1.000			
8. Customers' perceived relational value	-.023	.151*	.112 [†]	.238**	-.058	-.088	-.259**	1.000		
9. Customers' actual purchases [†]	-.167*	-.034	-.058	-.030	.063	.080	.097	.186**	1.000	
10. Customers' perceived service performance	-.060	-.084	-.027	.029	-.085	.075	.108 [†]	.250**	.092	1.000
Mean	2.38	2.48	2.14	3.97	5.47	5.99	3.59	4.50	9.00	4.58
Standard Deviation	0.78	0.79	1.06	1.07	1.22	0.92	0.85	0.97	4.31	1.14

** $p < .01$. * $p < .05$. [†] $p < .10$ (two-tailed).

Notes: We log transformed customers' actual annual insurance purchase amount during the year after our data collection. Mean of raw purchase amount = HKD 18,063; min = HKD 678, max = HKD 104,116.

Table 2 Mediation tests of supervisor and coworker ostracism (Study 3)

Panel A	Customer Control Value	Customer Control Value	Threatened Efficacy Needs	Threatened Relational Needs	Customer Control Value
<i>Control variables</i>					
Supervisor ostracism	-.22* (H1)		.54**	.16	-.14
Coworker ostracism	.15		.02	.25*	.14
Threatened efficacy needs		-.18*			-.15 [†] (H2)
Threatened relational needs		.06			.06
Total R ²	.10*	.11*	.38**	.34**	.12**

Panel B	Customer Relational Value	Customer Relational Value	Threatened Efficacy Needs	Threatened Relational Needs	Customer Relational Value
<i>Control variables</i>					
Supervisor ostracism	-.09		.54**	.13	-.06
Coworker ostracism	.22*(H3)		.02	.26**	.18
Threatened efficacy needs		-.10			-.10
Threatened relational needs		.16*			.14 [†] (H4)
Total R ²	.16*	.16*	.38**	.33**	.18*

** $p < .01$. * $p < .05$. [†] $p < .10$ (two-tailed).

Notes: The control variables included supervisor-provided company tenure and sex; employee-provided company tenure, sex, relationship length with the supervisor, client, and coworker, and personality traits of extroversion and optimism; customer-provided sex, age, education, interaction frequency with the employee via face to face and by telephone, and customers' purchase volume in the previous year. Among them, the following variables exert significant effects on the threatened needs or customer coproduction values: employee company tenure, relationship length with coworker, optimism, customer age and customers' interaction frequency (face to face and telephone) with employees. Detailed results are available upon request.

Table 3 Mediated moderation model for threatened needs on coproduction value (Study 3)

<i>Servicing Empowerment as the Moderator</i>	Model 1: (DV = Control Value)	Model 2: (DV = Threatened Efficacy Needs)	Model 3: (DV = Control Value)
<i>Control variables</i>			
Supervisor ostracism	-.159 [†]	.535**	-.053
Servicing empowerment (SE)	-.454**	.301	-.319
Supervisor ostracism × SE	.178*	-.134 [†]	.105
Threatened efficacy needs			-.152*
Threatened efficacy needs × SE			.150 [†]
Model R ²	.139*	.387**	.168*
Simple effect of supervisor ostracism on threatened efficacy needs:		High SE (+1 SD): .535 + (-.134)(1.22) = .372/ Low SE (-1 SD): .535 + (-.134)(-1.22) = .698	
Simple effect of threatened efficacy needs on control value:		High SE (+1 SD): -.152 + (.150)(1.22) = .031/ Low SE (-1 SD): -.152 + (.150)(-1.22) = -.335	
Total indirect effect of supervisor ostracism on control value through threatened efficacy needs:		High SE (+1 SD): .372 x .031 = .01 Low SE (-1 SD): .698 x -.335 = -.23	
<i>Extendedness of Customer Relationship as the Moderator</i>	Model 1: (DV = Relational Value)	Model 2: (DV = Threatened Relational Needs)	Model 3: (DV = Relational Value)
<i>Control variables</i>			
Coworker ostracism	.306**	.342**	.262*
Extendedness of customer relationship (ECR)	-.372 [†]	-.262	-.278
Coworker ostracism × ECR	.200**	.075	.159*
Threatened relational needs			.100
Threatened relational needs × ECR			.174**
Model R ²	.207**	.336**	.257**
Simple effect of coworker ostracism on threatened relational needs:		High ECR (+1 SD): .342 + (.075)(.99) = .416/Low ECR (-1 SD): .342 + (.075)(-.99) = .268	
Simple effect of threatened relational needs on relational value:		High ECR (+1 SD): .100 + (.174)(.99) = .272/Low ECR (-1 SD): .100 + (.174)(-.99) = -.072	
Total indirect effect of coworker ostracism on relational value through threatened relational needs:		High ECR (+1 SD): .416 x .268 = .11 Low ECR (-1 SD): .272 x -.072 = -.02	

** $p < .01$. * $p < .05$. [†] $p < .10$ (two-tailed).

Notes: The control variables included in this test were the same as those listed in Table 2. Among them, the following variables exert significant effects on the threatened needs or customer coproduction values: employee company tenure, relationship length with coworker and supervisor, extroversion and optimism, customer gender, customers' interaction frequency (face to face and telephone) with employees, and customers' purchase volume in the previous year. Detailed results are available upon request.

Table 4 Effects of customer coproduction values on customer service perceptions (Study 3)

	Customers' Actual Purchases	Customers' Perceived Service Performance
<i>Control Variables</i>	---	---
<i>Independent Variables</i>		
Customer control value	.08	.16 [†]
Customer relational value	.25**	.44**
Total R^2	.62**	.37**

** $p < .01$; * $p < .05$; [†] $p < .10$

Notes: The control variables included in this test were the same as those listed in Table 2 and Table 3. Among them, the following variables exert significant effects on customers' actual purchase or perceived service performance: employees' relationship length with customer, extroversion and optimism, customers' interaction frequency (face to face and telephone) with employees, and customers' purchase volume in the previous year. Detailed results are available upon request.

We have also included the constructs of supervisor ostracism, coworker ostracism, threatened efficacy needs, and threatened relational needs in this model estimation, the result pattern for the effects of customer control value and customer relational value on customers' actual purchases and perceived service performance remains the same.

Appendix Measurement items and validity assessment (Study 3)

Measurement Model 1	
Supervisor Ostracism^a: <i>Cronbach's alpha = .97, CR = .97, AVE = .74</i>	SFL
1. My supervisor ignored me when I came to the office.	.830
2. I had to take initiative to say something in order to catch my supervisor's attention.	.767
3. My supervisor always seemed to rush to end our conversation.	.862
4. My supervisor seldom took initiative to share working experiences with me.	.848
5. My supervisor seldom looked at me when I reported my work.	.865
6. In general, I feel being ignored by my supervisor.	.833
7. My supervisor often explicitly criticized my opinions/suggestions in the meeting.	.867
8. My supervisor often disagreed with my suggestions at work.	.864
9. My supervisor always uses "busy" as the excuse to turn down my lunch invitation.	.847
10. My supervisor explicitly interrupted my presentation and disapproved my views at work.	.918
11. My supervisor refused to talk too much to me at work.	.899
12. In general, I feel being rejected by my supervisor.	.884
Coworker Ostracism^a: <i>Cronbach's alpha = .97, CR = .97, AVE = .74</i>	SFL
1. My greetings to my colleagues have gone unanswered at work.	.836
2. I involuntarily sat alone in a crowded meeting room.	.837
3. My colleagues refused to talk to me at work.	.885
4. Some colleagues shut me out of the conversation.	.876
5. My colleagues left the pantry soon after I entered that area.	.854
6. In general, I feel being ignored by my colleagues at work.	.897
7. My suggestions at work were always rejected by my colleagues.	.809
8. My colleagues refused to help me buy things when they went out for a coffee break.	.841
9. My colleagues often disapprove my opinions at work.	.849
10. My colleagues explicitly disagreed with what I said in the meetings.	.885
11. My colleagues always excluded me in their group activities.	.856
12. In general, I feel being rejected by my colleagues at work.	.912
Threatened Efficacy Needs^a: <i>Cronbach's alpha = .97, CR = .97, AVE = .74</i>	SFL
1. I felt powerless.	.680
2. I felt that I have no control over the course of my job task.	.759
3. I felt that I do not have the ability to significantly alter the course of my work.	.800
4. I felt that I am unable to influence others' actions.	.766
5. I felt that others (i.e., supervisor or coworkers) decide everything.	.804
6. I felt invisible.	.884
7. I felt meaninglessness.	.925
8. I felt nonexistent.	.975
9. I felt unimportant.	.979
10. I felt useless.	.969
Threatened Relational Needs^a: <i>Cronbach's alpha = .95, CR = .95, AVE = .67</i>	SFL
1. I felt "disconnected."	.676
2. I felt being isolated by others.	.871
3. I felt like an outsider.	.897
4. I felt I did not belong to the group.	.933
5. I felt others (i.e., supervisor or coworkers) did not interact much with me.	.905
6. I felt badly about myself.	.623
7. My self-esteem is low.	.859
8. I felt disliked.	.836
9. I felt insecure.	.710
10. I felt dissatisfied.	.782
Model fit: $\chi^2/df = 2.17$, CFI = .92, TLI = .91, IFI = .92, RMSEA = .079.	

Measurement Model 2

Servicing Empowerment^a: <i>Cronbach's alpha = .93, CR = .93, AVE = .83</i>	SFL
1. I have significant autonomy in determining how I serve my customers.	.841
2. I can decide on my own how to do about serving my customers.	.928
3. I have considerable opportunity for independence and freedom in deciding how I serve my customers.	.954
Extendedness of Customer Relationship^a: <i>Cronbach's alpha = .95, CR = .95, AVE = .85</i>	SFL
1. I expect my relationship with this customer to last a lifetime.	.923
2. This customer will be served by me in the future.	.942
3. My relationship with this customer is essentially "evergreen."	.902

Customers' Perceived Coproduction Value^b

In the following questions, we would like to know your feelings toward the service coproduction process with the insurance agent. "Coproduction" here refers to the process and extent of interaction with the insurance agent for the services to be completed. The interactions might include (a) your perceived control in the process of providing information, feedbacks or suggestions to the insurance agents relating to the insurance products or services and (b) your perceived intent and efforts of the agent in building a closer relationship with you for achieving a joint satisfactory service outcome.

Control Value^b: *Cronbach's alpha = .89, CR = .89, AVE = .57*

To what extent do you agree that the agent performs in the following ways so as to <u>gain more control over his/her interaction</u> with you?	SFL
1. I mostly don't have a say or chance to discuss much with the agent, he or she always works out everything for me. (<i>reverse scale</i>)	.806
2. The agent always invites my suggestions and feedbacks on their products and services.	.796
3. I have the opportunities to voice my personal view on their products and services.	.795
4. The agent talks most of the time during our discussion on the insurance plan, which make me feel less control over the interaction. (<i>reverse scale</i>)	.659
5. The agent always selects a product or service that he or she feels suit my needs without consulting much of my view. (<i>reverse scale</i>)	.715
6. I have the opportunities to ask for different services or products to choose from the agent.	.765

Relational Value^b: *Cronbach's alpha = .91, CR = .89, AVE = .68*

To what extent do you agree that the agent performs in the following ways so as to build a better relationship with you?

1. I have an enjoyable relationship with the service agents because he/she willingly goes out of his/her way to satisfy my needs.	.672
2. I am always served with his/her extra care that goes above and beyond the "call of duty".	.757
3. This agent will voluntarily assist me for building a better relationship with me.	.966
4. This agent is always willing to give me a help for forging a better relationship with me.	.865

Customers' Perceived Service Performance^b: *Cronbach's alpha = .96, CR = .96, AVE = .88*

1. This service agent's service performance is good.	.958
2. This service agent's service performance is better than I expected.	.978
3. I am happy with this service agent's performance.	.874

Customers' Actual Purchases^c

The customer's actual purchase of the insurance policy in the year of 2013.

Model fit: $\chi^2/df = 1.73$, CFI = .97, TLI = .96, IFI = .97, RMSEA = .062.

Notes: All items used seven-point scales (1 = "strongly disagree"; 7 = "strongly agree"). SFL = standardized factor loading, CR = composite reliability, AVE = average variance extracted.

^a Rated by service agent respondents.

^b Rated by customer respondents.

^c Rated by supervisor respondents.