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Organizational citizenship behavior and the enhancement of absorptive capacity☆

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ABSTRACT

Firm-level absorptive capacity has been conceptualized as the capability of the firm to identify, assimilate/transform, and exploit new knowledge. Despite the fact that the role of individuals strongly influenced the original conceptualization of the construct, the role of individuals in developing organizational absorptive capacity has been largely ignored. Meanwhile, studies have shown that individual-level behaviors known as organizational citizenship behaviors are related to indicators of organizational performance, yet there have been relatively few theoretically-based arguments explaining this relationship. In this paper, we articulate a model that depicts how the organizational citizenship behaviors of individuals enhance a firm's absorptive capacity. Specifically, we propose that citizenship behaviors moderate the relationship between routines and processes and the exploratory, assimilative, transformative, and exploitative learning capabilities that comprise organizational absorptive capacity.

1. Introduction

Research investigating the role that individuals within organizations play in affecting organizational outcomes, which are generally referred to as "micro-foundations" has increased in recent years (Lewin, Massini, & Peeters, 2011). Scholars have argued that in order to understand organizational concepts such as learning and knowledge, we must develop a better understanding of the role individuals play in these processes (Felin & Foss, 2005). However, although absorptive capacity (AC) is intricately related with both organizational learning and knowledge, AC researchers have focused less on individuals' contributions to its development, focusing instead on structural and procedural antecedents (for exceptions, see Jones, 2006; Sun & Anderson, 2012). Indeed, despite being the focus of over 900 academic articles, Lane et al. (2006: 833) argue that researchers have failed to incorporate the role of individuals into AC models:

> From a practical perspective, omitting individuals from absorptive capacity models suggests that they are not important to knowledge processing. Yet, in the real world, executives of knowledge-intensive firms routinely worry about the fact that their core asset goes home every night. From a theoretical perspective, overlooking the role of individuals not only overlooks a key component of Cohen and Levinthal's (1990) logic but suggests that absorptive capacity is fundamentally an algorithmic matching process: develop X amount of absorptive capacity in Y, and then your firm can learn Z. *But what creates competitive advantage out of knowledge is the unique and valuable ways in which it is combined and applied.* (Lane et al., 2006: 853-854) (emphasis added).

We develop theoretical support for why organizational citizenship behaviors (OCBs) of employees contribute to the "unique and valuable ways" that organizations acquire, assimilate/transform and exploit new knowledge, which are the very foundations of AC. Prior work finds that it is often the informal, non-prescribed interactions of individuals that leads to learning within organizations (e.g., Obembe, 2013). By its very definition, organizational citizenship behavior – "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization" (Organ, Podsakoff, & MacKenzie, 2006: 3) – suggests that OCBs are precisely the types of behavior that fill the gaps between how firms have organized their learning processes and what is actually needed for them to create competitive advantage.

Employees who engage in OCBs are often referred to as "good soldiers" because of their willingness to go above and beyond the call of duty (Organ, 1988), that is, to engage in these *relatively* discretionary

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and *less explicitly* rewarded behaviors in order to improve the "efficient and effective functioning" of organizations (Organ et al., 2006). Organ and colleagues identified several ways in which OCBs may accomplish this, including enhancing coworker productivity and improving coordination of team effort (see p. 200–202). Building on their intuition, we propose another way that OCBs contribute to organizational effectiveness: by enhancing each of the four learning capabilities that comprise AC. More specifically, we argue that these discretionary behaviors can be the vital link in the AC process that fills the gap between how AC learning capabilities are formally structured and how they need to operate in order to generate a competitive advantage.

The proposed relationship between OCBs and organizational outcomes has been generally supportive empirically (Allen, Adomdza, & Meyer, 2015; Podsakoff, Aherne, & MacKenzie, 1997) and conceptually (Organ et al., 2006: 200-202). These studies, however, have been largely based on the *a priori* assumption that such a relationship does in fact exist – with little theoretical justification for that assumption (Podsakoff, Podsakoff, MacKenzie, Maynes, & Spoelma, 2014). That is to say, following the definition of OCB, researchers have attempted to verify a relationship between OCB and organizational outcomes, but except for a few examples (e.g., Bolino, Turnley, & Bloodgood, 2002), there is little in the way of theory as to why this relationship might exist. In this paper we provide a theory-driven argument that OCBs enhance organizations' absorptive capacity (AC).

Our paper seeks to make two significant contributions. First, we provide a theoretical linkage between individual-level behaviors and firm-level outcomes beyond the definitional linkage that characterizes much of the OCB literature today. In proposing a theory of how OCBs contribute to a firm-level construct like AC, which is both theoretically and empirically related positively to innovation (Cohen & Levinthal, 1990), organizational learning (Lenox & King, 2004) and long-term financial performance (Prieto & Revilla, 2006), we make a noteworthy contribution to OCB research which we hope will lead to new avenues of research for the construct. Second, by articulating this perspective we also contribute to the AC literature by focusing on a conspicuously-overlooked aspect of the construct – namely, how individual-level behaviors contribute to the development of AC. In this paper, therefore, we develop a model that articulates the important linkages between a subset of individual behaviors – OCBs – and AC.

2. Theoretical foundations

2.1. Absorptive capacity

Building upon the work of prior scholars (e.g. Mowery, 1983; Tilton, 1971), Cohen and Levinthal introduced the absorptive capacity (AC) construct into the social science lexicon, defining it as the learning ability of firms to "identify, assimilate, and exploit knowledge from the environment" (Cohen & Levinthal, 1989: 569). Although the construct has evolved and been redefined several times, a consistent theme throughout the construct's development is that AC reflects the ability of firms to beneficially utilize external knowledge through the learning capabilities of exploration, assimilation, transformation, and exploitation (Lane et al., 2006).

The first main component of AC is that of exploratory learning, in which new knowledge is sought, identified, valued and then, if deemed appropriate, acquired. Once new knowledge has been brought into firms, it is connected with existing knowledge through the alternate processes of assimilation and transformation. Assimilation occurs when the new knowledge fits within the firm's existing knowledge structures, which makes the new knowledge easy to absorb (assimilate) into the existing knowledge. In contrast, transformation occurs when the new knowledge does not fit within those structures. Instead, those structures must be modified (transformed) to accommodate the new knowledge. The final learning capability supporting AC is that of exploitative learning by which knowledge is applied towards productive scientific and commercial ends. Ultimately, firms seek to produce valuable commercial outputs such as new products, services, or other valuable intellectual property (for more discussion of AC, see: Cohen & Levinthal, 1990; Lane et al., 2006; Todorova & Durisin, 2007).

While each of these learning capabilities are unique in their foci, they are similar in that they are all comprised of various routines. Routines have been defined as "patterned sequences of learned behavior involving multiple actors who are linked by relations of communication and/or authority (Cohen & Bacdayan, 1994: 555) and are described as the "building blocks" upon which capabilities are built (Lewin et al., 2011: 82). Prior work in AC has articulated numerous routines that support the learning capabilities within AC (Lewin et al., 2011). For example, regularly interacting with knowledgeable people in an industry is one way employees can explore for and acquire new, external knowledge, which supports exploratory learning (Kohli, Jaworski, & Kumar, 1993). Creating cross-functional teams or scheduling time to meet with individuals from other departments to share different ideas and perspectives can be an important component of assimilating new knowledge or transforming existing knowledge bases, which fosters assimilative and transformative learning (Song, Montoya-Weiss, & Schmidt, 1997). Re-combining knowledge in new and different ways in order to develop new solutions out of existing knowledge enables firms to more fully exploit their knowledge bases, which further develops exploitative learning (Kogut & Zander, 1992).

These routines, and the learning capabilities that comprise AC, operate within the broader context of the structures and policies of the organization (Lane et al., 2006). Prior work suggests that the knowledge processing and learning capabilities of a firm cannot be fully understood without understanding how it is organized (Kogut & Zander, 1992). For instance, the number of hierarchical levels and the degree of centralization of decision-making are argued to affect how learning capabilities and knowledge processing develop and evolve over time. Similarly, organizational policies such as compensation plans have been linked with influencing innovation (Hoskisson, Hitt, & Hill, 1993) and motivating research in knowledge-intensive firms (Henderson & Cockburn, 1994).

In these ways, organizational structures and policies have been argued to affect AC and the underlying learning and knowledge processing capabilities (Lane et al., 2006). They also act as the framework within which the routines and other activities that support AC capabilities are created, maintained, and modified. We take the routines-as-building-blocks analogy one step further and argue that individuals' OCBs act as the mortar that holds those building blocks together. Even if firms adopt and implement best practices in their structures, policies, and routines, perfect alignment between these practices and the larger environment in which the firm exists is highly improbable. That is, no system is perfectly created and no structure can foresee all eventualities (Katz, 1964). Thus, something more is required if organizations are to maintain and enhance AC. We argue that the OCBs of employees – their non-prescribed, discretionary behaviors – make the difference.

2.2. Organizational citizenship behavior

Though the term "organizational citizenship behavior" first appeared in Smith, Organ, & Near's, 1983 article, the conceptual roots of OCB extend considerably further into the past. Barnard, in his classic work, *The Functions of the Executive*, said, "the vitality of organizations lies in the willingness of individuals to contribute forces to the cooperative system" (Barnard, 1938: 84). He further argued that this "willingness" varies widely across individuals. The implication that some individuals go above and beyond some technically-required level of willingness highlights the discretionary aspect of OCB.

Katz (1964: 132) also noted the importance of "actions not specified by role prescriptions which nevertheless facilitate the accomplishment of organizational goals." Subsequently, Katz and Kahn (1966: 338) argued that because organizational planning is never performed with perfect knowledge and therefore cannot take into account all possible

Table 1
Definitions of affiliative and challenging OCBs.

Affiliative OCBs	Behaviors that are cooperative in nature and are generally noncontroversial (Van Dyne et al., 1995: 252) and strengthen relationships (McAllister et al., 2007).
Helping	Behaviors targeted at individual others for the purpose of alleviating their struggles with work-related problems or potentially preventing problems from occurring in the first place (Organ et al., 2006).
Sportsmanship	Enduring difficulties and interruptions without complaining (Organ, 1988), keeping a positive attitude when things do not go as planned and not taking offense when others discard one's suggestions and ideas (Podsakoff, MacKenzie, Paine, & Bachrach, 2000).
Organizational loyalty	Characterized by cooperation for the good of the organization and by commitment to the organization that goes beyond one's commitment to other individuals, teams, and departments (Graham, 1991).
Organizational compliance	Behaviors resulting from a mindset in which employees accept organizational rules, regulations, and policies, take extraordinary care to complete tasks for which they are responsible, and generally practice effective stewardship of organizational resources (Graham, 1991).
Individual initiative	Involves extraordinary levels of task-related behavior that are so far above and beyond the required level that they appear essentially voluntary and is characterized by perseverance and conscientiousness (Borman & Motowidlo, 1993).
Civic virtue (some forms)	Keeping themselves informed about the organization as a whole rather than simply focusing on their own job or department (Organ, 1988).
Self-development	"Refers to improving one's own knowledge or working skills" (Farh, Zhong, & Organ, 2004: 247).
Challenging OCBs	Behaviors through which employees express constructive criticism of the status quo for the purpose of creating improvement via change (McAllister et al., 2007).
Voice	"Expression of constructive challenge with an intent to improve rather than merely criticize" (Van Dyne & LePine, 1998: 109).
Taking charge	"Voluntary and constructive efforts, by individual employees, to effect organizationally functional change with respect to how work is executed" (Morrison & Phelps, 1999: 403).
Civic virtue (some forms)	Use of critical thinking to identify problems or improvements and then speaking up, making suggestions for change.

contingencies, "the resources of people for innovation, for spontaneous cooperation, for protective and creative behavior are thus vital to organizational survival and effectiveness." Thus, these relatively discretionary behaviors play an integral role in organizations' knowledge and learning processes.

Given that OCBs are thought to facilitate organizational efficiency and effectiveness (Organ et al., 2006), researchers have devoted significant attention to identifying their antecedents. The most established framework for understanding the occurrence of OCB is social exchange theory (Homans, 1958). Generally speaking, this perspective suggests that employees reciprocate the favorable treatment they receive from their employer by going above and beyond the call of duty (Organ, 1988). Consistent with principles of social exchange, studies have found that employees are more likely to engage in OCB when they have been treated fairly (Moorman, 1991), when they are given meaningful and satisfying work (Bateman & Organ, 1983), when their supervisors inspire and motivate them (Grant, 2008), and when organizations are trustworthy, fulfill the promises they have made to employees, and show high levels of support (Turnley, Bolino, Lester, & Bloodgood, 2003).

Beyond social exchange, researchers have identified other reasons that employees engage in OCB. For instance, some studies have focused on how employees' personality and mood contribute to OCB (Ilies, Scott, & Judge, 2006), and other researchers have argued that OCBs are more likely to occur when employees feel pressured to engage in citizenship behaviors or see them as an expected part of their job (Bolino, Turnley, Gilstrap, & Suazo, 2010). It has also been argued that employees may be motivated to engage in OCB in order to enhance their image or reputation at work (Bolino, 1999), or due to a combination of both self-serving and other-serving motives (Grant & Mayer, 2009). Finally, more recent work has highlighted the complex role that multiple motives, cognitions, identity, and self-regulation processes may play in understanding how employees process feedback regarding OCB and make decisions about engaging in future acts of citizenship (Lemoine, Parsons, & Kansara, 2015).

Although there are numerous examples and descriptions of OCBs (for a comprehensive review, see Organ et al., 2006), researchers often classify them into two parsimonious categories: affiliative and challenging (Podsakoff et al., 2014). Affiliative OCBs are behaviors that are cooperative in nature, are generally noncontroversial (Van Dyne, Cummings, & Parks, 1995: 252), and strengthen relationships (McAllister, Kamdar, Morrison, & Turban, 2007). Challenging OCBs, on the other hand, are behaviors through which employees express constructive criticism of the status quo for the purpose of creating improvement via change (McAllister et al., 2007). We argue that affiliative and challenging OCBs, as exhibited through each of the specific types of OCBs described in Table 1, enhance each of the learning capabilities that comprise organizational AC. We next turn to those arguments.

3. Propositions

3.1. The moderating effect of OCBs in general

We posit that OCBs alter the efficiency and effectiveness of routines and processes on a firm's AC by moderating the effect that those routines and processes have on the knowledge creation activities and learning capabilities that comprise AC. Although these learning-related routines and processes may result from the firm's structures and policies (Lane et al., 2006), Katz (1964: 132) argued that "an organization that depends solely upon its blueprints of prescribed behavior is a fragile social system." Strict adherence to formally-prescribed routines and processes, then, while important, is insufficient to bring about desired outcomes. This highlights the importance of individual behavior within the context of those routines and processes. Indeed, Lane et al. (2006) call for AC researchers to renew emphasis on the central role of the individual in firm-level AC development recalls Barnard's (1938) contention that the very survival of an organization depends on the willingness of its employees to contribute their efforts to the organization, which he conceptualized as a cooperative system. This cooperative system consists of not only routines and processes, but also the efforts of the employees who labor to complete them.

Barnard further argued that employees vary in their willingness to contribute; some employees contribute more to the organization than do others. In general, then, employees who engage in OCBs – who go above and beyond the call of duty – exemplify increased willingness to participate in the cooperative system. The routines and processes that drive a firm's AC are elements of that cooperative system. Therefore, to the degree that employees engage in affiliative and challenging OCBs, their efforts affect the outcomes of the firm's formalized routines and processes, amongst them the firm's AC.

We expect affiliative OCBs to strengthen the positive relationship between routines and processes and each of the four AC capabilities (i.e., exploration, assimilation, transformation and exploitation). This is because of the cooperative and noncontroversial nature of these behaviors (Van de Ven & Drazin, 1985). Put another way, OCBs "lubricate the social machinery of the organization" (Bateman & Organ, 1983: 588). This imagery illustrates how affiliative OCBs allow firms' cooperative systems to function smoothly and efficiently. However, the routines and processes that contribute to a firm's AC vary according to the specific learning capability with which they are

associated (Lewin et al., 2011). Therefore, certain types of affiliative OCBs are especially beneficial to AC within the routines and processes associated with specific learning capabilities, as we articulate below.

Similarly, challenging OCBs will also enhance the efficiency and effectiveness of routines and processes on the learning capabilities that support AC. Whereas affiliative OCBs are cooperative and non-controversial in nature, challenging OCBs are characterized by behaviors that go against the status quo and may appear more controversial (Van Dyne et al., 1995). However, the intent of challenging OCBs is to improve a situation by bringing about change (Morrison & Phelps, 1999), so these types of OCBs will also enhance the efficiency and effectiveness of the routines and processes that support AC, although by different mechanisms than affiliative OCBs.

In the following four sub-sections, we describe how both affiliative and challenging OCBs enhance the relationship between organizational routines and processes, and each of the four learning capabilities that comprise AC. To summarize these relationships, Table 2 provides examples of how each OCB enhances the efficiency and effectiveness of the relationship between a firm's routines and processes and the learning capabilities that comprise AC.

3.2. The moderating effect of OCBs for the exploration learning capability

Employees enhance the firm's exploratory learning capability by engaging in affiliative OCBs that allow them to better seek out, identify, value, and acquire new knowledge. Despite the importance of incorporating new knowledge, firms tend to stick with what they know best (Leonard-Barton, 1992). To overcome this potentially crippling tendency, firms need employees to use different techniques, search unexpected sources, and persist longer in search than they might normally be inclined to (Zahra & George, 2002) and do so in ways not previously considered by their supervisors.

Several affiliative OCBs may allow employees to do just that. First, the affiliative OCB of generalized compliance involves using judgment and displaying initiative (itself a form of affiliative OCB) to adhere to the spirit of the policy or rule (Smith et al., 1983). Thus, employees exhibiting generalized compliance venture beyond established routines, guided by their understanding that the spirit of the routine is to acquire valuable resources for the firm. Employees who recognize the intent behind the routines and processes and practice this type of organizational compliance will enhance the efficiency and effectiveness of the firm's exploratory learning capability. While employees who merely comply with specific directives will provide standard and expected outcomes for exploratory learning capability, when employees go beyond minimum requirements, the chances of making important discoveries increase.

To the degree that firms are able to overcome tendencies to stick with what they know and seek out new knowledge, the employees doing the searching must be able to properly identify and value the new knowledge when they encounter it (Todorova & Durisin, 2007). In order to do that, employees must first possess a good idea of what "organizationally-relevant knowledge" actually is. Employees who exhibit civic virtue are more likely than others to possess this understanding because their level of involvement in the organization as a whole is greater. That is, because employees demonstrate civic virtue by attending meetings even when not required to do so (Graham, 1991) and keeping themselves informed about the organization as a whole rather than simply focusing on their own job or department (Organ, 1988), they will be more knowledgeable about information that will contribute to organizational functioning. Thus, employees who engage in civic virtue forms of affiliative OCBs enhance the intensity and direction of effort to increase the firm's exploratory learning capability by improving the identification and valuation of firm-relevant knowledge.

After new knowledge has been sought out, identified, and valued, employees enhance the firm's exploratory learning capability by actually acquiring new knowledge. Zahra and George (2002) argue that the ability of firms to acquire new knowledge is based on three key components – the (1) intensity and (2) speed with which new knowledge is sought out and (3) the direction of such efforts. Affiliative OCBs such as helping and sportsmanship are particularly beneficial in all three of these arenas. For example, when employees help each other by sharing ideas related to knowledge search along a trajectory likely to result in the identification and acquisition of new knowledge, the joint effort of both employees increases both the intensity and speed with which new knowledge is acquired, in a fruitful direction. Alternately, if employees involved in exploratory learning routines do not receive help but instead just "buckle down" and persist in their work without complaining, those employees exhibit sportsmanship, which likewise increases the efficiency and effectiveness of the learning routines.

Table 2
Summary of how affiliative and challenging OCBs enhance absorptive capacity.

Affiliative OCBs	Affiliative OCBs "lubricate the social machinery of the organization" (Bateman & Organ, 1983: 588) by enhancing cooperation and strengthening relationships amongst workers (McAllister et al., 2007), which enhances the efficiency and effectiveness of the routines supporting AC learning capabilities.
Helping	Strengthens relationships between workers, improves knowledge transfer, increases the rate of learning by new employees and fosters diffusion of best practices amongst workers, which enhances the efficiency and effectiveness of learning routines (Organ et al., 2006).
Sportsmanship	Reduces petty complaints, offenses, and in-fighting, which increases the amount of energy available for efficiently and effectively engaging in learning capabilities (Organ et al., 2006).
Organizational loyalty	Fosters a focus not on what is best for the individual, but what is best for the organization (Graham, 1991), which increases the attention and energy devoted to the learning capabilities.
Organizational compliance	Adherence to the spirit of organizational rules and routines guides employees to extend learning routines beyond that which is formally prescribed, which enhances the effectiveness of those routines (Podsakoff et al., 2000).
Individual initiative	Going far beyond what is formally required of employees creates additional opportunities for exploration, assimilation, transformation, and exploitation of knowledge, which enhances AC.
Civic virtue (some forms)	The ability to see the big picture, and where particular routines fit into that grand scheme, allows employees to more thoughtfully and competently execute their assigned routines, which increases the efficiency and effectiveness of the learning capabilities (Organ, 1988).
Self-development	Gaining valuable skills through self-development increases the ability of employees to more competently execute their assigned routines and, perhaps, increase the types of routines they understand and can participate in (Farh et al., 2004).
Challenging OCBs	Challenging OCBs seek to bring about change and improvement to the routines supporting AC learning capabilities by challenging the status quo (Van Dyne et al., 1995).
Voice	Taking responsibility to not only observe and discover new and improved ways to execute routines, but also to then have the courage to voice those ideas in a respectful way, brings vital improvements to routines that enhance AC (Van Dyne & LePine, 1998).
Taking charge	Identifying needs and then taking responsibility to address them, even when it is not part of a job description to do so, reduces the burden on managers to make all such necessary changes, which increases the efficiency and effectiveness of the learning capabilities that support AC (Morrison & Phelps, 1999).
Civic virtue (some forms)	Providing feedback on the how routines are performing enables managers to make more informed decisions regarding whether, and how, to make important changes to routines, thereby enhancing AC (Organ et al., 2006).

One of the biggest challenges with developing and sustaining an exploratory learning capability is that firms have, over time, a natural tendency towards exploitative behaviors and away from exploratory ones (Levinthal & March, 1993). In other words, they become better and better at what they do and see less and less need to incorporate new knowledge. However, it is imperative for firms to reinvigorate existing knowledge structures with new knowledge lest their competencies turn into rigidities (Leonard-Barton, 1992). This is where challenging citizenship behaviors should be especially helpful.

For example, when employees engage in the challenging OCB of voice, they make innovative recommendations to change routines and processes even when others do not share their opinion (Van Dyne & LePine, 1998). Therefore, when employees encounter exploratory routines and processes that they believe do not help the firm seek, identify, value, and acquire useful information, their use of voice to rectify that situation should improve the firm's exploratory learning capability. Such behavior is also consistent with the challenging OCB of taking charge, through which employees try to bring about appropriate changes in how their work is accomplished (Morrison & Phelps, 1999), and with exercising influence, in which employees engage in critical thinking to identify problems and improvements before voicing their recommendations for change (Graham & Van Dyne, 2006). In these ways, challenging OCBs also enhance the efficiency and effectiveness of the firm's exploratory learning capability. Therefore, we propose that:

P1. *OCBs enhance the efficiency and effectiveness of the relationship between a firm's routines and processes and its exploratory learning capability.*

3.3. The moderating effect of OCBs for the assimilation learning capability

Building on prior work by Piaget (1952) on cognition and learning, Todorova and Durisin (2007) argue that a firm's newly-acquired knowledge can be described as being either generally compatible or generally incompatible with existing knowledge bases. However, regardless of the degree of compatibility, at least *some* modification to existing knowledge bases must be made. When new knowledge is generally compatible with existing knowledge, the degree of modification required to incorporate that new knowledge is likely rather low. In such circumstances, firms are more easily able to interpret and comprehend the new knowledge through existing cognitive frameworks and assimilate it more readily (Zahra & George, 2002).

Employees who engage in affiliative OCBs enhance the efficiency of assimilative learning because of the cooperative nature of those behaviors, which are instrumental in promoting an efficient and effective organization. For example, when a new employee is involved in routines or processes designed to facilitate interpreting and understanding newly-acquired knowledge, more experienced coworkers would be able to draw upon their years of experience to help them better understand existing knowledge bases or how the new knowledge fits in with it. Therefore, if the less experienced employee falls behind in their work, the veteran might assist him or her in getting caught up – even though doing so is not part of their job. The same sort of helping might be appreciated when an unexpectedly large amount of information needs to be processed and a deadline for doing so looms.

Assimilation may also involve sharing information with other employees as they seek to understand and organize the new knowledge within the firm's existing knowledge structures. To the extent that employees feel threatened by the changes that may ensue because of the new knowledge, they may attempt to carve out a knowledge fiefdom for themselves by not sharing information or doing so only reluctantly and with great difficulty. However, employees who engage in organizational loyalty would be cooperative in this regard due to their loyalty to the organization rather than to themselves or other individuals or groups (Graham, 1991).

In contrast to affiliative behaviors that promote cooperation, challenging behaviors encourage questioning rather than accepting the status quo (McAllister et al., 2007). Although knowledge that is amenable to assimilation can be more easily incorporated into existing knowledge structures without much modification, that is not to suggest that taking time to question and challenging existing frameworks would be without benefit. For example, when firms acquire new knowledge that appears to fit well with existing knowledge, there may be a sense that the existing knowledge structures do not need to be modified. However, employees who take time to examine the new knowledge and exercise voice behaviors will prompt those involved in the integration to pause and consider what the new knowledge may bring to the firm. In this way, while the speed of learning may be slower, the depth of learning may increase. Therefore, we make the following proposition:

P2. *OCBs enhance the efficiency and effectiveness of the relationship between a firm's routines and processes and its assimilative learning capability.*

3.4. The moderating effect of OCBs for the transformation learning capability

In contrast to assimilation, transformation is required when newly acquired knowledge does not fit well with existing knowledge (Todorova & Durisin, 2007). As such, existing knowledge and cognitive structures must be transformed to be able to incorporate the new data. In such settings, when new knowledge cannot be incorporated into firms until existing knowledge structures are modified, affiliative and challenging OCBs may again be quite beneficial.

For example, exercising influence – a challenging OCB – involves using critical thinking to identify problems and then speaking up (voice) to make suggestions for improvements (Graham & Van Dyne, 2006). Critical thinking that leads to alternative ways of conceptualizing existing knowledge in order to accommodate newly acquired knowledge is crucial for transformative learning. However, it is not always easy for employees to think critically about their own firms. Repeated patterns of behavior and inertia set in and make it difficult for employees to understand what needs to be changed (Levinthal & March, 1993). This is why exercising critical thinking and influence is likely to be above and beyond the normal job description of most employees.

Additionally, if and when employees are able to discover areas that need to be changed, they must then take the next (and perhaps fateful) step of speaking up and exercising influence to lead change. Depending upon the nature of the new knowledge to be incorporated, perhaps even radical changes may be required, which could fundamentally alter power relationships within firms (Tripsas & Gavetti, 2000). Individual employees, then, may perceive this change brought about by others who have engaged in challenging OCBs as a threat to their own power. Because of the defensive response one would expect from these threatened individuals, taking charge is a potentially risky, challenging OCB in which to engage. However, given how important it is for firms to self-reflect and change their own operations in order to remain competitive, such behaviors are tremendously beneficial.

Despite the importance of identifying and implementing such changes, doing so is not easy for firms. That is why, in addition to the important challenging behaviors of critical thinking, voice and influence, transformative learning is also enhanced when employees engage in affiliative behaviors. For example, the affiliative OCBs of sportsmanship and courtesy will ease tensions raised by conflict in the knowledge transformation process. For example, firms often employ cross-functional teams to deal with difficult problems. As these employees who possess different skill sets and perspectives discuss an intractable problem, they may propose wildly different ideas. Employees who exhibit sportsmanship will not be defensive when their ideas are challenged (Podsakoff et al., 2000), and they will be more willing to share knowledge, particularly if it is in some way atypical or unusual, because they will not be as concerned if their attempt is rebuffed. Furthermore,

those who exhibit courtesy will take greater care in challenging others' ideas, reducing the likelihood of raising others' defenses.

Transformation may also require the alteration of existing routines and processes. Again, such changes highlight the importance of sportsmanship and courtesy. Good sports roll with the punches, accepting the inconvenient change without making a fuss. Courtesy, on the other hand, is especially important when the change affects someone who is not a good sport because forewarning such individuals may make them more receptive to the change; failure to warn "poor sports" might be particularly costly. Therefore, we propose that:

P3. *OCBs enhance the efficiency and effectiveness of the relationship between a firm's routines and processes and its transformative learning capability.*

3.5. The moderating effect of OCBs for the exploitation learning capability

Employees also enhance firms' exploitative learning capability by engaging in OCBs that allow firms to make use of newly acquired and incorporated knowledge for the production of commercial or scientific ends (Lane et al., 2006). In general, firms establish routines and processes for the purpose of allowing them to exploit knowledge (Zahra & George, 2002). These routines and processes must be sufficiently efficient to allow firms to use current knowledge to obtain short-term gains, but if firms are to survive in the long-term, routines and processes must also be adapted to exploit new knowledge as it is acquired and incorporated by firms. Thus, for both short- and long-term viability, employee behaviors that help firms make the most of existing exploitative routines and processes, as well as behaviors that help modify those routines and processes, are vital (Levinthal & March, 1993).

Affiliative OCBs should be especially beneficial in the context of existing exploitation routines and processes because of their cooperative, noncontroversial aspects, which allow employees to focus on their work rather than on debates about the appropriateness of the workflow and conflicts over deviations from established routines. One affiliative behavior that can provide such benefits is that of organizational compliance, which is exemplified by conscientious adherence to organizational routines (Graham, 1991). If knowledge is to be exploited over an extended period of time, formally-prescribed routines and processes are necessary. When employees pay particularly close attention to organizationally-prescribed routines, haphazard departures from the operational practice will be lessened. Although the routines and processes inevitably will need to change, such change should be guided by the context in which the routines and processes are embedded rather than by the whim of each individual employee.

However, organizational compliance does not consist of blindly adhering to obviously outmoded routines and processes. Rather, truly compliant behavior requires adherence to the spirit of the routine. Thus, when employees who exhibit this type of OCB encounter a situation in which the existing routines are inadequate, rather than responding in a haphazard way they may instead turn to organizationally-prescribed methods for dealing with this sort of problem. Such methods might include either another existing routine that allows the process in question to continue to completion or, instead, a feedback process that halts the current routine and initiates investigation of the unexpected situation. The point is that compliance is not necessarily rote behavior but can actually enhance dynamic processes like those involved in exploitation capability.

Sportsmanship, too, is important in the context of exploitative routines and processes. Though these routines and processes are formally established, new knowledge may be acquired at any time and may necessitate alteration of those routines, often with very little advance notice. Sportsmanship, then, would be valuable because people who are good sports have a roll-with-the-punches mentality that allows them to maintain a high level of functioning even in a dynamic environment.

In addition to these affiliative behaviors, challenging OCBs can also be beneficial for supporting exploitative learning capabilities. Because efficient and effective exploitative learning is able to reuse and recombine knowledge is ways not previously considered, challenging OCBs may be particularly useful. To come up with innovative ways to (re)use knowledge, it may be necessary to challenge the status quo of how that knowledge has been previously used. Thus, when it is necessary to change normal routines and processes, challenging OCBs should be particularly beneficial in instigating and bringing such changes to fruition.

When exploitative learning routines and capabilities need to be changed because of the incorporation of new knowledge, employees who exert influence (a challenging form of civic virtue) can be helpful in identifying how, what, when and where changes need to be made and then speaking up in order to bring to fruition the changes they perceive to be required. When employees exhibit these types of behaviors, they enable firms to overcome inertial forces and make changes that will allow firms to exploit new knowledge, which will increase the likelihood of long-term competitiveness of the firm. Therefore, we propose that:

P4. *OCBs enhance the efficiency and effectiveness of the relationship between a firm's routines and processes and its exploitative learning capability.*

4. Discussion

4.1. General discussion

In this paper we argue that specific types of individual-level behaviors (OCBs) contribute to the development of firm-level absorptive capacity (AC), which in turn may ultimately result in competitive advantage. More specifically, we suggest that various forms of *affiliative* and *challenging* OCBs increase the firm's *exploration*, *assimilation*, *transformation*, and *exploitation capabilities* by moderating the efficiency and effectiveness of the routines and processes that support the learning capabilities of AC. These relationships are important because of the role of AC in achieving competitive advantage (Zahra & George, 2002).

Our contribution is twofold. First, by proposing relationships between specific individual-level behaviors and the firm-level construct of AC, we contribute to the AC literature, which has not significantly addressed the role of individual-level contributions to the building of AC (Lane et al., 2006). In this paper, we have attempted to bring individuals more prominently into the AC conversation by suggesting ways in which specific types of behaviors contribute to the development of AC. In making this contribution, we also build upon prior work by Organ et al. (2006) which identified several ways in which OCBs might contribute to the overall effectiveness of organizations (2006: 200–202). In their book, Organ and colleagues suggest that OCBs may enhance organizational effectiveness by enhancing coworker productivity, coordinating activities between team members, or creating social capital (see pages 200–202 for more reasons and examples). We extend their general ideas by articulating specific, theoretically-driven ways in which OCBs contribute to each of the four learning capabilities that comprise AC.

Second, by explicating the relationship between various types of OCBs and AC (which is positively associated with firm-level performance), we address a long-standing issue in the OCB literature, and one for which there are few theoretical explanations. Indeed, for many years, it was simply *assumed* that OCBs contribute to firm-level performance. In recent years, researchers have sought to confirm this assumption empirically with generally supportive, but sometimes equivocal, results (e.g., Allen et al., 2015). Perhaps the reason for this situation is that empirical research has not been guided by well-grounded theory. In this paper, we have attempted to provide a theoretical explanation for how individual-level OCBs might contribute to firm-level performance and encourage additional empirical investigations into these relationships.

4.2. Managerial implications

To the extent that OCBs do indeed contribute to the development of AC there are at least two managerial implications. First, organizations should seek to hire employees who are more likely to engage in OCBs. Although the relationship between dispositional characteristics and OCBs is relatively weak (Organ et al., 2006), two personality characteristics included in the Five Factor Model of personality (Digman, 1990) do have a positive relationship with OCBs: conscientiousness and agreeableness (e.g., Ilies et al., 2006). Given the widespread use of personality assessments in the employee selection process, organizations may already be collecting this data, which could be used to identify applicants who are disposed to engage in higher levels of OCBs than some other applicants.

However, the relationship between these personality characteristics and OCBs is mediated by employee attitudes such as job satisfaction (Ilies et al., 2006), which highlights a second managerial implication: managers should consider how their actions influence employees' workplace attitudes. For example, employees who perceive themselves to be treated fairly tend to experience higher levels of job satisfaction and organizational commitment, both of which, in turn, are positively related to OCB (Moorman, 1991). Moreover, employees tend to engage in more OCBs when they also view their managers and the organization more generally as being trustworthy and providing high levels of support (Turnley et al., 2003). Other research suggests that managers should seek to design jobs in which their employees find meaning and significance; when employees perceive their work to be meaningful, they experience higher levels of job satisfaction and, again, are more likely to engage in higher levels of OCBs (Grant, 2008). Therefore, managers may consider designing routines in which those charged with executing them will find meaning and significance.

4.3. Directions for future research

First and foremost, we have dealt only with OCB as a positive contributor to AC. However, OCBs are not without costs. OCB research suggests that many of the antecedents of such behaviors are at least partially under the control of the organization. Therefore, even though the typical definition of OCB casts the behaviors as discretionary, implying that organizations can not explicitly require them, research indicates that it is possible to cultivate an environment in which OCBs are encouraged. Doing so almost certainly has costs, both direct and indirect. Direct costs result from expending substantial time and effort on things such as designing interesting tasks, providing meaningful feedback, and exhibiting generally supportive behaviors (to name a few frequently-cited antecedents of OCBs) (Organ et al., 2006). These costs are perhaps not a very consequential concern; there are any number of good reasons to engage in these practices beyond the encouragement of OCBs (Ilgen & Hollenbeck, 1991).

Indirect costs, on the other hand, are more insidious. Often they result from the "dark side" of OCBs (Bolino, Klotz, Turnley, & Harvey, 2013). For example, when OCBs take on a life of their own in such a way that in-role productivity suffers, there is certainly an undesirable cost of engaging in such behaviors. Also, the pressure some employees feel to do OCBs may have negative outcomes such as increased work-family and work-leisure conflict, stress, and turnover intentions (Bolino et al., 2010) that ultimately hinder productivity as well. Given that such costs exist and that AC may be more or less important in particular circumstances (as argued in the preceding paragraphs), it would be beneficial to better understand the potential downside of OCBs with respect to AC.

Second, our model is by no means exhaustive; we have not attempted to address every possible way in which each OCB dimension can affect each of the learning capabilities that support AC. Rather, by laying the broad theoretical foundation for how OCBs affect AC, we have attempted to shed light on this important, yet overlooked relationship. In doing so, we believe that there are several potentially-interesting ways in which this line of inquiry could be extended in future research. One such way is to consider that the external environment may alter the importance of some types of AC and thus, some types of OCBs. For example, Eisenhardt and Martin (2000) suggest that in moderately dynamic markets firms will rely more on existing knowledge, rendering AC as a dynamic capability less valuable. In turn, OCBs would also be less valuable as a mechanism by which to increase AC. However, in high-velocity markets AC becomes much more valuable because extracting new knowledge from the environment becomes especially important, thereby – according to our theorizing – making OCBs more important as well.

5. Conclusion

It is evident that individual contributions are vital for the creation of competitive advantage, but due to uncertainty in the organizational environment even rigorously-planned deployment of employees is likely to fall short of optimal results. Thus, Katz and Kahn (1966) suggest that non-directed behaviors – like OCBs – may partially fill that gap. Furthermore, in their discussion of dynamic capabilities, Teece, Pisano, and Shuen (1997) argue that "it is difficult if not impossible to tightly calibrate individual contribution to a joint effort", and in so saying they echo the position taken by Katz and Kahn over 30 years prior. Our fundamental suggestion is that OCBs are one way that people – acting within the structure, yet largely independent of organizational control – may increase the efficiency and effectiveness of the routines and processes from which an organization's AC is derived.

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