



Spilling Outside the Box: The Effects of Individuals' Creative Behaviors at Work on Time Spent with their Spouses at Home

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Abstract:	<p>Most research on creativity describes it as a net positive: producing new products for the organization and satisfaction and positive affect for creative workers. However, a host of anecdotal and historical evidence suggests that creative work can have deleterious consequences for relationships. This raises the question: how does creativity at work impact relationships at home? Relying on work-family conflict and resource allocation theory as conceptual frameworks, we test a model of creative behaviors during the day at work and the extent to which employees spend time with their spouses at home in the evening, using 685 daily matched responses from 108 worker-spouse pairings. Our results reveal that variance-focused creative behaviors (problem identification, information searching, idea generation) lead to a decline in time spent with spouse at home. In contrast, selection-focused creative behaviors (idea validation) lead to an increase in time spent with spouse. Further, openness to experience moderates these relationships. Overall, the results raise questions about the possible relational costs of creative behaviors at work on life at home.</p>

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Spilling Outside the Box: The Effects of Individuals' Creative Behaviors at Work on Time Spent with their Spouses at Home

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6 **Spilling Outside the Box: The Effects of Individuals' Creative Behaviors at Work on Time**
7 **Spent with their Spouses at Home**
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10 **ABSTRACT**
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12 Most research on creativity describes it as a net positive: producing new products for the
13 organization and satisfaction and positive affect for creative workers. However, a host of
14 anecdotal and historical evidence suggests that creative work can have deleterious consequences
15 for relationships. This raises the question: how does creativity at work impact relationships at
16 home? Relying on work-family conflict and resource allocation theory as conceptual
17 frameworks, we test a model of creative behaviors during the day at work and the extent to
18 which employees spend time with their spouses at home in the evening, using 685 daily matched
19 responses from 108 worker-spouse pairings. Our results reveal that variance-focused creative
20 behaviors (problem identification, information searching, idea generation) predict less time spent
21 with a spouse at home. In contrast, selection-focused creative behaviors (idea validation) predict
22 more time spent with a spouse. Further, openness to experience moderates these relationships.
23 Overall, the results raise questions about the possible relational costs of creative behaviors at
24 work on life at home.
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30 **Keywords:**
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32 Creativity, Creative Behaviors, Experience Sampling, Work-Family, Resource Allocation.
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The Effects of Individuals' Creative Behaviors at Work on Time Spent with their Spouses at Home

Relationships are hard enough, but it takes a real champion of a person to be married to someone who's obsessed with a creative pursuit. (Kleon, 2012: 133)

Researchers and practitioners have generally extolled the virtues of creativity (George, 2007; IBM, 2010). Creative work has obvious merits: it serves as a seedbed for organizational innovation (Amabile, 1988) and it enhances individuals' status (Perry-Smith & Shalley, 2003). Perhaps because the benefits of creativity seem so compellingly obvious, while the costs seem so minimal, researchers have primarily focused their attention on the antecedents of creative behavior often at the exclusion of the downstream effects creative behaviors might have beyond the production of the creative idea itself. Relative to our understanding of creativity's antecedents, the social side effects of creativity represent a rich opportunity for theoretical advancement. Our goal in this paper is to explore these "downstream" issues by examining how daily creative behaviors at work might impact spousal relationships at home, since, as the opening quote alludes, creative work might create pressures for spousal relationships.

Organizational researchers have largely focused on the benefits of creativity to organizations (competitive advantage, adaptability in a turbulent world, etc.) and creative workers (experiences of positive affect, increased job satisfaction, etc.). The generative nature of creativity has become so engrained that some scholars define creativity as an inherently positive form of deviance (Zhou & Ren, 2012). Because creativity is the production of novel and useful ideas (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Woodman, Sawyer, & Griffin, 1993), behaviors that produce creativity often revolve around perceiving opportunities where multiple knowledge domains collide or by pushing ideas to the edge of a domain. Evidence suggests that significant interpersonal relationships are important in these activities because they serve as both

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2
3 a seedbed and soundboard for ideas (Grant & Berry, 2011) and as a source of socio-
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5 psychological support that encourages individuals to persevere in pursuing potentially productive
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7 avenues of exploration. For example, studies show that supportive coworkers and supervisors
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9 enhance workers' creative performance (Amabile et al., 1996). Indeed, the presence of
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11 supportive others can be so powerful that it can actually enable creative workers to turn moments
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13 of dissatisfaction into catalysts for creative thinking (Zhou & George, 2001). Work by Perry-
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15 Smith and Shalley (2003) extended social support beyond organizational boundaries by noting
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17 that creative ideas are likely fostered by a broader network of relationships. Following this vein
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19 of thought, Madjar, Pratt, and Oldham (2002) provided evidence showing that support from
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21 home and family provides significant contributions to employee creativity above and beyond
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23 support provided by supervisors and coworkers. Hence, the extant literature shows that creativity
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25 is a product of social forces, but what about the reverse relationship? By asking this question, we
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27 suggest a crucial gap in our understanding of creative work: what is missing from the literature is
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29 an understanding of effects of creativity as an independent variable generally and, more
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31 specifically, a consideration of the impact of creative work on relationships at home.
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39 In this study, we cut new theoretical ground by articulating how creative behaviors at
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41 work could impact the allocation of time at home. By way of preview, we argue that creative
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43 behaviors that lead to the development of a new idea at work (including problem identification,
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45 information searching, and idea generation) may have a negative effect on the amount of time
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47 workers spend with their spouses after work since they use up so many cognitive resources and
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49 leave little left over for the home domain. In contrast, we suggest that idea validation, or
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51 soliciting feedback from others about a creative idea, will have positive effects on the allocation
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53 of time resources to spousal relationships at home that same day because it allows individuals to
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3 leave their work at work. Furthermore, we respond to calls that note “researchers have paid little
4 attention to how employees’ work experiences can buffer” against negative affect (Grant &
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6 Sonnentag, 2010) by examining the possibility that idea validation might have a buffering effect
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8 against spousal negative affect (whereas other creative behaviors might amplify spousal negative
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10 affect). Our theorizing is further enriched by considering how individual differences in openness
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12 to experience moderate the daily effects that workers’ creative behaviors have on how they
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14 allocate time with their spouses in the evening.
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20 The notion that some creative behaviors might be relationally depleting while other
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22 creative behaviors might be relationally enriching has obvious and important practical
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24 implications. Some estimates suggest one third of the workforce in the United States primarily
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26 performs creative work (Florida, 2002), with many additional jobs either requiring spurts of
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28 creativity or instances of incremental creativity, suggesting that the downstream effects of
29
30 creativity are relevant for a considerable portion of the workforce. Hence, given the premium
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32 organizations place on creative work, understanding how creativity might impact significant
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34 relationships, like the relationship between spouses, has important implications for creative
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36 workers, managers, and organizations, as each attempts to maintain a sustainable level of
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38 creative output.
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43 **CREATIVE BEHAVIORS AT WORK, RESOURCE ALLOCATION AT HOME**

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45 To understand how creativity might impact spousal relationships, our theorizing
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47 integrates insights from resource allocation theory and work-family conflict theory. These lenses
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49 articulate how demands and strain generated in the workplace drive subsequent attitudes,
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51 decisions, and behaviors germane to stakeholders at home. Specifically, an integrated model of
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53 work-family conflict suggests that various demands – or their associated behaviors – in the
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3 workplace can drive unintentional outcomes such as the allocation of time and attention to the
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5 home domain (Edwards & Rothbard, 2000).
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8 **Resource Allocation Theory**

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10 Some evidence suggests the possibility that creative work might use up key resources that
11 are essential for relationships. Anecdotally, several highly creative individuals in a variety of
12 fields – for instance, Einstein, Elvis, Gandhi, Dr. Seuss, and Van Gogh (Gardner, 1994) – all
13 struggled to maintain their relationships to spouses or significant others. More concretely, a
14 study of the careers of successful female creative writers found that creative writers often
15 struggled with their marriages and frequently experienced divorce (Piiro, 1998). In reviewing
16 the literature on “major creators,” Policastro and Gardner observe
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27 [C]reative masters take their work very seriously: Such individuals are continually
28 engaged in facing major challenges, which they cannot solve superficially and which
29 demand profound concentration and total immersion in the problem at hand. They do not
30 seem to have much energy left for getting deeply involved with other people. (1998: 215)
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33 They continue by raising a more general line of inquiry: “The question remains whether ... [this
34 pattern] hold[s] for individuals who are also creative, but in a more limited sense” (215-6). In
35 other words, although “limited” creativity might seem less heroic, understanding how workers in
36 typical jobs respond to instances of incremental creativity is likely a more universal experience.
37 One starting point for exploring the influence of creative behaviors on relationships is alluded to
38 by Policastro and Gardner’s observation that creative behaviors might be “resource greedy,”
39 soaking up cognitive resources and the allocation of time. Resource allocation theory provides a
40 conceptual framework for beginning to explore these dynamics.
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52 Resource allocation theory suggests that individuals have finite resources – or entities
53 that are valuable in their own right or that serve as means to valued ends (Hobfoll, 2002). Using
54 resources involves opportunity costs. For example, a longstanding hypothesis is that individuals
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3 can allocate their cognitive energy to a task, but doing so depletes their stock of cognitive
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5 resources available for subsequent tasks (James, 1890). Similarly, individuals need to make
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7 choices about how they spend their time because “spending time on one activity necessarily
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9 comes at the expense of another” (Bergeron, 2007: 1083-4). Researchers focusing on the
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11 interface between work and family have provided important evidence of how using resources in
12
13 one domain affects the other.
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17 One important form of work-family conflict is time based. This form of conflict deals
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19 with the allocation of one’s physical presence to one domain or another, but also deals with “a
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21 preoccupation with one role even when one is physically attempting to meet the demands of
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23 another role” (Greenhaus & Beutell, 1985: 78). In short, when one is mentally wrapped up in a
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25 given domain, that individual will find it difficult to mentally engage in a new domain. The
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27 inability to adequately engage in a given domain will hamper the individual’s performance in
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29 that domain because the individual cannot engage with all the resources that are typically
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31 available, nor with the range of resources that are required, in such situations.
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35 Consistent across the literature on work-family conflict and consistent with resource
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37 allocation theory, is the notion that the use of resources has ancillary consequences. Hobfoll
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39 argues that, when resources are stretched thin, individuals “strive to develop resource surpluses
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41 in order to offset the possibility of future loss” (Hobfoll, 1989: 517). Because creative tasks often
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43 require a great deal of cognitive focus (Elsbach & Hargadon, 2006), time (Baer & Oldham,
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45 2006), and emotional energy (Amabile, Barsade, Mueller, & Staw, 2005), some creative
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47 behaviors are potentially resource greedy. This suggests that engaging in creative behaviors at
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49 work is resource depleting and should generate the need to offset these behaviors by restoring
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51 resources at home. We develop the linkages in this reasoning with our hypotheses below.
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Variance-focused Behaviors and Spousal Interaction at Home

Campbell argued that all creativity is a result of behaviors that generate variations followed by behaviors that selectively retain the solutions that are most adaptive. Hence, producing a novel, useful idea requires a toolbox of diverse behaviors. Some of these behaviors serve the needs of variation. Here we focus on three: problem identification, information searching, and idea generation. Zhang and Bartol (2010) argue that problem identification, information searching, and idea generation work together as a suite of behaviors they label “creative process engagement” which they argue lead to the production of novel and useful ideas. Although each behavior is slightly different, our focus in this study is on their similarities. These behaviors serve the aim highlighted by Campbell: generating variance, cultivating possibilities that serve as the raw materials for creative work. The famous mathematician, Poincaré, described this variation-generating aspect of creativity as something that “charms” the sensibilities of the would-be creative worker (quoted in Campbell 1960: 388). Why do variance-focused behaviors produce feelings of being “charmed”? One reason might be that the suspense, the sheer weight of possibilities that bubble up from variance-focused behaviors is likely very engrossing. However, the engrossing nature of such activities soaks up cognitive resources. As Simon observed, in reflecting on the creative process, “most design resources go into discovering or generating alternatives, and not into choosing among them ... in domains of scientific, artistic, or technical interest, the designer cannot foretell – until quite late in the game – what will emerge” (1995: 247). Simon’s observation highlights the fact that the amount of attention required for variance-focused behaviors is tied to the array of possibilities that emerge from the activity and the subsequent difficulty of “foretelling” which possibilities will bear fruit. As Seifert describes it, these behaviors are really a matter of digging into “[a] problem’s core

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3 aspects, and making exerted tentative unsuccessful attempts to reach a satisfactory conclusion”
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5 (Seifert, Meyer, Davidson, Patalano, & Yaniv, 1994: 75).
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8 Given the engrossing nature of these creative behaviors, it is not surprising that variance-
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10 focused behaviors would be expected to consume a considerable portion of individuals’
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12 cognitive resources. Indeed, the very notion of time-based work-family conflict suggests either:
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14 “(1) time pressure associated with membership in one role may make it physically impossible to
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16 comply with expectations arising from another role” or that “(2) pressures may produce a
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18 preoccupation with one role even when one is physically attempting to meet the demands of
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20 another role” (Greenhaus & Beutell, 1985: 78). Clearly an employee experiencing the former
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22 will have a difficult time engaging with a spouse, simply because the employee is not physically
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24 present at home. However, the more insidious outcome is that work lingers in the mind, such as
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26 when a challenging problem or list of problems will not leave the worker alone, resulting in
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28 spouses who are aloof throughout the evening, even though they might have made it home in
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30 time for dinner. For example, an IDEO employee admitted that “I like being one of the three or
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32 four people who came up with creative ideas. If I am not, I sometimes spend a couple more hours
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34 afterwards to develop better ideas” (Sutton & Hargadon, 1996: 707). Hence, creative behaviors
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36 not only deplete cognitive resources but as a result, they can also impact the allocation of time.
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38 Thus, physically changing venues from work to home might not be sufficient to halt employees’
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40 work-focused cognitive processes and redirect them to home-relevant demands. We therefore
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42 expect that when employees spend the day wrapped up in puzzles associated with variance-
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44 focused behaviors, they are less apt to disengage their minds regardless of whether they have
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46 crossed the physical threshold to the home domain. Based on this rationale, we predict:
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55 ***Hypothesis 1: Engaging in variance-focused behaviors during work on a given day is***
56 ***negatively related to time spent with one’s spouse at home that evening.***
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Selection-focused Behavior and Spousal Interaction at Home

Idea validation is a form of feedback seeking whereby individuals ask coworkers for feedback to help them shape emerging ideas, closing off some avenues of exploration and thereby focusing creative efforts. Returning to Campbell's variation-selection distinction, whereas problem identification, information searching, and idea generation represent variance-focused behaviors, idea validation is a selection-focused behavior. Even though researchers and practitioners have often embraced the brainstorming rule of "withholding criticism" (Osborn, 1953), research on creative work in organizations shows that individuals consistently seek feedback from peers (Hargadon & Bechky, 2006) and that even in environments that openly embrace the rule of "withholding criticism," workers still actively seek feedback from one another (Sutton & Hargadon, 1996). Hence, receiving feedback about creative work is a critical creative behavior, helping to determine how ideas advance (Amabile, 1988; Simonton, 2010).

Because the result of idea validation is to limit possibilities, which limits the drain on cognitive resources, receiving evaluations on creative ideas at work might also lead an employee to spend more time with his or her spouse at home.. When creative ideas are assessed:

[P]rogress is evaluated. If there is complete success ... the process ends ... If there is complete failure ... the process will also, most likely end. But if there is some progress without complete success, which is probably the most common outcome, there may be cycling back [to early stages] *with a reformulation of an attack on the problem* (1988: 162-3, emphasis added).

The delimiting of possibilities – either vis-à-vis termination of the creative process or by creating a plan of "attack" – enables creative workers to disengage from their work and thereby retain cognitive resources for possible allocation in the home domain. For example, in Amabile et al's daily diary study of creativity, one participant recorded "[a teammate] and myself discussed what speeds and controls we needed on equipment. I made my recommendations on what gear ratios

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3 to go with and he turned me loose to go do it” (2005: 388). What this example illustrates is the
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5 way evaluation helps to constrain the scope of creative work, providing the creative worker with
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7 a more finite set of ideas to consider and a more focused task to complete. The consequence of
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9 this is that cognitive resources allocated to disparate ideas related to the work should once again
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11 become available for allocation to other tasks or domains.
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15 Since humans can act as “cognitive misers” (Gollwitzer & Moskowitz, 1996), the
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17 cognitive savings afforded by idea validation at work could liberate cognitive resources for
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19 allocation in home-relevant effort or behavior. This is particularly important when considering
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21 that our cognitive resources are finite (Hobfoll, 2002), which limits our ability to effectively and
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23 simultaneously engage in multiple tasks at one time, particularly in the face of competing
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25 demands within and without the present task or domain (Kanfer & Ackerman, 1989). A relevant
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27 example of this would be when a worker arrives home from the office after validating various
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29 ideas for revising a project. In many cases, several of the ideas will have been laid aside and one
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31 or a few remaining ideas will mark the future of the project. In such a case, the worker is more
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33 likely to arrive home with a clean cognitive slate and allocate available cognitive resources to a
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35 spouse’s interests, needs, or questions, as opposed to the worker who continues to be wrapped up
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37 in idea generation and information search related to the project. Put formally:
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44 *Hypothesis 2: Engaging in idea validation during work on a given day is positively*
45 *related to time spent with one’s spouse at home that evening.*
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47 **Quality of Interactions: Buffering Spouses’ Negative Affect**

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50 In addition to the direct impact that various creative behaviors are likely to have on how
51
52 employees spend their time at home after work, the preceding arguments also suggest that the
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54 nature of the time spent shared between spouses might qualitatively differ on the basis of these
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56 creative behaviors. As we have highlighted throughout, when employees engage in variation
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3 inducing behaviors their minds are likely to be wrapped up, making them less able to attend to
4 matters in the home domain, which clearly exemplifies time-based work-family conflict
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6 (Greenhaus & Beutell, 1985). Ample evidence indicates that work-family conflict is linked to the
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8 demands of one's daily work (e.g., Ilies et al., 2007; Wagner, Barnes, & Scott, 2014), and
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10 research suggests that as work generates conflict between work and home domains, it is possible
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12 for the employee's spouse to experience affective decrements (e.g., Song, Foo, & Uy, 2011).
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17 Resource allocation theory offers at least one perspective on why work demands on an
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19 employee might subsequently influence a spouse's mood. From this perspective resources are
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21 finite and as individuals' resources are depleted during the day, they have fewer resources
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23 available to invest in relationships. This allocation of finite resources is critical when considering
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25 spousal outcomes because one of the consistent remedies for negative states arising from
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27 environmental stressors is social support (Cohen & Wills, 1985; Kessler, Price, & Wortman,
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29 1985). Hence it is possible that support from a spouse could provide an especially powerful
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31 deterrent or antidote to the negative affective influences in one's daily life (Repetti, 1989).
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37 In light of spouses' important roles as protector and buffer, the finite nature of an
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39 employee's cognitive resources is especially salient because an employee who returns home with
40
41 her mind wrapped up in the day's creative pursuit will have fewer resources available to help
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43 buffer against the negative affect her spouse might be experiencing on a given day. One
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45 participant in a study of work-family conflict among medical doctors offered a salient example
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47 of how spouses seek each other out to recover from negative events: "I feel that my blood gets
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49 sucked at work and I need a sympathetic attitude from my spouse to recover" (Rout, 1996: 158).
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51 This type of experience aligns with arguments by Repetti who claims that the presence of more
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53 resources "from a spouse can help to buffer the depressive effects of major and minor stressors"
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3 (Repetti, 1989). Hence, because variance-focused behaviors are likely to use more cognitive
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5 resources than selection-focused behaviors, the likely result is that individuals with fewer
6
7 available cognitive resources are less able to engage with their spouses in a way that creates a
8
9 buffer to absorb negative affect that the spouse might have built up over the course of the day
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11 when they spend time together in the evening. This means that the spouses of such engaged
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13 employees are likely to continue to experience higher of levels of negative affect into the
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15 evening because the quality of the time spent together does not provide a sense of support. By
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17 contrast, those employees who have selected their ideas, narrowed their alternatives, and thereby
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19 left their work at the office, will arrive home with a greater cognitive capacity to engage with
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21 their spouses and therefore the quality of time spent with their spouses will be such that it helps
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23 to alleviate their spouses' affective pressure. The consequence is that these spouses are likely to
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25 report substantially lower levels of negative affect in the evening, due to the spousal interactions
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27 that have enabled them to come up with adaptive ways to deal with the stressors they
28
29 experienced throughout the day (Cohen & Wills, 1985). In line with this view of resources and
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31 social support, we hypothesize the following:
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39 ***Hypothesis 3:** Engaging in variance-focused behaviors during work is positively related*
40 *to spousal negative affect at home that evening.*

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43 ***Hypothesis 4:** Engaging in idea validation during work is negatively related to spousal*
44 *negative affect at home that evening.*

45 46 **Openness to Experiences as a Moderator of Day-to-Day Effects**

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48 Openness to experience is a broad dimension of personality that includes a preference for
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50 variety and a tendency for intellectual curiosity (McCrae & Costa, 1985) and, as such, it is the
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52 personality characteristic most frequently studied in connection to creativity (Baer & Oldham,
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54 2006; Feist, 1998; George & Zhou, 2001; Harris, 2004; King, Walkder, & Broyles, 1996; Li et
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3 al., 2014; McCrae, 1987; Silvia, Nusbaum, Berg, Martin, & O'Connor, 2009; Taggar, 2002).

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6 When considering how creative work might exhaust resources, one possibility is that individuals
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8 with high levels of openness to experience might have an easier time with generating creative
9
10 ideas and as a result they would exhaust fewer resources when engaged in variance-focused
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12 behaviors.
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15 However, openness to experience, at its heart, is about individuals' willingness to
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17 entertain new ideas rather than their fluency in shaping an idea. Metaphorically, during variance-
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19 focused work, having a high level of openness to experience is like dumping out a bigger pile of
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21 Legos (when compared someone with a lower level of openness) without instructions for how to
22
23 put them together. That is, openness provides more raw materials when individuals are engaged
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25 in variance-focused behaviors rather than enhancing how individuals choose an idea from that
26
27 variety. For example, in a study of creative groups, groups with higher openness to experience
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29 were more creative but this was mediated by their ability to examine and elaborate on the
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31 information that the higher openness allowed to flow into the group (Homan, Hollenbeck,
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33 Humphrey, Van Knippenberg, Ilgen, & Van Kleef, 2008). As such, we suggest that because
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35 openness to experience exposes individuals to more variety, it will further exhaust cognitive
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37 resources during variance focused behaviors.
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44 Studies have shown that openness to experience influences behavior primarily through
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46 cognitive channels (McCrae, 2006). For example, a recent neuro-imaging study (voxel-based
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48 morphometry) revealed that individuals high in openness to experience have more development
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50 in the right posterior middle temporal gyrus, the portion of the brain responsible for novelty
51
52 seeking, and that individuals with this brain structure were more creative (Li et al., 2014). The
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54 cognitive effects of openness to experience are important here because they align with our use of
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3 resource allocation theory and suggest that, given the engrossing nature of variance-focused
4 behaviors, highly open individuals may commit greater portions of their cognitive resources to
5 these activities. The result is that they are likely to become even more wrapped up in thinking
6 about the day's problem, and thus might find that days during which they spend time engaged in
7 variance-focused behaviors, they are less prone to engage with their spouse at home because
8 their mental wheels keeps spinning. In contrast, less open individuals inherently expose
9 themselves to more shallow pools of variety, and thus they are more able to detach from their
10 cognitive pursuit more easily as they transition into the home domain. This would make for a
11 weaker link between the day's creative behaviors and their spousal interactions that night.
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25 With regard to idea validation, employees high in openness to experience might be
26 particularly receptive to the feedback given to them as they test their ideas. This allows them to
27 consider more ways to restrict their ideas, helping to narrow the set of ways to progress.
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29 Returning to the Lego metaphor, when engaged in idea validation, high levels of openness to
30 experience would be akin to allowing for more instructions for how to assemble the pieces
31 together. This allows employees to use fewer cognitive resources after engaging in these
32 behaviors. As further support more germane to individual creative work and feedback, George
33 and Zhou (2001) found that feedback was more likely to influence creativity when individuals
34 were higher in openness to experience, suggesting that open individuals may have been more
35 adept at integrating feedback into their work. Hence, individuals higher in openness to
36 experience should be more likely to free cognitive resources after a day heavy in idea validation,
37 allowing them to more full engage with a spouse that evening and to provide the social support
38 that buffers the spouse's negative affect. Hence, we propose:
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55 ***Hypothesis 5:** The effect of the day's (a) variance-focused behaviors and (b) idea*
56 *validation on time spent with one's spouse that evening will be moderated by openness to*
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3 *experience such that the relationship is stronger for those with higher levels of openness*
4 *to experience.*

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7 ***Hypothesis 6:*** *The effect of the day's (a) variance-focused behaviors and (b) idea*
8 *validation on spouse negative affect will be moderated by openness to experience such*
9 *that the relationship is stronger for those with higher levels of openness to experience.*

11 METHODS

14 Participants

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16 We recruited 139 working adults from a variety of different organizations and over 20
17 different industries in Singapore. Industry types included finance, construction, government,
18 education, healthcare, transportation and many others. Business management students at a
19 Singapore university delivered coded invitation packets to each participant; the packet included a
20 letter describing the study and ten surveys and return envelopes for completion by the spouse.
21 The letter explained that participation required the employee to complete an entry survey and
22 online afternoon and evening surveys each workday for two weeks (employee), and the spouse to
23 complete a paper-based evening survey each night for two weeks (spouse). Data collected in this
24 manner is generally of comparable quality to data collected via other, more "traditional,"
25 methods (e.g., Smith, Tisak, Hahn, & Schmieder, 1997), and provides a heterogenous sample
26 (Demerouti & Rispens, 2014; Morgeson & Humphrey, 2006).

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42 Of the workers invited to participate in the study, 108 dyads provided complete data on
43 the employee individual difference survey and at least one day of matched daily surveys. This
44 final sample of participants represents 78% of the sample that accepted the invitation to
45 participate; this group completed a total of 685 fully matched days, or an average of 6.3 fully
46 matched days per participant dyad. All the employees in the final sample resided in Singapore
47 and the majority were ethnically Chinese (98); the sample also included Malay (7), Filipino (1)
48 and Other (2) ethnicities. Participants had an average age of 46.8 years, 52% were male, 75%

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3 had at least a two-year college degree, and the most prevalent industries in which participants
4 were employed included business and financial operations (12%), sales (11.1%), management
5 (8.3%), engineering (8.3%), construction (8.3%), education (7.4%), transportation (5.6%),
6 government (5.6%), and other fields (33.4%). Employees' spouses were rather similar, reporting
7 an average age of 46.5 years and 69% possessing at least a two-year college degree. Participants
8 had an average of 1.6 children living at home (21% had no children living at home) and 67.7%
9 had been together for at least 20 years. We did not collect occupation information from spouses.

19 **Procedure**

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22 Participation in the study consisted of two major parts. First, participants completed an
23 entry survey in which they completed demographic measures and various individual differences.
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25 The second part of the study consisted of a diary study in which participants completed several
26 short surveys each workday over a two-week period. Participants completed an internet-based
27 survey about their day's activities prior to leaving the workplace; employees also completed an
28 internet-based evening survey just prior to retiring to bed; finally, the spouse or significant other
29 of each employee completed a paper-based survey each evening prior to retiring to bed, and
30 returned the survey to the researchers in a stamped envelope the next morning; spouses were also
31 asked to complete and return a short demographic survey, independent of the daily surveys.

32 **Measurement**

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35 *Creative behaviors.* Producing a novel, useful idea generally requires a toolbox of
36 different behaviors, yet many of the behaviors crucial to creative success have been somewhat
37 obscured. For example, the widespread adoption of brainstorming as a facilitative technique for
38 creative output has popularized the notion that idea generation is synonymous with creativity.
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40 Similarly, since problem solving is a common activity inside organizations, it also represents a
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3 common opportunity for individuals to be creative. As evidence, Amabile et al (2005) found that
4 many examples of daily creativity using an open-ended diary protocol were incremental
5 opportunities to solve problems, rather than dramatic changes to the status quo. As a result,
6 Amabile et al. encouraged future researchers to examine a much wider array of creative
7 behaviors than typically targeted in studies of creativity. In response to this call, we focus on
8 problem identification, information searching, idea generation and idea validation. Moreover, we
9 examine these creative behaviors in the context of more typical workplace settings – those in
10 which employees often engage in “little c” or incremental creativity.
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22 Each afternoon we sent employees an email reminding them to complete the post-work
23 survey before they left their workplace. Employees clicked on a link in the email which took
24 them to the Web-based survey including items assessing the extent to which they engaged in
25 creative behaviors that day (Zhang & Bartol, 2010). Problem identification, information
26 searching, and idea generation were assessed with three, three, and five items respectively, from
27 Zhang and Bartol, and idea validation was assessed with five items developed for this study, as
28 described in the subsequent paragraph. Example items from the previously validated scales
29 include “I spent considerable time trying to understand the nature of the problem” (problem
30 finding), “I searched for information from multiple sources” (information searching) and “I
31 looked for connections with solutions used in seeming diverse areas” (idea generation). Answers
32 were given on a scale from 1 = *strongly disagree* to 5 = *strongly agree*. The average of the daily
33 coefficient alphas across the days of the study was .89 for problem identification, .90 for
34 information searching and .93 for idea generation.
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52 To develop a scale for idea validation we generated a pool of 40 items. We initially
53 narrowed our pool of potential items by eliminating redundancies, creating a pool of 22 items.
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3 We then gave a panel of four academics that had authored at least one article on creativity in a
4 top management journal a definition of idea validation adapted from Amabile, in part describing
5 how “the response possibility is tested for correctness or appropriateness against ... knowledge
6 and relevant criteria” (Amabile, 1988: 140). We asked them to independently select seven of the
7
8 22 items they felt best captured the construct. This step produced fairly strong agreement and
9
10 allowed us to reduce the items to a final list of five. Then, following Anderson and Gerbing’s
11
12 (1991) item-sort task for establishing substantive validity, we combined the five idea validation
13
14 items along with Zhang and Bartol’s (2010) eleven items for problem identification, information
15
16 gathering, and idea generation to create a pool of randomly mixed items. We presented this pool
17
18 to a group of seven doctoral students in organizational behavior and asked them to independently
19
20 sort the items to match definitions for problem identification and idea validation. This produced
21
22 a relatively high substantive-validity coefficient ($c_{sv} = .89$) for the items for idea validation, well
23
24 above the .5 cutoff, providing some assurance of validity of this new scale prior to use in the
25
26 field. The five idea validation items, tailored to the day-level of analysis, read as follows: “I tried
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28 to get others' opinions about my new ideas,” “I tested out my ideas by explaining them to my co-
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30 workers,” “I considered diverse sources in assessing whether my new ideas are appropriate,” “I
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32 sought feedback from colleagues about the feasibility of my new ideas” and “I talked to my
33
34 colleagues about new ideas I have to see if they will work.” The five items were rated with the
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36 same 5-point likert scale used to assess the other creative behaviors, and average of the daily
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38 coefficient alphas across the days of the study was .95.

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41 ***Time with spouse.*** We measured the employee’s time use at home by asking the spouse
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43 to indicate, on the paper-based bedtime survey, “the number of hours you spent with your
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45 spouse/significant other tonight (e.g., 1hr, 1.5hrs, etc.)” as previously done by Ilies et al. (2007).
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3 In addition to being successfully utilized by other researchers, this measure presents other
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5 benefits. Notably, the measure is behavioral and complements the proposed affective and
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7 cognitive theoretical mechanisms. Another benefit is that such a measure is open to interpretation
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9 by the spouse; for instance, if an employee and spouse were in the same room at the end of the
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11 day, and the employee were glued to his smartphone answering emails, the spouse might not
12
13 view them as spending time together even though they were physically in the same space.
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15 Likewise, if an employee is lost in thought and not attending to his spouse's comments, the
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17 spouse might not feel like she is spending time with the employee. In this way, we left it to each
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19 spouse to determine what it means to "spend time together."
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24 ***Spouse and employee affect.*** We collected spouse ratings of nightly positive and
25
26 negative affect on the evening paper-based survey using ten items from the Positive and
27
28 Negative Affects Schedule (PANAS) short form (Mackinnon, Jorm, Christensen, Korten,
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30 Jacomb, & Rodgers, 1999; Watson, Clark, & Tellegen, 1988). This measure asks participants to
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32 indicate the extent to which they currently feel each of five different positive (e.g., inspired,
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34 excited, enthusiastic) and negative adjectives (e.g., upset, nervous, distressed) at the time of
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36 completing the survey. Answers were given on a scale from 1 = *very slightly or not at all*, to 5 =
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38 *extremely*. The average of the daily coefficient alphas across the days of the study was .93 for
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40 positive affect and .88 for negative affect. For use as controls, we also assessed employee
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42 evening positive and negative affect via an online survey using the same measure described
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44 above. The average coefficient alpha for employee measures was .95 for positive affect and .89
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46 for negative affect.
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53 ***Openness to Experience.*** We measured each participant's trait openness to experience on
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55 the entry survey with ten items from the International Personality Item Pool (IPIP) mapping of
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3 the NEO-PI-R (Goldberg et al., 2006). Participants responded to items such as “I enjoy hearing
4 new ideas” and “I have a vivid imagination” on a scale from 1 = *strongly disagree* to 5 =
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8 *strongly agree*. The coefficient alpha was .87.

10 **Analysis**

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12 Each dyad in the study completed up to 10 days’ matched surveys. Therefore, the day-
13 level responses were not independent from one another. Moreover, our intent is to examine how
14 behaviors on a given day influence how employees interact in the home domain that evening.
15 Thus, we utilized a hierarchical linear modelling (HLM) framework to analyze our data. This
16 approach allows us to account for the lack of independence in the responses from day to day, and
17 also allows us to person-mean center the day-level responses such that our analyses reveal how
18 variation in behavior from day to day predicts day-to-day fluctuations in behaviors at home. The
19 value of this approach is that, by focusing only on departures from the mean, it removes potential
20 confounds that might emerge from individuals’ rating tendencies (Ilies et al., 2007), and ensures
21 that “relations among the within individual variables are unconfounded by personality or other
22 individual differences” (Judge, Scott, & Ilies, 2006: 131). Likewise, given that all daily
23 employee data were matched with daily spouse data, which were also person-mean centered, we
24 are able to remove any between individual differences among spouses, including the spouse’s
25 occupation or personality traits, when conducting the intraindividual analyses.
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45 Although we measured each separate creative behavior with items specific to that
46 behavior, consistent with Zhang and Bartol’s (2010) conceptual arguments and empirical
47 findings we combined the three variation inducing creative behaviors into one factor, contrasting
48 it with idea validation which was a separate factor. Table 1 reports the fit indices from various
49 models, including a one-factor model, a two factor model wherein the idea validation items load
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3 on one factor and the other items load onto a separate factor, and a third model in which the first-
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5 order factors problem identification, information gathering, and idea generation load on a
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7 second-order factor and idea validation remains an independent first-order factor. The results of
8
9 these analyses indicate that the third model with a variance-focused behaviors factor including
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11 problem identification, information gathering, and idea generation and a selection-focused
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13 behavior (idea validation) factor fits the data significantly better than preceding models. Notably,
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15 this structure to the data replicates the model presented by Zhang and Bartol (2010) with the
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17 addition of idea validation as a distinct factor. Accordingly, we used variance-focused behaviors
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19 (problem identification, information gathering, and idea generation) and a selection-focused
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21 behavior (idea validation) as the two primary predictors in our analyses.
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28 INSERT TABLE 1 ABOUT HERE
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31 Daily data were captured on three surveys: an employee survey completed in the
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33 afternoon at work, an employee survey completed at home, and a spouse survey completed at
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35 home. These surveys were matched, and data were only analyzed if all three surveys were
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37 completed on the given day. At the second level of the HLM, we included an identification
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39 number for each participant, as well as our substantive level-2 predictor, openness to experience.
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41 Analyses were conducted as presented in the tables, with successive models including the
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43 creative behaviors, and subsequent models including openness to experience and its interaction
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45 with the creative behaviors.
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49 Examining within-individual variation in creative behaviors and home outcomes requires
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51 that the variables demonstrate significant within-individual variability. We computed a null
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53 model for each of our variables to determine the proportion of the overall variation in each
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55 variable attributable to within- and between-person factors. Table 2 reports these variance
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3 components, indicating that a significant portion of the variance in each variable of interest
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5 occurs within individuals, including more than 50% of the variance in creative behaviors and
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7 time spent with spouse and 45% of the spouse's nightly negative affect.
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12 INSERT TABLE 2 ABOUT HERE
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14 15 **RESULTS**

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17 Table 3 provides the within-individual correlations above the diagonal, and the between-
18 individual correlations below the diagonal, with the latter utilizing the averaged day-level
19 measures for the level-1 variables.
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26 INSERT TABLE 3 ABOUT HERE
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29 Our first set of hypotheses looked at the effects of creative behaviors on allocating time
30 with a spouse. Specifically, Hypothesis 1 predicted that variance-focused behaviors during the
31 workday decreases the amount of time the employee spends with his or her spouse at home that
32 evening. Table 4 (Model 1) presents the results of the test of this hypothesis, showing that
33 variance-focused behaviors at work are negatively related to time spent with spouse that evening
34 ($B = -.45, p < .01$), supporting Hypothesis 1. Hypothesis 2 predicted that engaging in idea
35 validation during the day would lead to greater amounts of time spent with one's spouse in the
36 evening. Results indicate that idea validation at work is positively related to time spent with
37 spouse that evening ($B = .25, p < .05$), supporting Hypothesis 2.
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50 Our second set of hypotheses built upon the notion of social support to examine how the
51 creative behaviors in which the employee engaged at work might determine how effectively the
52 employee can help buffer the spouse's negative affect on a given evening. Hypothesis 3
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3 predicted that engaging in variance-focused behaviors would result in heightened levels of
4 spouse negative mood that evening. Table 5 (Model 1) presents the results of our test of this
5 hypothesis, showing that these variance-inducing creative behaviors have no effect on the
6 spouse's negative affect that evening ($B = .07, p > .10$); thus Hypothesis 3 was not supported.
7
8 Hypothesis 4 took the alternative perspective that employees engaging in idea validation on a
9 given day would return home with ample resources with which they could provide support to
10 their spouse, thereby enabling them to reduce the spouse's negative affect that evening. Results
11 of the test of this hypothesis indicate that engaging in idea validation at work subsequently
12 predicts a decrease in the amount of negative affect a spouse experiences that evening ($B = -.06,$
13 $p < .05$). Thus, Hypothesis 4 was supported.
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27 In addition to the direct effects of engaging in creative behaviors, Hypothesis 5a and 5b
28 also predicted that individual differences in openness to experience might moderate the effects of
29 creative behaviors on the amount of time spent with a spouse at home. Analyses indicate that
30 openness significantly moderates the link between variance-focused behaviors and time with
31 spouse ($B = -.41, p < .05$), and the link between idea validation and time with spouse ($B = .49, p$
32 $< .01$; see Table 4, Model 2). Plotting these interactions reveals that the negative relationship
33 between variance-focused behaviors and time spent with one's spouse at home is more strongly
34 negative for individuals high in openness to experience, and not significantly different from zero
35 for those low in openness to experience (Figure 1). By comparison, the relationship between idea
36 validation and time spent with spouse is especially strong for highly open individuals, but not
37 different from zero for individuals low in openness to experience (Figure 2). These findings
38 support Hypothesis 5a and 5b.
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55 Hypothesis 6a and 6b similarly predicted that the employee's openness to experience
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3 would moderate the strength of the relationship between engaging in various creative behaviors
4 on a given day and the negative affect of the spouse that evening. Our test of this hypothesis
5 reveals that openness did not moderate the link between problem findings, information gathering,
6 and idea generation and spouse negative affect ($B = .06, p > .10$), nor did it moderate the link
7 between idea validation and spouse negative affect ($B = .04, p > .10$). Thus, Hypothesis 6a and
8 6b were not supported.¹
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18 INSERT TABLES 4 AND 5 AND FIGURES 1 AND 2 ABOUT HERE
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21 22 **DISCUSSION** 23

24 For organizations to be innovative year in and year out, they need to find ways to enable
25 employees to be creative day in and day out. Engaging in creative work is undoubtedly a critical
26 part of the day-to-day rhythm of organizational life. While extant research provides a relatively
27 rich portrait of the antecedents critical to producing creative ideas, we know comparatively little
28 about the consequences for the workers producing these ideas. This focus on the creative idea as
29 an endpoint might have cast a halo that obscured the aftereffects of creative behaviors, especially
30 aftereffects that might cast creativity in a less positive light.
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40 In the present study, we sought to delve into a relatively unexplored aspect of creative
41 work, namely the relational aftereffects of creative behaviors at work on relationships at home.
42 To do so, we hypothesized that creative behaviors focused on increasing variation (problem
43 identification, information searching, and idea generation) versus those focused on idea selection
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53 ¹ We ran additional analyses in which we controlled for spouse evening positive and negative affect (when
54 predicting spouse negative affect we included spouse positive affect). We also ran analyses controlling for employee
55 evening positive and negative affect, because employee affect facilitates a significant indirect effect of the two
56 categories of creative behaviors on time spent with the employee's spouse. These additional analyses revealed no
57 significant differences in the relationships of interest from those we report above. Moreover, the effect sizes of the
58 respective estimates showed little change when including the controls.
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3 (idea validation) would have distinct effects on spousal interactions after work. Specifically, we
4 argued that variance-focused behaviors would reduce workers' allocation of time to their spouses
5 at home. Conversely, we argued that a selection-focused behavior would increase workers'
6 allocation of time to their spouses at home. In addition, we argued that openness to experience
7 would moderate these relationships such that the effects of creative behaviors on time allocation
8 with a spouse for individuals high in openness to experience would be stronger than for those
9 lower in openness to experience. Our results generally supported these hypotheses and we also
10 found that in addition to the behavioral consequences these workplace behaviors have on the
11 home domain, the nature of spousal interaction appears to be such that engaging in idea selection
12 on a given day is associate with reduced spouse negative affect that evening, suggesting that
13 validating ideas at work may liberate an employee's cognitive resources in a way that allows
14 them to provide more effective support to their spouse after work.
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31 **Theoretical Implications**

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34 We see our empirical results stretching theory in new ways. Recent conceptual arguments
35 suggest that organizations might need to carefully consider how to design jobs to facilitate
36 creative behaviors. Elsbach and Hargadon (2006) have argued that highly enriched jobs designed
37 to foster creativity – jobs high in autonomy, complexity, feedback, etc., – can be too engrossing.
38 They argue that creative work is so taxing, that creative workers should schedule daily bouts of
39 relatively routine, mindless work, to restore cognitive resources. Work on the relationship
40 between time pressure and creativity provides similar conclusions: that creative work soaks up so
41 many cognitive resources that additional pressures reduce creative ability. The solution that both
42 these literatures suggest is to give creative workers more time which provides further proof of
43 the heavy resource strain that creative behaviors can impose on individuals. Yet, in modern
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3 organizations with flatter structures that require more work from fewer individuals, where being
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5 overworked is a badge of honor, and where technology encourages workers to be “on” all the
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7 time, it is questionable that breaks at work will provide enough time for recovery. Our results
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9 significantly extend this line of thinking by revealing that the taxing nature of creative work is
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11 not confined to work but spills beyond work. There are both theoretical and practical
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13 implications that can be derived from this insight.
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17 First, although models of creativity have often included idea validation or a similar
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19 construct as an important creative behavior, the effects of idea validation have been under
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21 specified. This is likely due to a combination of factors. One cause might be overly linear models
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23 of the creative process that imply idea validation is a terminal behavior that occurs once, at the
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25 end of creative work, rather than a cyclical, integral aspect of creative work. Perhaps a more
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27 pervasive cause is that many paradigms for research creativity – brainstorming research, insight
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29 research, problem solving, etc. – either ignore idea validation, undermine its value, or suggest
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31 that idea validation is actually counterproductive for creative work. For example, brainstorming
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33 is often taught with the norm to “withhold criticism” and research on brainstorming groups
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35 shows evidence that evaluation apprehension, the fear of being criticized, likely reduces idea
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37 generation during brainstorming. This is not to say that idea validation is not important, simply
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39 that it is less helpful when the goal is generating an array of new options. Indeed, research shows
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41 that groups struggle to choose the best ideas from those they have generated, hence idea
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43 validation has a great deal of benefit to enhancing the overall creativity of a creative task or
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45 project (Rietzschel, Nijstad, & Stroebe, 2010). Importantly, our results reveal that idea validation
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47 is not just useful for selecting the best idea from a set of options, but that idea validation has
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49 social benefits as well. This runs counter to much of the information seeking and feedback
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3 seeking literature which highlights the social costs of seeking feedback: individuals are reluctant
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5 to ask others' opinions fearing that it will reflect poorly on their competence (Morrison & Bies,
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7 1991). While our work cannot address these social costs at work, it does reveal that idea
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9 validation seems to serve a beneficial function when workers return home, enabling workers to
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11 allocate more time to their spouses. Hence, idea validation may not just be important for
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13 improving fledgling creative ideas, it might also serve a constructive function for relationships.
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17 Second, our results help broaden our conceptual understanding of creativity in several
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19 ways. Although there is general agreement about creativity as an outcome, creative behaviors are
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21 diverse, requiring different skills and evoking different reactions. By focusing on creative
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23 behaviors instead of creative outcomes we are able to better capture this diversity and get at
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25 some of the “tension” inherent in creative work that George (2007) has urged researchers to
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27 explore. For example, even though workers might dislike idea validation – because even
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29 constructive feedback likely creates some limits in a worker's freedom to direct their idea and
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31 unconstructive feedback likely generates resentment – the long term effects of idea validation
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33 likely benefit the workers. So, behaviors that seem unpleasant might actually be more generative
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35 for workers in the long run. We also build theory by examining how the resource intensity of
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37 creative behaviors might affect important relationships, in this case with spouses. Amabile
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39 suggested that “a comprehensive model” of creativity account for external influences on the
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41 process (1988: 159). We would agree, but our findings suggest the importance of reversing the
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43 causality: that a comprehensive model of the creative process must account for how creativity
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45 influences external forces. Moreover, whereas previous work in this vein has focused on
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47 pathological disorders and affective illnesses as a cause for marital discord and dissolution, our
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49 study suggests a more subtle and, perhaps due to this subtlety, a more ubiquitous mechanism:
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3 spending time with a spouse. This suggests that problems in marriages with creative workers
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5 might have less to do with diagnosable disorders and might have more to do with the steady
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7 accretion or erosions of time as an important marital resource.
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10 In addition to contributing to theory on creativity, our results contribute to theory on
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12 work-family conflict and resource allocation. They contribute to theory on work-family conflict
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14 by highlighting the notion that beyond the products that emerge from the creative process,
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16 different creative behaviors might also give birth to employee behaviors that build or breakdown
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18 the home domain. One potential explanation for this effect is that the employee has more
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20 cognitive resources available for deployment in the home domain. These home outcomes, which
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22 stem from highly desirable work behaviors, suggest added layers of complexity in the interface
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24 between work and home domains. Thus, work-family researchers might consider more
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26 theoretically rich and dynamically complex models of work-family influences as we seek to
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28 understand how different domains of our lives can be more effectively pieced together.
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34 **Practical Implications**

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36 The theoretical contributions from this study also raise considerable practical concerns,
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38 primarily shifting focus from a concern for managing the development of a creative idea or
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40 promoting creative actions, to a concern for creative workers themselves. This shift raises the
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42 possibility that the costs of some forms of creative work might be hidden by the immediate
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44 benefits of creativity itself and eventually offloaded to workers' home lives. This possibility is
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46 perhaps more important since research shows that couples in healthy marriages actually rely on
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48 mutual creative thinking (Sprenkle & Olson, 1978) and constructive problem solving skills
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50 (Kurdek, 1998) just to manage their home life, let alone leaving resources for the next day at
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52 work. The upshot is that the benefits of creatively solving problems at work may be robbing
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3 couples of resources they need to creatively solve problems at home.
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5 A shift to a focus the potential costs of creativity raises questions regarding job design.
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8 Elsbach and Hargadon (2006) have argued that workers cannot perpetually maintain high levels
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10 of engagement, they need “mindless” breaks to re-energize. Our work aligns with this conclusion
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12 but we push further and suggest three important practical implications beyond this. First, workers
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14 can be more mindful about why and when they use idea validation behaviors. That is, idea
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16 validation might serve a complementary function to other strategies to preserve cognitive
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18 resources. If workers understood that idea validation provided benefits outside of work (the
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20 why), they might be more likely to make sure they end their day’s creative activities (the when)
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22 with idea validation to help stave off fully depleting cognitive resources vital for the evening.
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27 Second, Bechky and Hargadon (2006) observed that organizations often rely on social
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29 interactions to facilitate creative behaviors but that these behaviors were strongly influenced by
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31 organizational norms and values. Hence, rather than embracing a value like “withhold criticism”
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33 managers could encourage workers involved in creative tasks to “ideate then validate” or to see
34
35 idea validation as “feedback that feeds ideas.” Admittedly these are flimsy attempts at sticky
36
37 slogans, but the logic is sound: to support the behaviors that sustain creativity, organizations
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39 need a normative fabric that empowers and supports the competing tensions inherent in creative
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41 work (Harrison & Rouse, 2014). Third, although none of the creative behaviors studied here are
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43 restricted to a given phase of the creative process, the intensity might vary. For example, workers
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45 do tend to rely more on variance-focused behaviors in early stages of creative work and
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47 selection-focused behaviors near the end (Yuan & Zhou, 2008). This might mean that the effects
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49 we see are more pronounced at different stages of creative work, that early in the process,
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51 workers might be more engrossed in their creative and therefore less resource full at home.
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3 Managers might help by paying attention to stages of creative work and helping workers more
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5 mindfully attend to their transitions between work and home during early stages of a project.
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8 Finally, a century worth of research has shown that creative workers typically experience
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10 a short, early peak and then a long decline in productivity over the course of their careers
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12 (Simonton, 1997). It could be that the dynamics revealed here, when aggregated over a career,
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14 play a role in these trajectories. While we raise this as a tentative, open question, it does suggest
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16 that we know very little about how creativity can be sustained over time, how organizations can
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18 sustain creative work or even creative careers, or whether sustaining creative work is a worthy
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20 goal. For example, some work shows that creativity might best flourish in bursts, such as a
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22 “skunkworks” or a team that feels it is “on a mission” (Amabile, Hadley, & Kramer, 2002).
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25 Knowing that they will be engaged in a short-term, immersive creative burst might allow
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27 workers and spouses to more concretely discuss the potential costs and benefits of this sort of
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29 immersion and to develop strategies for coping with, or thriving within, these situations.
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33 34 **Limitations**

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36 Some limitations in this study inherently temper our claims while providing provocative
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38 opportunities for future research. First, although we rely on resource allocation as a theoretical
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40 framing for our study, we did not directly measure the cognitive experience of our participants.
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42 While our approach is consistent with other research (e.g., Sonnentag, Mojza, Demerouti, &
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44 Bakker, 2012) that theorizes resources as a mechanism without directly measuring them, we
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46 cannot definitively state that the variation inducing behaviors use up more cognitive resources.
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48 Similarly, we cannot definitively state that engaging in idea validation delimits creative ideas and
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50 provides paths for refining and improving them, thereby freeing up cognitive space for engaging
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52 at home. Our results showing that openness to experience moderates these relationships may
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3 somewhat mitigate these concerns. Studies have shown that openness to experience influences
4 behavior primarily through cognitive channels (McCrae, 2006). Moreover, openness to
5 experience is inherently about a willingness to engage mentally with new information. Hence,
6 the finding that openness to experience significantly moderated our direct effects by augmenting
7 their impact on time spent with a spouse provides some evidence of a cognitive mechanism
8 guiding these effects. Future research can further pin down the exact mediating mechanisms.
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18 Another interesting question that emerges from our findings concerns an odd form of
19 generalizability. That is, are our results specific to creative work or do they apply to any sort of
20 highly engaging work? While it is possible that highly engaging work might provide a similar
21 pattern of relationships, we feel that creative work represents a special class of engagement and
22 possibly a more concentrated set of effects. Creativity concerns novelty, the interaction with the
23 new. Hence, participating in creative behaviors fundamentally puts workers on the intersection of
24 the known and the unknown: a nexus of possible juxtapositions and recombinations that create a
25 limitless array of novel opportunities and puzzles. Workers are left grappling with this novelty,
26 often unable to rely on existing schema, relationships, or routines to help them. In contrast, other
27 forms of engaging work - a basketball player experiencing a state of flow during a game or a
28 surgeon performing a tricky piece of surgery - might inherently rely on practiced, routine
29 behavior, where novelty has long been eroded away to reveal a streamlined beauty inherent in
30 the work being performed. This offers an opportunity for future research to explore the
31 differences between the type of engagement that comes from excelling in intricate routine work
32 or the type of engagement that comes from creative work.
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53 Regarding our data collection, the existence of a link between workers' creative
54 behaviors and their spouses' affect and behaviors at home, despite a range of experiences that
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3 can occur in the time between the creative behaviors at work and the evening encounters, attests
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5 to the robustness of our findings given that such a design provides a conservative test of our
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7 predictions. Even so, we did not consider any of the attributes of the spouse that may have
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9 allowed us to examine additional dynamics. Would a highly open spouse be more likely to tap
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11 into an employee's continuing thought processes and thus join him or her in ongoing creative
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13 behaviors? Furthermore, how would a spouse's employment status, especially if employment
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15 were at the same organization as the employee, influence the relations we observe in this paper?
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17 Future research might attend to these questions.
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22 Finally, our methods did not allow us to get at the "quality" of some of the actions central
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24 to our theorizing. For example, we do not know the type of feedback that was being provided
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26 during idea validation, whether it was open or closed, developmental or controlling (Zhou,
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28 2003). Similarly we do not know about the exact nature or quality of the time spent with the
29
30 spouse. Were workers that engaged in variance-focused behaviors lost in thought? Were they
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32 continuing to work at home in their minds (or actually working from home via technology)?
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34 Perhaps more interesting is the question of what was happening when workers that engaged in
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36 idea validation returned home. Were they complaining about the "jerk at work" that told them
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38 their idea was bad? Was the additional time spent with their spouses driven by commiseration?
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40 Or was the worker sufficiently free of work to fully engage in life at home and conversations
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42 regarding work were relatively rare and fleeting? Our findings suggest that employees who
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44 returned home with a greater availability of cognitive resources were able to help their spouses
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46 reduce their negative affect throughout the evening, but future research could seek to elaborate
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48 exactly how this is done. Using qualitative methods like open-ended questions and observation
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50 might better capture exactly which mechanisms are at work. Such an approach could lend great
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3 insight to the processes we have uncovered.
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6 CONCLUSION

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8 Much of the research on creativity has adopted a sort of gardening metaphor, wherein new
9 ideas are seeds and creative workers are gardeners carefully planting a variety of seeds, grafting
10 new sprouts onto one another, and tending to new plants until they produce fruit. Once the idea is
11 fully formed, once the seed produces fruit, the process is often considered to be over. But what
12 about the gardeners, how does the growth of the seed impact them? We significantly extend
13 theory on creative work by beginning to account for these effects: the outcomes of the creative
14 process go beyond the generation of new ideas and include the costs and benefits for the creative
15 workers themselves. Perhaps even more surprisingly, these costs and benefits impact not only the
16 creative worker but their spouses as well. In raising this issue, we highlight a paradox: that
17 creative work that is most often associated with benefits for the creative worker can have the
18 highest relational costs, whereas creative work that is most often associated with costs for the
19 creative worker can provide the greatest relational rewards. If employee creativity is to provide a
20 truly sustainable competitive advantage, then a more thorough understanding of the downstream
21 effects of creative behavior is necessary.
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TABLE 1
Fit Indices for Measurement Models

Model	χ^2	df	$\Delta \chi^2$	Δ df	RMSE A	CFI	TLI	SRMR
1. One-factor	1309.89	104	--		.130	.729	.687	.088
2. Two-factors (Problem Identification, Information Gathering, Idea Generation vs. Idea Validation)	553.45	103	756.44*	1	.080	.899	.882	.055
3. Four first-order factors with one second-order factor (Problem Identification, Information Gathering, Idea Generation)	216.93	100	336.52*	3	.041	.974	.968	.040
4. Four first-order factors	211.50	98	5.43	2	.041	.974	.969	.038

$\Delta \chi^2$ represents the change from the immediately preceding model. Model 3 is the model validated by Zhang and Bartol (2010), with the addition of Idea Validation as an independent factor.

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TABLE 2
Variance Components of Null Models for Daily Variables

Variable	Within-Individual Variance	Between-Individual Variance	% Within Individual
Problem Identification, Information Gathering, and Idea Generation	.20	.19	51.2%
Idea Validation	.29	.24	55.5%
Time Spent with Spouse	1.34	.96	58.5%
Employee Positive Affect	.33	.64	34.2%
Employee Negative Affect	.11	.18	36.9%
Spouse Positive Affect	.23	.78	22.8%
Spouse Negative Affect	.15	.18	45.0%

TABLE 3

Descriptive Statistics and Within- and Between-Person Correlations ^a

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Problem Finding, Information Gathering, and Idea Generation	3.33	.63	---	.63**	-.09*	-.03	-.02	.03	.02
2. Idea Validation	3.33	.73	.70**	---	.02	-.01	.05	.02	-.03
3. Time with Spouse	2.63	1.51	.05	.04	---	.03	-.08*	.07†	.04
4. Employee Evening Positive Affect	2.48	.98	.39**	.35**	.07	---	-.06	.09†	-.02
5. Employee Evening Negative Affect	1.22	.50	.05	.04	.02	.25**	---	-.01	.09**
6. Spouse Evening Positive Affect	1.24	.55	.00	-.04	-.03	.48**	.07	---	-.05
7. Spouse Evening Negative Affect	2.18	1.01	.07	.07	.10	.18†	.43**	.20*	---
8. Openness to Experience	3.29	.60	.15	.14	.09	.36**	.04	.21*	.09

^a Variables 1, 2, 4, and 5 were reported daily by the employee; variables 3, 6, and 7 were reported nightly by the spouse; openness to experience was measured once at the beginning of the study. Correlations above the diagonal represent within-individual correlations; correlations below the diagonal represent between-person correlations (from the averaged within-person measures). Level-1 n = 685; Level-2 n = 108. † $p < .10$; * $p < .05$; ** $p < .01$.

TABLE 4
Effects of Creative Behaviors on Time Spent with Spouse^a

Predictor	Model 1		Model 2	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Intercept (B_{00})	2.65**	.11	2.65**	.10
<i>Level 1 predictors</i>				
Problem Finding, Information Gathering, Idea Generation (B_{10})	-.45**	.13	-.47**	.12
Idea Validation (B_{20})	.25*	.11	.23**	.10
<i>Level 2 predictors</i>				
Openness to Experience (B_{01})			.17	.19
<i>Cross-level predictors</i>				
Openness to Experience x Problem Finding, Information Gathering, Idea Generation (B_{11})			-.41*	.18
Openness to Experience x Idea Validation (B_{21})			.49**	.11

^a All level-1 predictors were centered at individuals' means. Level-2 predictor was grand-mean centered. *B* = unstandardized regression coefficient obtained in HLM (level-1 *n* = 685; level-2 *n* = 108). Daily creative behaviors were measured in the afternoon at work; openness to experience was measured the week prior to the diary study; time spent with spouse was measured from the spouse in the evening at home. * $p < .05$; ** $p < .01$; one-tailed tests.

TABLE 5
Effects of Creative Behaviors on Spouse Negative Affect^a

Predictor	<u>Model 1</u>		<u>Model 2</u>	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Intercept (B_{00})	1.25**	.04	1.25**	.04
<i>Level 1 control</i>				
Time spent with spouse (B_{10})	.01	.02	.00	.02
<i>Level 1 predictors</i>				
Problem Finding, Information Gathering, Idea Generation (B_{20})	.07	.05	.06	.05
Idea Validation (B_{30})	-.06*	.03	-.06*	.03
<i>Level 2 predictors</i>				
Openness to Experience (B_{01})			.07	.08
<i>Cross-level predictors</i>				
Openness to Experience x Problem Finding, Information Gathering, Idea Generation (B_{21})			.11	.10
Openness to Experience x Idea Validation (B_{31})			.00	.04

^a All level-1 predictors were centered at individuals' means. Level-2 predictor was grand-mean centered. *B* = unstandardized regression coefficient obtained in HLM (level-1 *n* = 685; level-2 *n* = 108). Daily creative behaviors were measured in the afternoon at work; openness to experience was measured the week prior to the diary study; time spent with spouse and spouse affect were measured from the spouse in the evening at home. * $p < .05$; ** $p < .01$; one-tailed tests.

FIGURE 1
Openness Moderates the Creative Behavior-Time with Spouse Relationship

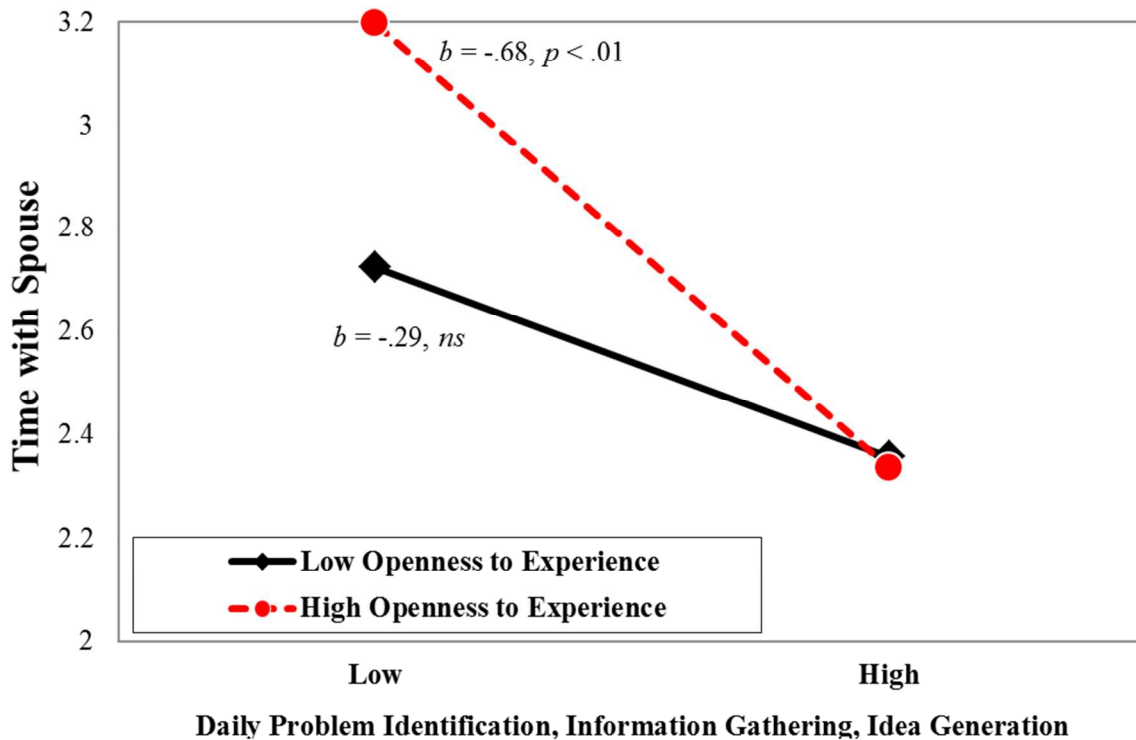
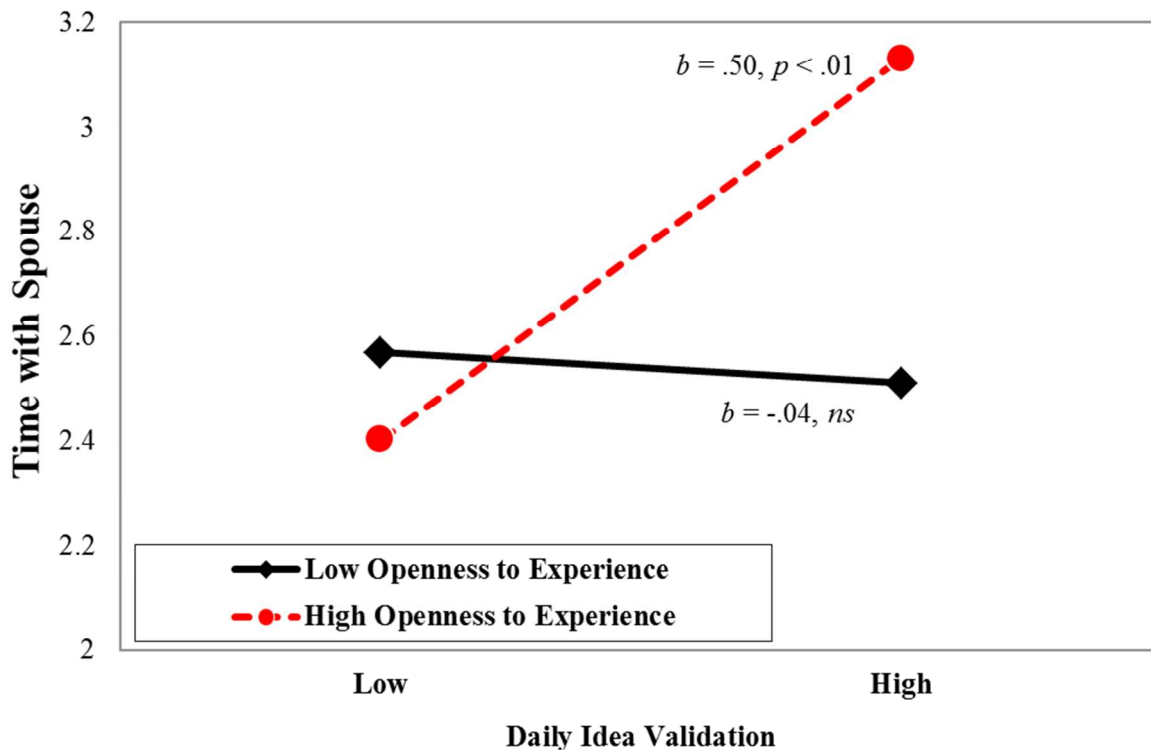


FIGURE 2
Openness Moderates the Idea Validation-Time with Spouse Relationship



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