

# Conservation of Resources in the Organizational Context: The Reality of Resources and Their Consequences

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## Abstract

Over the past 30 years, conservation of resources (COR) theory has become one of the most widely cited theories in organizational psychology and organizational behavior. COR theory has been adopted across the many areas of the stress spectrum, from burnout to traumatic stress. Further attesting to the theory's centrality, COR theory is largely the basis for the more work-specific leading theory of organizational stress, namely the job demands-resources model. One of the major advantages of COR theory is its ability to make a wide range of specific hypotheses that are much broader than those offered by theories that focus on a single central resource, such as control, or that speak about resources in general. In this article, we will revisit the principles and corollaries of COR theory that inform those more specific hypotheses and will review research in organizational behavior that has relied on the theory.

## INTRODUCTION TO CONSERVATION OF RESOURCES THEORY

Conservation of resources (COR) theory begins with the tenet that individuals strive to obtain, retain, foster, and protect those things they centrally value. COR theory follows an understanding that cognitions have an evolutionary-based built-in and powerful bias to overweight resource loss and underweight resource gain. Following this basis, COR theory posits that stress occurs (a) when central or key resources are threatened with loss, (b) when central or key resources are lost, or (c) when there is a failure to gain central or key resources following significant effort. At its core, COR theory is a motivational theory that explains much of human behavior based on the evolutionary need to acquire and conserve resources for survival, which is central to human behavioral genetics. Like other social animals, humans must acquire and conserve both personal strengths and social bonds. Unlike other animals, however, humans can create complex tools to ensure their survival and have the advantage of complex language to communicate, which aids survival and social bonding. Thus, people employ key resources not only to respond to stress, but also to build a reservoir of sustaining resources for times of future need. Furthermore, the obtaining and retaining of personal, social, and material resources creates in people, families, and organizations the sense that they are capable of meeting stressful challenges. It is a critical tenet of COR theory that individual appraisal is secondary to what is centrally valued and universal among people. Among these commonly valued resources are health, well-being, family, self-esteem, and a sense of purpose and meaning in life. How these appraisals are expressed differs culturally but always reflects the same core elements.

In part, COR theory has been important for advancing an understanding of stress in organizations because it is essentially the opposite of Lazarus & Folkman's (1984) stress-appraisal theory. In short, stress-appraisal theory asserts that what is stressful is what is perceived as stressful. This theory, however, is limited, because by definition one has to wait until after an event has occurred to recognize it as stressful. This simple fact makes stress-appraisal theories either idiographic or nonpredictive. Furthermore, stress-appraisal theory implicitly states that stress is an individual perception, whereas COR theory emphasizes the objectively stressful nature of events. Moreover, given the current emphasis on social justice and efforts to decrease workplace sexual harassment and maltreatment, Lazarus and Folkman's theory is potentially victim blaming and puts the burden of addressing the situation on the individuals who experience the stress and who should therefore adjust their appraisals. Indeed, in a legal sense, if workplace mistreatment is centrally a matter of appraisal, the cases that stem from it are termed "without merit" or "frivolous." Likewise, if workplace conditions are not stressful but are only perceived as such, intervention will focus on appraisals and perhaps the causes of those distorted cognitions. Essentially, to combat such stressors individuals must change their minds. To state this more clearly, arguing that stress is that which is appraised as stressful is classist, sexist, and racist. In today's understanding of organizational stress, even the emphasis on microaggressions implies that subtle racist and sexist behavior is real and not just perceived by the victim (Sue 2010). Of course, many stressors are subtle and may in fact be misperceived, but COR theory emphasizes that at least for major stressful conditions it is the objective elements of a life event or series of events (e.g., a divorce or firing is not an event so much as it is a series or cascade of events) that are shared within a culture and have a common level of impact. So, for example, being fired from work probably entails earlier warnings or feedback, and perhaps a period of burnout; it may include having other strong job possibilities (or not) and having money in savings (or not); and it will be different depending on the individual's age. Although perceptions will play a role, these objective elements, according to COR theory, will be the prevailing influences on any outcome.

COR theory is closely aligned with a theory forwarded by Paul Baltes that focused on life span development. Like COR theory, Baltes's (1997) theory of selective optimization with

compensation (SOC) focused on gain and loss of resources and the inevitable loss of resources that accompanies aging—which, in turn, demands a realignment of available resources to compensate for failing ones. The cross talk between COR theory and Baltes’s SOC theory was not coincidental, as Hobfoll and Baltes were frequently in contact and cited each other’s work, and Hobfoll spent a period in Berlin with Baltes sharing ideas that shaped the theories the two were working on. This collaboration illustrates how a theory from quite another domain, developmental aging, can be richly applied to organizational behavior and its applications.

COR theory also highlights that stressful events are the wrong unit of analysis and indeed confuse our understanding of stressful conditions. Stressful conditions are seldom events; rather, they are complicated sequences that occur over time. For example, when layoffs occur in a workplace, first they are likely anticipated, subsequently the layoff “event” occurs, and then the process of finding new work or adjustment follows. Furthermore, objective factors such as employability, skill level, savings, the handling of the layoff, and the availability of new positions are all major factors that contribute to the outcome. The reason that individuals’ appraisals are generally good predictors is that most individuals are good catalogers of these complex objective elements—albeit, as COR theory emphasizes, people carry an evolutionary-based built-in and powerful bias to overweight resource loss and underweight resource gain. This bias is common to people within a culture and is not idiographic, although prior objective life experience will certainly color such common appraisals.

## **Principles of Conservation of Resources Theory**

The principles of COR theory and its corollaries are summarized in the sidebar titled Principles and Corollaries of Conservation of Resources Theory.

The first principle of COR theory is that resource loss is disproportionately more salient than resource gain. Resources include object resources (e.g., car, tools for work), condition resources (e.g., employment, tenure, seniority), personal resources (e.g., key skills and personal traits such as self-efficacy and optimism), and energy resources (e.g., credit, knowledge, money). The disproportionate impact of resource loss compared to resource gain is expressed in the much greater effect of resources loss, the speed of that impact, and the length of time the impact remains salient. As such, in addition to considering the magnitude of impact, COR theory is also the only stress theory that includes a component of momentum. Specifically, COR theory posits that resource loss not only is more powerful than resource gain in magnitude but also tends to affect people more rapidly and at increasing speed over time. Loss is primary in human systems because people are products of evolution, and in evolutionary terms even small losses were often significantly tied to failure to survive. The attribute of momentum may also have an evolutionary basis, as slow processes might not be as easily noticed and thereby might produce major or even survival-threatening damage by the time they are identified.

The second principle of COR theory is that people must invest resources in order to protect against resource loss, recover from losses, and gain resources. This includes direct replacement of resources, such as using savings to pay for lost income, and indirect investment of resources, such as increasing employees’ skills to prepare for a tough business environment. In the latter case, skills and confidence resources are increased to offset the loss of potential income if gains are not made.

The third principle of COR theory is paradoxical. It states that resource gain increases in salience in the context of resource loss. That is, when resource loss circumstances are high, resource gains become more important—they gain in value. A related corollary of this (Corollary 1) is that those with greater resources are less vulnerable to resource loss and more capable of orchestrating resource gain. But, the infusion of resources for those with few resources can have powerful impact

## PRINCIPLES AND COROLLARIES OF CONSERVATION OF RESOURCES THEORY

**Basic COR theory tenet:** Individuals (and groups) strive to obtain, retain, foster, and protect those things they centrally value.

**Principle 1: Primacy of loss principle.** Resource loss is disproportionately more salient than resource gain.

**Principle 2: Resource investment principle.** People must invest resources in order to protect against resource loss, recover from losses, and gain resources.

**Principle 3: Gain paradox principle.** Resource gain increases in salience in the context of resource loss. That is, when resource loss circumstances are high, resource gains become more important—they gain in value.

**Principle 4: Desperation principle.** When people's resources are overstretched or exhausted, they enter a defensive mode to preserve the self which is often defensive, aggressive, and may become irrational.

### Resource Caravans and Resource Caravan Passageways Principles

**Resource caravans:** Resources do not exist individually but travel in packs, or caravans, for both individuals and organizations.

**Resource caravan passageways:** People's resources exist in ecological conditions that either foster and nurture or limit and block resource creation and sustenance.

### Corollaries

**Corollary 1:** Those with greater resources are less vulnerable to resource loss and more capable of resource gain. Conversely, individuals and organizations who lack resources are more vulnerable to resource loss and less capable of resource gain.

**Corollary 2: Resource loss cycles.** Because resource loss is more powerful than resource gain, and because stress occurs when resources are lost, at each iteration of the stress spiral individuals and organizations have fewer resources to offset resource loss, and these loss spirals gain in momentum as well as magnitude.

**Corollary 3: Resource gain spirals.** Because resource gain is both of less magnitude and slower than resource loss, resource gain spirals tend to be weak and develop slowly.

in engaging gain momentum and strength. It is notable that no other theory of stress includes this type of interaction.

The fourth principle of COR theory is that when their resources are overstretched or exhausted, individuals enter a defensive mode to preserve the self that is often aggressive and may become irrational. This is the least researched principle of COR theory but one that has high explanatory power. Like other aspects of COR theory, this is likely to be a built-in evolutionary strategy that may be defensive (i.e., to conserve resources) or exploratory (i.e., to search for alternative survival or adaptation strategies that on their face or from experience do not seem adaptive). In this way, a defensive withdrawal allows time to regroup or to wait for help, or it allows the stressor to pass. Aggressive or seemingly irrational responses may also work because they can potentially change the array of stressors or allow for the emergence of a new coping strategy.

### Corollaries of Conservation of Resources Theory

COR theory also proposes several key corollaries. Just like the principles of COR theory, these corollaries make for specific, complex, and multifaceted predictions, and they also lend themselves to build the complex strategies required to counteract major stressful conditions at the individual or organizational level.

Corollary 1 is that resource possession and lack thereof are integral to vulnerability and resilience. Those with greater resources are less vulnerable to resource loss and more capable of resource gain. Conversely, individuals and organizations that lack resources are more vulnerable to resource loss and less capable of resource gain.

Corollary 2 is that resource loss has a spiraling nature. Because resource loss is more powerful than resource gain, and because stress occurs when resources are lost, at each iteration of the stress spiral individuals and organizations have fewer resources to offset resource loss. This creates resource loss spirals whereby losses gain in both impact and momentum. No other stress theory proposes such detailed predictions that are both testable and valuable in their application.

Corollary 3 is that resource gain also has a spiraling nature. However, because resource gain is both of less magnitude and slower than resource loss, resource gain spirals tend to be weak and take time to develop. Gain cycles are sluggish. That said, they are the only game in town other than escape, and so they must be undertaken by individuals and organizations to counteract loss and to build engagement. One caveat to this principle is that resource gain spirals do gain in saliency in high-loss settings and conditions, which means that the motivation to build a resource gain cycle will increase when losses occur and will have higher payoff under high stress conditions.

### **Resource Caravans and Resource Caravan Passageways**

COR theory has also developed a greater understanding and emphasis on both the interrelationship between resources and how environments and contexts create fertile or infertile ground for creation, maintenance, and limitation of resources. The caravan concepts stand in contrast to the general emphasis of research to focus on either one resource at a time (e.g., self-efficacy, social support), or assume that resources are static, ignoring how they are imparted, nurtured, or frustrated.

**Resource caravans.** Hobfoll (2011a) has theorized that resources do not exist individually but travel in packs, or caravans, for both individuals and organizations. Because resources tend to be the consequence of nurturance and learned adaptation, they are likely to appear as co-travelers. For example, self-esteem, optimism, and self-efficacy emerge from common environmental and developmental conditions and therefore are highly correlated. In fact, because personal resources are likely to emerge from nurturing or supportive social conditions, these personal resources are likely to be related to having supportive families and supportive work organizations.

**Resource caravan passageways.** People's resources exist in ecological conditions that either foster and nurture or limit and block resource creation and sustenance. Organizations and the broader culture play a major role in this process, but organization scholars often miss this level of analysis due to the field's overwhelming emphasis on the individual level. Whether we are speaking of classes of people, such as women or ethnic minorities, or of any given set of individuals, when we look at their resources, stress, and productivity, we are actually seeing a reflection of the greater organization and culture's stage setting, allowances, and facilitations—the passageways they create, maintain, and foster. Social and environmental conditions create resilience or fragility, social skillfulness or social awkwardness, tolerance or intolerance, among the individuals who are exposed to such environments.

An excellent example of the resource caravan passageways construct is provided by US Marine Corps training, which focuses on developing independent thinking, balancing the freedom to fail with the opportunity to succeed, and cultivating a “power down” model that dispenses with the traditional concentration of power in the hands of senior officers (Krulak 1999). This training

model was introduced as a direct result of the recognition that a Marine corporal, the lowest-level team leader, is likely to face environments that require enemy engagement, peacekeeping, and humanitarian efforts, all in the span of a few city blocks. Rather than faulting noncommissioned officers for lack of initiative and independence, the Marine Corps saw this as a systemic issue that required new passageways of training and leadership that the prior training philosophy, which had not adapted to changing military demands, failed to promote.

In the next sections we first turn to how organizations share and exchange resources, which is key to understanding both organizational processes and COR-based intervention strategies. Then, we focus on North American and global research advances in the application of COR theory to organizational settings.

## THE CROSSOVER MODEL

COR theory (Hobfoll 1989, 2001) focuses on protecting resources, gaining resources, and preserving resources. An additional dimension is the exchange of resources based on the crossover model. Crossover was defined by Bolger et al. (1989) as the interpersonal process that occurs when the job stress or psychological strain experienced by one person affects the level of strain of another person in the same social environment. Thus, crossover is a dyadic interindividual transmission of psychological states and experiences. In this way, crossover acts as one of the mechanisms of resource exchange within resource caravans. The crossover model extends previous approaches by adding an interindividual level of analysis; expanding the focus to dyads, teams, and organizations (Westman 2001); and outlining the mechanisms by which experiences, emotions, and resources are transferred within social and organizational contexts.

Westman (2001) proposed three mechanisms to delineate how these crossover processes may occur. First, in direct crossover, the experiences, affective states, and resources are transmitted between the partners via empathy. Second, in indirect crossover, specific mediating or moderating mechanisms intervene in the transmission of experience (e.g., coping and interaction styles such as social support and social undermining). For example, in the case of undermining, one person expresses his or her stress by undermining the partner, who becomes stressed as a result of being undermined. Finally, in spurious crossover, some shared stressors (e.g., economic hardship) may lead to common affects (e.g., anxiety and dissatisfaction) in both partners.

The original definition of crossover focused on stress and strain, and most crossover studies found evidence of the crossover of psychological stress and strains such as anxiety, burnout, perceived health, and work-family conflict. Westman (2001) expanded the crossover focus by broadening the definition of crossover to include the transmission of positive experiences and states. Westman (2001) proposed that crossover mechanisms (direct, indirect, and spurious) are equally applicable to negative and positive crossover. Just as strain in one partner may produce an empathetic reaction in the other that increases the recipient's strain, so the work engagement expressed by one partner may fuel the engagement of the other.

Crossover of positive emotions may also occur indirectly, following an interaction between the partners. For example, when one person's resources at work (such as support and personal control) increase, he or she may be able to provide more support to his or her spouse, leading to an increase in the latter's well-being. Finally, spurious positive crossover effects may occur in a work environment where all workers are exposed to the same levels of job resources (e.g., flexible work arrangements).

The extension of the crossover process to positive experiences and states is in line with the growing interest in positive psychology (e.g., Seligman & Csikszentmihalyi 2000) and with Fredrickson's (2001) broaden-and-build theory, which postulates that positive emotions broaden

individuals' thought–action repertoires, prompting them to pursue a wider range of thoughts and actions than they typically do. In the interpersonal context, the broaden-and-build theory predicts that positive emotions broaden people's sense of self to include others and enhance individuals' identification with others, consequently producing greater feelings of self–other overlap and “oneness” (Vaugh & Fredrickson 2006). Such feelings may lead to positive emotions through a direct crossover process involving empathy.

## Crossover of Resources

A new stream of research related to positive crossover investigates the crossover of resources. Neff et al. (2012) demonstrated how two resources—performance self-esteem and job-related self-efficacy—are transferred via crossover from one person to another. The authors based their research on self-expansion theory (Aron et al. 1991) and on the assumption that in an intimate relationship, individuals increasingly incorporate their partners' resources, perspectives, and identities into their own self-concept (Aron & Aron 1986, Aron et al. 2005). According to this theory, “the evaluative and affective responses to another's acquisition and loss of resources. . . are to some extent the same as if the acquisition or loss was with regard to one's own resources” (Aron et al. 2005, p. 210).

The self-expansion model suggests that humans have a fundamental motivation to self-expand in order to increase the “physical and social resources, perspectives, and identities that facilitate achievement of any goal that might arise” (Aron et al. 2001, p. 478). The process of self-expansion begins with a comparison of the current self to the potential self, which is the self within the relationship that includes the perspectives, resources, and identities of both the self and the partner. If the potential self represents some improvement on the present self, one will be motivated to self-expand to include the other (Aron & Aron 1986, p. 23). For example, if a person anticipates that self-expansion will contribute to the influx of new resources, he or she will be more likely to incorporate the other into the self, as such an interpersonal inclusion will result in enhanced self-efficacy and sense of the self. Self-expansion contributes to an effective leader–follower relationship. Resource exchange between leaders and followers is discussed in the section titled Crossover of Engagement.

Neff et al. (2012) studied the crossover of performance self-esteem between partners. Using a diary study, they showed that the day-specific self-esteem experienced by one partner upon finishing work crossed over to the other partner in the evening. The authors proposed that one partner's day-specific self-esteem perceptions initiate social comparison processes within the other partner, especially when the other partner reports low self-esteem and high empathic concern. Theoretically, when one's partner speaks of his or her own accomplishments and related high self-esteem, one's own self-esteem may be enhanced because of self-expansion. Thus, for intimate couples, the partners' levels of self-esteem may converge over time to a shared higher level. This finding supports self-expansion theory and the proposed direct crossover mechanism as a reflection of direct empathic reaction (Westman 2001). In another study, Neff et al. (2013a) found that job-related self-efficacy crossed over to a partner when both partners talked about their jobs and learned how the other coped with difficult situations. Thus, a person who brings home his or her job-related self-efficacy beliefs, accomplishments, and ways of dealing with difficulties can enhance the partner's job-related self-efficacy beliefs through crossover processes.

Furthermore, Neff et al. (2013a) showed that the crossover of job-related self-efficacy was indirectly linked to the partner's perceived work engagement. In a longitudinal study of crossover of performance self-esteem, Neff et al. (2013b) showed that when the partner had low baseline performance self-esteem, one's performance self-esteem at Time 1 predicted changes in the partner's performance self-esteem at Time 2, illustrating how resource caravans (Hobfoll 2011b) are

transmitted. Such a transfer of resource caravans triggers the accumulation of resources that COR theory describes as a gain spiral (Hobfoll 2002, 2011a).

### **Crossover of Engagement**

Engagement refers to a persistent and pervasive affective-cognitive state that is not focused on any specific object, event, individual, or behavior. Schaufeli & Bakker (2004) defined work engagement as a positive and fulfilling work-related state of mind characterized by vigor, dedication, and absorption. Engaged employees have a sense of energetic and affective connection with their work activities. The engagement literature identifies job resources (e.g., performance feedback, job autonomy, and supervisor support) and personal resources (e.g., self-efficacy, self-esteem) that predict individual engagement (Schaufeli & Bakker 2004). This accretion of resources may, in turn, increase the likelihood that engaged employees will also participate in other roles, for example through supportive behaviors (Bakker & Xanthopoulou 2009).

In addition to the crossover of self-esteem and self-efficacy, the crossover of resources is also very important for gain spirals, because it can increase the partner's engagement, potentially triggering a chain of crossover of engagement processes. Findings suggest that individuals who feel engaged as a result of the resources available at work are likely to express this engagement in their interactions with their partners. Several studies have demonstrated the positive crossover of engagement or its components (e.g., Bakker & Xanthopoulou 2009, Demerouti et al. 2005, Westman et al. 2009). More specifically, Bakker et al. (2005) revealed that the positive feelings of vigor and dedication expressed by one partner influenced the other partner, even after controlling for relevant aspects of the work and home environment. Similarly, Bakker & Xanthopoulou (2009) found a crossover of daily work engagement, but only on days when employees interacted more frequently than usual within a dyad.

Several researchers have also found crossover of engagement among team members (Bakker et al. 2006, 2009). Thus, a process that is initiated at the dyadic level may lead to a spiral from one individual to his or her partner and from both of them to their respective team members, potentially leading to what is described as an engaged organization (Westman 2001) or a vigorous organization (Shirom 2011). Westman (2001, p. 743) observed: "Just as crossover at the workplace can cause a burnout climate in the organization, we can focus on positive crossover where positive experiences impact the team, the department and the organization." Shirom (2011, p. 60) claimed that vigorous organizations can be regarded as organizations whose managerial apex effectively creates the conditions that generate, maintain, and foster employee vigor throughout the organization and mobilizes these energetic resources in the pursuit of organizational effectiveness. Organizational vigor probably reflects the synergistic accumulation of individual employees' level of vigor. Vigorous organizations could be expected to be highly innovative and to adjust proactively to environmental changes.

### **Crossover of Resources from Leaders to Followers**

An illustration of the crossover of resources between leaders and followers is the leader-member exchange (LMX) model (Graen & Uhl-Bien 1995). LMX theory, which focuses on the dyadic social exchange relationship between supervisors and subordinates, describes how supervisors exchange important resources (e.g., social support, control, self-efficacy) with subordinates who assist them in completing their work. According to the LMX model, leaders develop different forms of exchange relationships with their subordinates, such that employees who maintain good exchange relationships receive more resources (e.g., social support) than others (Graen &



Uhl-Bien 1995). LMX theory suggests that a positive, high-quality social exchange between managers and employees is vital for individual, team, and organizational outcomes (Gerstner & Day 1997, Graen & Uhl-Bien 1995). Thus, crossover of work engagement from leaders to followers ensues from the interpersonal exchange of resources.

Breevaart et al. (2014) found that a positive leader-follower exchange relationship was positively related to job resources, which in turn facilitated employees' work engagement and performance. Furthermore, Guterman et al. (2017) maintained that highly engaged leaders have better relationships with their followers, which in turn benefits the followers' work engagement. These findings suggest that LMX plays an important role in follower engagement, and it may help explain why and how leader engagement can cross over and promote follower engagement. These findings are similar to those of Neff and colleagues (Neff et al. 2012, 2013a,b), who show that crossover of resources promotes engagement in the other party.

### **Implication of Crossover of Resources for Teams and Organizations**

Similar to COR, the crossover model proposes that via the process of resource crossover a set of resources (resource caravan) enhances engagement and resilience within a workplace and work culture. Taken together, the findings suggest that enhancing resource accumulation (of employees in general and of organizational leaders in particular) and promoting resource crossover may lead to increased work engagement among employees. This mechanism of resource exchange at the team or organizational level may be fundamental to creating and sustaining engaged and resilient teams and organizations, and organizations would be wise to develop interventions to increase resource exchanges.

The crossover model outlines a series of alternative but not mutually exclusive mechanisms by which resource gains are transferred in social settings from one person to another, and from the dyad to the team and to the organization. Although COR theory would posit that the transfer of resources and emotions across social entities (individuals and organizations) would be slower, more incremental, and less impactful for resource gain than for resource loss, the actual effect of crossover of resources on engagement warrants organizational focus on this kind of crossover to find ways to enhance this process. Westman et al. (2013), who compared the intensity of positive and negative crossover, found that positive crossover had a stronger impact on a group than did negative crossover. Perhaps different rules of crossover apply to individuals and to groups?

Several important questions with enormous applied potential remain for future investigations. Is the crossover of resources unique to the investigated resources (e.g., self-esteem and self-efficacy), or are there additional resources that may cross over? Can we design the crossover of resources? Can we design environments for sharing and fostering resources and limiting the crossover of stressors and strains? Can we facilitate network research to direct the crossover of resources among team members? How does the integrative level of employee engagement influence the organization as a whole? What are the features of engaged organizations?

Knowledge about the impact of resources on engagement and resilience in a work environment opens new directions for research and applications in organizations, using both COR theory and the crossover model. Organizations may facilitate and cultivate frequent exchanges among colleagues to promote the crossover of engagement, with the aim of helping employees, teams, and organizations to use passageways and caravans of resources that create and enhance engagement and resilience. The end result of such a process may be an engaged and resilient organization. By helping employees acquire resources that lead to engagement and resilience and by eliminating obstacles to resource depletion, organizations can prevent unnecessary stress and strain and enhance employee well-being and effectiveness.

On a broader level, the finding that high job-related self-efficacy not only is beneficial for the individual (Abele & Spurk 2009, Stajkovic & Luthans 1998) but also affects the individual's partners via crossover processes has practical implications for dual-earner couples and their organizations. Supporting employees' job-related self-efficacy at work might positively affect their partners via crossover processes, which may, in turn, positively affect the partners' work engagement, ultimately leading to improved performance. Consequently, the crossover of resources between partners may contribute to a more resilient family, more resilient organizations, and gradually a more resilient society.

## **CURRENT EVIDENCE: CONFIRMING THEORY AND BUILDING NEW APPLICATIONS**

In this section, we briefly summarize the recent studies testing COR theory and the principles we have presented to this point. We use the review of COR theory by Halbesleben et al. (2014) as our point of departure, examining four recent trends in the literature that have either continued since the publication of that review or have begun to emerge more clearly in its aftermath.

### **Moving Beyond Stress**

Perhaps one of the most notable recent trends in the literature concerning COR theory has been its application beyond the study of stress and strain. This trend is perhaps not surprising, as it fits the broader trend of considering COR theory in terms of its implications for motivation rather than stress alone. This literature has been important not solely because it has extended the reach of COR theory, but also because it has provided unique opportunities to test the tenets and corollaries of the theory and to explore the definition and dynamics of resources.

Among the most common extensions of COR theory beyond stress and strain has been the attempt to better understand how individuals allocate and conserve resources in the context of resource gains and losses. In some cases, those resource losses are the result of strains, such as emotional exhaustion. For several years, the focus of these efforts has been on how emotional exhaustion affected resource investment strategies tied to performance at work (Demerouti et al. 2014, Halbesleben & Bowler 2007, Wright & Cropanzano 1998). More recent work has started to expand that body of work into other realms of job performance (Park et al. 2014), also exploring such outcomes as absenteeism (van Woerkom et al. 2016), turnover (Marchand & Vandenberghe 2016, Reina et al. 2017), and safety behaviors (Halbesleben 2010).

Studies extending the outcomes of resource gains and losses have played an important role in understanding COR theory, in part, because they offer new ways of testing the resource investment processes relevant to the theory. For example, by considering the ways that employees manage their resources at work, issues like how they assess their available resources, pay attention to changes in resources, and self-regulate to decide how best to invest those resources become targets for change (Hagger 2015). For example, Trougakos et al. (2015) found that when employees are chronically exhausted (i.e., they start each day with depleted resources), they rely more heavily on surface acting strategies with coworkers, and because they lack the resources to address more deeply the issues they encounter at work, they end up continually experiencing higher levels of exhaustion (see also Uy et al. 2017).

Extensions beyond stress and strain have also helped advance theory and practice in different contexts, including interpersonal relationships at work. In that regard, recent attention has been paid to leadership, in part because of its implications not just for the leader but also for others who work with the leader (e.g., Chi & Liang 2013, Hunter et al. 2017, Schmitt et al. 2016). For example,

Lam et al. (2017) report the results of two studies that find support for a nuanced response to emotional exhaustion whereby supervisors appear more likely to engage in abusive behavior toward subordinates (measured through the subordinates' evaluations of abusive supervisor behavior) when the supervisor is experiencing exhaustion, is relatively lower in self-monitoring, and the subordinate is performing lower than average. In effect, they argue that holding back the impulse to respond abusively to an underperforming employee requires self-regulatory resources (cf., DeWall et al. 2007, Stucke & Baumeister 2006).

Extending this line of thinking offers some interesting further insights into the relationships between leadership and employee performance. First, supervisors can respond in any number of ways to poor subordinate performance. One would hope that supervisors would invest resources to help improve the performance of their subordinates, with the understanding that the performance of the employees may play a role in the overall performance of their functional area, making the supervisors' performance also seem higher (Tepper et al. 2011). However, abusive behavior may represent a withholding of resources from subordinates; in other words, the supervisor may be making an effort not to invest resources that would help improve the subordinates' performance (Walter et al. 2015). Interestingly, other recent work suggests that this inhibits employee performance directly, and it may also dissuade the employees from seeking out meaningful feedback from their supervisors (Moss et al. 2003, Tepper et al. 2006, Whitman et al. 2014). In the end, it becomes apparent just how important a broad understanding of the interplay of resources among individuals becomes, as resource losses in some individuals can end up triggering resource losses in those around them (Debus & Unger 2017, Huang et al. 2016, Lavner & Clark 2017, Li et al. 2016, Wheeler et al. 2013).

Lam et al.'s (2017) work emphasizes that the approach taken depends upon factors such as the performance of the subordinate as well as the resources available to the supervisor (see also Byrne et al. 2014). This adds to an emerging line of literature consistent with the COR principle that employees become more defensive in their resource investment strategies as they lose resources (Halbesleben & Bowler 2007; Halbesleben & Wheeler 2011, 2015), particularly because it hints at the limits associated with this principle. Specifically, applying the principle of self-regulation, they address questions about how "strategically defensive" one can be, given that consideration of the best use of dwindling resources requires an investment of resources itself.

## **Conceptualization and Measurement of Resources**

The previous discussion naturally leads to the next significant trend in the recent COR literature, which has focused on defining more clearly what resources are. As noted earlier, a challenge with resources (and stress) is that they take on a very individualized meaning, and therefore at times they can be difficult to define. On the one hand, broad definitions of resources are useful because they accommodate a wide range of individualized experience; on the other hand, too broad a definition opens the possibility of scholars defining nearly anything and everything as a resource to suit their research questions, making theory testing nearly impossible. Hobfoll (1988, 1998) actually was clear on these issues. He posited that personal, material, energy and condition resources of interest were those that were central to survival or major goal attainment, and common across large groups of individuals. He further clarified that how resources operated depended on the ecological context, such that in one context a resource might be salient and positive and in another might be salient but negative. Hence, Hobfoll opened a dialogue that demanded that COR theory had to be viewed in context, and that it would be best used when integrated with more particular theories that developed on the micro level of a given resource or set of resources in a given context.

In their review of COR theory, Halbesleben et al. (2014) attempted to clarify the nature of resources by defining them in terms of supporting goal achievement. Such a perspective is useful, particularly when trying to understand how constructs commonly conceived as resources may, under the right circumstances, not be considered as such. For example, Russell et al. (2017) recently found that conscientiousness, which is typically considered a resource, may lead individuals to utilize other resources in ways that are not necessarily beneficial. In their example, conscientious people depleted their affective well-being more readily than less conscientious counterparts as a result of email interruptions throughout the workday. In other words, conscientiousness typically is seen as a resource that helps individuals better manage other resources (see Halbesleben et al. 2009, ten Brummelhuis & Bakker 2012), but in other cases it can lead individuals to divert their attention from broader performance goals.

Such findings are not limited to dispositional, self-regulatory resources. Social support is among the resources that is most often assumed to play a helpful role in addressing demands at work, and much of the evidence supports that assumption (Cohen & Wills 1985, Halbesleben 2006, Kurtessis et al. 2017). Yet mounting evidence suggests that even social support can, at times, not be helpful or even make situations worse (Beehr et al. 2003, 2010; Deelstra et al. 2003). There remains a great deal of work to be done to better understand how we should appropriately define resources; key in the emerging work in this area is the recognition that integration with theories beyond COR theory may help in sorting out those important issues (Bono et al. 2013, Kammeyer-Mueller et al. 2016, Russell et al. 2017).

## **The Role of Time**

Beyond the contribution of other theories, another important element to understand when a resource “acts” like a resource is time. As part of a broader, albeit overdue, trend in the literature (Shipp & Cole 2015), scholars have been increasingly exploring how the dynamics of resources in COR theory depend upon time. The role that time plays in such dynamics can take many forms, ranging from the amount of time over which resources are lost or gained (e.g., acute versus chronic stressors), to the length of recovery periods necessary to regain resources, to the specific timing that a resource becomes available relative to the timing of resource loss. Again, this returns to some of the original ideas of COR theory (Hobfoll 1988), which focused on time and momentum of resource gain and loss processes.

The question of timing within COR theory has been tested on a number of fronts. For example, researchers have increasingly examined how long-lasting the impact of some resources (or their loss) is. For example, Airila et al. (2014) examined two sets of data from Finnish firefighters collected 10 years apart. They found that job resources (e.g., relationships with others and task resources) and personal resources (e.g., self-esteem) were associated with the firefighters’ abilities to do their job a full 10 years after the initial data collection. They found that relationship to be fully mediated by work engagement, suggesting that utilizing those resources by investing them into one’s work may be key to their long-term impact on work ability. In other words, though we often think about resources as something that can be used up or lost, they may also be replenished over time if they are utilized appropriately.

On the other end of the spectrum, researchers have increasingly explored the impact that resources play in shorter-term settings, such as across days or weeks (Demerouti et al. 2015, Donald et al. 2016, Rodríguez-Muñoz et al. 2017). Within that line of work are studies more closely examining the importance of how individuals spend their time in terms of the resources they gain or lose (Halbesleben et al. 2013, Hunter & Wu 2016, Zacher et al. 2014). COR theory-based recovery research has been thriving for many years now (Niks et al. 2016, Sonnentag &

Fritz 2015); however, some interesting new innovations related to COR theory are starting to emerge. For example, Trougakos et al. (2014) examined an often warmly anticipated (or deeply dreaded) period in the workday: the lunch break. They found that autonomous control over that period played a very important role in the participants' end-of-day fatigue: When employees can control what happens during their lunch break, they are far more likely to experience lower fatigue.

An important line of research has started to test how different uses of time in study designs can affect the conclusions drawn from those studies. As a recent example, Matthews et al. (2014) examined competing theories regarding the relationship between work-family conflict and subjective well-being, finding that work-family conflict was associated with less favorable well-being in the short term, but this relationship decreased when one considered longer time lags of measurement between the variables. These findings are important, because they suggest that individuals can adapt to stressors over time in ways that might suggest an improved utilization of resources. For example, whereas work-family conflict may initially create a strain on resources, as individuals adjust to those resource losses, the impact that the work-family conflict has on well-being decreases (see also Nohe et al. 2015). Such findings have important implications for our understanding of resource gain and resource loss spirals.

Evidence continues to mount regarding the challenges associated with breaking from resource loss spirals (De Cuyper et al. 2012, Demerouti et al. 2004, Heath et al. 2012), and a better understanding of how individuals break loss spirals may be key to understanding important issues like resilience (Chen et al. 2015, Hobfoll et al. 2015). Furthermore, there remains a great deal of work to be done to separate out the role played by individuals (through individual adaptation or development of other resources; e.g., Kim et al. 2015, van den Heuvel et al. 2013) and the role played by others surrounding them (through support or provision of other resources; e.g., McTernan et al. 2016). These studies will have to carefully consider the role that time plays and account for that role in the study design (see also Ford et al. 2014, Ritter et al. 2016).

## **Building Implications for Practice**

A final trend to explore since Halbesleben et al.'s (2014) review is the greater emphasis on linking COR findings with practice. In many ways, COR research has had a deep relationship with practice from the start, given some of its roots in clinical practice (e.g., understanding responses to traumatic experiences). Therefore, while exploring deeper issues using COR theory, many researchers have also been emphasizing the practical nature of the theory. Particularly valuable have been studies that outline specific resources that seem to be most effective in improving well-being and other aspects of life inside and outside of work.

Kiazad et al. (2014), for example, examined how managing specific aspects of psychological contract breach affects outcomes associated with innovation. They found that programs that were administered during employee socialization periods (e.g., mentoring programs and social events) increased the links employees had with others in the organization. They also found that providing job candidates with realistic information improved the employees' perceptions of person-organization fit. Those links and perceptions of fit were important, because when issues came up in the employment relationship that could be conceived as psychological contract breach, the negative impact of those issues was reduced [see also Bellairs et al. (2014) and Halbesleben et al. (2013), who took a similar approach with regard to how furloughs are implemented in organizations].

In many ways, this trend speaks to the need to clearly conceptualize and operationalize the resources of interest in a study. For example, the value in Kiazad et al.'s (2014) study is that they took the findings of an innovative test of COR theory and conveyed them in ways that are more

amenable to changes in managerial practice. Offering clear evidence that specific programs provide resources that lead to positive outcomes will provide clearer paths to implementing COR-based practices than general prescriptions for “more support” or “more [insert general resource here]” do.

A challenge with this type of research moving forward is understanding how resources interact, particularly because no study can effectively address all of the resources that affect someone within a given environment. This is highlighted in the issues regarding social support mentioned above, where a general proclamation that managers should provide more social support may not hold true given other factors involved (e.g., whether such social support would be seen as threatening the self-esteem of the employee). This issue is particularly important in emerging work regarding work-family support and benefits, and it has inspired a very important and rapidly growing line of research (e.g., Butts et al. 2013). We mention this line of research because it integrates specific organizational practices with broader social forces that may affect the extent to which those practices are seen as resources at all (e.g., Wayne & Casper 2016). For example, in a major intervention study, Hammer et al. (2016) reported positive effects of an invention designed to help provide additional family support from supervisors and more control over when work was performed; however, the work-family climate (the extent to which there was broader support for utilization of work-family resources) played an important role in the extent to which the intervention was successful. Overall, there is increasing evidence that merely providing employees with broad resources related to managing work and family roles simply isn't enough: The environment has to be supportive of utilizing those resources in ways that can help employees satisfy their goals across work and family domains (e.g., Clark et al. 2015, Goh et al. 2015, Mandeville et al. 2016, Rofcanin et al. 2017).

## **CONSERVATION OF RESOURCES THEORY WITHOUT BORDERS: EVIDENCE ACROSS CULTURES**

### **Principles Across Borders**

Since its inception, COR theory has steadily propagated in the international literature as a fundamental motivational framework for organizational psychology and organizational behavior. Because an exhaustive list of references lies beyond our purpose, we highlight key features that characterize current global research in organizational settings.

At times of challenges to individual identification and shifting patterns of social relationships (Bauman 2000, Toffler & Toffler 2006), global research has found in COR theory a potent tool to address the organizational impact of economic contingencies. More specifically, studies have explored dynamics of resource accumulation in light of COR's basic principles on resource investment and motivation.

Current global research has focused on identifying resources that protect against further loss and subsequent debilitating behaviors at work. At the individual level, findings evidence the functional relationship between health preservation and improved work performance. For instance, in a unique three-wave longitudinal study covering over 16,000 professionals, Toker & Biron (2012) established that regular physical activity protected against job burnout and depression. The resource-restoring value of sleep has also been of increased interest. A telling example is that of Spain, a country that sleeps 30 to 40 minutes less than the European average (Barberia 2015) and where a number of publications highlight the importance of sleep quality for recovery and improved quality of work-life (Moreno-Jimenez et al. 2009; Sanz-Vergel et al. 2010, 2011; Vela-Bueno et al. 2008).

At the organizational level, resource investment is put in the perspective of performance and corporate social responsibility. For instance, and contrasting with North American research, international research based on COR theory has often applied the link between resource investment and organization performance to professional sports. At times focused on specific practices (Remlein et al. 2015, Poland), most research stress the beneficial impact of common resource investment initiatives, including injury recovery process (Bianco & Eklund 2001 and Ford & Gordon 1999, Australia), as well as athletes' physical and emotional resource building (Grove & Stoll 1999, Australia; Nicolas et al. 2011, France; Smith 2010, New Zealand).

An organizational focus on resources has also been advocated to the benefit of greater social cohesion. Reflecting the transforming value of work in a global society, current international research stresses the organizational challenges posed by blurred boundaries between professional and private spheres of activity. Studies highlight the differential work-family resource investment process and its impact on job performance and satisfaction (Gao et al. 2013, China; Goldfarb & Ben-Zur 2017, Israel; Innstrand et al. 2008 and Langballe et al. 2011, Norway; Jansen et al. 2003 and Liu et al. 2016, China/Hong Kong). In a context of changing psychological contracts, work organizations are increasingly expected to bear their share of social responsibility through supportive policies aimed at resource preservation and enhancement. Findings emphasize the role of such resources as supervisor support with regard to the work-family interface (Au & Ahmed 2016, Malaysia; Siu et al. 2015, China), of organizational justice (Janssen et al. 2010, China/Hong Kong; Sun & Pan 2008, China), as well as of training and development (Kalshoven & Boon 2012, Netherlands; Sun & Pan 2008, China).

## Principles Across Cultures

Hobfoll (1988, 2001, 2012) insists on the need to consider resources within the framework of their cultural context. He suggests that COR investment processes are embedded in a complex network of beliefs and values that give shared meaning and value to resources. Whereas appraisal theory focuses on individual, idiographic perceptions, COR theory emphasizes that the major rules governing how we respond to stress are embedded within shared cultural beliefs, and that individual differences are tertiary. Based on the current literature, we suggest that cultural factors shed light on both theory and empirical findings.

Research views resources differently depending on whether the studies are conducted in individualist or collectivist cultures (Hofstede 2003). In the former, resources are mostly viewed as contributors to individual well-being. For instance, organizational policies are expected to provide better access to training and development while developing fair performance appraisal and compensation systems (Kalshoven & Boon 2012, Netherlands). Also, management of the work-home interface is viewed from the individual perspective of preserving a balance and facilitating the interface between two types of competing pools of resources (Innstrand et al. 2008, Norway). In individualist cultures, findings tend to emphasize the need for preserving individual resources—for example, for preserving physical resources through respite periods (Goldfarb & Ben-Zur 2017, Israel; Fritz & Sonnentag 2006, Germany; Park & Lee 2015, South Korea; Rodríguez-Muñoz et al. 2012, Netherlands) and preserving psychological resources through proper therapy, ranging from theater (Harari 2015, Romania) to mindfulness (Kroon et al. 2015, Netherlands).

In more collectivist cultures, research appears to focus more on group benefits, and it envisions the role and the impact of resources against the backdrop of an integrated whole, with an aim at preserving some social harmony. In collectivist cultures, there is great porosity between the various spheres of social activity, as individuals identify more through networks of interdependence than through self-reference (Triandis 1995). Therefore, the role of resources extends beyond the realm

of occupational concerns. In Hong Kong, for example, Liu et al. (2016) explored the spillover impact of work-home relationships on partners' marital satisfaction. Their results were notably different from those of a previous study conducted in the Netherlands (van Steenbergen et al. 2014). Contrasting with the Dutch study, the Hong Kong sample displayed no gender gap in work-family enrichment, as manifested by the expression of social support. Although the authors do not suggest this, we propose considering such results as reflective of culturally based differences (i.e., individual versus collectivist values) in the way resources cement marital relationships. Similarly, Sun & Pan (2008) show how workplace attitudes and career paths in China should be understood in light of family obligations. They found older Chinese manufacturing workers to be much more vulnerable to burnout and less able to cope with stress on the job than their Western counterparts.

This integrated two-way relationship is exemplified in Malaysia, another collectivist society, where the role of supervisory support reaches out to promote work-life enrichment among employees (Au & Ahmed 2016). Indeed, the amalgamation of work and nonwork experiences confers to resource preservation the dual nature of an occupational and a public health issue. A telling example is a study conducted in Singapore (Lim et al. 2016) establishing a negative link between financial difficulties, feelings of social exclusion, and depletion of psychological capital among job-seekers on the one hand, and future propensity to remain in the organization and be committed on the other. As the authors aptly commented, "Our study underscores the importance of keeping job seekers energized" (Lim et al. 2016, p. 76).

Within-country research also brings additional light to the relationship between culture and COR theory. Though still relatively few, comparative analyses highlight the presence of micro cultures with regard to the shared value of resources. For instance, a study recently conducted in Israel shows that supervisory support has a positive impact on physical and cognitive vigor among immigrant employees from former USSR countries (predominantly high on the collectivism scale), whereas job control appears a significant determinant of cognitive vigor among native Israelis (Hoppe et al. 2017). This within-country diversity has also been tested combining several cultural dimensions. For instance, in the individualist Swiss culture (Sender et al. 2017), the fear of job loss depended on the level of uncertainty avoidance, but not homogeneously. In the German-speaking part of the country (low on uncertainty avoidance), prospects of downsizing or restructuring related to the fear of losing valued job features. By contrast, in the Swiss French-speaking counties (high on uncertainty avoidance), organizational uncertainty associated more with the threat of job loss. According to the authors, these findings reflect differing valuations, whereby jobs are primarily perceived as quantitative resources that ensure economic security (French-speaking sample) or as qualitative resources that provide skills for performance (German-speaking sample).

Research may not, however, be limited to Hofstede's cultural perspective. Research has, for example, proposed to understand organizational deviance from the perspective of value-based resource investment. In a context of job insecurity, real or perceived, individuals are expected to engage in corrupt acts as a protection against the anticipated onslaught of organizational aggressions. Neveu & Kakavand (2016) thus described corruption as a tool for warding off possible threats to valued personal resources, including sense of mastery and distributive and procedural justice.

## **Dynamics and Contingencies**

Current global studies testify to a continuing interest in COR's dynamics, especially in relation to the theory's key corollaries and resource-developing conditions. With regard to the resource accumulation process, a series of Chinese investigations analyzed the resource caravan in action



under a variety of spiraling scenarios. Specifically, researchers found that the combination of work-family enrichment and partner's support relates positively to spouses' marital satisfaction (Liu et al. 2016). Similarly, preserving psychological capital (e.g., optimism, hope, and resiliency) is associated with increased work-life balance over time (Siu 2013). Conversely, depletion of psychological capital adds to team members' distress vulnerability when confronted with abusive supervision (Li et al. 2016).

Global research also notably contributed to identifying new buffer-type resources. An enrichment to the Dutch-promoted job-demands resources model (Bakker et al. 2014, Demerouti et al. 2001), for instance, validates work ability perception as a personal resource that mediates the positive relationship between job demands and emotional exhaustion among older Italian kindergarten teachers (Viotti et al. 2017). Perceived organizational support of personal strengths, including professional know-how and talent, was identified as a significant buffer against the resource-depleting effect of high workload and high emotional demands in a large sample of Dutch health professionals (van Woerkom et al. 2016). In the context of an Australian hospital, climate of authenticity among health care providers emerged as another type of buffer resource against the strains incurred by emotional labor (Grandey et al. 2012). Similarly, the within-person strategy of selection-optimization-compensation (Freund & Baltes 2002) was found to moderate the link between daily problem-solving demands and daily fatigue of German university personnel (Schmitt et al. 2012).

Interestingly, research shows that buffering can also relate to the impact of valued cultural resources. Hence, Allen et al. (2016) found that job embeddedness, a resource otherwise instrumental for social networking, acts as a buffer against resource loss. The results from a study involving a sample of several hundred Japanese employees surveyed over a 12-month period in various sectors of the economy show that higher job embeddedness mediated turnover probability caused by increasing abusive job supervision, even though such elevated levels of job embeddedness came at the expense of altered physical health.

Investigating resource dynamics has led to a recent broadening interest for COR's passageway effects, whereby resource preservation and resource development processes are contingent on supportive versus undermining environmental conditions. This is in line with Halbesleben et al.'s (2014) call for more investigation on the topic. Economic instability, as reflected by feelings of job insecurity, is thus found to fuel a downward spiral, a negative passageway from lower perceived personal employability to work exhaustion, with a reciprocal impact over time on job insecurity perceptions (De Cuyper et al. 2012, Netherlands). Economic precariousness has indeed been tested in many countries as a fertile negative passageway to a worsening of mental health, including in Peru (De Cuyper et al. 2014), Russia (Shteyn et al. 2003), and Turkey (Ünal-Karagüven 2009). In such a crisis-stricken country as Belgium, Elst et al. (2016) show the amplifying effect of perceived (social and tangible) resource deprivation and depletion on the positive relationship between job insecurity and negative health consequences (mental and physical). Conversely, job security is both a personal and a social resource in the context of uncertain economic environments (Höge et al. 2015, Spain and Austria; Sender et al. 2017, Switzerland). Research even highlights work centrality among job seekers as a significant financial, personal, and social resource (Lim et al. 2016, Singapore).

## **Globalizing Perspectives**

As presented above, most COR-based cross-cultural studies adopt Hofstede's taxonomy and definitions. Following Sender et al. (2017), we propose combining more than one dimension to reflect

the cultural complexities of the resource dynamic process. The study of the interactions between uncertainty avoidance and individualism could thus shed additional light on the conservation process in the context of differing states of national welfare (resource passageways).

For instance, Hoppe et al. (2017) suggest that the differential valuation of resources between Israeli natives and immigrants be considered in light of the individualism/collectivism dimension. According to Hofstede's ranking (Hofstede et al. 2010), (individualist) Israel is high on uncertainty avoidance, just like immigrants from (collectivist) Russia and former Eastern block countries (Ukraine, Bulgaria, Romania). Yet, the only Eastern countries that, like Israel, are high on both individualism and uncertainty (Czech Republic and Hungary) are also the more developed (U. N. Dev. Programme 2014). It could then be hypothesized that resource preservation is motivated differently depending on the pool of resources owned—that is, preventive resource conservation as a strategy to protect accumulated resources (in more resourceful countries) as opposed to reactive preservation when resource accumulation is a short-term reality (in less resourceful countries).

COR-based international research could nevertheless benefit from alternatives to Hofstede's framework. As such, Schwartz's (1994) approach seems a relevant candidate (see also Ng et al. 2007). Fundamentally, COR theory proposes that resources act as motivational vectors grounded in universal, yet hierarchically ordered, values (Halbesleben et al. 2014, Morelli & Cunningham 2012). Much more research could and should be done to examine these cultural factors and how they lay a context for applying COR theory in ecological context.

## **FUTURE DIRECTIONS**

Only a handful of theories in modern psychology have had the capacity to produce such a broad spectrum of specific and testable research directions. A strength of COR theory is that it is potentially falsifiable in part or as a whole, and it has guided research across a broad set of principles and contexts in a manner that facilitates the testing of complex hypotheses. Appraisal-based theories are not, because of course we can always state that any outcome is a matter of idiographic, individual differences that are explained post hoc. Indeed, Hobfoll (1988, 1998) has repeatedly argued that appraisal theory is not a valid scientific set of principles, because its principles cannot be rejected.

COR theory from its outset has suggested that the principles and corollaries of the theory must be nested in the ecology and context of events. Individualistic versus collectivist versus familial cultures will operate under the same rules of conservation, but different resources will be valued, or at least the ranking of those resources will be different.

As we have seen, more recent research has moved beyond the study of stress and trauma to the very nature of the commerce of resources and their utility. One central question that emerges from this is why the principles and corollaries of COR theory have held so well over time. By basing its principles and corollaries on an understanding of the fundamental evolutionary requirement to build, protect, and invest resources for the survival and propagation of humans as a species, COR theory has identified one of the key active agents that define us as humans. Moreover, unlike evolutionary psychology, which relies on post-hoc evaluations, COR theory makes both intuitive and counterintuitive testable predictions. Thirty years ago, when the theory was formulated, there was great doubt that a set of principles could bridge from organizational psychology to trauma psychology, these being on virtually the opposite ends of the stress continuum. However, 30 years of research have clearly proven otherwise.

For the future, the area of greatest need for testing COR theory and for the health of organizations is the application of resource theory to interventions and clinical trials, both randomized and

more naturalistic. We do not have a good knowledge base for arguing with any certainty that the same naturalistic mechanisms that explain a given system can be seized upon and altered to produce change. In part this is because organizations are still operated more by art than science, but also because we have not conducted studies that support a science-based approach. As in the field of economics, some great theories (e.g., supply side, trickle down, communism) have had highly questionable applications and are certainly not straightforward. Intervention research has enormous potential, and COR theory appears to be one of the foundational theories for organizational psychology to guide such work.

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