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**TRICKLE-IN EFFECTS: HOW CUSTOMER DEVIANCE BEHAVIOR INFLUENCES
EMPLOYEE DEVIANCE BEHAVIOR**

by

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
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ABSTRACT

Prior research has established trickle-down effects (including trickle-out effects) in organizations, that is, perceptions, attitudes, and behavior may flow downward from an individual at a higher level of the organizational hierarchy (e.g., a supervisor) to another individual at a lower hierarchical level (e.g., a frontline employee), or from a frontline employee to an external member (e.g., a customer). Complementing the extant literature, this dissertation examines trickle-in effects, specifically, I examine whether customers' interpersonal and organizational deviance behavior will trickle-in through organizational boundary to influence a frontline employee's interpersonal and organizational deviance behavior.

Specifically, I propose customers' interpersonal and organizational deviance behavior will trickle-in through organizational boundaries to affect employees' interpersonal and organizational deviance behavior. In addition, I develop a multiple-mediator model to test the different possible mechanisms underlying trickle-in effects: social exchange, social learning, displaced aggression, self-regulation, and social interactionist model.

Two studies were conducted to test my propositions. In retail settings, Study 1 finds customers' interpersonal deviance behavior trickled-in through organizational walls to influence employees' interpersonal and organizational deviance behavior through displaced aggression mechanism. Study 2, collecting data from call centers, demonstrates customers' organizational deviance behavior trickled-in to influence employees' organizational deviance behavior through social learning processes.

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CHAPTER 1: TRICKLE EFFECTS

Recently there has been a growing interest in what researchers have termed “trickle-down effects,” wherein the perceptions, attitudes, and behaviors of one individual (usually a supervisor), as a result of treatment received from another individual (usually his or her manager), flow down the organizational hierarchy to influence the perceptions, attitudes, and behavior of yet another individual (usually a subordinate) [e.g., Ambrose, Schminke, & Mayer, 2013; Aryee, Chen, Sun, & Debrah, 2007; Hooper & Brass, 2006; Masterson, 2001]. For instance, a supervisor’s perceptions of interactional justice from his/her manager’s treatment may trickle down to affect a subordinate’s perceptions of interactional justice from the supervisor’s treatment (Ambrose et al., 2013; Aryee et al., 2007). In a similar vein, trickle-down research has also examined how an individual within the organizational boundary (usually an employee) may, as a result of receiving treatment from another individual (usually his or her supervisor), spread out such treatment to influence an external stakeholder (usually a customer or a family member), a phenomenon referred to as “trickle-out” effects in this dissertation (Masterson, 2001; Restubog, Scott, & Zagenczyk, 2011).

Both trickle-down and trickle-out effects constitute spillover social influence, suggesting perceptions, attitudes, and behaviors may transmit indirectly from one person to another. Understanding trickle effects is important in the organizational context, as employees within the organization often interact with one another and some also interact with outside stakeholders, forming a complicated social network. While it has long been understood that receiving certain treatment from another individual may affect how the target behaves toward the source of the treatment (i.e., direct or reciprocal social influence, Folger, Ford, Bardes, & Dickson, 2010;

Wayne, Liden, Graf, & Ferris, 1997; Westphal & Stern, 2006; Zapata, Olsen, & Martins, 2013), trickle effect research suggests treatment from the source may also influence how the target behaves toward other individuals with whom s/he interacts. Hence, social influence may carry over through a social network to influence individuals who have no direct interaction with the original source (i.e., indirect or spillover social influence). As trickle effects spread across social networks, the influence is not contained to the original dyad and could affect a broader range of individuals. Hence, trickle effects constitute a particularly important type of social influence in organizational settings.

Because of its importance, studies on trickle-down and trickle-out effects have proliferated in recent years. Research has established trickle effects on a broad range of constructs, including interactional, distributive and procedural justice (Ambrose et al., 2013; Aryee et al., 2007; Hoobler & Hu, 2013; Masterson, 2001; Tepper, Duffy, Henle, & Lambert, 2006; Tepper & Taylor, 2003), perceived organizational support (POS) (Shanock & Eisenberger, 2006), psychological contract breach (Bordia, Restubog, Bordia, & Tang, 2010; Hoobler & Brass, 2006), ethical leadership (Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009), abusive supervision (Mawritz, Mayer, Hoobler, Wayne, & Marinova, 2012), performance management (Biron, Farndale, & Paauwe, 2011), job satisfaction (Judge & Ilies, 2004), organizational identity (Lichtenstein, Netemeyer, & Maxham, 2010), affect (Ilies, Schwind, Wagner, Johnson, DeRue, & Ilgen, 2007), goal setting (Mawritz, Folger, & Latham, 2014), trust (Fulmer & Ostroff, 2013), and HR practices (Sun, Aryee, & Law, 2007).

Despite the quickly accumulating evidence for trickle effects, perhaps the most notable feature of this research area is the disorganized character of its growth. Most trickle effect research examines the phenomenon in a specific domain of organizational study, with the aim to

contribute to these specific domains (e.g., justice perceptions, abusive supervision, and ethical leadership). As a result, even though there have accumulated a considerable number of studies on trickle effects, these studies tend to be viewed as more closely attached to the specific domains they examine than as part of an independent research stream on trickle effects.

Relatedly, the conceptual growth of trickle effects as a research area has been organic, with no unifying conceptual framework to provide structure to existing research or guidance for future work, which severely hinders the further development of this research area.

The purpose of this paper is to provide a comprehensive review on extant research on trickle effects that scatter across different domains, and organize these studies as part of the same research stream. In addition, utilizing a spillover social influence perspective, I propose an overarching theoretical framework for understanding and studying trickle effects. With such a theoretical framework, we will be able to place trickle-down and trickle-out phenomena in a broader scope and identify other types of trickle effects that are similar at the core. In what follows, I first introduce the spillover social influence perspective as a central theoretical foundation and identify four types of trickle effects. Then I provide a comprehensive review on the current trickle effect literature, pertaining to the focal constructs, theories, mediators, and moderators that have been identified in the extant studies, and the methodologies used in these studies. Last, drawing on existing trickle effect research and the spillover social influence perspective, I recommend directions for future work to advance the trickle effect research.

The Social Influence Perspective and the Four Types of Trickle Effects

Social psychologists have defined social influence as influence that occurs when an individual's perceptions, feelings, attitudes, and behaviors are affected by others (Brehm, 1966; Cialdini, 2001; Cialdini & Goldstein, 2004; Kelman, 1958; Latane, 1981; Wood, Lundgren,

Ouellette, Busceme, & Blackstone, 1994). Thus, trickle-down and trickle-out effects can be conceptualized as social influence that originates from a higher level in the organizational hierarchy or within an organization, and is transmitted through an intermediary to a lower hierarchical level or outside the organization. It is important to note that most organizational research on social influence has focused on reciprocal social influence, wherein one's treatment toward other individuals affects how others treat him- or herself (Folger et al., 2010; Wayne et al., 1997; Westphal & Stern, 2006). For example, a subordinate's interaction with the supervisor with dignity or politeness may change how the supervisor treats the subordinate (Jones, 2008; Lian, Ferris, Morrison, & Brown, 2013; Wayne et al., 1997; Westphal & Stern, 2006). As such social influence is contained in a dyadic relationship and leads the target of the influence to treat the source differently; such influence is reciprocal in nature.

Trickle-down and trickle-out effects are different. A typical trickle-down phenomenon focuses on how a supervisor's perceptions of his/her manager's treatment (how the manager treats the supervisor) affects a subordinate's perceptions of the supervisor's treatment (how the supervisor treats the subordinate), or, in a trickle-out scenario, how an employee's perceptions of his/her supervisor (how the supervisor treats the employee) changes a customer's perceptions of the employee's treatment (how the employee treats the customer) (Ambrose et al., 2013; Borida et al., 2010; Masterson, 2001; Mayer et al., 2009). Hence, trickle-down and trickle-out effects do not capture reciprocal social influence. Instead they examine how receiving treatment from one individual (e.g., a manager) affects one's treatment of a different person (e.g., a supervisor's treatment toward his/her subordinate). In this dissertation, I term such indirect social influence "spillover social influence," as the social influence spills over or beyond the dyadic relationship between the original source and target and the target spreads the influence to a third person.

The social influence perspective provides a broader framework for considering how individuals influence one another in organizations. Social interactions are abundant in the workplace (Bouty, 2000; Brown & Moshavi, 2005; Epitropaki & Martin, 2013; Kinnis & Schmidt, 1988). When performing their jobs in organizations, employees often interact with people at different levels of the organizational hierarchy (i.e., supervisors, coworkers, subordinates) as well as people outside the organizational boundary (e.g., customers) (Grandey, 2003; Grandey, Fisk, & Steiner, 2005; Spencer & Rupp, 2009; Robinson & O’Leary-Kelly, 1998; Rupp, McCance, Spencer, & Sonntag, 2008). These different social groups may cast influence on employees’ work-related perceptions, attitudes, and behavior (Bouty, 2000; Brown & Moshavi, 2005; Epitropaki & Martin, 2013; Kinnis & Schmidt, 1988).

While the extant literature has mainly focused on downward spillover social influences from managers to supervisors to subordinates or outward spillover social influence from supervisors to employees to customers or family members (Ambrose et al., 2013; Masterson, 2001; Mayer et al., 2009), social psychologists have long acknowledged social influences may take place in different directions (Cialdini & Goldstein, 2004; Kelman, 1958; Latane, 1981). That is, people at a lower level of the organizational hierarchy may cast influence on those at a higher level. Similarly, people outside the organizational may also influence those within the organizations. Hence, I suggest just as there are downward and outward spillover social influence processes, there are likely upward and inward spillover social influence. Social influence may spillover in an upward fashion when employees’ perceptions, attitudes, and behavior trickle-up through the organizational hierarchy to influence the perceptions, attitudes, or behavior of higher level managers, or in an inward fashion when customers’ or family

members' perceptions, attitudes, and behavior trickle-in through the organization boundary to influence employees' behavior directed at coworkers or supervisors.

I conducted a search through Web of Science and Google Scholar, using keywords like “trickle-down effects,” “trickle-out effects,” “trickle-up effects,” “trickle-in effects,” “trickle effects,” “spillover effects,” and “cascading effects.” A thorough literature review identified 46 papers published between 1980 to 2014 that have explored various aspects of organizational “trickle effects” from both conceptual and empirical perspectives (see Appendix 1). While a significant portion of these papers investigate trickle-down effects and trickle-out effect, there also exists sporadic research on trickle-in and trickle-up effects. In the next section, I provide a comprehensive review on this body of literature.

The Trickle-effect Literature

In this section, I review the extant research on trickle effects from the following perspectives: (1) the focal constructs that have been examined in trickle effect research, (2) the theories or mechanisms that have been proposed to account for trickle effects, (3) the mediators identified and tested for trickle effects, (4) the moderators identified and tested for trickle effects, and (5) the methodologies used in past studies to research trickle effects. Such a structured review allows us to assess what we know and do not know about trickle effects in organizational settings. Accordingly, I put forth suggestions for future research in this important area.

Focal Constructs Examined in the Trickle Effect Literature

Focal Constructs Examined in Trickle-down Effects

My literature review has identified a total of 28 papers that examine trickle-down phenomenon. Researchers have established the trickle-down effects for a broad range of constructs, such as justice (Ambrose et al., 2013; Aryee et al., 2007; Masterson, 2001; Tepper et

al., 2006; Tepper & Taylor, 2003), abusive supervision (Mawritz et al., 2012), psychological contract breach (Bordia et al., 2010; Hoobler & Brass, 2006), perceived organizational support (POS) (Shanock & Eisenberger, 2006), behavioral integrity (BI) (Simons et al., 2007), and ethical leadership (Mayer et al., 2009).

Across this broad range of constructs, the focal construct that has received the most empirical support on the trickle-down effects is justice, with a total of seven papers find evidence for the trickle-down effects of justice. As the first researcher, who termed “trickle-down effects,” Masterson (2001) found instructors’ perceptions of distributive justice and procedural justice from their supervisors trickled down to influence their students’ perceptions of distributive justice and procedural justice from the instructors. Following Masterson’s (2001) study, researchers have examined trickle-down effects of justice perceptions in other forms and in other contexts. For example, surveying dyads of National Guard members and their supervisors, Tepper and Taylor (2003) demonstrated supervisors’ procedural justice perceptions trickled down to affect their subordinates’ procedural justice perceptions. In a more recent paper, Tepper et al. (2006) found supervisors’ procedural justice perceptions also trickled down to influence subordinates’ perceptions of their supervisors’ abusive supervision. Rafferty, Restubog, and Jimmieson (2010) found managers’ distributive injustice and interactional injustice treatment trickled down to influence supervisors’ abusive behavior toward their subordinates. Aryee et al. (2007) showed supervisors’ interactional justice perceptions of their managers trickled down to influence subordinates’ interactional justice perceptions of their supervisors through subordinates’ perceptions of abusive supervision. More recently, Ambrose et al. (2013) found fair interactional treatment supervisors received from their managers trickled down to influence subordinates’ perceptions of interpersonal treatment from supervisors at an aggregated level, which in turn

affected group-level employee citizenship and deviance behavior. Hoobler and Hu (2013) showed supervisors' interactional justice perceptions of their managers trickled down to influence subordinates' negative affect toward others through supervisors' negative affect. These findings provide robust evidence that supervisors' perceptions of fair treatment received from their managers is related to subordinates' perceptions of how the supervisor treats them.

In addition to the trickle-down effects of justice, the trickle-down effects of leadership are also well documented. For example, Mayer et al. (2009) showed top managers' ethical leadership trickled down to influence supervisors' ethical leadership, which in turn, was positively related to group-level OCB and negatively associated with group-level deviance behavior. Schaubroeck et al. (2012) found leaders' ethical behavior trickled down to influence ethical leadership of their immediate followers, which in turn, trickled down to influence ethical leadership of lower level followers. Crossley, Taylor, Wo, and Piccolo (2014) found supervisors' ethical leadership trickled down to influence how their subordinates interact with their customers, impacting repeated sales to existing customers. Besides ethical leadership, transformational leadership also trickles down the organizational hierarchy. Bass, Waldman, Avolio, and Bebb (1987) and Yang, Zhang, and Tsui (2010) both found managers' transformational leadership behavior trickled down to influence supervisors' transformational leadership behavior. Likewise, Dvir, Eden, Avolio, and Shamir (2002) demonstrated leaders' transformational leadership trickled down to influence the direct followers' treatment towards their followers, which in turn, affected performance of these indirect followers.

In addition to the trickle-down effects of "good" leadership behavior, researchers have also examined trickle-down effects of "dark" leadership behavior, abusive supervision or deviance behavior. For example Mawritz et al. (2012) found managers' abusive behavior trickled

down to influence supervisors' abusive behavior, which further trickled down to affect employees' deviance behavior. Liu, Liao, and Loi (2012) found senior managers' deviance behavior trickled down to influence supervisors' abusive behavior, which in turn, affected team members' creativity.

Researchers have also shown employees' identification with an organization trickles down along the organizational hierarchy. For example, Schuh, Zhang, Egold, Graf, Pandey, & van Dick (2012) showed leaders' organizational identity trickled down to influence followers' organizational identity. Lichtenstein, Netemeyer, and Maxham (2010) showed store managers' organizational identity trickled down to influence their subordinates' organizational identity, which in turn, trickled out to affect customers' identification with the organization, ultimately leading to the high financial performance of the organization.

There is also evidence that psychological contract breach trickles down through the organizational hierarchy. For example, Hoobler and Brass (2006) found supervisors' psychological contract breach of their managers trickled down to affect subordinates' perceptions of abusive supervision of their supervisors. Bordia et al. (2010) found supervisors' perceptions of organizational breach of their managers trickled down to influence subordinates' perceptions of supervisory breach, which were then related to their citizenship behavior toward the customers, and consequently customer satisfaction.

Finally, literature has shown the trickle-down effects of other constructs. For example, Shanock and Eisenberger (2006) demonstrated supervisors' perceived organizational support (POS) from the organization trickled down to influence subordinates' POS through subordinates' perceived supervisor support (PSS). Subordinates' POS was also positively related to their in-role performance and extra-role performance. Relatedly, Wu, Lee, Hu, and Yang (2014) found

managers' non-work support from the organization and their bosses trickled down to influence supervisors' non-work support toward their subordinates.

Simons et al. (2007) found supervisors' perceptions of their managers' behavioral integrity (BI) trickled down to influence their subordinates' BI perceptions of supervisors. Mawritz, Folger, and Latham (2014) showed managers' assignment of difficulty goals to supervisors trickled down to influence supervisors' abusive behavior toward their subordinates. Schuh, Zhang, and Tian (2013) found leaders' moral leadership behavior and authoritarian leadership behavior trickled down to influence the followers' in-role and extra-role behaviors toward the organization and their coworkers. Gratton & Erickson (2007) found the senior executives' cooperation trickled down to influence the supervisors' cooperation, which in turn, affects employees' cooperation behavior.

Detert & Trevino (2010) showed senior managers' power trickled down to influence how the supervisors interacted with their employees, which in turn, affects employees' speak up behavior. Biron, Farndale, and Faauwe (2011) showed top management promotion of certain performance management practices trickled down to influence lower level management performance management effectiveness through the middle level management performance management effectiveness.

Focal Constructs Examined in Trickle-out Effects

Although not as extensive as trickle-down effects, evidence has also been documented for the trickle-out effects, that is, the way one person in the organization (e.g., a supervisor) treats another person (e.g., an employee) transmits through organizational walls to affect how the latter (e.g., an employee) treats yet another individual, specifically an outsider (e.g., a customer or a family member).

Many of these studies examine how conflict, pressure, or stress in the workplace may carry over to life at home. Hammer, Cullen, Neal, Sinclair, and Shafiro (2005) found employees' work related conflict from their supervisors or coworkers trickled out to influence employees' depressions at home towards their family members. Grzywacz and Marks (2000) showed employees' pressure from their supervisors or coworkers trickled out to influence employees' negative emotion towards their family members. Grzywacz, Almeida, and McDonald (2002) demonstrated the employees' stress from their supervisors or coworkers trickled out to influence the employees' interaction with their family members at home. Ilies, Schwind, Wagner, Johnson, DeRue, and Ilgen (2007) found employees' workload from the organization trickled out to influence employees' affect at home toward their family members. In addition, dark behavior or negative affect has also been shown to trickle out from work to home. For example, Restubog, Scott, & Zagenczyk (2011) found supervisors' abusive behavior toward the employees trickled out to influence employees' family undermining behavior at home. Williams and Alliger (1994) showed employees' unpleasant moods caused by their supervisors and coworkers trickled out to influence their unpleasant moods toward their family members at home.

Research has also documented the trickle-out effects of positive constructs. For example, Frone, Yardley, & Markel (1997) showed employees' perceived supervisors' support trickled out to influence their spouse support at home. Takeuchi, Yun, and Tesluk (2002) found expatriates' general adjustment in their international assignment from the support of their supervisors and coworkers trickled out to influence their spouse adjustment at home.

Focal Constructs Examined in Trickle-up Effects

In contrast to the extensive research on trickle-down and trickle-out effects, trickle-up effects have received little academic attention. In line with conceptualization of trickle-down and

trickle-out effects, I conceptualize trickle-up effects as referring to how the perceptions, attitudes, and behavior of one party in the organization (e.g., a subordinates) flow up through the organizational hierarchy to influence the perceptions, attitudes, and behavior of another party (e.g., a manager) through the transmitter (e.g., a supervisor). While this is an important area, surprisingly there exists only one paper examining trickle-up effects. In particular, Fulmer and Ostroff (2013) found supervisors' trust in leader trickled up to influence their supervisor' trust in (their own) leader, which in turn, affects the leaders' trust in the top management team.

Focal Constructs Examined in Trickle-in Effects

In line with my conceptualization, trickle-in effects refer to the way an outside party (e.g., a customer, or a family member) treats another person (e.g., a frontline employee) transmits through organizational walls to affect how the latter (e.g., the frontline employee) treats yet another individual (e.g., a supervisor, a coworker, or organization).

To date, there is no studies examining the trickle-in effects. However, some studies showed the influence from an outside party can breach in through organizational wall. For example, Sliter, Sliter, and Jex (2012) found customers' incivility transmitted through organizational wall and interacted with coworker incivility to affect employees' absenteeism and sales performance. Crouter (1984) found employees' experience mood and support at home influenced their experience at work. Frone, Yardley, & Markel (1997) showed employees' parental overload, distress or dissatisfaction at home influenced their work overload. Grzywacz and Marks (2000) showed employees' family support decreased employees' job pressure at work. Takeuchi et al. (2002) found expatriates' spouse adjustment at home influenced their general adjustment in their international assignment. Williams and Alliger (1994) showed employees' unpleasant moods experienced at home influenced their unpleasant moods experienced at work.

Although these articles do not explicitly examine how the way an outside party treats the employees influence how the employees treat a third party in organizations, such influence is likely.

Summary

It is evident from the above review that consistent with the spillover social influence framework, trickle effects can take place in different directions in organizational settings. Social influence may transmit downward, outward, upward, or inward, through the organizational hierarchy or across the organizational boundary.

In particular, the trickle effect literature has documented ample evidence of downward and outward spillover phenomenon. It is shown social influence may transmit downward across different hierarchical levels within the organization and also from within the organization to outsiders. Specifically, researchers have found perceptions, attitudes, and behavior may flow down from top leaders to middle level managers (Mayer et al., 2009), from middle level managers to supervisors (Mayer et al., 2009; Mawritz et al., 2012; Simons, 2007; Thau et al., 2009), from supervisors to employees (Ambrose et al., 2013; Aryee et al., 2007; Mayer et al., 2009; Bordia et al., 2010; Hoobler & Brass, 2006; Shanock & Eisenberger, 2006; Tepper et al., 2006; Tepper & Taylor, 2003), and from employees to customers (Bordia et al., 2010; Masterson, 2001) and family members (Hoobler & Brass, 2006).

In a sharp contrast, research on trickle-up and trickle-in effects is rather limited. There is only one paper that showed upward spillover social influence from a lower organizational hierarchy to a higher hierarchy (Fulmer & Ostroff, 2013).

While the trickle effect literature as a whole has established the spillover phenomenon with a variety of focal constructs, my review reveals researchers have focused on different sets of

constructs when studying the four different types of trickle effects. In trickle-down effects, researchers have placed much attention on how justice and leadership transmit from managers to supervisors and then to subordinates (Ambrose et al., 2009; Mayer et al., 2009). In trickle-out effects, prior studies have focused on how conflicts and stress may trickle out from supervisors to employees and then to family members (Grzywacz et al., 2002; Hammer et al., 2005). In trickle-up effects, the only extant study examined how trust in a leader may transmit from subordinates to supervisors (Fulmer & Ostroff, 2013). And researchers have not yet studied trickle-in effects.

Future Research Directions

Based on my review, the first thing I observed is this research stream needs more empirical evidence for trickle-up effects and trickle-in effects. So far, to my knowledge, the only study examining the upward spillover phenomena is the study conducted by Fulmer and Ostroff (2013), studying the trickle-up effects of trust from supervisors to managers. This is in sharp contrast with the proliferate literature on trickle-down effects. It is unknown whether such difference is caused by the different level of academic attention allocated to these two effects or due to the fact that downward spillover social influence is more prominent in organizational settings than upward spillover social influence. Future research on trickle-up and trickle-in effects will shed light on whether and how employees at lower hierarchical level will influence those at higher hierarchical levels, and when these trickle-up and trickle-in effects will be profound.

Second, since customers are an important stakeholder for organizations and employee-customer interaction is commonplace, it is plausible that how customers treat employees may affect how employees treat their coworkers, supervisors, or organizations. Future studies

studying the trickle-in effects from customers will thus make a significant contribution to our field. Such new insights will also allow us to understand how influence on employees casted by customers versus family members may differ in nature.

Third, it is interesting that researchers on different types of trickle effects have established the phenomena using different focal constructs. Future research should investigate whether the same construct may trickle in different directions, or whether only some constructs will be transmitted in certain directions. If the latter, then it will be fruitful to identify what kind of constructs are more likely to trickle downward, outward, upward, or inward. For example, trickle-down research has accumulated much evidence on the trickle-down effects of justice and leadership (Ambrose et al., 2013; Mayer et al., 2009). Can justice and leadership trickle in other directions? Will supervisor leadership style perceived by employees affect how they treat family members? Will justice perceptions of subordinates affect justice perceptions of supervisors? Or, will justice experienced at home influence how employees behavior at workplace?

An interesting observation is it seems the trickle-down literature and the only trickle-up study have focused predominantly on cognition-based constructs, such as trust (Fulmer & Ostroff, 2013), leadership (Mayer et al., 2009), perceived organizational support (Shanock & Eisenberger, 2006). Therefore, an important future research question is whether cognitive and emotional constructs tend to trickle in different directions (upward/downward versus inward/outward).

Theories Proposed for the Trickle Effects

According to my review, most papers on trickle effects only cite one theory as the explaining mechanism. And only 6 papers proposed multiple mechanisms to explain the trickle

effects. In addition, virtually all papers proposed a theory or multiples to explain the trickle effect without explicitly testing the theorized process.

Trickle effect researchers have proposed at least 15 different theoretical accounts for explaining the phenomena (along with papers that have offered no theoretical explanation at all). Of the 15 theories offered, three theories have been frequently cited to explain the trickle-down and trickle-out effects: social learning theory, social exchange theory, and displaced aggression. Table 1 identifies the specific theoretical foundations employed by each empirical study in my review. In this section I focus on the three main theories used frequently in the trickle effect literature.

Social Learning Theory

My review identifies 13 papers that use social learning theory (Bandura, 1977; 1986) to account for trickle effects. These papers suggest an individual (e.g., a supervisor) may imitate and model the behavior of another person (e.g., his/her manager) through a vicarious learning process, and this modeled behavior influences how s/he treats a third party (e.g., his/her subordinate).

Social learning theory suggests social influence transmits through one person learning and imitating other people's, as "most human behavior is learned observationally through modeling: from observing others, one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action" (Bandura, 1977). In the context of trickle-down and trickle-out effects, employees usually interact with their supervisors frequently and their supervisors usually have high status, power, and capabilities (Ambrose et al., 2013; Mayer et al., 2009; Mawritz et al., 2012; Simons et al., 2007). Thus supervisors often become the employees' role models, as employees are motivated to imitate supervisors' behavior.

Accordingly, emulating how their supervisors treat them, employees may adopt the same behavior when treating their subordinates or customers (Ambrose et al., 2013; Mawritz et al., 2012; Simons et al., 2007). Hence, past research has suggested trickle-down and trickle-out effects are driven by a social learning mechanism.

For example, Ambrose et al. (2013) found supervisors' interactional justice perceptions trickled down to influence the group's interactional justice climate, because "a supervisor is likely to look to his or her manager to learn the appropriate way to interact with others"(p. 8). Simons et al. (2007) showed supervisors' behavioral integrity (BI) trickled down to affect subordinates' behavioral integrity, and they suggested this effect occurred through modeling and imitation. Mawritz et al. (2012) found managers' abusive behavior trickled down to influence supervisors' abusive behavior, which in turn, trickled down to influence work group interpersonal deviance behavior, since "individuals are likely to model the aggressive behavior of those in positions of higher status" (p.330). Crossley et al. (2014) found the influence of supervisors' ethical leadership on employees trickled out to affect employees' interaction with their customers, which in turn, led high customer repeated purchase. They suggested this effect occurred because employees model and copy their supervisors' ethical behavior when interacting with their customers. Thus, supervisors' ethical behavior can influence the customers they never met through employees' role modeling process.

Social Exchange Theory

Besides social learning theory, trickle-down and trickle-out scholars have also explained the downward and outward spillover with social exchange theory. There are 9 papers that have explained trickle effects using social exchange theory (Blau, 1964). This line of work suggests an individual (e.g., a supervisor) feels obligated to reciprocate the favorable treatment s/he receives

from the organization (e.g., as embodied by his/her manager) by treating a third person (e.g., his subordinate) fairly.

Homans (1958) suggested social behavior is often driven by exchange of goods, which includes both material goods (e.g., gifts) and non-material goods (e.g., time, respect, or approval). People tend to engage in social exchange when they perceive subjective value in the goods they are likely to receive from their exchange partners (Homans 1958) and when the exchange is expected to bring benefits (Emerson, 1976). As suggested by past research, the norm of reciprocity is key to social exchange theory, as it regulates exchange behavior. When individuals receive a favor or benefit, the norm of reciprocity will propel the benefit receiver to discharge the obligations by returning the favor to the benefits provider in the hope that continuing such relationship will bring more valued benefits (Blau, 1964; Cropanzano & Mitchell, 2005; Gouldner, 1960).

In the trickle-down and trickle-out literature, researchers have argued that these effects are driven by social exchange. Compelled by norm of reciprocity, employees who receive fair treatment from their managers feel obligated to reciprocate the fair treatment by treating their subordinates or customers more fairly as doing so ultimately provides a benefit for their exchange partner (Bordia et al. 2010; Masterson, 2001; Mayer et al., 2009; Shanock & Eisenberger 2006; Tepper & Taylor, 2003).

For example, Masterson (2001) explained instructors who received fair treatment also treated students more fairly because they felt “obligated to reciprocate by providing the organization with something of value in turn” (p. 596). Tepper and Taylor (2003) showed supervisors’ procedural justice perceptions trickled down to influence subordinates’ procedural justice perceptions, and they argued “employees interpret procedural fairness to mean that their

employer can be trusted to protect their interest; this, in turn, engenders an obligation to repay their employer in some fashion” (p. 97). Mayer et al. (2009) demonstrated top managers’ ethical leadership trickled down to affect supervisors’ ethical leadership. To explain this effect, the authors suggested “ethical leaders are likely to engender high levels of trust and to be perceived as fair ... [Employees] are more likely to reciprocate such treatment by behavior in ways that benefit the entire work groups” (p.3). Shanock and Eisenberger (2006) found supervisors’ perceived organizational support (POS) trickled down to influence subordinates’ POS, because “POS leads to a felt obligation to help the organization reach its objectives” (p. 689). Bordia et al. (2010) showed supervisors’ psychological contract breach trickled down to affect subordinates’ psychological contract breach, and the authors suggested “the perception of breach will lead to supervisors reducing their contributions to the organizations” (p.1583).

Displaced Aggression

Seven papers identified in my review have suggested displaced aggression (Marcus-Newhall, Pedersen, Carlson, & Miller, 2000; Tedeschi & Norman, 1985) as an underlying mechanism for trickle effects. These researchers assert an individual (e.g., a supervisor) who receives harmful treatment from another individual (e.g., his/her manager) may redirect their aggression toward a third person (e.g., his/her subordinate).

While social exchange theory and social learning theory are more cognitively-driven, displaced aggression is a more emotion-driven mechanism (Blau, 1964; Bandura, 1977, 1986; Marcus-Newhall, Pedersen, Carlson, & Miller, 2000; Tedeschi & Norman, 1985). Displaced aggression refers to the “redirection of a [person’s] harmful behavior from a primary to a secondary target or victim” (Tedeschi & Norman, 1985: 30). That is, a person may experience

aggression in response to harmful behavior of others, and direct aggression toward a person other than the harm-doer.

Displaced aggression is often explained by the frustration-aggression hypothesis, which suggests frustration is a prelude of aggression (Dollard, Doob, Miller, Mowrer, & Sears, 1939). A victim of harmful treatment often experiences frustration, anger, and resentment. The increased level of frustration and negative emotions will lead the victim to display aggression and fight back. However, in situations where there exists a power asymmetry between the victim and the harm-doer (e.g., the harm-doer has power over the victim), the victim may not be able to vent their aggression or fight back toward the original harm-doer. Instead, the victim tends to vent their aggression toward easy targets, usually people who are less powerful (Marcus-Newhall et al., 2000; Skarlicki & Folger, 1997; Tedeschi & Norman, 1985).

In trickle-down and trickle-out effects, when the subordinates receive mistreatment from their supervisors, they often feel frustration and anger. These negative emotions prepare them to retaliate and fight back. However, since supervisors usually have power and authority over subordinates, the subordinates are usually not able to retaliate and fight back toward their supervisors. Afraid of the potential punishments from the supervisors, the subordinates may redirect and vent their aggression toward their subordinates or customers (Aryee et al., 2007; Hoobler & Brass, 2006).

For instance, Aryee et al. (2007) found supervisors' interactional justice trickled down to influence subordinates' interactional justice because "supervisors who experience interactional injustice at the hands of their immediate bosses may take out their frustration on subordinates" (p. 192-193). Hoobler and Brass (2006) showed supervisors' psychological contract violations trickled down to affect subordinates' abusive supervision because "individuals are often unable

to confront the source of workplace stressors...those individuals turning toward other, less powerful individuals on whom to vent their frustrations ” (p. 1126). Restubog et al. (2011) showed employees’ abusive supervision trickled out to influence employees’ aggressive behavior directed at their spouse at home, and they argued this effect happened because “such individuals are more likely to engage in displaced aggression, which involves redirecting harmful actions away from the source of fear or frustration and onto an alternative target instead.” (p. 715).

Summary

Overall, researchers have been idiosyncratic in the theoretical explanations on which they draw. As a result, research on trickle effects is conceptually disjointed. Among all the explanations cited in past research, the three most popular theories in explaining trickle effects are social learning theory, social exchange theory, and displaced aggression. In particular, social learning theory, social exchange theory, and displaced aggression have been extensively used to explain for trickle-down and trickle-out effects (Ambrose et al., 2013; Hoobler & Brass, 2006; Mayer et al., 2009), but have not been cited for trickle-up or trickle-in effects.

In a recent effort to understand which of the three theories (i.e., social exchange, social learning, or displaced aggression) is the dominant force behind trickle-down of interactional justice perceptions from supervisors to subordinates, Wo, Ambrose, & Schminke (in press) tested the three theories simultaneously in a multiple-mediator model. In two studies, one cross-sectional and the other longitudinal, with different operationalizations of the theorized mediators, they found social exchange theory was the only driving force for the trickle-down of informational justice perceptions, while displaced aggression explained the trickle-down of interpersonal justice. Their findings suggested different theories may explain different types of downward spillover social influences. For social influences that involve more emotion-laden

perceptions (e.g., interpersonal justice perceptions), the effects tend to be driven by an emotion-based theoretical account (e.g., displaced aggression). For social influences that involve more cognitive perceptions (e.g., informational justice), the effects are likely to be driven by a cognition-based theoretical account (e.g., social exchange).

Future Research Directions

While the three popular theories—social learning theory, social exchange theory, and displaced aggression—have all been used to explain trickle-down and trickle-out effects, none of these theories have been used for trickle-up and trickle-in effects. Hence, future research should investigate whether these three popular theories apply to other types of trickle effects. It is plausible some theories may only apply to certain kinds of trickle effects. For example, displaced aggression may not fit in the trickle-up context. Displaced aggression account suggests the victim may fear to retaliate toward the harm-doer due to power asymmetry and thus redirect their aggression to someone who is less powerful. While this account provides a reasonable explanation for why employees receiving unfair treatment from managers redirect their aggression toward their own subordinates (Hoobler & Brass, 2006; Wo et al., in press), this mechanism is less plausible in upward spillover social influence, as supervisors are less likely to redirect their anger toward their managers, who are more powerful than them.

Meanwhile, although no studies in trickle-up and trickle-in effects have used social learning theory or social exchange theory as the explaining mechanisms, I suggest these two theories may drive upward and inward spillover influence. For instance, a supervisor may observe and learn a behavior from a subordinate, and adopt the same behavior when interacting with their own managers. An employee who receives support from home, may feel obligated to reciprocate the favor to the family members. One way to achieve this is to be successful at work.

Consequently, the employee may work harder in his/her job and give more support to his/her supervisor.

Finally, although many papers propose a theory to explain the trickle effects, researchers rarely explicitly test the proposed mechanism. As a result, we don't really know whether this theory actually plays a mediating role behind the trickle effects. I suggest future studies to operationalize the proposed mechanism(s) in the hypothesized model. By doing so, we will further our understanding of the mechanism behind the trickle effects. In particular, since trickle effects are a complicated, dynamic social influencing process, I suspect often there would be multiple mechanisms at work simultaneously. I thus call for more studies that test multiple mediators for trickle effects to identify whether more than one mechanism drive the effect.

Moderators Identified in the Trickle Effect Literature

Seventeen papers I reviewed examined moderators of trickle effects (Table 1 shows the complete list of moderators examined by each empirical study in our review). Among these papers, most examined the characteristics of the transmitter of trickle effects (i.e., the person who transmits the treatment from another individual to a third party) as moderators (12 papers). Five papers studied the organizational context as moderators. Only two papers tested the characteristics of the target of trickle effects (i.e., the individual who receive treatment from the transmitter) as moderators.

For transmitter-related moderators, researchers have identified a variety of demographic characteristics of the transmitter as moderating the trickle effects. Simon et al. (2007) identified race as a moderating variable, documenting the trickle-down effects of behavioral integrity is less strong when employees are managed by non-black managers. Restubog et al. (2011) proposed gender moderating both the trickle-down and trickle-out effects of abusive supervision,

which is stronger for men than women. Crouter (1984) demonstrated the trickle-out effect of family stress or support is stronger for women with young children at home. Grzywacz and Marks (2000) found the trickle-out effect of employees' stress and overload is stronger for young men. In addition, the trickle-out effects of employees' stress and overload is less strong for high school educated than college graduates. While the trickle-out effect of employees' stress and overload is stronger for employees who are high in neuroticism, the trickle-out effect of employees' stress and overload is less strong for employees who are high in extraversion. Grzywacz et al. (2002) showed the trickle-out effect of employees stress and support is stronger for employees who are younger than those who are older.

The transmitter's attribution and endorsed value also moderate trickle effects. For instance, Hoobler and Brass (2006) found the trickle-down effect of supervisors' psychological contract breach is stronger for supervisors who have high hostile attribution bias. Liu et al. (2012) showed the trickle-down effect of abusive supervision is weaker for supervisors who attribute managers' abusive behavior is driven by higher motives of injury initiation. And the trickle-down effect of abusive supervision is stronger for supervisors who attribute managers' abusive behavior is driven by higher motives of performance promotion. Wu et al. (2014) demonstrated the trickle-down effect of non-work support is stronger if supervisors perceived their subordinates as out-group members. Yang et al. (2010) found the trickle-down effect of transformational leadership is stronger for supervisors who endorse high power distance value.

There is also evidence that the transmitter's leadership style plays a moderating role in trickle effects. For example, Ayree et al. (2007) showed the trickle-down effect of interactional justice is stronger for supervisors who are high in authoritarian leadership style. Schuh et al. (2013) found the trickle-down effect of moral leadership is stronger for supervisors who have

high transformational leadership. In addition, researchers have also examined the transmitter's emotion as a moderator. For example, Rafferty et al. (2010) showed the trickle-down effect of distributive injustice and interactional justice is stronger for supervisors who have high distress.

For organizational context-related moderators, Ambrose et al. (2013) found the trickle-down effect of interactional justice is stronger if the work group structure is more organic. Mawritz et al. (2012) showed the trickle-down effect of abusive supervision is stronger for the work group that has high hostile climate. Sun et al. (2007) demonstrated the trickle-down effect of high-performance human resources practices is stronger when unemployment is low, or when the organization implements service quality strategy rather than pursuing a low-cost strategy. Tepper and Taylor (2003) found the trickle-down effect of procedural justice is stronger for supervisors whose mentoring role is defined as extrarole.

In addition, researchers have also examined the target-related moderators. For example, Rafferty et al. (2010) found the trickle-down effect of distributive injustice and interactional justice is stronger for subordinates who have low self-esteem. Tepper et al. (2006) showed the trickle-down effect of procedural justice is stronger for subordinates who have high negative affectivity.

Summary

My literature review reveals that past research has identified three types of moderators for trickle effects: characteristics of the transmitter, characteristics of the organizational context, and characteristics of the target.

Future Research Direction

It is surprising that no extant study has examined the characteristics of the source (i.e., the person whose treatment toward the transmitter leads the transmitter to treat the target in certain

ways) as a moderating variable for the trickle effects. Since the spillover influence originates from the sources, understanding the role of the source in trickle effects is particularly important. Such findings will shed light on what kind of source is more likely to start a chain effect of social influence in organizations.

In addition, I also find the target perspective is an underrepresented group, with only two papers examining target characteristics as moderators. I suggest more research should examine the moderators from the target perspectives.

Moreover, since spillover social influence is a complicated phenomenon which involves multiple parties, I argue in some situation, moderators related to the source, the transmitter, and the target may interact to affect the trickle effects. Or, these moderators may also interact with characteristics of the organizational context to cast an influence. Such research will help us to gain further understanding when these trickle effects will be stronger and when these trickle effects will be mitigated.

Methods Used to Study Trickle Effects

My review of the literature reveals the dominate approach of studying trickle effects is survey study. A total of 33 papers used survey study approach, among which, 25 studies test hypothesis using cross-sectional survey data and 8 studies examined their hypotheses using longitudinal survey data. Besides this dominate approach, 3 papers used experience-sampling approach, 3 papers implemented qualitative/case study methods, and 1 paper used field experiment.

In particular, a majority of the evidence for the trickle-down context was established with cross-sectional survey data (22 studies), while the phenomenon also received support using data from longitudinal surveys (4 studies), qualitative/case studies (3 studies), and field experiment (1

study). Trickle-out researchers found support for the effect using data from cross-sectional studies (5 studies), longitudinal survey studies (5 studies), and experience-sampling (3 studies). Regarding the trickle-up context, I located one conference presentation, with method information unavailable to me.

Future Research Direction

My review suggests researchers have used a variety of methods studying trickle effects, which boosts our confidence in the robustness of the spillover influence phenomenon. However, it is worth noting the cross-sectional survey approach is the dominant method used in studying trickle effects. Given my proposed spillover social influence framework which suggests that trickle effects can take place in different directions, establishing causality rather than mere correlations between the independent and dependent variables become especially important. For example, when we observe managers' perceptions, attitudes, and behavior correlate with subordinates' perceptions, attitudes, and behavior, it is important to investigate whether such spillover effect occurs in a downward fashion (i.e., trickle-down effects, managers influencing supervisors and then supervisors influencing subordinates) or an upward fashion (i.e., trickle-up effects, subordinates influencing supervisors and then supervisors influencing managers).

Cross-sectional survey study, while popular, is not the optimal approach to study trickle effects, given its limited usefulness in determining causality (Antonakis, Bendahan, Jacquart, & Lalive, 2010). Longitudinal survey studies, which are the second most commonly used method in the trickle effect research, help alleviate to some extent the causality concern inherited in the cross-sectional approach, as these studies temporally separate the measurement of independent and dependent variables and hence help establishing causality (Antonakis et al., 2010; Kenny, 1979). Experimental approach is only used in one out of all the papers we reviewed. However,

this approach provides most stringent test on causal relationships (Antonakis et al., 2010; Kenny, 1979; Cook, Shadish, & Wong, 2008). Hence, I recommend future research to utilize more experimental approaches in trickle effect studies, to further our understanding of the phenomenon.

Insight from the Social Influence Literature

In this paper, I propose a spillover social influence perspective to examine trickle effects. Not only does this theoretical framework allow us to identify four types of trickle effects—trickle-down, trickle-out, trickle-up, and trickle-in—it also suggests researchers on trickle effects could draw insights from the social influence literature to future studies and advance our understanding of this phenomenon.

Social psychologists have defined social influence as influence that occurs when an individual's perceptions, feelings, attitudes, and behaviors are affected by others (Cialdini, 2001; Cialdini & Goldstein, 2004; Latane, 1981). Social influence research typically focuses on the direct influence of one individual on another, known as reciprocal social influence. However, I argue this framework is useful for understanding trickle effects in which social influence spills over from the original dyadic relationship to other parties, or spillover social influence.

In general, scholars have argued that social influence may have either a cognitive or an affective base. Researchers have classified cognitive social influences as either normative or informative (Cialdini & Trost, 1998; Kaplan & Miller, 1987). Normative social influence takes place as individuals infer norms and expectations from others' behavior and adopt the same behavior to conform to the social norm. In contrast, informative social influence occurs when individuals derive useful information from others' behavior and consequently become persuaded into changing their own behavior.

To explain affective social influence, two theories—appraisal theory and emotion contagion—are widely accepted. Appraisal theory suggests that individuals adopt certain emotional responses as a result of their evaluations or appraisals of an event such as treatment they receive from others (Scherer, 1999). Emotion contagion theory proposes that individuals' emotions tend to converge with emotions of others (Hatfield, Cacioppo, & Rapson, 1994).

In addition to the models that explain how social influence takes place, social psychologists have also developed models to investigate when different types of social influence may play a role. The Elaboration Likelihood Model (ELM) provides an overarching model that suggests individuals may rely on cognitive or affective processes in different situations.

The ELM posits social influence may occur through what are termed central or peripheral routes (Chaiken & Trope, 1999; Petty & Cacioppo, 1986). When people are highly involved and spend much of their effort trying to make sense of the event (e.g., treatment they receive from or the behavior of others), they tend to adopt a central route wherein they engage in elaborative cognitive processing and rely on logical arguments to understand the event. In such situations, cognitive social influence tends to take place, through either normative or informative influence.

When people are less involved and spend little time and effort thinking about the event, they tend to adopt a peripheral route of processing wherein they rely on heuristic cues or feelings to respond to the event. In these situations, affective social influence tends to take place, through mechanisms suggested in appraisal theory or emotional contagion theory.

These features of the social influence literature provide guidance for thinking about trickle effects in a more structured way. Properly applied, a social influence framework allows us to organize the idiosyncratic theories prevalent in the trickle literatures. This positions us to organize existing studies in a more structured manner and to guide future research efforts.

The three dominant theoretical perspectives that emerged from my review—social learning theory, social exchange theory, and displaced aggression—represent both cognitive and affective perspectives on social influence. Social learning theory and social exchange theory adopt a cognitive approach to understanding trickle effects. Social exchange theory can be viewed as normative social influence. Social exchange theory suggests trickle effects take place because employees are motivated to follow the norm of reciprocity. On the other hand, social learning theory can be viewed as informative social influence. Employees desire to model behavior of others (e.g., supervisors) as they believe such behavior is informative or useful to help them learn how to better adapt to the organization. In contrast, displaced aggression suggests trickle effects are affective in nature. The displaced aggression account fits into appraisal theory, as it suggests employees develop negative emotions such as frustration and anger after receiving negative treatment from others, which increase their need to vent these emotions to third parties.

The ELM provides an indication of when each of these mechanisms is more likely to play a role in trickle effects. The core thesis of the ELM is that individuals are more likely to use a central route and engage in cognitive processing when they are highly involved with the event, but will use a peripheral route and rely on emotions as cues when they are less involved (Chaiken & Trope, 1999; Petty & Cacioppo, 1986). Based on this framework, I theorize when employees spend extensive time and effort thinking about their interactions with others, trickle effects are more likely to occur through cognitive social influence (e.g., social exchange, and social learning mechanisms). When employees spend limited cognitive resources to understand their interactions with others, trickle effects are more likely to take place through affective social influence (displaced aggression). Hence, the ELM suggests individuals' involvement with the

event, and effort in understanding it, may determine which of the different proposed mechanisms underlies trickle effects.

This conceptual framework based on social influence theory provides us further insights on trickle effects and directions for future study. Figure 1 is the conceptual model spillover social influence (SSI). First, it suggests that different mechanisms may be behind trickle effects of different constructs. For example, since social exchange and social learning theories are cognitively driven, they may be more responsible for the trickle effects of cognitive constructs. On the other hand, since displaced aggression is a more emotion-based account, it may be more likely at work when the trickle effects involve an emotion-laden constructs. As a matter of fact, researchers have used social exchange theory and social learning theory to explain the trickle effects of informational justice, and displaced aggression to explain the trickle effects of interpersonal justice (Wo et al., in press).

Thus, in general the extant literature is consistent with the spillover social influence framework. To move this area further, using this framework, we can categorize together trickle effects that take place in different directions and seem distinct from each other, based on their common mechanism. Since these effects are driven by the same process, it's plausible they also share similar mediating or moderating variables.

Organizing extant research in this way holds great promise for pointing researchers in more productive directions in their future work. However, the benefits go beyond simply identifying current gaps in the literature. Using this framework, scholars will be able to construct theory-driven models capable of providing competitive tests of alternative mechanisms by which trickle effects may emerge. For example, ethical leadership and procedural justice scholars have proposed multiple mechanisms by which trickle-down effects emerge. Yet no

studies provide competitive tests of these predictions, which would aid in moving each of the fields forward with respect to the theoretical underpinnings of these important phenomena. I believe such advancements would mean a great deal, both conceptually and empirically, in an area of study in which fifteen different theoretical mechanisms currently compete for explaining how trickle effects emerge.

Challenges in the Trickle-Effects Literature

My review of the literature identifies three challenges facing trickle-effects research. First, currently the field lacks a clear and coherent definition of trickle effects. In the few papers that proposed a definition, trickle effects are defined akin to any social influence and the indirect nature of such influence is often neglected in the definition (please see table 10). For example, Bordia et al. (2010) defined trickle-down effect as “uncovers the role of supervisor perceptions of breach as an antecedent of subordinate perceptions of breach.”(p. 1580). And Mawritz et al. (2012) viewed trickle-down effects as “models that link behaviors of higher levels of management to employees’ attitudes and behaviors through the behaviors of immediate supervisors.” (p. 326). Beyond the lack of clear definition, there isn’t agreement about same attitude/behavior or different attitude/behavior. To move the field forward, a clearly delineated definition is in need. To adequately capture the nature of the construct and differentiate it from direct social influence, I define trickle effects as phenomena wherein perceptions, behaviors, or attitudes of the source trickle through the transmitter to influence the *same* perceptions, behaviors, or attitudes of third parties, who may or may not have direct interactions with the source. I use the term spillover social influence for a broader type of trickle effects, which is also indirect social influence from the source to the target through the transmitter, but originates from one kind of perceptions, behaviors, and attitude but results in a different kind of perceptions,

behavior, and attitude. For example, when supervisors' perceptions of procedural justice from their managers, transmit through supervisors, to influence employees' perceptions of procedural justice from their supervisors, this is a trickle effect by my definition. When supervisors' perceptions of procedural justice from their managers, transmit through supervisors, to influence employees' abusive supervision of their supervisors, this is no longer considered trickle effects but the more general spillover social influence (Tepper et al., 2006).

Second, different mechanisms might be at play for different trickle effects. Some mechanism(s) may only fit in certain kinds of trickle effects. For example, when displaced aggression may play a role in trickle-down effects, it may not fit in trickle-up effects. While this account provides a plausible explanation for why employees vent their aggression resulting from their supervisors toward their own subordinates instead toward their supervisors because of power asymmetry and fear of retaliation (Hoobler & Brass, 2006), this mechanism is less possible for trickle-up effects, as managers are often more powerful than supervisors. On the other hand, social learning theory may play a role for trickle-up effects. A supervisor may imitate and copy a behavior from his/her subordinate and then demonstrate the same behavior toward his/her manager.

Third, different mechanisms might be at work for different constructs. For example, when literature has suggested social learning theory plays a role in trickle-down effects of ethical leadership (Mayer et al., 2009), displaced aggression may not apply to trickle-down effects of this construct. On the other hand, while displaced aggression may provide a reasonable explanation for trickle-down effects of supervisors' interactional injustice (Aryee et al., 2007; Wo et al., in press), social learning theory may not play a role in trickle-down effects of this construct, since unfair behaviors are usually not socially desirable.

Conclusion

The trickle effect literature is vibrant, and has grown by leaps and bounds in recent years. It is sorely in need of a thoughtful, comprehensive, well-structured review. But it is in need of much more than that. For scholars of trickle effects, the need is indeed great for a one-stop-shopping source for information about research in this area. But the need may be even greater for a conceptual framework by which current and future work might be organized, integrated, and understood. Further, this framework offers the potential for multiplying the effects of research efforts in the area, by highlighting problems and challenges that are not just interesting, but also theoretically important to understanding the phenomenon more generally, rather than on a piecemeal, domain-by-domain basis.

Finally, this review and theoretical framework has the potential to contribute to organizational research well beyond those involved directly in trickle effects scholarship. As illustrated in Table 1, interest in trickle effects has “trickled in” to many of the largest research domains in organizational research. It is bound to arrive in many more. In next paper, I examine the under-researched trickle effects, namely, the trickle-in effects of customers’ deviance behavior on employees’ deviance behavior.

CHAPTER 2: STUDY 1 & STUDY 2

A considerable body of organizational research has documented “trickle-down effects,” wherein the perception, attitude, and behavior of one individual (usually a supervisor) flow down the organizational hierarchy to influence the perceptions, attitudes, and behavior of another individual (usually a subordinate). Within the same theoretical framework, trickle-down research has also examined how individuals within the organizational boundary (usually an employee) may trickle out and influence an external stakeholder (usually a family member or a customer) (Masterson, 2001). Research has established trickle-down and trickle-out effects on a broad range of constructs, including interactional, distributive, and procedural justice (Ambrose, Schminke, & Mayer, 2013; Aryee, Chen, Sun, & Debrah, 2007; Masterson, 2001; Tepper, Duffy, Henle, & Lambert, 2006; Tepper & Taylor, 2003), perceived organizational support (POS) (Shanock & Eisenberger, 2006), psychological contract breach (Bordia, Restubog, Bordia, & Tang, 2010; Hoobler & Brass, 2006), ethical leadership (Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009), and abusive supervision (Mawritz, Mayer, Hoobler, Wayne, & Marinova, 2012).

While trickle-down and trickle-out research documents that social influence may spread from one person to another by trickling down the organizational hierarchy or outside the organizational boundary, our knowledge is limited whether spillover influence may take place in opposite directions, i.e., by trickling upward through the organizational hierarchy or inward through the organizational boundary. Social psychologists have long acknowledged that social influence may occur in different directions (Cialdini & Goldstein, 2004; Kelman, 1958; Latane, 1981). Hence, it is conceivable that just as there are trickle-down effects from supervisors to employees and trickle-out effects from employees to customers or family members, there also

exists trickle-up effects from employees to supervisors and trickle-in effects from customers or family members to employees.

Compared to the growing literature on trickle-down and trickle-out effects, research on trickle-up and trickle-in effects is underdeveloped. To date, only one study has examined trickle-up effects, i.e., how the perceptions, attitudes, and behavior of one party in the organization (e.g., a subordinate) flow up through the organizational hierarchy to influence the perceptions, attitudes, and behavior of another party (e.g., a supervisor), and no paper has investigated trickle-in effects, i.e., how the perceptions, attitudes, and behavior of an outside party (e.g., a customer, or a family member) flow in through organizational boundary to influence the perceptions, attitudes, and behavior of one party within the organization (e.g., an employee). To obtain a comprehensive understanding of spillover social influences (i.e., social influence spills over from the original dyadic relationship to other parties) in organizational settings, it is important to gather more empirical evidence on trickle-up and trickle-in effects.

My dissertation aims to add to the trickle effect literature by examining trickle-in effects in the context of deviance behavior. In particular, this dissertation investigates how customers' deviance behavior may trickle in through the organizational boundary and influence employees' deviance behavior directed towards coworkers and the organization. In addition, I examine multiple mechanisms that may drive trickle-in effects of different types of deviance behavior.

I anticipate this dissertation to contribute to trickle effect literature and the deviance literature in the following ways. First, through empirically testing trickle-in effects, this work demonstrates individuals traditionally viewed as at the receiving end of the communication chain (i.e., customers) can influence those who are typically considered as communication sources (i.e., employees). Evidence for such inward spillover phenomena complement the extant literature on

outward and downward trickle effects to provide a more comprehensive view on spillover social influence in organizational settings.

Second, this dissertation is the first empirical investigation to explore the mechanisms in the trickle-in phenomena. I identify five theoretical accounts to explain the effects and develop a multiple-mediator model to simultaneously test these mechanisms. Understanding the underlying mechanisms of trickle-in effects will provide us insights on the similarity and difference between driving forces of different trickle effects (i.e., trickle-down effects, trickle-out effects, trickle-up effects, and trickle-in effects), and shed light on how managers may manage or interfere trickle-in effects of deviance behavior.

Third, this dissertation also contributes to the deviance literature. Past research in this area has examined how employees' deviance behavior may affect customers (Harris & Ogbonna, 2006) but no study has investigated the effect of customers' deviance on employees' deviance behavior. In addition, extant literature has determined supervisors' deviance behavior may drive employees' deviance behavior (Mitchell & Ambrose, 2007; Thau, Bennett, Mitchell, & Marrs, 2009; Thau & Mitchell, 2010), an influence within the organization. However, researchers have not looked beyond the organizational boundary to identify external factors that may affect employees' deviance behavior. Adding to the extant deviance literature, this dissertation proposes customers' deviance behavior may also influence employees' deviance behavior through a trickle-in process.

Trickle-in Effects of Deviance Behavior

Employee Deviance Behavior

Employee deviance behavior is defined as “voluntary behavior that violates significant organizational norms and in so doing threatens the well-being of an organization, its members, or

both” (p. 556, Robinson & Bennett, 1995). Such behavior has also been referred to in the literature as “counterproductive work behavior,” (Penney & Spector, 2005; Spector & Fox, 2002), or “workplace aggression” (Neuman & Baron, 1998). Deviance behavior induces significant financial loss to the organizations, and was estimated to cost companies \$6 to \$ 200 billion every year (Murphy, 1993; Robinson & Bennett, 1995). Consistently, academic research also found workplace deviance behavior was negatively related to both subjective and objective group performance (Dunlop & Lee 2004). These findings highlight the importance of understanding employee deviance behavior in organizations.

Literature has classified two types of employee deviance behavior: interpersonal deviance behavior (i.e., deviance behavior toward persons) and organizational deviance behavior (i.e., deviance behavior toward organizations) (Robinson & Bennett, 1995; Bennett & Robinson, 2000; Dalal 2005; Mount, Ilies, & Johnson, 2006; Yang & Diefendorff, 2009). Although these two types were correlated, a meta-analysis lent evidence employees’ interpersonal and organizational deviance behavior were two distinct constructs that correlated with Big Five variables and OCB differently (Berry, Ones, & Sackett, 2007).

Past research has identified factors within the organization that influence employee deviance behavior (Aquino, Lewis, & Bradfield; 1999; Greenberg and Barling, 1999; Hershcovis et al., 2007; Judge, Scott, & Ilies, 2006; Lee & Allen 2002; Mayer et al., 2009; Robinson & Greenberg, 1998). Supervisors’ treatments of their employees have often been linked with employees’ deviance behavior. For example, employees’ justice perceptions of supervisors’ treatment have been found to be negatively associated with employees’ deviance behavior (Aquino, Galperin, & Bennett, 2006; Aquino, Lewis, & Bradfield, 1999; Judge, Scott, & Ilies, 2006; Lim, 2002; Yang & Diefendorff, 2009). Similarly, supervisors’ ethical leadership is

negatively associated with employees' deviance behavior (Mayer et al., 2009), but supervisors' abusive supervision is positively related to employee deviance behavior (Mitchell & Ambrose, 2007; Thau et al., 2009)

Employees' personalities or chronic behavior also predict their workplace deviance behavior (Aquino, Lewis, & Bradfield, 1999; Diefendorff & Mehta, 2007; Hershcovis et al., 2007; Judge, LePine, & Rich, 2006; Mount, Ilies, and Johnson, 2006). It has been found that employees' deviance behavior is positively associated with employees' negative affectivity (Aquino, Lewis, & Bradfield, 1999) responsiveness to rewards (Diefendorff & Mehta, 2007), history of aggression (Greenberg & Barling, 1999), but negatively associated with employees' desire to achieve (Diefendorff & Mehta, 2007), agreeableness and conscientiousness (Mount, Ilies, & Johnson, 2006)

Researchers have also found job situations affect employees' workplace deviance behavior (Lee & Allen 2002). Employees' deviance behavior is likely curbed when employees have favorable perceptions of work situations, report high perceived organizational support, or feel satisfied with their jobs (Colbert, Mount, Harter, Witt, & Barrick, 2004; Mangione & Quinn, 1975), but promoted when employees perceive psychological contract breach, or conflicts, incivility, and aggression in the workplace (Glomb & Liao, 2003; Penney & Spector, 2005; Restubog, & Tang, 2008).

It is evident extant research on employee deviance behavior has mostly focused on factors internal to the organization (i.e., factors within the organization such as employee characteristics, supervisor characteristics, or job characteristics) that drive these behaviors (Please see Appendix 2 for more detailed review on this literature). Little research has looked beyond the organizational boundary to identify factors external to the organization that may lead

employees to engage in deviance behavior. In this dissertation, I propose customers, an important external stakeholder, may influence employees' deviance behavior. Specifically, customers' deviance behavior may trickle into the organization and affect employees' interpersonal and organizational deviance behavior.

Customer Deviance Behavior

Customers purchase products and services from organizations and provide the major source of income for organizations. Thus, customers play a vital role for organizations' survival and success (Hollowell, 1996). Not only is customers' purchasing behavior important for the organizations, but also how customers conduct their purchase has reciprocal and spillover influence on frontline employees' perceptions, attitudes and behavior (Grandey et al., 2004; Grandey et al., 2005; Grandey, Kern, & Frone, 2007; Rupp et al., 2008; Rupp & Spencer, 2006). For example, Grandey et al. (2004) found customer aggression is positively related to employees' emotional exhaustion.

In this dissertation, I focus on the dark side of customers' behavior, that is, customers' deviance behavior. In line with the definition of workplace deviance behavior (Bennett & Robinson, 2000; Robinson & Bennett, 1995), I define customer deviance behavior as customers' voluntary behavior that violates significant social interaction norms and, in so doing, threaten the well-being of the company or its members, or both. Also consistent with the workplace deviance behavior literatures (Bennett & Robinson, 2000; Robinson & Bennett, 1995), I categorize customers' deviance behavior as toward either employees (customers' interpersonal deviance behavior) or toward the company (customers' organizational deviance behavior). Customers' organizational deviance behavior refers to customers' deviance behavior that harms the general benefits or well-being of the company. Examples include theft or abusing return policies.

Customers' interpersonal deviance behavior refers to customers' deviance behavior toward frontline employees with whom they interact. Examples of such behavior include being rude or disrespectful to employees.

Customer interpersonal deviance behavior bears similarities with customer incivility (Andersson & Pearson, 1999; Walker, van Jaarsveld, & Skarlicki, 2014) and customer mistreatment (Skarlicki, van Jaarsveld, & Walker, 2008; Wang, Liao, Zhan, & Shi, 2011) in the literature, since all these constructs suggest customers being rude, disrespectful. These streams of research have demonstrated customer interpersonal deviance behavior is associated with negative consequences for employees. Prior study has also shown service employees who received high levels of uncivil treatments from customers were more likely to demonstrate high levels of uncivil treatments or sabotage behavior toward customers (Shao & Skarlicki, 2014; Skarlicki et al., 2008; van Jaarsveld, Walker, & Skarlicki, 2010; Wang et al., 2011). In addition, in a review paper, Yagil (2008) suggested customer aggression led to employees' negative emotions, such as anger, depression, emotion exhaustion, sleepless, worthlessness (Wang, Liu, Liao, Gong, Kammeyer-Mueller, & Shi, 2013), as well as negative attitudes and behaviors, such as lower job satisfaction, higher turnover intention, more absence, lower organizational commitment, lower morale and motivation, and higher withdraw behavior (Grandey, Dickter, & Sin, 2004; Holmvall & Sidhu, 2007; Rafaeli, Erez, Ravid, Derfler-Rozin, Treister, & Scheyer, 2012; Sliter et al., 2012).

Thus, extant research on customer incivility or mistreatment focuses on its influences on employee well-being, job performance, and employees' mistreatment toward the customers. In this dissertation, I argue as customers' deviance behavior affects employees' perceptions, attitudes, and behavior, these impacts may be carried forward to affect how employees treat

coworkers or behave in the organization. In addition, different from the extant customer deviance literature that focuses on customers' deviance behavior toward employees, I propose customers may also engage in deviance behavior toward the organization, which may also trickle-in through organizational boundary to affect frontline employees. I suggest both customers' interpersonal deviance behavior and customers' organizational deviance behavior will increase frontline employees' interpersonal deviance behavior (directed at their coworkers) and organizational deviance behavior (directed at their organizations).

Trickle-in Processes

I suggest the three theories often used to explain trickle-down and trickle-out effects (i.e., social exchange theory, social learning theory, and displaced aggression) are also applicable in the trickle-in effects of customers' deviance behavior. In addition to these mechanisms, I suggest two other mechanisms, self-regulation theory and the social interactionist model, may also underlie the effect of trickle-in processes of customers' deviance behavior (Aquino & Douglas, 2003; Baumeister, 2001; Felson, 1992).

I examine the trickle-in processes based on the spillover social influence framework developed in Chapter 1 (Cialdini, 2001; Cialdini & Goldstein, 2004; Latane, 1981). This framework suggests trickle-in processes take place through either a cognitive route or an affective route. Whether the route is cognitive or affective is guided by Elaboration Likelihood Model (ELM), which suggests that individuals are more likely to use a central route and engage in cognitive processing when they are highly involved with the event, but will use a peripheral route and rely on emotions as cues when they are less involved (Chaiken & Trope, 1999; Petty & Cacioppo, 1986). According to this framework, when employees witness customers' organizational deviance behavior, they try to make sense of these behaviors and spend time and

effort thinking about them. In this case, trickle-in effects are more likely to occur through the cognitive route (e.g., social exchange and social learning mechanisms). On the other hand, when employees spend limited cognitive resources and emotionally reacted to customers' mistreatment, the trickle-in effects are more likely to take place through the affective route (e.g., displaced aggression, self-regulation theory, and social interactionist model). Therefore I suggest a multiple-mediator model of the trickle-in process of customer deviance behavior. Figure 2 shows the conceptual trickle-in model of these five mechanisms. Mechanisms in blue box indicate the cognitive routes and mechanisms in red box indicate the affective routes.

Below I present a key mediating variable for each theoretical mechanism through which the trickle-in effects take place. Taken together, I suggest a multiple-mediator model to simultaneously examine five mechanisms behind the trickle-in effects of customers' deviance behavior.

Social Exchange Theory: the Mediating Role of Employees' Intentions to Seek Revenge

Social exchange theory states individuals follow the norm of reciprocity in social interactions and reciprocate the treatment they receive by returning similar treatments (Blau, 1964). People may engage in the exchange of material (e.g., money or gift) or non-material goods (e.g., respect or support) (Homans 1958), and the norm of reciprocity applies to both positive and negative treatment received (Gouldner, 1960). When people receive negative treatment (e.g., lack of support), they tend to adopt a "tit-for-tat" strategy and return the undesirable treatment (Cropanzano & Mitchell, 2005; Mitchell & Ambrose, 2007). For example, Bordia et al. (2010) showed supervisors' psychological contract breach trickled-down to affect subordinates' psychological contract breach, and the authors suggested the effect took place through negative norm of reciprocity. When supervisors perceived breach in psychological

contract with their managers, they were motivated to reduce their contributions to the organizations and became more likely to break psychological contract with subordinates.

In the trickle-in process of customers' deviance behavior, when customers engage in deviance behavior toward frontline employees, such as being rude or disrespectful to them, employees feel a violation of some of their basic needs, such as respect and support, triggering the negative norm of reciprocity. Since employees receive harmful treatment when working for the organization, they may blame the organization for their negative experience and feel motivated to seek revenge toward the organization. Thus, one way for them to get even is to engage in deviance behavior toward the organization.

While customers' interpersonal deviance behavior is expected to increase employees' organizational deviance behavior, it may not affect employees' interpersonal deviance behavior. As employees tend to blame the organization (rather than coworkers) for receiving negative treatment from customers, they are less likely to seek revenge by mistreating coworkers, since they normally view their coworkers as being in the same boat as themselves. Thus, I suggest, based on social exchange theory, customers' interpersonal deviance behavior will trickle in to influence only employees' organizational deviance behavior but not employees' interpersonal deviance behavior.

In addition, based on SET, I anticipate only customers' interpersonal deviance behavior but not customers' organizational deviance behavior will trickle in to influence employees. When customers engage in organizational deviance behavior such as store theft or abusing return policies, they take advantage of the organization but do not mistreat frontline employees. As employees receive no negative treatment, they are unlikely to engage in social exchange or seek revenge.

Hence I suggest customers' interpersonal deviance behavior will trickle-in to affect employees' organizational deviance behavior. Further, the effect is mediated by employees' intentions to seek revenge. This is consistent with Restubog, and Tang (2008), who found employees often sought revenge in response to a negative event. Similarly, I suggest, customers' mistreatment toward employees activates negative norm of reciprocity and motivates them to seek revenge. In turn, they become more likely to engage in organizational deviance behavior to get even. Thus I hypothesize:

Hypothesis 1. Employees' intention to seek revenge mediates the relationship between customers' interpersonal deviance behavior and employees' organizational deviance behavior.

Social Learning Theory: the Mediating Role of Customers' Role Model Influences

Social learning theory suggests individuals model and imitate other people's behavior through a vicarious learning process (Bandura, 1977; 1986). According to the theory, social learning is more effective when people pay attention to others' behavior, remember the behavior, recall and retrieve the behavior, and have motivation to copy the behavior. Bandura (1977; 1986) also suggested people are more likely to model behavior of those who are similar to them. This is because a similar target would activate an "identificatory" process, wherein the learner identifies with the target and feels motivated to model the target's behavior (Bandura, 1969; Kohlberg, 1963; Manz & Sims, 1980).

As frontline employees may have frequent interactions with customers, they have ample opportunities to observe and learn from customer behaviors. In addition, employees may observe that customers' organizational deviance behavior leads to material or psychological benefits to the customers (Robinson & Bennett, 1995). As people tend to copy the behavior of others when it is associated with positive outcomes (Bandura, 1977; 1986), employees are likely motivated to

emulate customers' organizational deviance behavior. When employees observe customer organizational deviance behavior and notice that customers benefit from such behaviors, they cognitively register these behaviors and the related outcomes. Later, when employees have the opportunities to take advantage of the organizations through deviant behavior, they will likely model customers' deviance behavior toward organizations (Bandura, 1977, 1986). I suggest customer role model influence as a key indicator in such trickle-in effects. Specifically, customers' organizational deviance behavior creates model influence on frontline employees to adopt behaviors that benefit themselves at the cost of the organization, which in turn increases employees' organizational deviance behavior.

In contrast to customer organizational deviance, when customers mistreat the frontline employees, employees are more likely to experience negative emotions than to cognitively calculate the benefits customers may have gained from their mistreatment. Hence, I do not expect social learning theory to account for the trickle-in effects of customer interpersonal deviance behavior. Since employees are only expected to emulate customers' organizational deviance behavior, I suggest only customer organizational (but not interpersonal) deviance behavior will trickle in to increase only employee organizational (but not interpersonal) deviance behavior, and the effect will be mediated by customers' role model influence. Therefore I hypothesize:

Hypothesis 2. Customers' role model influence mediates the relationship between customers' organizational deviance behavior and employees' organizational deviance behavior.

Displaced Aggression: the Mediating Role of Anger

Displaced aggression is the "redirection of a [person's] harmdoing behavior from a primary to a secondary target or victim" (Tedeschi & Norman, 1985: 30). According to the

frustration-aggression hypothesis (Dollard, Doob, Miller, Mowrer, & Sears, 1939), when a victim is harmed by a harm-doer, the victim feels frustration, anger, and resentment. These arisen negative emotions will prepare the victim for aggression and lead them to fight back. However, when retaliating against the original harm-doer is difficult or undesirable, the victim may vent their aggression toward easier targets instead (Marcus-Newhall et al., 2000; Skarlicki & Folger, 1997; Tedeschi & Norman, 1985).

Based on displaced aggression, I suggest customers' interpersonal deviance behavior but not customers' organizational deviance behavior will trickle-in to affect employees' deviance behavior. This is because displaced aggression is an emotion-laden mechanism and takes place as individuals experience strong negative emotions (Dollard et al., 1939). Recent research suggests such a mechanism is more likely to drive the trickle effects of emotion-laden constructs. For example, Wo et al. (in press) found trickle-down of supervisors' interpersonal justice, an emotion-laden construct, took place through displaced aggression, but trickle-down of informational justice, a more cognitive construct, did not activate displaced aggression.

Between the two types of customers' deviance behavior, interpersonal deviance is more likely to induce strong emotions than organizational deviance behavior (Lee & Allen, 2002). For example, Yagil (2008), in a review, found customers' aggression toward employees led to employees' negative emotions, such as anger or depression. Wang et al. (2013) found customers' mistreatment of employees was positively related to employees' negative mood in the following morning. In comparison, customers' deviance behavior toward the organization does not bring direct harm to employees and is less likely to raise employees' negative emotions. Thus, I suggest displaced aggression is a driving mechanism for the trickle-in effect of customers' interpersonal deviance behavior but not for organizational deviance behavior.

According to the displaced aggression, when frontline employees are unable to retaliate directly toward customers who mistreat them, the employees may vent their anger and aggression toward other targets such as coworkers. While existent research has found employees do sometimes sabotage customers who mistreated them (Skarlicki et al., 2008; Wang et al., 2011), employees do not always have opportunities to do so. As many organizations follow “the customer is always right” principle and discourage employees confrontation with customers, employees may be afraid they will be punished if they return the mistreatment to customers (Christensen & Bower, 1996; Yagil, 2008). Additionally, employees’ interaction with one customer is often short-lived and may end before employees find the opportunity to retaliate (Morris & Feldman, 1996; Rafaeli, 1989). Consequently, employees are not always able to vent their aggression toward customers who mistreat them.

As the deviant treatment employees have received from customers build up frustration and anger within them (Skarlicki et al., 2008), they become more likely to redirect the aggression elsewhere. Coworkers are often easy targets for displaced aggression because they are readily available in the workplace and mistreating them is less likely to result in sanctions from the organization (Skarlicki & Folger, 1997). Similarly, employees may also vent their anger by engaging in deviance behavior toward the organizations as there are often more opportunities for them to do harm to the organization than to retaliate against customers. My proposition that employees may vent frustration from customers’ mistreatment to both coworkers and the organization is consistent with the findings of Ambrose, Seabright, and Schminke (2002) that employees who had received unfair treatments were likely to engage in sabotage behavior directed at both the organization and other individuals.

I suggest displaced aggression plays an important role in the trickle-in effects of customers' interpersonal deviance behavior, which is related to both employees' interpersonal deviance behavior and organizational deviance behavior. Buss and Perry (1992) showed anger was an important prelude of aggression, which "involves physiological arousal and preparation for aggression, (and) represents the emotional or affective component of behavior" (p. 457). Research has also suggested interpersonal mistreatment usually elicits negative emotions among employees (Rupp et al., 2008; Rupp & Spencer, 2006). Thus, I suggest anger is an appropriate indicator of displaced aggression. When customers demonstrate deviant behavior toward frontline employees, the interpersonal mistreatment triggers employees' anger. Because of fear or lack of opportunity to retaliate toward customers, employees vent their anger toward coworkers or the organization, increasing employees' interpersonal deviance behavior and organizational deviance behavior. Thus I hypothesize:

Hypothesis 3. Employees' anger mediates the relationship between customers' interpersonal deviance behavior and employees' interpersonal deviance behavior.

Hypothesis 4. Employees' anger mediates the relationship between customers' interpersonal deviance behavior and employees' organizational deviance behavior.

Self-Regulation Theory: the Mediating Role of Ego-Depletion

Although organizational researchers have not used self-regulation theory to explain trickle effects, I suggest it may serve as a mechanism for the trickle-in effects of customers' interpersonal and organizational deviance behavior. Self-regulation theory suggests self-regulation is a scarce resource. When people use up this resource in a self-control event, they become more prone to failure in subsequent attempts at self-control (Muraven & Baumeister, 2000). This is because prior consumption of self-control resources induces an ego depletion state,

which refers to “a temporary reduction in the self’s capacity or willingness to engage in volitional action (including controlling the environment, controlling the self, making choices, and initiating action) caused by prior exercise of volition” (Baumeister, Bratslavsky, Muraven, & Tice, 1998, p. 1253). In the deviance literature, it is shown that sleep deprivation reduces employees’ self-control capacity as employees use resources to stay awake, which makes it more difficult for employees to control their actions (Christian & Ellis, 2011). This finding associates depletion of self-control resources with employee deviance behavior.

When employees are interpersonally mistreated by their customers, their self-control system is activated, as they use self-control resources to cope with the undesirable events, which, in turn, results in ego depletion (Grandey et al., 2004; Grandey et al., 2005; Grandey, Fisk, & Steiner, 2005; van Jaarsveld, Walker, & Skarlicki, 2010). Reduced resources to engage in further self-control impair employees’ capacity to conform to desirable social interactional norms such as treating others with respect and dignity and following the organizational norms. Consequently, employees who are interpersonally mistreated by their customers are likely to treat their coworkers in a deviant way or demonstrate deviance behavior toward the organization, due to ego depletion or reduced capacity of self-control (Skarlicki & Folger, 1997; Thau & Mitchell, 2010). This conceptualization is line with Thau and Mitchell (2010), who found employees’ experience of abuse behavior promoted self-regulation impairment and induced ego depletion, which led employees to have less willpower to conform to the normative expectation, resulting in deviance behavior.

Similarly, when employees witness customers’ organizational deviance behavior, the employee will use resources to process these undesirable events. For example, employees may struggle with whether or not to stop the customer’s organizational deviance behavior, or whether

to report these behavior to management teams. These struggles increase employees' stress level, which depletes employees' self-regulation capacity (Baumeister, 2001; Baumeister et al., 2001; Muraven & Baumeister, 2000). Consequently, employees who witness customers' organizational deviance behavior have less self-regulation capacity to follow norms when interacting with coworkers or behaving in organizations, increasing their interpersonal and organizational deviance behavior.

Therefore, I suggest interpersonal and organizational deviance behavior from customers drain employees' self-control resources, giving rise to employees' ego depletion. When employees subsequently interact with their coworkers and behave in the organization, they are less able to comply with normative expectations to control their behaviors. Thus, employees are more likely to demonstrate deviance behavior toward their coworkers and the organization. That is, I suggest ego depletion mediates the trickle-in effects of customers' interpersonal deviance behavior and customers' organizational deviance behavior. Specifically I hypothesize:

Hypothesis 5: Employees' ego depletion mediates the relationship between customers' interpersonal deviance behavior and employees' interpersonal deviance behavior.

Hypothesis 6: Employees' ego depletion mediates the relationship between customers' interpersonal deviance behavior and employees' organizational deviance behavior.

Hypothesis 7: Employees' ego depletion mediates the relationship between customers' organizational deviance behavior and employees' interpersonal deviance behavior.

Hypothesis 8: Employees' ego depletion mediates the relationship between customers' organizational deviance behavior and employees' organizational deviance behavior.

Social Interactionist Model: the Mediating Role of Identity Threat

In addition to the above four mechanisms, I suggest the social interactionist model (Aquino & Douglas, 2003; Felson, 1992) may also explain the trickle-in effects of customers' interpersonal deviance behavior. This theory posits when individuals frequently encounter unfavorable experiences, their feelings and sense of competence, self-worth, or dignity are challenged. This perceived self-identity threat will compel individuals to restore their sense of competence, self-worth, or dignity, sometimes through demonstrating antisocial or aggressive behavior as a way of protest to enhance their self-image (Kelloway et al., 2010)¹.

In the context of trickle-in effects of customers' deviance behavior, when frontline employees receive mistreatment from customers, it is likely that their self-identity is threatened, and they perceive less self-importance. In order to restore their self-identity, employees tend to engage in deviance behavior toward their coworkers, or the organizations to demonstrate their power and capability to control the environment and others (Marcus-Newhall et al., 2000; Skarlicki & Folger, 1997; Tedeschi & Norman, 1985). Consistent with my proposition, Kelloway, Francis, Prosser, and Cameron (2010) suggested employees sometimes use workplace deviance behavior as a form of protest to regain feelings of lost control and mitigate the dissatisfaction caused by the mistreatment they received from different sources, such as supervisors, coworkers, or customers. Therefore, to regain a sense of self-importance, employees may deliberately

¹ Reactance theory and social interactionist model bear similarities, as both suggest individuals seek control over their environment. Yet there is subtle difference between the two theories regarding the cause that triggers individual to behave in a way to regain control. For reactance theory, motivation to obtain a sense of control is enhanced when people perceive a strong persuasive intent from others. For social interactionist model, people desire to gain control when they receive certain treatment that threatens or challenges their self-image or self-importance. However, future research will be fruitful to investigate which of these two theories is more applicable to trickle effects of deviance behavior.

mistreat coworkers or sabotage toward the organization to demonstrate their capability to impact others and the organization.

I expect customers' organizational deviance behavior, which targets the organization rather than the employee, is less likely to induce self-identity threat among employees. Hence, based on the social interactionist model, customers' organizational deviance behavior will not trickle-in to affect employees' deviance behavior.

Although social interactionist model is similar to the social exchange theory and displaced aggression in that it suggests customers' mistreatment reduces employees' sense of dignity, it provides a unique explanation for why employees engage in deviance behavior. While social exchange theory emphasizes the norm of reciprocity and suggests employees engage in deviance behavior to return received treatment, and the displaced aggression account focuses on emotions and posits employees engage in deviance behavior to vent their anger, the social interactionist model centers on self-identity and suggests deviance behavior provides employees a way to demonstrate power and restore their self-importance (Aquino & Douglas, 2003; Felson, 1992; Marcus-Newhall et al., 2000; Tedeschi & Norman, 1985). Through sabotaging coworkers and the organization, employees regain a sense of control over the environment and people around them, which repairs their perceptions of self-importance (Allen & Greenberger, 1980; Kelloway et al., 2010).

Since perceived identity threat is key to the social interactionist model, I use perceived identity threat as a mediating variable in the trickle-in effects of customers' interpersonal deviance behavior. That is, customers' interpersonal deviance behavior may cause self-identity threat among employees, which then motivates employees to demonstrate interpersonal and organizational deviance behavior. Thus, I hypothesize:

Hypothesis 9. Employees' perceived identity threat mediates the relationship between customers' interpersonal deviance behavior and employees' interpersonal deviance behavior.

Hypothesis 10. Employees' perceived identity threat mediates the relationship between customers' interpersonal deviance behavior and employees' organizational deviance behavior.

Study 1

Sample and Procedure

To test the proposed hypotheses, I collected longitudinal data from supervisor-employee dyads from a variety of retail companies in Southeast U.S. using a snowball procedure. I recruited students from a large university to participate in this study in exchange for course credits (Piccolo, Greenbaum, Den Hartog, & Folger, 2010). Participating students identified an employee who works in a retailing store and has direct interactions with customers on a daily basis to complete the employee survey. The employee's immediate supervisor was also approached to complete the supervisor survey. Both employee and supervisor surveys were administered through Qualtrics. Employees and supervisors' surveys were matched using a four-digit pin code.

The employees completed two surveys at two time waves two weeks apart. At time 1, the employees reported customers' interpersonal deviance behavior and customers' organizational deviance behavior they had recently experienced or witnessed during interactions with customers. At time 2, employees provided ratings on the five mediators proposed for the trickle-in effects (i.e., intention to seek revenge, role model influence, anger, ego-depletion, and perceived identity threat). Supervisors completed a survey at Time 2, in which they rated the employees' interpersonal deviance behavior and organizational deviance behavior.

To ensure authenticity of the data, I explained the important implications of this research and emphasized integrity when recruiting participants. For every pair of matched surveys, I checked the IP address, and the starting and finishing time of each survey to make sure the surveys were filled out by different sources.

In total I received 225 completed employee surveys and 200 completed supervisor surveys. The response rate was 23 percent for employees and 20 percent for supervisors. The matched sample was 170. The employee respondents were 55 percent female, and averaged 25.1 years of age with 3.1 years of organization tenure and 2.6 years of department tenure. The supervisor respondents were 49 percent female, and averaged 35.1 years of age with 6.6 years of organization tenure and 4.9 years of department tenure.

Measures

Customer interpersonal deviance behavior. Customers' interpersonal deviance behavior was assessed by adapting the measures developed by Skarlicki et al. (2008) and Wang et al. (2011). The employees were asked to rate the frequency of customers' interpersonal deviance behavior they experience recently in their work, using a 5-point Likert scale (1= never, 5= frequently). The scale includes eight items: "Yelled at you," "Vent their bad mood out on you," "Spoke aggressively to you," "Used condescending language (e.g., 'you're an idiot')," "Complained without reason," "Raised irrelevant discussion," "Refused to listen to you," and "Interrupted you: cut you off mid sentence" ($\alpha = .91$).

Customer organizational deviance behavior. Since customers' organizational deviance behavior tend to vary to a large extent by the type of organization, I conducted a pretest by asking a sample of customer service employees in retailing stores to generate items for common types of customers' organizational deviance behavior in their stores. Each of 48 participants

wrote down 5 behaviors they deemed to be customers' organizational deviance behavior. Among the generated items, 16 items appear multiple times, which were used to assess customers' organizational deviance behavior.

Sample items includes "Drink and eat store products and then put them back without paying," "Leave unwanted items in random places," "Switch price tags of items for cheaper prices," "Buy the promotional item, after receiving the bonus item, and then return the original item," "Throw their waste on the floor and/or make a mess in the bathroom," "Return products with missing parts for refund," "Break something in the store and put it back on the shelf without informing the store employee," "Lie about their age in order to get a certain discount," "Return used products because they only needed them for a few days (e.g., for a specific occasion)," and "Use false coupons to get discounts." The employee were asked to rate each of these customers' organizational deviance behavior on a 5-point Likert scale (1=never, 5= frequently) ($\alpha = .96$).

Intentions to seek revenge. I measured intentions to seek revenge by adapting the scale developed by Aquino, Tripp, and Bies (2001, 2006). The employees were asked to rate three items: "I tried to make the organization pay for what the customer did," "I tried to get even," "I tried to make something bad happen to the organization" (1=not at all accurate, 5= very accurate) ($\alpha = .91$).

Customer role model influence. I assessed customers' role model influence by adapting the scale developed by Rich (1997). The employees were asked to rate three items: "The customer demonstrated the kind of behavior I like to copy," "The customers' behavior influenced me to model," and "The customer exhibits the kind of behavior that I try to imitate" (1=not at all accurate, 5= very accurate) ($\alpha = .81$).

Anger. Anger was measured with a scale developed by Forgas et al. (1997). On a 5-point response format (1 = strongly disagree, 5= strongly agree), the employees were asked to rate the extent to which they agreed with five statements: “At work, I feel angry,” “At work, I am furious,” “At work, I feel irritated,” “At work, I am mad,” and “At work, I am burned up” ($\alpha = .89$).

Ego depletion. I assessed ego depletion with five items adapted from Baumeister et al. (1998). On a 5-point response format (1 = strongly disagree, 5= strongly agree), employees were asked to indicate the extent to which each of the five statements reflected how they felt at work in general. The statements are: “At work, I feel like my willpower is gone,” “I feel drained at the workplace,” “At work, I feel mentally exhausted,” “I feel worn out at the workplace,” and “At work, I wish I could just relax for a while” ($\alpha = .89$).

Perceived identity threat. I measured employees’ perceived identity threat by adapting Aquino and Douglas’ (2003) scale. On a 5-point response format (1 = never, 5= always), employees were asked to rate 5 items regarding customer behavior: “Did something to make you look incompetent,” “Looked at you in a negative way,” “Criticized you unfairly,” “Questioned your abilities or judgments,” and “Embarrassed you in front of other people” ($\alpha = .91$).

Employee interpersonal and organizational deviance behavior. I assessed employee interpersonal deviance behavior and organizational deviance behavior by utilizing the version of the Bennett and Robinson (2000) adapted by Stewart et al. (2009) for other-reported employee deviance. Supervisors were asked to rate the employees’ deviance behavior on a five-point Likert scale (1= never, 5= frequently). Sample items include “Put little effort into their work,” “Taken property from work without permission,” “Acted rudely toward someone at work,” and “Said

something hurtful to someone at work,” (Employees’ interpersonal deviance behavior, 10-item, $\alpha = .87$; employees’ organizational deviance behavior, 4-item, $\alpha = .93$).

Results

The means, standard deviations, and intercorrelations about the variables are reported in Table 2.

Study 1 examined the mediating processes by which customers’ interpersonal and organizational deviance behavior trickle-in to influence employees’ interpersonal and organizational deviance behavior. In order to test this multiple-mediator model, I utilized Lau and Cheung’s (2012) procedure to examine the five mediating mechanism simultaneously in a complex latent variable model. This procedure provided the direct, indirect, and total effects. Also, it provided bootstrapping results for the specific indirect effects. I present the visual demonstrations of the results of Study 1 in Figure 3.

Customer Interpersonal Deviance Behavior. Hypothesis 1, 3, 4, 5, 6, 9, 10 state customers’ interpersonal deviance behavior trickle-in to influence employees’ deviance behavior through four mediators: employees’ intention to seek revenge, employees’ anger, employees’ ego-depletion, and employees’ identity threat. In terms of relationships between the independent variable (customers’ interpersonal deviance behavior) and the four mediators, results revealed customers’ interpersonal deviance behavior is significantly related to three mediators: employees’ anger ($\beta = .33, p < .01$), employees’ ego-depletion ($\beta = .47, p < .01$), and employees’ identity threat ($\beta = .49, p < .01$). Regarding the relationships between four mediators and the DVs (employees’ interpersonal deviance behavior and employees’ organizational deviance behavior), employees’ anger is significantly related to both employees’ interpersonal and organizational deviance behavior ($\beta = .45, p < .01$; $\beta = .39, p < .01$, respectively). And employees’ ego-

depletion is significantly related to both employees' interpersonal and organizational deviance behavior ($\beta = -.28, p < .01$; $\beta = -.28, p < .01$, respectively).

I conducted bootstrapping procedures for the indirect effects. The confidence intervals for the indirect effects through employees' anger and ego-depletion are significant. Taken together, the results show customers' interpersonal deviance behavior trickle-in to influence employees' interpersonal and organizational deviance behavior only through employees' anger and ego-depletion. The other mediators are not significant (See Table 3 and Table 5). It is important to note that while the mediating effects of anger are consistent with Hypotheses 3 and 4, suggesting customers' interpersonal deviance behavior is positively related to employees' emotions of anger, which is then positively related to employees' interpersonal and organizational deviance behavior, the findings on the mediating role of ego-depletion is inconsistent with Hypotheses 5 and 6. Hypotheses 5 and 6 predict customers' interpersonal deviance behavior is positively related to ego-depletion, which is then positively associated with employees' deviance behavior. The results, however, show customers' interpersonal deviance behavior is positively related to ego-depletion, which is then negatively associated with employees' deviance behavior.

Customer Organizational Deviance Behavior. Hypothesis 2, 7, 8 state customers' organizational deviance behavior trickles-in to influence employees' deviance behavior through two mediators: customers' role model influence and ego-depletion. For the relationships between the independent variable (customers' organizational deviance behavior) and the two mediators, we find customers' organizational deviance behavior is not significantly related to either mediator. For the relationships between the two mediators and the DVs (employees' interpersonal deviance behavior and employees' organizational deviance behavior), only

employees' ego-depletion is significantly related to both employees' interpersonal and organizational deviance behavior ($\beta = -.28, p < .01$; $\beta = -.28, p < .01$).

I conducted bootstrapping procedures for the indirect effects. The confidence intervals for the indirect effect through employees' ego-depletion are not significant. Taken together, the results show customers' organizational deviance behavior does not trickle-in through any mechanisms to influence employees' interpersonal and organizational deviance behavior (See Table 4 and Table 5).

Discussion

Study 1 provides the first empirical test of the mediating mechanisms by which customers' interpersonal and organizational deviance behavior trickles-in to influence employees' interpersonal and organizational deviance behavior. By simultaneously pitting against the proposed mediating mechanism in a multiple-mediator model, I find support for the trickle-in effects of customers' interpersonal deviance behavior on employees' interpersonal and organizational deviance behavior. In addition, such effects are fully mediated by employees' anger, suggesting the trickle-in is driven by the displaced aggression accounts.

Study 1 reveals no evidence for trickle-in effects of customers' organizational deviance behavior. Therefore, while customers' organizational deviance causes direct financial loss to the organization, it does not spillover to within the organization to cause more financial damage through employees' deviance behavior. On the other hand, while customers' interpersonal deviance behavior does not cause direct financial loss to the organization, it can result in indirect financial damages to the organization through employees' deviance behavior.

One unexpected yet intriguing finding revealed in this study is the mediating role of ego-depletion in the trickle-in effects of customers' interpersonal deviance behavior. The results that

ego-depletion is negatively associated with employees' interpersonal and organizational deviance behavior is opposite to Hypotheses 5 and 6. It appears when employees are ego-depleted as a result of customers' mistreatment, they are less likely to engage in either type of workplace deviance behavior. One possibility is the act of engaging in deviance behavior requires resources. Hence, when employees are ego-depleted, they do not have sufficient resources to perform deviance behavior. Since this is the first test on the mediating role of self-regulation in trickle effect, more empirical evidence is needed to assess the relationship between employees' ego-depletion and their deviance behavior.

Although the results of Study 1 provide some insights on the trickle-in effects of customers' deviance behavior, we need to be cautious to overgeneralize the findings. In particular, since Study 1 obtained data from the retail industry, it is imperative to replicate the study in other customer service contexts. For this purpose, I conducted Study 2, using data collected from customer service representatives in call centers in China.

Study 2

The design of Study 2 is similar to Study 1. The goal of Study 2 is to test my hypotheses in a different customer service setting—call centers.

Sample and Procedure

I collected data from supervisor-employee dyads from call centers of four companies (Dell, Microsoft, Hewlett-Packard, and Unicom) in China. To solicit participation, I sent a cover letter and survey instructions to each company's call center director, who forwarded these documents to the supervisors. The supervisors then sent the cover letter and instruction to one of their subordinates. The supervisors sorted their subordinates' last names in Excel and picked the subordinate whose last name was in the middle. All participants were full-time workers. Both

employee and supervisor surveys were completed online through Qualtrics. Same as with study 1, employees completed a survey at Time 1 in which they report customers' interpersonal deviance behavior and customers' organizational deviance behavior, and the other survey at Time 2 (two weeks later) in which they provided ratings on the five mediators (i.e., intention to seek revenge, role model influence, anger, ego-depletion, and perceived identity threat). The employees' immediate supervisors completed a survey at Time 2 in which they rated employees' interpersonal deviance behavior and organizational deviance behavior. Employees and supervisors' surveys were matched through a four digit-pin code.

I received 131 employee surveys and 133 supervisor surveys. The response rate was 23.8 percent for employees and 24.2 percent for supervisors. The final matched sample was 66. The employee respondents were 70 percent female, and averaged 29.6 years of age with 5.2 years of organization tenure and 4.2 years of department tenure. The supervisor respondents were 48 percent female, and averaged 36.7 years of age with 7.9 years of organization tenure and 6.9 years of department tenure.

Measures

I used the same measures as Study 1, except for the scale for customers' organization deviance behavior. To ensure the customers' organization deviance behavior scale is appropriate for the cell center context, I phone interviewed with the management team about what kind of customers' behavior is viewed as customers' organizational deviance behavior in these call centers. I modified the measure to call centers' setting based on the feedback from the management team. Sample items are: "Gained underserved price discount by providing falsified information," "Gained underserved warranty by providing falsified information," "Asked for additional warranty or service without a legitimate reason." (1=never; 5= a lot). All survey

questions were translated in Chinese. The Cronbach Alphas for all the measures were above .70 and thus satisfactory (customer interpersonal deviance behavior, $\alpha = .96$; customer organizational deviance behavior, $\alpha = .93$; employees' intention to seek revenge, $\alpha = .96$; customers' role model influence, $\alpha = .78$; employees' anger, $\alpha = .97$; employees' ego-depletion, $\alpha = .94$; employees' identity threat, $\alpha = .93$; employee interpersonal deviance behavior, $\alpha = .77$; employee organizational deviance behavior, $\alpha = .71$).

Results

The means, standard deviations, and intercorrelations about the variables are reported in Table 6.

I used the same procedure as Study 1 to test Hypotheses 1-10. I present the visual demonstrations of the results of Study 2 in Figure 4.

Customer Interpersonal Deviance Behavior. Hypothesis 1, 3, 4, 5, 6, 9, 10 suggest customers' interpersonal deviance behavior trickles-in to influence employees' deviance behavior through four mediators: employees' intention to seek revenge, employees' anger, employees' ego-depletion, and employees' identity threat. In terms of relationships between the independent variable and the four mediators, customers' interpersonal deviance behavior is significantly related to three mediators: employees' intention to seek revenge ($\beta = .47, p < .01$), employees' anger ($\beta = .59, p < .01$), and employees' identity threat ($\beta = .45, p < .01$). Regarding the relationships between four mediators and the outcomes, none of the four mediators is significantly related to either employees' interpersonal or organizational deviance behavior. The direct effects of customers' interpersonal deviance behavior on employees' interpersonal and organizational deviance behavior are not significant.

In addition, all indirect effects are not significant at .05 level. Taken together, the results show customers' interpersonal deviance behavior does not trickle in to influence employees' interpersonal and organizational deviance behavior through any of the proposed mechanisms. (See Table 7 and Table 9).

Customer Organizational Deviance Behavior. Hypothesis 2, 7, 8 suggest customers' organizational deviance behavior trickles-in to influence employees' deviance behavior through two mediators: customers' role model influence and ego-depletion. For the relationships between the independent variable and the two mediators, customers' organizational deviance behavior is significantly related to both mediators (customers' role model influence, $\beta = .38, p < .01$; ego-depletion, $\beta = .45, p < .01$, respectively). For the relationships between the two mediators and the DVs, only customers' role model influence is significantly related to employees' organizational deviance behavior ($\beta = .20, p < .05$). Finally, the direct effects of customers' organizational deviance behavior on employees' interpersonal and organizational deviance behavior are not significant.

In addition, the indirect effect from customers' organizational deviance behavior to employees' organizational deviance behavior through customers' role model influence is significant at .05 level. Taken together, the results show customers' organizational deviance behavior trickles-in through customers' role model influence to affect employees' organizational deviance behavior, supporting social learning theory (See Table 8 and Table 9). Therefore, Hypothesis 2 is supported.

Discussion

Testing the hypotheses in call centers settings, this study found a trickle-in process of customers' deviance behavior that is different from Study 1. Specifically, results show customers'

organizational deviance behavior trickles in to influence employees' organizational deviance behavior only through customers' role model influence, supporting social learning theory. No evidence is revealed for trickle-in effects of customers' interpersonal deviance behavior.

Study 2 adds to Study 1 to show that it is possible for both customers' interpersonal deviance behavior and organizational deviance behavior to trickle into the organization and influence employees' workplace deviance behavior. In addition, these two trickle-in processes involving different types of customers' deviance behavior are driven by different mechanism. Which type of customers' deviance behavior is more likely to trickle in, however, seems bounded by the specific customer service context. Specifically, in retail setting, customers' organizational deviance does not trickle in, while customers' interpersonal deviance behavior trickles in to influence employees' interpersonal and organizational deviance behavior only through displaced aggression. On the other hand, in a call center setting, customers' interpersonal deviance behavior does not trickle in, while customers' organizational deviance behavior trickles in to influence employees' organizational deviance behavior only through social learning processes.

General Discussion

Prior research has accumulated a large body of evidence on the trickle-down and trickle-out effects, documenting that social influence may spill downward along the organizational hierarchy (from managers to supervisors to subordinates) or outward across the organizational boundary (from supervisors to employees to family member or customers) (Ambrose et al., 2013; Masterson, 2001). However, researchers have not yet examined social influence spill inward through the organizational wall (from customers to employees to coworkers, supervisors, or the organization). Complementing the extant literature on trickle effects, this dissertation empirically

tests trickle-in effects of deviance behavior from customers to employees. Across two studies, I show that both customers' interpersonal deviance behavior and customers' organizational deviance behavior may trickle in through the organizational boundary to influence employees' deviance behavior.

In addition, this dissertation also assesses the major mechanisms that may explain the trickle-in effects of customers' deviance behavior: social exchange theory, social learning theory, displaced aggression, self-regulation theory, and social interactionist model. In two studies, I tested the five mediating mechanisms simultaneously in the same model, providing the first empirical investigation of different trickle-in processes. The results suggest customers' interpersonal and organizational deviance behavior may trickle-in to influence employees' workplace deviance behavior through different processes. Specifically, in the retail industry, Study 1 reveals customers' interpersonal deviance behavior trickles-in to influence employees' interpersonal and organizational deviance behavior through displaced aggression. For employees working in call centers, however, Study 2 documents customers' organizational deviance behavior trickles-in to influence employees' organizational deviance behavior through the social learning mechanism.

It is worth to note that the two studies find evidence for trickle-in effects of different types of customers' deviance behaviors. While Study 1 provides support for trickle-in effects of customers' interpersonal deviance behavior but not customers' organizational deviance behavior, Study 2 documents trickle-in effects of customers' organizational deviance behavior but not customers' interpersonal deviance behavior. Such difference in the trickle-in patterns is intriguing. I speculate the difference results may be caused by the difference in culture, in customer service employees as well as in the context of the customer service industry in the two

studies. First, there exists a cultural difference in the two studies. Study 1 involves customer service employees from US, who tend to value individualism and independence. Study 2, however, received data from customer service employees in China, who are more likely to value collectivism and interdependence. It is likely that independent employees (like those in Study 1) may focus on their subjective inner feeling, and tend to react more to personal mistreatment from customers. On the other hand, interdependent employees (like those in Study 2) may give more attention to the group or the organization they belong to, and hence react more to customers' organizational deviance behavior (Griffin, Neal, & Parker, 2007; Singelis, 1994; Trevor, Reilly, & Gerhart, 2012). Second, the context of customer service also differs across the two studies. Study 1 focuses on the retail industry, where employees engage in direct, face-to-face interactions with their customers. Study 2 involves call center employees, who interact with customers on the phone. Compared to call center employees who mainly engage in verbal communications with customers, employees in retailing industry can also observe customers' facial expressions and body language. As the communication is more multi-faceted, retailing employees experience more emotional distress when mistreated by customers, facilitating trickle-in effects of customers' interpersonal deviance behavior. In call centers, employees engage in verbal conversations and have ample opportunities to learn about customers' (sometimes unreasonable) intentions to seek more benefits from the organizations, which may strengthen the trickle-in process of customers' organizational deviance behavior. Third, I also observe difference in employees' department tenure in the two studies, with the average department tenure for employees from call centers being longer than employees from retail industry (4.2 years vs 2.6 years). It is possible employees with longer tenure may be better at emotion management skills and are less likely to react emotionally. At the same time, since they

are more likely to think about their job situation from a long-term perspective, they may be more motivated to engage in social learning which may help them to maximize their gains in the workplace.

Fifth, it is possible that organizational climate may play a role in trickle effects. When the organization or the unit within the organization fosters certain culture, it may result in indirect social influence in various directions. Future studies will be beneficial to examine how the culture or climate at a group level influences trickle effects. Literature so far has not yet examined trickle effects through multilevel lens. Multilevel studies on organizational climate will shed light on our understanding of trickle effects in organizations.

Implications for Research

These findings have several important implications for research. First, research has so far focused on the trickle-down effects. Using spillover social influence framework, we now have a broad research area to explore. My dissertation adds to the literature by empirically testing trickle-in effects. Future research would be fruitful to examine another under-researched trickle effects—trickle-up effects.

Second, research has shown different constructs may trickle-down through different mechanisms (Wo et al., in press). Similarly, my research shows different types of customers' deviance behavior may trickle-in through different mechanisms. Third, my dissertation adds to our understanding of the mechanisms of the trickle-in effects. Such knowledge allows us to identify moderators that strengthen and lessen the trickle-in effects. For instance, constructs such as perceived similarity are likely to influence the trickle-in effects of customers' organizational deviance behavior, because these constructs affect individuals' reactions to social learning process (Wo & Ambrose, 2015).

Fourth, the results suggest the usefulness of spillover social influence framework. Not only does this framework help identify the new research area, such as trickle-in effects and trickle-up effects, but it also helps identify the mechanisms associated with the constructs. Consistent with spillover social influence model, when the emotion-laden construct, customers' interpersonal deviance behavior trickle-in to influence employees' deviance behavior, it tends to channel through affective based mechanisms, such as displaced aggression theory. On the other hand, when the cognitive-laden construct, customers' organizational deviance behavior trickles-in to influence employees' deviance behavior, it tends to go through cognitive based mechanisms, such as social learning theory.

Implications for Practice

In addition to implications for research, the findings also have practical implications for organizations. First, in the trickle-in context, employees play an important role in whether they can buffer the negative spillover influence from customers' deviance behavior, which reduces their own deviance behavior and consequently significant financial loss to the organizations. Based on our findings, it may be beneficial to provide emotion management training to retail employees to reduce trickle-in effects of customers' interpersonal deviance, and emphasize integrity and organizational identity to call center employees to decrease trickle-in effects of customers' organizational deviance behavior.

Second, organizations may need to use different training programs based on the characteristics of their industry. Specifically, for the retail industry, since customers' organizational deviance behavior does not trickle in, organizations need to focus on customers' interpersonal deviance behavior, which indirectly cause financial losses to the organization through the impact on employees' interpersonal and organizational deviance behavior. On the

other hand, for the call centers, since customers' interpersonal deviance behavior does not trickle in, organizations need to pay extra attention to customers' organizational deviance behavior. Not only these behavior cause direct financial loss to the organization, but also cause indirect financial loss to the organization through the impact on employees' organizational deviance behavior.

Limitations

This research has some limitations. First, both studies use perceptual measures, as objective data are not available. Future studies may be promising if we can examine the trickle-in effects of customers' deviance behavior using objective data, such as phone recording, or video recording.

Second, both studies use a longitudinal survey approach. Although the longitudinal approach is better than cross-sectional design, to establish the causality, field experiment may be a promising area to further our understanding of the mechanisms behind the trickle-in effects. However, by measuring independent variables, and mediators and dependent variables at two different time, this research design help capture the temporal dynamics of trickle-in processes.

Third, this research has not examined moderators of trickle-in effects. Therefore, we do not really know when the trickle-in effects will be strengthened and when the effects will be mitigated. Future studies may be beneficial to uncover the conditions under which the trickle-in effects of customers' deviance behavior are strengthen or mitigated.

Conclusion

The trickle-down and trickle-out research has grown dramatically in the past decades. However, as informed by spillover social influence framework, other spillover social influences, such as trickle-in effects and trickle-up effects, are largely overlooked in the literature. This

research contributes to the literature by empirically examining five mechanisms of the trickle-in effects of customers' deviance behavior. By doing so, it provides insight about how and why customers' deviance behavior trickle-in through organizational wall to influence employees' deviance behavior specifically, and trickle effects more generally.

**APPENDIX A: LIST OF PUBLISHED ARTICLES TO DATE (BOTH
EMPIRICAL AND THEORETICAL)**

1. Ambrose, M. L., Schminke, M., & Mayer, D. M. 2013. Trickle-down effects of supervisor perceptions of interactional justice: A moderated mediation approach. *Journal of Applied Psychology*, 98(4): 678-689.
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**APPENDIX B: REVIEW OF EMPLOYEE DEVIANCE BEHAVIOR,
COUNTERPRODUCTIVE WORK BEHAVIOR, WORKPLACE
AGGRESSION, AND CUSTOMER DEVIANCE BEHAVIOR**

Employee Deviance Behavior

Employee deviance behavior is defined as “voluntary behavior that violates significant organizational norms and in so doing threatens the well-being of an organization, its members, or both” (p. 556, Robinson & Bennett, 1995). Such behavior induces significant financial loss to the organizations, and was estimated to cost companies \$ 6 billion to \$ 200 billion every year (Murphy, 1993; Robinson & Bennett, 1995). Literature has classified two types of employee deviance behavior: interpersonal deviance behavior (i.e., deviance behavior toward persons) and organizational deviance behavior (i.e., deviance behavior toward organizations) (Robinson & Bennett, 1995; Bennett & Robinson, 2000). Although these two types were correlated, a meta-analysis lent evidence employees’ interpersonal and organizational deviance behavior were two distinct constructs which correlated with Big five variables and OCB differently (Berry, Ones, & Sackett, 2007).

Demonstrating the impact of employee deviance behavior to organizations, Dunlop and Lee (2004) found workplace deviance behavior was negatively related to both subjective and objective group performance. In comparison, organizational citizenship behavior was not associated with either subjective or objective group performance after controlling for workplace deviance behavior. This research highlights the importance of understanding employee deviance behavior in organizations.

Past research has identified factors within the organization that influence employee deviance behavior (Aquino, Lewis, & Bradfield; 1999; Judge, Scott, & Ilies, 2006; Lee & Allen 2002; Mayer et al., 2009; Robinson & Greenberg, 1998). Justice perceptions have been documented as an important antecedent to employee deviance behavior (Aquino, Galperin, & Bennett, 2006; Aquino, Lewis, & Bradfield, 1999; Judge, Scott, & Ilies, 2006; Lim, 2002). For

example, Judge, Scott, and Ilies (2006) showed employees' interpersonal justice, along with employees' hostility and job satisfaction, predicted half of the total variance in employees' workplace deviance behavior reported by their supervisors. Aquino, Lewis, and Bradfield (1999) found interactional justice was negatively related to both employees' organizational deviance behavior and interpersonal deviance behavior, whereas distributive justice was only negatively associated with employees' interpersonal deviance behavior and procedural justice was not related to either organizational or interpersonal deviance behavior. Aquino, Galperin, & Bennett (2006) found employees' interactional justice perceptions were negatively related to employee deviance behavior. This relationship was moderated by both social status and aggressiveness such that the relationship was strongest when employees were low in social status and high in aggressiveness. Conceptualizing cyberloafing as a type of workplace deviance behavior, Lim (2002) found distributive justice, procedural justice, and interactional justice were negatively related to cyberloafing through the mediation of employees' neutralization technique, a technique that legitimated their deviant behavior in the workplace.

Besides justice perceptions, researchers have also documented the effect of leadership style on employees' workplace deviance behavior (Mayer et al., 2009; Mitchell & Ambrose 2007; Thau, Bennett, Mitchell, & Marrs, 2009). For instance, Mayer et al. (2009) found top managers' ethical leadership trickled-down to influence supervisors' ethical leadership, which in turn, was negatively associated with group-level deviance behavior. Thau et al. (2009) found abusive supervision was positively related to employee organizational deviance behavior and supervisor-directed deviance behavior. In addition, the effect of abusive supervision on employee deviance behavior was stronger when authoritarian management style was low or when management style delivered the message of high situation uncertainty. Mitchell and Ambrose (2007) documented

abusive supervision was positively associated with employees' supervisor-directed deviance, organizational deviance and interpersonal deviance. This relationship was stronger for individuals who were high in negative reciprocity beliefs (i.e., beliefs that "when someone mistreats them, it is acceptable to retaliate in return" p, 161).

In addition to supervisor treatment (as reflected by employees' justice perceptions or supervisors' leadership styles), researcher have also found employees' personalities are related to their workplace deviance behavior (Aquino, Lewis, & Bradfield, 1999; Christian & Ellis 2011; Diefendorff & Mehta, 2007; Judge, LePine, & Rich, 2006). For example, Aquino, Lewis, and Bradfield (1999) found employees' negative affectivity was positively associated with both employees' organizational deviance behavior and interpersonal deviance behavior. Diefendorff and Mehta (2007) demonstrated employees' desire to achieve was negatively associated with both employee interpersonal deviance behavior and organizational deviance behavior, whereas employees' responsiveness to rewards was positively associated with employee interpersonal deviance behavior and employee organizational deviance behavior. Judge et al. (2006) found employees high in narcissism tended to rate themselves more favorably on workplace deviance behavior and reported less frequent deviance behavior than as rated by their supervisors. Their study indicated certain personality traits may bias employees' perceptions of their own deviance behavior. Christian and Ellis (2011) found employees deprived of sleep had less self-control capacity, which made them get hostile more easily, which, in turn, increased these individuals' workplace deviance behavior.

Job situations also affect employees' workplace deviance behavior. For example, Colbert, Mount, Harter, Witt, and Barrick (2004) found favorable perceptions of work situation were negatively associated with employee workplace deviance behavior. The relationship between

developmental environment and employee organizational deviance behavior was moderated by conscientiousness and emotional stability such that the relationship was stronger for employees who were low in conscientiousness or emotional stability. In addition, perceived organizational support was negatively associated with employees' interpersonal deviance behavior, and this relationship was moderated by agreeableness such that the relationship was stronger for employees low in agreeableness. Restubog, and Tang (2008) found psychological contract breach was positively related to employee deviance behavior. This relationship was mediated by revenge. Further, the relationship between revenge and deviance behavior was moderated by employees' self-control capacity such that the relationship was stronger for employees who had low self-control capacity. Lee and Allen (2002) found when job affect was represented by only affect valence (i.e., general positive and negative affect), job cognition was a better predictor of workplace deviance behavior than job affect. However, when job affect was represented by discrete emotions (i.e., sad, happy, fear), job cognition and job affect predicted workplace deviance behavior equally well.

Counterproductive work behavior

Counterproductive work behavior bears similarities with the construct of workplace deviance behavior. Counterproductive work behavior refers to "behavior by employees that harms an organization or its members" (p. 777, Penney & Spector, 2005; Spector & Fox, 2002). Similar to employee deviance behavior, researchers have suggested counterproductive work behavior may target at the organization (organizational counterproductive work behavior) and other employees (interpersonal counterproductive work behavior) (Dalal 2005; Mount, Ilies, & Johnson, 2006; Yang & Diefendorff, 2009). In a meta-analysis of 38 empirical studies, Dalal (2005) found organizational citizenship behavior (OCB) was negatively related to both

organizational and interpersonal counterproductive work behavior. This finding contrasts counterproductive work behavior with OCB, highlighting its harmful nature.

Mangione and Quinn (1975)'s pioneering study found job satisfaction was negatively related to employees' self-reported counterproductive work behavior, but this effect only occurred for men who were 30 years old or older. Penney and Spector (2005) found workplace incivility, job stressor, and interpersonal conflicts were positively associated with counterproductive work behavior reported by coworkers. This relationship was moderated by employees' negative affectivity such that the relationship was stronger for employees high in negative affectivity.

Mount, Ilies, and Johnson (2006) studied the effect of personality traits on counterproductive work behavior. Among the Big Five traits, they found only agreeableness was negatively associated with interpersonal counterproductive work behavior, while only conscientiousness was negatively related to organizational counterproductive work behavior. Moreover, the relationship between agreeableness and interpersonal counterproductive work behavior was partially mediated by job satisfaction. Their study indicated different personality traits predict different types of counterproductive work behavior.

Yang and Diefendorff (2009) found perceived ambiguity was positively associated with employees' organizational counterproductive work behavior. This relationship was partially mediated by employees' negative emotions. Also, employees' interpersonal injustice was positively related to their interpersonal counterproductive work behavior. This relationship was fully mediated by employees' negative emotions. The link between employees' interpersonal injustice and negative emotions was moderated by employees' negative affectivity such that the relationship was stronger for employees high in negative affectivity. In addition, employee interpersonal injustice was positively associated with employees' organizational

counterproductive work behavior. This relationship was fully mediated by employees' negative emotions. The relationship between employees' negative emotions and organizational counterproductive work behavior was less strong for employees high in conscientiousness and agreeableness.

In addition, researchers have also examined whether self-reported counterproductive work behavior converges with peer-reported counterproductive work behavior. Surveying employee-coworker pairs, Fox, Spector, Goh, and Bruursema (2007) found these two types of ratings converged for interpersonal counterproductive work behavior, but not for organizational counterproductive work behavior. This finding suggests perceptions of organizational counterproductive work behavior may differ between employees and their peers.

Workplace Aggression

Another construct similar to employee deviance behavior is workplace aggression. Workplace aggression is defined as "efforts by individuals to harm others with whom they work, or have worked, or the organizations in which they are presently, or were previously employed" (p. 395, Neuman & Baron, 1998). Hence, consistent with employee deviance behavior and counterproductive work behavior, workplace aggression can be either organizational or interpersonal.

Fox and Spector (1999) proposed a model of work frustration-aggression, suggesting that workplace aggression was often triggered by frustrating events. The authors found a positive relationship between employees' experiences of frustrating events and their personal aggression and organizational aggression behavior, which was mediated by employees' affective response. In addition, employees' trait anxiety and locus of control were associated with employee's

affective response, while employees' trait anger and estimation of likelihood of punishment were related to employees' personal and organizational aggression behavior.

Glomb and Liao (2003) found both being the victim of aggression and the workgroup aggression climate predicted employees' workplace aggression even when controlling employees' predisposition aggression, demographics, organizational justice, work satisfaction, job stress, work stress, and organizational stress.

Greenberg and Barling (1999) found employees' history of aggression and amount of alcohol consumed were positively associated with employee aggression toward their coworker. Employees' procedural justice perceptions and workplace surveillance were negatively related to employee aggression toward their supervisor. Although employees' history of aggression, amount of alcohol consumed, procedural justice, and workplace surveillance were not associated with employees' aggression toward their subordinates, the authors found job security and amount of alcohol consumed interacted to have an impact on employee aggression toward their subordinates.

Based on a meta-analysis of 57 empirical studies, Hershcovis et al. (2007) found both individual factors (i.e., trait anger, trait anxiety, gender, locus of control) and situational factors (i.e., justice, leadership, workplace surveillance, interpersonal conflict) predicted workplace aggression. These predictors worked differently dependent on whether employee aggression was toward supervisors, subordinates, or the organizations.

Extant research on employee deviance behavior, counterproductive work behavior, and workplace aggression has mostly focused on internal factors (i.e., factors within the organization such as employee characteristics, supervisor characteristics, or job characteristics) that drive these behaviors. Little research has looked beyond the organizational boundary to identify

external factors that may lead employees to engage in deviance behavior. In this dissertation, I suggest customer deviance behavior may flow into the organization and affect employee deviance behavior.

Customer Deviance Behavior

Customers purchase products and services from organizations and provide the major source of income for organizations. Thus, customers play a vital role for organizations' survival and success (Hollowell, 1996). Not only is customers' purchasing behavior important for the organizations, but also how customers conduct their purchase has reciprocal and spillover effects on frontline employees' perceptions, attitudes and behavior (Grandey et al., 2004; Grandey et al., 2005; Grandey, Kern, & Frone, 2007; Rupp et al., 2008; Rupp & Spencer, 2006).

Built on the definition of workplace deviance behavior (Bennett & Robinson, 2000; Robinson & Bennett, 1995), I define customer deviance behavior as customers' voluntary behavior that violates significant social interaction norms and, in so doing, threaten the well-being of the company or its members, or both. Also in line with the workplace deviance behavior and related literatures (Bennett & Robinson, 2000; Robinson & Bennett, 1995), I categorize customer deviance behavior as toward either employees (customer interpersonal deviance behavior) or toward the company (customer organizational deviance behavior). Customer organizational deviance behavior refers to customer deviance behavior that harms the general benefits or well-being of the company. Examples include theft or abusing return policies. Customer interpersonal deviance behavior refers to customer deviance behavior toward frontline employees with whom they interact. Examples of such behavior include being rude or disrespectful to employees.

Customer interpersonal deviance behavior bears similarities with customer incivility and customer mistreatment in the literature. Customer incivility refers to “uncivil treatment of employees by customers” (Andersson & Pearson, 1999; Walker, van Jaarsveld, & Skarlicki, 2014). Research has demonstrated customer incivility was associated with negative consequences for employees. For example, van Jaarsveld, Walker, & Skarlicki (2010) found service employees who received high levels of uncivil treatments from customers were more likely to demonstrate high levels of uncivil treatments toward customers. The authors suggested this relationship took place sequentially through job demands and emotional exhaustion. Similarly, Sliter et al. (2012) showed customer incivility decreased the focal employee’s sales performance and increased his/her absenteeism, especially when coworker incivility was also high.

Another construct similar to customer interpersonal deviance behavior is customer mistreatment. Customer mistreatment refers to perceived unfair treatments or low quality treatments employees receive from their customers (Skarlicki, van Jaarsveld, & Walker, 2008; Wang, Liao, Zhan, & Shi, 2011). Research has examined how customer mistreatment triggers employees’ sabotage behavior toward the customers. For example, research has shown customer interpersonal unfair treatment positively influenced employee sabotage behavior toward customers, after adjusting for the employee’s intra-organizational justice perception. This positive effect was stronger for employees high in symbolization of moral identity or low in internalization of moral identity (Skarlicki et al., 2008). Wang et al. (2011) found daily customer mistreatment toward employees was associated with employee sabotage behavior toward customers, especially among employees high in negative affectivity or employees with low self-efficacy to regulate their emotions. Shao and Skarlicki (2014) found employees’ individualism

and collectivism moderated the relationship between customer mistreatment and employee sabotage behavior toward customers and employees' withdrawal of citizenship behavior toward customers. Specifically, the effect was stronger among North American employees compared to East Asia employees.

Research has also shown customer mistreatment was related to negative consequences for employees. Yagil (2008) conducted a review on the consequence of customer aggression. The author suggested customer aggression led to employees' negative emotions, such as anger, depression, emotion exhaustion, sleepless, worthlessness. Also, customer aggression was associated with employees' negative workplace outcomes, such as lower job satisfaction, higher turnover intention, higher level absence, lower organizational commitment, lower morale and motivation, and higher withdraw behavior.

For example, Wang, Liu, Liao, Gong, Kammeyer-Mueller, and Shi (2013) found customer mistreatment was positively related to employees' negative mood in the following morning and this effect was mediated by employees' rumination. This relationship was moderated by service rule commitment and perceived organizational support such that the relationship was stronger for employees who had high service rule commitment, but the relationship was weaker for employees who perceived low organizational support. Holmvall and Sidhu (2007) found employees who experienced more customer interactional injustice reported a lower level of job satisfaction and a higher level of turnover intentions. In addition, these relationships were moderated by interdependent self-construals such that the relationships were more profound for employees high in interdependent self-construals. Grandey, Dickter, and Sin (2004) found customer aggression was positively associated with employee absence (i.e., "absent from the workplace as a form of avoidance," p. 6) and the effect was mediated by employees'

emotional exhaustion. Moreover, regarding emotion regulation strategies, employees who experienced more customer aggression were more likely to use surface acting or vented emotions when serving customers; on the other hand, employees who experienced less customer aggression were more likely to use deep acting. Based on four experimental studies, Rafaeli, Erez, Ravid, Derfler-Rozin, Treister, & Scheyer (2012) showed customer verbal aggression impaired employees' recall capability, recognition memory, working memory, and quality of task performance. They also demonstrated the negative consequences of customer verbal aggression on cognitive ability was weakened by employees' perspective-taking ability.

Extant research on customer incivility or mistreatment focuses on its influences on employee well-being, negative workplace outcomes, and employee mistreatment toward the customers. In this dissertation, I argue as customer deviance behavior affects employees' perceptions, attitudes, and behavior, these impacts may be carried forward to affect how employees treat coworkers or behave in the organization. In addition, different from the extant customer deviance literature that focuses on customer deviance behavior toward individuals, I propose customers may also engage in deviance behavior toward the organization, which may also trickle-in through organizational boundary to affect frontline employees. I suggest both customer interpersonal deviance behavior and customer organizational deviance behavior will increase frontline employees' interpersonal deviance behavior (directed at their coworkers) and organizational deviance behavior (directed at their organizations).

APPENDIX C: TABLES AND FIGURES

Table 1: Summary of Types, Focal Constructs, Levels, Mechanisms, Sample, Methodology, Mediators, and Moderators of Spillover Social Influence in Published Empirical Articles (to date)

	Focal Constructs of Spillover Social Influence	Levels of Spillover Social Influence	Mechanisms of Spillover Social Influence	Types of Spillover Social Influence	Sample Size	Methodological Approach	Mediators	Moderators	Dependent Variables
Ambrose, Schminke, & Mayer (2013)	Interactional justice	From supervisor to employee	Social learning theory	Trickle-down effects	83 supervisors and 406 employees	cross-sectional survey study	interactional justice climate	work group structure	Group-level OCB and deviance
Aryee, Chen, Sun & Debrah (2007)	Interactional justice	From supervisor to employee	Displaced aggression	Trickle-down effects	178 supervisor-subordinate dyads	cross-sectional survey study	abusive supervision	authoritarian leadership style	Interactional justice
Bass, Waldman, Avolio, & Bebb(1987)	Transformational leadership	From manager to supervisor	Social learning theory	Trickle-down effects	56 supervisors	cross-sectional survey study	none	none	Transformational leadership
Biron, Farndale, & Paauwe (2011)	Performance management effectiveness	From manager to supervisor ; from supervisor to employee	Signaling theory	Trickle-down effects	16 world-leading firms	case study			Performance management effectiveness
Bordia, Restubog, Bordia, & Tang (2010)	Psychological contract breach	From supervisor to employee	Social exchange theory	Trickle-down effects	172 supervisor-subordinate dyads in call centers.	cross-sectional survey study	supervisors' OCB	none	Psychological contract breach

	Focal Constructs of Spillover Social Influence	Levels of Spillover Social Influence	Mechanisms of Spillover Social Influence	Types of Spillover Social Influence	Sample Size	Methodological Approach	Mediators	Moderators	Dependent Variables
Crossley, Taylor, Wo, & Piccolo (working paper)	Ethical leadership	From supervisor to employee; from employee to customer	Social learning theory; social exchange theory	Trickle-down effects; trickle-out effects	455 employees and 146 leaders	cross-sectional survey study with objective sales data	trust in leaders	none	Customer repeated purchase
Crouter (1984)	family support; family mood	From family to employee	role-strain hypothesis		55 employees; 110 interviews	qualitative study	none	gender; whether have young children	family support; family mood
Detert & Treviño (2010)	Voice	From supervisor to employee; from manager to employee	Social learning theory; climate	Trickle-down effects	89 interviews	qualitative study	none	none	Voice
Dvir, Eden, Avolio, & Shamir (2002)	Transformational leadership	From manager to supervisor; from supervisor to employee	No mechanism proposed	Trickle-down effects	54 military leaders, 90 direct followers, 724 indirect followers	field experiment	none	none	Transformational leadership

	Focal Constructs of Spillover Social Influence	Levels of Spillover Social Influence	Mechanisms of Spillover Social Influence	Types of Spillover Social Influence	Sample Size	Methodological Approach	Mediators	Moderators	Dependent Variables
Frone, Yardley, & Markel (1997)	spouse support; family support; supervisor support; coworker support	From employee to family; from family to employee	No mechanism proposed	Trickle-out effects;	372 employees	cross-sectional survey study	none	none	spouse support; family support; supervisor support; coworker support
Fulmer & Ostroff (2013)	Trust	From supervisor to manager	No mechanism proposed	Trickle-up effects					Trust
Gratton & Erickson (2007)	Cooperation	From manager to supervisor ; from supervisor to employee	Social learning theory	Trickle-down effects	A UK bank	case study	none	none	Cooperation
Grzywacz & Marks (2000)	family support; family disagreements; decision latitude; job pressure	From employee to family; from family to employee	Ecological systems theory	Trickle-out effects;	1986 employees	cross-sectional survey study	none	gender, race, education, income, neuroticism, extraversion	family support; family disagreements; decision latitude; job pressure
Grzywacz, Almeida, & McDonald (2002)	stress	From employee to family; from family to employee	Family life course theory	Trickle-out effects;	741;	longitudinal survey study	none	age	stress

	Focal Constructs of Spillover Social Influence	Levels of Spillover Social Influence	Mechanisms of Spillover Social Influence	Types of Spillover Social Influence	Sample Size	Methodological Approach	Mediators	Moderators	Dependent Variables
Hammer, Cullen, Neal, Sinclair, & Shafiro (2005)	stress; support;	From employee to family	The enhancement hypothesis	Trickle-out effects	234 dual-earner couples	longitudinal survey study	none	none	stress; support
Hoobler & Brass (2006)	Psych contract breach	From supervisor to employee	Displaced aggression	Trickle-down effects	210 supervisors, subordinates, and family members	cross-sectional survey study	abusive supervision	hostile attribution bias	Family undermining
Hoobler & Hu (2013)	Interactional justice	From supervisor to employee; from employee to family	Displaced aggression	Trickle-down effects; trickle-out effects	200 supervisor-subordinate dyads	cross-sectional survey study	negative affect	none	Abusive supervision
Ilies, Schwind, Wagner, Johnson, DeRue, & Ilgen (2007)	Positive and negative affect	From employee to family	Mood congruency hypothesis	Trickle-out effects	106 employees	experience-sampling study; daily report over 2 weeks	none	none	Positive and negative affect
Judge & Ilies (2004)	job satisfaction	From employee to family	Mood congruency hypothesis	Trickle-out effects	74 employees	experience-sampling study; three time a day over 2 weeks	none	trait-positive and trait-negative affectivity	Job satisfaction

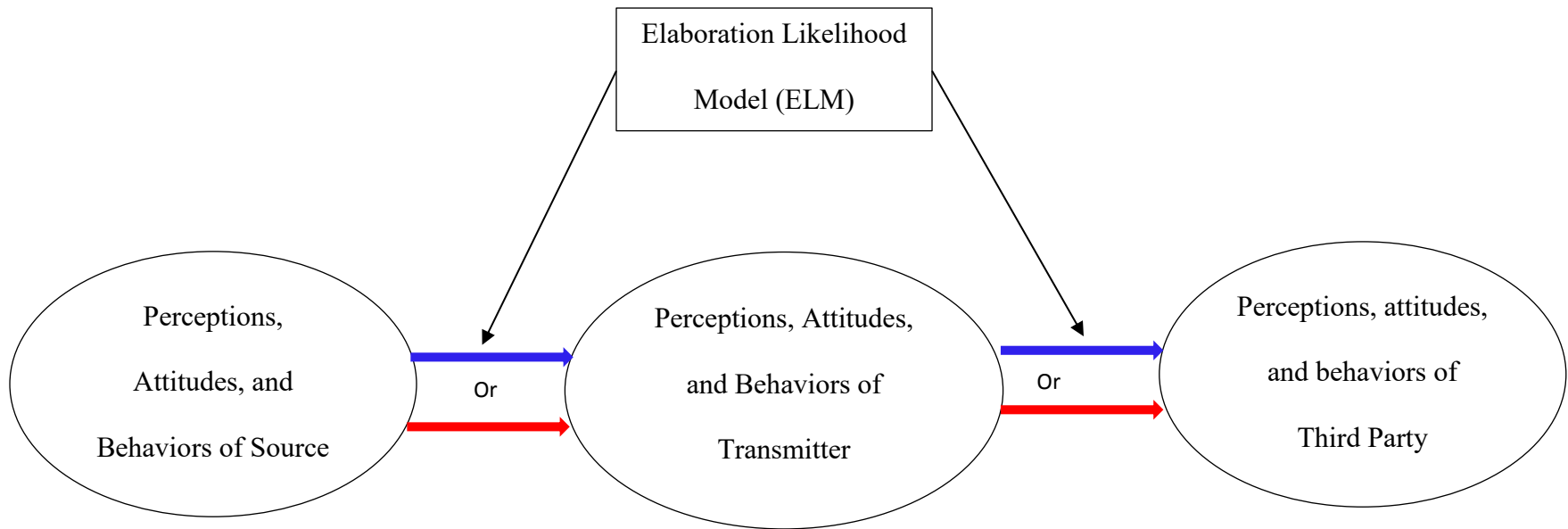
	Focal Constructs of Spillover Social Influence	Levels of Spillover Social Influence	Mechanisms of Spillover Social Influence	Types of Spillover Social Influence	Sample Size	Methodological Approach	Mediators	Moderators	Dependent Variables
Lichtenstein, Netemeyer, & Maxham (2010)	Organizational identity	From supervisor to employee; from employee to customer	Social exchange theory	Trickle-down effects; trickle-out effects	306 managers; 1615 employees; 57656 customer surveys	cross-sectional survey study	none	none	Organizational identity
Liu, Liao, & Loi (2012)	Abusive supervision	From manager to supervisor ; from supervisor to employee	Social learning theory	Trickle-down effects	108 team leaders and 762 team members	longitudinal survey study	none	attributions for the motives behind their own supervisors' abusive supervision	Team member creativity
Masterson (2001)	Distributive justice; procedural justice	From employee to customer	Social exchange theory	Trickle-out effects	187 instructors and Students	longitudinal survey study	organizational commitment	none	Distributive justice; procedural justice
Mawritz, Folger, & Latham (2014)	job goals	From supervisor to employee	Cognitive theory of stress	Trickle-down effects	215 supervisor-subordinate dyads	cross-sectional survey study	hindrance stress, anger, anxiety	none	Abusive supervision
Mawritz, Mayer, Hoobler, Wayne, & Marinova (2012)	Abusive behavior	From manager to supervisor ; from supervisor to employee	Social learning theory/social information processing	Trickle-down effects	288 supervisors and 1423 employees, 288 work group	cross-sectional survey study	none	hostile climate	Abusive behavior

	Focal Constructs of Spillover Social Influence	Levels of Spillover Social Influence	Mechanisms of Spillover Social Influence	Types of Spillover Social Influence	Sample Size	Methodological Approach	Mediators	Moderators	Dependent Variables
			theory						
Mayer, Kuenzi, Greenbaum, Bardes & Salvador (2009)	Ethical leadership	From supervisor to employee	Social exchange theory; social learning theory	Trickle-down effects	904 employees, 195 supervisors, in 195 departments	cross-sectional survey study	none	none	Group-level OCB and deviance
Rafferty, Restubog, & Jimmieson (2010)	Distributive justice; interactional justice	From supervisor to employee	Displaced aggression	Trickle-down effects	175 supervisor-subordinate dyads	longitudinal survey study	none	supervisor' distress, subordinates' self-esteem	Insomnia
Restubog, Scott, & Zagenczyk (2011)	Abusive behavior	From supervisor to employee; from employee to family	Social learning theory; displaced aggression	Trickle-down effects; trickle-out effects	study 1: 184 employees Study 2: 188 restaurant workers	longitudinal survey study	psychological distress	gender	Spouse undermining
Schaubroeck, Hannah, Avolio, Kozlowski, Lord, Treviño,	Ethical leadership	From manager to supervisor ; from supervisor	Culture	Trickle-down effects	243 squads, 85 platoons, 40 companies	cross-sectional survey study	ethical culture	none	Ethical cognitions and behaviors

	Focal Constructs of Spillover Social Influence	Levels of Spillover Social Influence	Mechanisms of Spillover Social Influence	Types of Spillover Social Influence	Sample Size	Methodological Approach	Mediators	Moderators	Dependent Variables
Dimotakis, & Peng (2012)		to employee							
Schuh, Zhang, Egold, Graf, Pandey, & van Dick (2012)	Organizational identity	From supervisor to employee	Social identity theory	Trickle-down effects	study 1: 18 leaders and 216 employees Study 2: 44 leaders and 109 followers)	cross-sectional survey study	transformational leadership	none	OCB
Schuh, Zhang, & Tian (2013)	Transformational leadership	From supervisor to employee	Social learning theory	Trickle-down effects	114 leader-follower dyads	cross-sectional survey study	none	transformational leadership	In-role and extra-role efforts
Shanock & Eisenberger (2006)	Perceived organizational support (POS)	From supervisor to employee	Social exchange theory	Trickle-down effects	135 supervisor-subordinate dyads	cross-sectional survey study	perceived supervisor support	none	Perceived organizational support (POS)
Simons, Friedman, Liu, & Parks (2007)	Behavioral integrity	From supervisor to employee	Social learning theory	Trickle-down effects	449 supervisor-subordinate dyads	cross-sectional survey study	none	race of manager	Behavioral integrity
Sliter, Sliter, & Jex (2012)	Incivility	From customer to employee	The conservation of resources		120 employees	cross-sectional survey study	none	coworker incivility	Withdrawal and sales performance

	Focal Constructs of Spillover Social Influence	Levels of Spillover Social Influence	Mechanisms of Spillover Social Influence	Types of Spillover Social Influence	Sample Size	Methodological Approach	Mediators	Moderators	Dependent Variables
Sun, Aryee, & Law (2007)	Human resource practices	From supervisor to employee	Climate	Trickle-down effects	81 human resource managers and 405 supervisors	cross-sectional survey study	service-oriented citizenship behaviors	unemployment rate and business strategy	Turnover and productivity
Takeuchi, Yun, & Tesluk (2002)	Cross-cultural adjustment	From employee to family; from family to employee	Displaced aggression	Trickle-out effects;	215 expatriates and 173 spouses	longitudinal survey study	none	none	Cross-cultural adjustment
Tepper, Duffy, Henle & Lambert (2006):	Procedural justice	From supervisor to employee	Displaced aggression	Trickle-down effects	334 supervisor-subordinate dyads	cross-sectional survey study	supervisors' depression	subordinates' negative affectivity	Abusive supervision
Tepper & Taylor (2003)	Procedural justice	From supervisor to employee	Social exchange theory	Trickle-down effects	373 national guard members and their military supervisors	cross-sectional survey study	supervisors' OCB	Supervisors' OCB role definitions	OCB
Williams & Alliger (1994)	Positive and negative mood	From employee to family; from family to employee	stress	Trickle-out effects;	41 working parents	experience-sampling study; daily report over 1 week	none	none	Positive and negative mood

	Focal Constructs of Spillover Social Influence	Levels of Spillover Social Influence	Mechanisms of Spillover Social Influence	Types of Spillover Social Influence	Sample Size	Methodological Approach	Mediators	Moderators	Dependent Variables
Wo, Ambrose, & Schminke (in press)	Interpersonal justice; informational justice	From supervisor to employee	Social exchange theory; social learning theory; displaced aggression	Trickle-down effects	Study 1: 200 supervisor-subordinate dyads Study 2: 270 supervisor-subordinate dyads	cross-sectional and longitudinal study	POS, role model influence, anger; Felt obligation toward the organization, interactional efficacy, anger/irritation	none	Interpersonal justice; informational justice
Wu, Lee, Hu, & Yang (2014)	Perceived supervisor non-work support	From supervisor to employee	Social exchange theory; social learning theory	Trickle-down effects	132 supervisor-subordinate dyads	cross-sectional study	none	supervisors' perceived in-group/out-group membership of the subordinates	OCB
Yang, Zhang, & Tsui (2010)	Transformational leadership	From manager to supervisor ; from supervisor to employee	Social learning theory	Trickle-down effects	30 middle managers, 98 frontline supervisors, 491 frontline employees	cross-sectional survey study	none	power distance values endorsed by supervisors	Job performance



Blue indicates cognitive social influence

Red indicate affective social influence

(SSI model)

Figure 1: Conceptual Model of Spillover Social Influence in Organizations

Table 2: Study 1 Means, Standard Deviations, and Correlations

Variables	M	SD	1	2	3	4	5	6	7	8
1. Customers' Interpersonal Deviance Behavior	2.47	.84								
2. Customers' Organizational Deviance Behavior	2.59	1.04	.58**							
3. Intentions to Seek Revenge	1.36	.72	.04	.10						
4. Role Model Influence	1.77	.92	-.08	-.09	.44**					
5. Anger	1.77	.80	.30**	.14	.39**	.05				
6. Ego-depletion	2.44	.96	.31**	.17	.07	-.18*	.54**			
7. Identity Threat	2.01	.92	.37**	.39**	.36**	.03	.38**	.31**		
8. Employees' Interpersonal Deviance Behavior	1.26	.57	.20*	.14	.44**	.14	.40**	-.00	.25**	
9. Employees' Organizational Deviance Behavior	1.32	.52	.18*	.15	.49**	.20*	.34**	-.04	.22*	.85**

Note. n=170 dyad of supervisor-subordinate. ** $p < .01$; * $p < .05$; Two-tailed.

Table 3: Study 1 Results of Structural Equation Modeling: Customer Interpersonal Deviance Behavior

IV to Mediator	Coefficient
Customers' Interpersonal Deviance Behavior → Intentions to Seek Revenge	.10
Customers' Interpersonal Deviance Behavior → Anger	.33**
Customers' Interpersonal Deviance Behavior → Ego-depletion	.47**
Customers' Interpersonal Deviance Behavior → Identity Threat	.45**
Direct Effects of Mediator on DV	
Intentions to Seek Revenge → Employees' Organizational Deviance Behavior	.18**
Anger → Employees' Organizational Deviance Behavior	.39**
Anger → Employees' Interpersonal Deviance Behavior	.45**
Ego-depletion → Employees' Organizational Deviance Behavior	-.28**
Ego-depletion → Employees' Interpersonal Deviance Behavior	-.28**
Identity Threat → Employees' Organizational Deviance Behavior	.08
Identity Threat → Employees' Interpersonal Deviance Behavior	.14
Direct Effect of IV on DV	
Customers' Interpersonal Deviance Behavior → Employees' Organizational Deviance Behavior	.04
Customers' Interpersonal Deviance Behavior → Employees' Interpersonal Deviance Behavior	.06

** $p < .01$; * $p < .05$; one-tailed.

Table 4: Study 1 Results of Structural Equation Modeling: Customer Organizational Deviance Behavior

	Coefficient
IV to Mediator	
Customers' Organizational Deviance Behavior → Customer Role Model Influence	-.05
Customers' Organizational Deviance Behavior → Ego-depletion	-.15
Direct Effects of Mediator on DV	
Customer Role model Influence → Employees' Organizational Deviance Behavior	.00
Ego-depletion → Employees' Organizational Deviance Behavior	-.28**
Ego-depletion → Employees' Interpersonal Deviance Behavior	-.28**
Direct Effect of IV on DV	
Customers' Organizational Deviance Behavior → Employees' Organizational Deviance Behavior	.10
Customers' Organizational Deviance Behavior → Employees' Interpersonal Deviance Behavior	.04

** $p < .01$; * $p < .05$; one-tailed.

Table 5: Study 1 Indirect Effects and Bootstrapping Results: From Customer Interpersonal Deviance Behavior to Employees' Organizational Deviance Behavior^a

	Indirect Effect	90% Bootstrapped Lower	Confidence Interval Upper
Anger	.09	.03	.17
Ego-depletion	-.09	-.20	-.03

From Customer Interpersonal Deviance Behavior to Employees' Interpersonal Deviance Behavior^a

	Indirect Effect	90% Bootstrapped Lower	Confidence Interval Upper
Anger	.10	.03	.20
Ego-depletion	-.09	-.24	-.03

^a Based on 1,000 bootstrap samples.

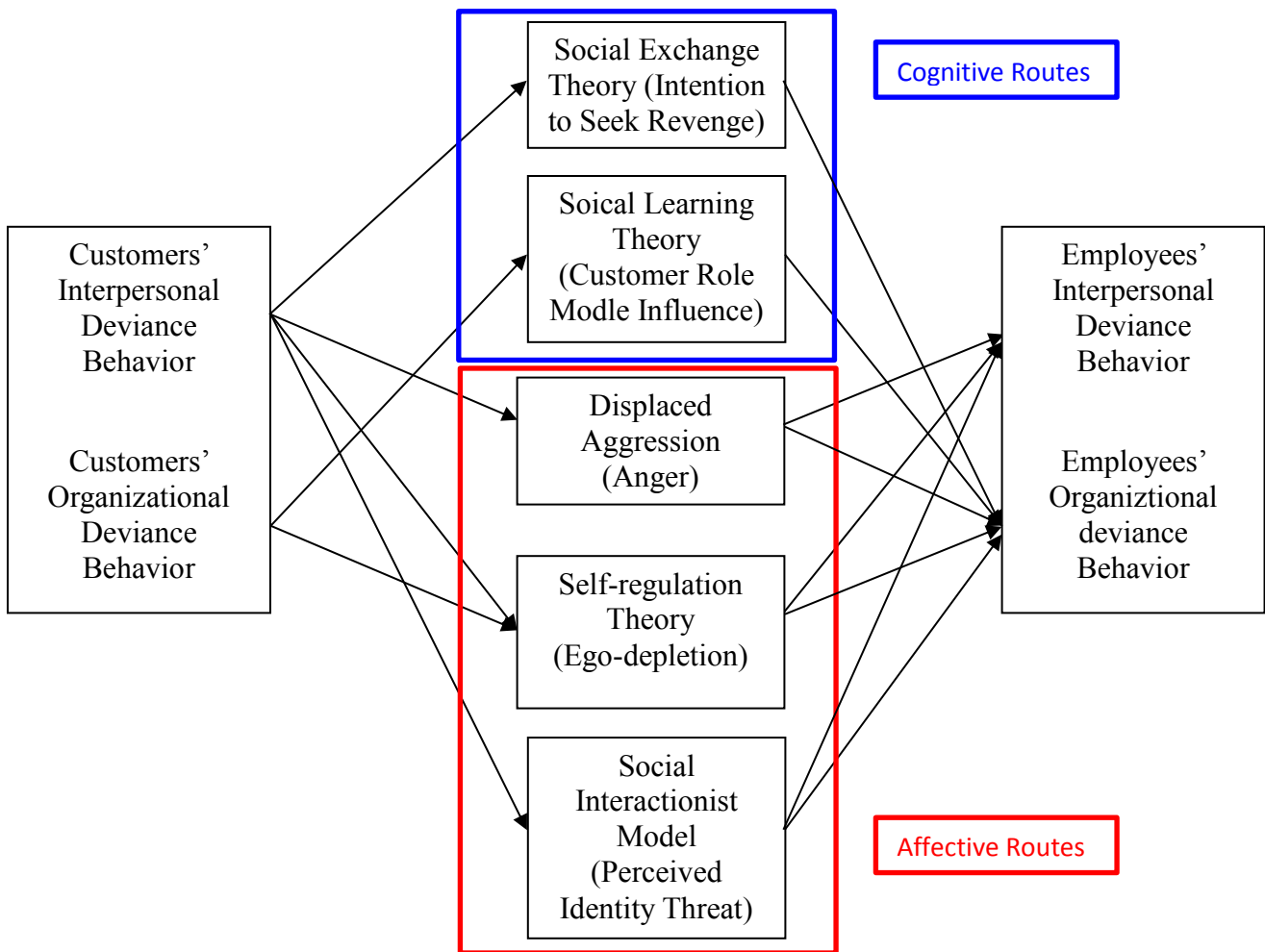
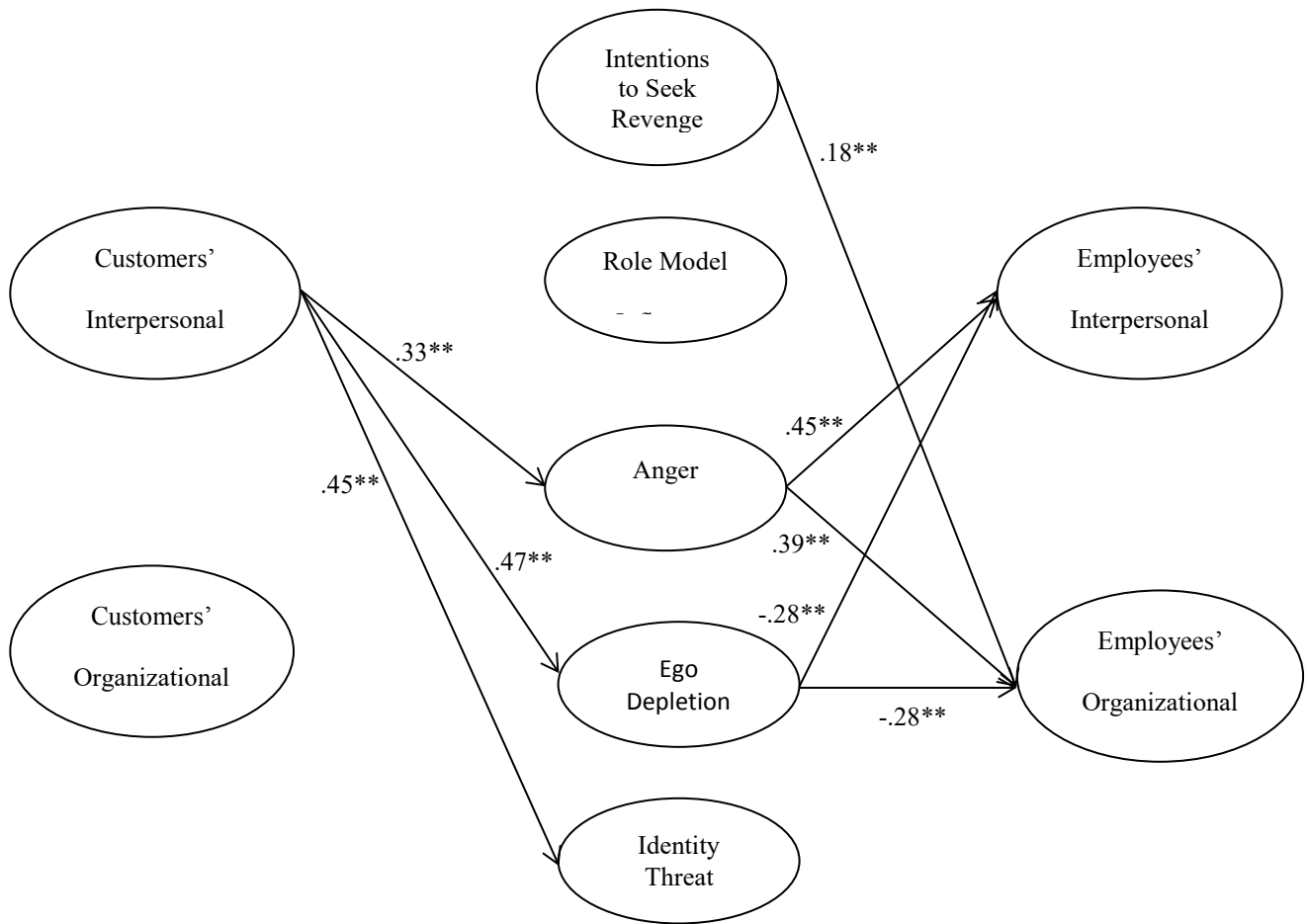


Figure 2: Conceptual Model of Trickle-In Effects of Customer Deviance Behavior



** $p < .01$; * $p < .05$; one-tailed.

Figure 3: Study 1 Structural Equation Modeling Results: Partial Mediation Model

Table 6: Study 2 Means, Standard Deviations, and Correlations

Variables	M	SD	1	2	3	4	5	6	7	8
1. Customers' Interpersonal Deviance Behavior	1.80	.90								
2. Customers' Organizational Deviance Behavior	1.58	.72	.63**							
3. Intentions to Seek Revenge	1.28	.54	.11	.12						
4. Customer Role Model Influence	1.37	.63	-.04	-.06	.78**					
5. Anger	1.64	.87	.08	.18	.76**	.76**				
6. Ego-depletion	1.90	.93	-.12	.18	.70**	.65**	.85**			
7. Identity Threat	1.49	.64	-.10	-.01	.67**	.65**	.78**	.75**		
8. Employees' Interpersonal Deviance Behavior	1.32	.50	-.10	-.11	.24	.45**	.52**	.53**	.49**	
9. Employees' Organizational Deviance Behavior	1.12	.23	.07	.05	.34*	.40**	.48**	.46**	.54**	.80**

Note. n=66 dyad of supervisor-subordinate. ** $p < .01$; * $p < .05$; Two-tailed.

Table 7: Study 2 Results of Structural Equation Modeling: Customer Interpersonal Deviance Behavior

IV to Mediator	Coefficient
Customers' Interpersonal Deviance Behavior → Intentions to Seek Revenge	.47**
Customers' Interpersonal Deviance Behavior → Anger	.59**
Customers' Interpersonal Deviance Behavior → Ego-depletion	.18
Customers' Interpersonal Deviance Behavior → Identity Threat	.45**
Direct Effects of Mediator on DV	
Intentions to Seek Revenge → Employees' Organizational Deviance Behavior	.18
Anger → Employees' Organizational Deviance Behavior	-.26
Anger → Employees' Interpersonal Deviance Behavior	.31
Ego-depletion → Employees' Organizational Deviance Behavior	-.14
Ego-depletion → Employees' Interpersonal Deviance Behavior	-.25
Identity Threat → Employees' Organizational Deviance Behavior	.28
Identity Threat → Employees' Interpersonal Deviance Behavior	.38
Direct Effect of IV on DV	
Customers' Interpersonal Deviance Behavior → Employees' Organizational Deviance Behavior	.26
Customers' Interpersonal Deviance Behavior → Employees' Interpersonal Deviance Behavior	-.33

** $p < .01$; * $p < .05$; one-tailed.

Table 8: Study 2 Results of Structural Equation Modeling: Customer Organizational Deviance Behavior

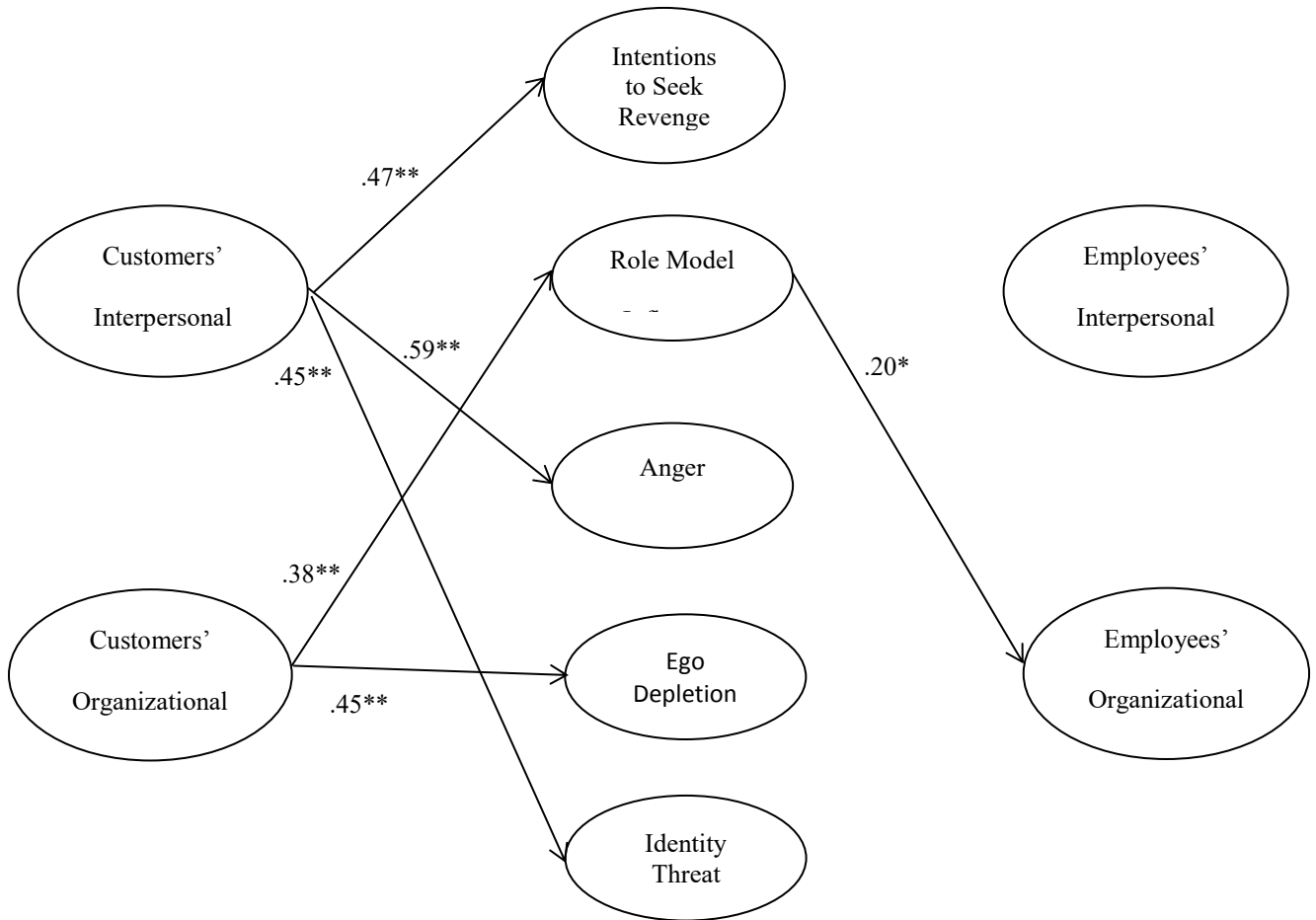
	Coefficient
IV to Mediator	
Customers' Organizational Deviance Behavior → Customer Role Model Influence	.38**
Customers' Organizational Deviance Behavior → Ego-depletion	.45**
Direct Effects of Mediator on DV	
Customer Role model Influence → Employees' Organizational Deviance Behavior	.20*
Ego-depletion → Employees' Organizational Deviance Behavior	-.14
Ego-depletion → Employees' Interpersonal Deviance Behavior	-.25
Direct Effect of IV on DV	
Customers' Organizational Deviance Behavior → Employees' Organizational Deviance Behavior	.21
Customers' Organizational Deviance Behavior → Employees' Interpersonal Deviance Behavior	.61

** $p < .01$; * $p < .05$; one-tailed.

Table 9: Study 2 Indirect Effects: From Customers' Organizational Deviance Behavior to Employees' Organizational Deviance Behavior

	Indirect Effect	P value
Customers' Role model influence	.09*	.046

** $p < .01$; * $p < .05$; One-tailed



** $p < .01$; * $p < .05$; one-tailed.

Figure 4: Study 2 Structural Equation Modeling Results: Partial Mediation Model

Table 10:Trickle-down Definition

	Trickle-down definitions
Ambrose, Schminke, & Mayer (2013)	“trickle-down” models—the effect of perceptions of one member of the organization (typically the supervisor) on other members (typically the supervisor’s subordinates).
Aryee, Chen, Sun & Debrah (2007)	A trickle-down model describes how interactions at a higher organizational level affect perceptions of justice and subsequent reactions, as well as the impact of these reactions on perceptions of justice and subsequent reactions at a lower organizational level.
Bass, Waldman, Avolio, & Bebb(1987)	No specific definition proposed; also referred to as the falling dominoes effect/cascading leadership; "followers tend to emulate the directive or participative styles of leadership exhibited by their supervisors."
Biron, Farndale, & Paauwe (2011)	No definition proposed.
Bordia, Restubog, Bordia, & Tang (2010)	No definition proposed; "The trickle-down approach also uncovers the role of supervisor perceptions of breach as an antecedent of subordinate perceptions of breach." "develop a model that links a supervisor’s experience of psychological contract breach with the subordinate’s experience of breach, ultimately resulting in poorer customer service by the subordinate."
Detert & Treviño (2010)	No specific definition proposed; "This leader constellation for a given employee includes not only his/her immediate supervisor and the organization’s most senior leadership team, but one or more “skip-level leaders,” which we define as any leader in the organization’s formal chain of command above the informant’s immediate supervisor."
Dvir, Eden, Avolio, & Shamir (2002)	No specific definition proposed; "Direct leadership, or the relationships between focal leaders and their immediate followers, has been studied extensively. In contrast, knowledge of indirect leadership, or the influence of focal leaders on individuals not reporting directly to them, is much more limited. The few attempts to understand indirect leadership have been limited to world-class leaders or highly visible GEOs. It is assumed that transformational leadership at any level can impact both direct and indirect followers."
Gratton & Erickson (2007)	No specific definition proposed;
Hoobler & Brass (2006)	No specific definition proposed;

Hoobler & Hu (2013)	No specific definition proposed; "Researchers have recently engaged in attempts to model what have been called "trickle-down" effects of abusive supervision. These models illustrate that factors specific to the organization or perceptions and characteristics of the supervisor set in motion a chain of events that result in a supervisor's abusive behavior. Though these studies have largely been cross-sectional in nature, they suggest an active process whereby events "flow downhill" to and from supervisor abuse, resulting in negative outcomes for organizations, subordinates, and even subordinates' family members outside of the workplace."
Lichtenstein, Netemeyer, & Maxham (2010)	No specific definition proposed. The authors refer the trickle-down effects as "chain of influence."
Liu, Liao, & Loi (2012)	No specific definition proposed. "we build a trickle-down model to unveil how abusive supervision manifested at the department level flows down through an organizational hierarchy to stimulate team leader abusive supervision and consequently undermines team member creativity."
Masterson (2001)	No specific definition proposed. "This study developed and tested a trickle-down model of organizational justice that hypothesized that employees' perceptions of fairness should affect their attitudes toward the organization, subsequently influencing their behavior toward customers."
Mawritz, Folger, & Latham (2014)	No specific definition proposed.
Mawritz, Mayer, Hoobler, Wayne, & Marinova (2012)	"trickle-down models that link behaviors of higher levels of management to employees' attitudes and behaviors through the behaviors of immediate supervisors."
Mayer, Kuenzi, Greenbaum, Bardes & Salvador (2009)	No specific definition proposed. "The purpose of the present research is to test a trickle-down model to examine how ethical leadership flowing from top levels of management to supervisors and eventuates in employee behavior."
Rafferty, Restubog, & Jimmieson (2010)	No specific definition proposed. "We develop a "trickle-down model" of abusive supervision that is concerned with how relationships at a higher organizational level cascade down the organization to affect behavior and reactions at a lower level."
Restubog, Scott, & Zagencyk (2011)	No specific definition proposed.

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