The Seesaw Self: Possessions, Identity (De)activation, and Task Performance

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Abstract
Research has shown that possessions have the power to change consumers’ self-construal and activate different aspects of the self. Building on this literature, the authors suggest that the salience of product ownership not only activates the product-related self but also simultaneously deactivates product-unrelated selves, resulting in impaired performance on tasks unrelated to the activated self. In five experiments, we first elicit feelings of ownership over a product (e.g., a calculator) to activate a product-related identity (e.g., the math self). Participants then engage in a task that is labeled as being a product-related task (e.g., a math task) or a product-unrelated task (e.g., a visual task). Although the task is the same, participants in the ownership condition perform worse on a task labeled as product-unrelated than those in the baseline condition do. Support for the underlying identity activation process comes from the finding that performance impairment is more likely to hold under conditions of low self-concept clarity, in which identity is malleable. The authors discuss the theoretical and practical implications of this finding.

Keywords
ownership, identity, self-concept clarity, task performance, possessions

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Teenagers purchase Nike shoes believing that they can be better athletes when they are wearing these shoes. Prospective job candidates wear designer suits believing that they will sound more sophisticated and impressive during an interview when wearing one of these suits. Are consumers’ intuitions regarding the influence of products and brands on their performance accurate? Recent research suggests that brands and products can facilitate product-related performance in two ways. First, brand use can increase perceptions of domain-specific self-efficacy and thereby enhance performance (Park and John 2014). Second, feelings of ownership over products can result in these products’ being categorized as a “part of the self” and thereby affect product-related judgments and behaviors (Weiss and Johar 2016). An equally important but unaddressed question concerns consumer performance on product-unrelated tasks when product-related identity is activated. Would wearing a new pair of Nike shoes affect a teenager’s ability to perform in nonathletic domains, such as in an English class? Would purchasing a designer suit on a Saturday evening affect a job candidate’s ability to cook dinner that night?

The current research examines downstream consequences of product ownership on task performance in product-unrelated domains. Consistent with prior research, we suggest that feelings of ownership can improve consumers’ performance in product-related domains by activating the product-related identity. Importantly, we propose a novel by-product of such activation. We suggest that activating the product-related identity is likely to simultaneously deactivate product-unrelated identities and thus impair consumers’ performance in product-unrelated domains. It is well established that feelings of psychological ownership over a product activate product-related identity (Peck and Shu 2009; Weiss and Johar 2013), but we are not aware of any evidence for the deactivation of product-unrelated selves. We base our proposition on research suggesting that activation of one aspect of the identity can lead to a momentary deactivation of other aspects of the identity (Bodenhausen, Macrae, and Hugenberg 2003; Hodges and Park 2013; Zhang et al. 2013).

Our research contributes to the existing literature on identity from a theoretical as well as practical perspective. Theoretically, we propose that activating one identity can simultaneously deactivate other identities that may be unrelated to (but...
not necessarily in conflict with) the activated identity. To our knowledge, such an assertion has not been made previously in the literature. Our experimental evidence is robust and reveals these effects with a simple change in task label while the actual task remains the same. Individuals do not appear to consciously disengage from tasks unrelated to the currently active identity; rather, these effects appear to manifest outside of conscious awareness.

Practically, we show that the mere salience of possessions can lead to such identity activation and deactivation effects. Everyday activities such as shopping can activate product-related identities and deactivate product-unrelated ones, resulting in downstream consequences for consumer performance and behavior. In some domains, such as education or gaming, task performance could be a critical variable that companies aim to maximize. Although student learning remains a primary goal of education, some companies have observed that better performers (e.g., those who score higher on tests) are more likely to stay engaged and complete the course. Direct evidence for the relationship between performance and customer retention comes from online course providers (Coursera 2017). Although it is impossible to determine causality in the relationship between student engagement and performance, they appear to mutually reinforce each other. In fact, gaming companies design games to fit the level of the player to maintain a balance between challenge and achievement (Engeser and Rheinberg 2008). Gamers may be demotivated if the game is either too easy or too difficult. To enhance task performance and the perception of flow, identity activation may be a useful strategy that firms can employ. The notion of identity deactivation and performance impairment suggests that courses should be maintained within portfolios of identity-related content and customers should be encouraged to work within one skill domain at a time. We return to the practical relevance of our findings in the General Discussion section.

Possessions and Identity (De)Activation

Products are an integral part of consumers’ identity (Reed et al. 2012). Our possessions communicate our social beliefs (e.g., breast cancer awareness bracelets) and our social affiliations (e.g., university T-shirts; Wu, Cutright, and Fitzsimons 2011). Possessions help individuals to explore and discover their identity (Wu, Cutright, and Fitzsimons 2011) or to pursue an idealized self-image (Mandel, Petrova, and Cialdini 2006). Consistent with the idea that products can activate aspects of identity, recent research has shown that feelings of product ownership lead to incorporating product attributes as a part of the self (Weiss and Johar 2013). Such psychological ownership—the feeling that a product is part of the self—can arise without actual possession of a product, and by means of mere touch or mental imagery (Peck and Shu 2009). The sense of ownership can even be experienced in a virtual world, and a product can be perceived as an extension of the self (Slater et al. 2009). What are the downstream behavioral consequences of feelings of ownership and identity activation?

Feelings of product ownership can lead consumers to behave in ways that are consistent with traits associated with the owned product (Coleman and Williams 2013; Reed et al. 2012; Weiss and Johar 2013; Wheeler, DeMarree, and Petty 2007). For example, consumers who wear fake sunglasses (presumably feeling ownership of the sunglasses; see Weiss and Johar 2016) are more likely to exhibit fake behavior (i.e., cheat) than those who wear authentic sunglasses (Gino, Norton, and Ariely 2010). In an academic setting, undergraduate participants who used an MIT pen were likely to perform better on a GRE test than those who used a Pilot pen, and this product–self assimilation was stronger among entity theorists who used the product to bolster their perceptions of their fixed ability (Park and John 2014). Overall, research has convincingly demonstrated that owned-product traits transfer to the self, and that consumers exhibit product-congruent behaviors on product-related tasks (McC racken 1986). Such assimilation of the self to owned products can occur through inferential processes (Park and John 2014) or categorization processes (Weiss and Johar 2013).

Although prior research has clearly demonstrated behavioral assimilation to the identity activated by an owned product, it has been silent about behaviors related to other identities. The assumption thus far appears to be that performance facilitation as a result of ownership-induced identity activation does not impose any costs on performance related to other identities. Contrary to this view, we suggest that activation of the product-related identity is likely to result in simultaneous deactivation of product-unrelated identities, resulting in impaired performance on product-unrelated tasks. We base our prediction on research by Bodenhausen, Macrae, and Hugenberg (2003) that suggests that people want to behave in a coherent and situationally appropriate manner (Hugenberg and Bodenhausen 2004), resulting in the active inhibition of identities that make the self-view less cohesive when one particular identity is activated (Hugenberg and Bodenhausen 2004; Macrae, Bodenhausen, and Milne 1995; Neill 1977). Among competing representations of identities, people selectively attend to a focal category, and the selected target category guides subsequent processing (Bodenhausen 1988; Macrae, Bodenhausen, and Milne 1995; Mercurio and Forehand 2011). Unattended categories are not passively ignored but are actively suppressed (Neill 1977) because they are treated as distractors during information processing (Deutsch and Deutsch 1963).

The idea that individuals have multiple identities and that activation of one can lead to the inhibition of another has received some empirical support (Bodenhausen, Macrae, and Hugenberg 2003; Macrae, Bodenhausen, and Milne 1995). For example, when Chinese Americans had their Chinese identity activated by seeing the face of another Chinese (vs. Caucasian) person, they suppressed their American identity, as indicated by their impaired fluency in English (Zhang et al. 2013). Similarly, Asian American women performed better on a mathematics test when their Asian identity was activated than when their gender identity was activated (Shih, Pittinsky, and
Activation of one identity leading to deactivation of a different identity may seem relatively intuitive for conflicting identities, where activation of one identity automatically implies suppression of a conflicting identity. This is the case in the two findings cited above. In fact, the Shih, Pittinsky, and Ambady (1999) finding may simply reflect behavior that is consistent with the activated stereotype. The literature provides some evidence for deactivation of identities unrelated to the currently active identity, although the findings have not necessarily been interpreted using our theoretical lens (Kettle and Häubl 2011; Macrae, Bodenhausen, and Milne 1995; Winterich and Barone 2011). For instance, when lab participants had their student identity activated (vs. not activated), they were more engaged in an identity-related camera shopping task and were less engaged in an identity-unrelated dishwasher shopping task (Experiment 1 in Kettle and Häubl 2011). Another study found facilitation of performance on a lexical decision task when the words were related to the activated identity and inhibition when the words were related to a different identity, compared with the performance of participants who had no identity activated (Macrae, Bodenhausen, and Milne 1995). These findings are consistent with research in social cognition that suggests that activation of a target representation benefits when inhibitory mechanisms suppress interfering alternatives (Neill 1977).

From the literature discussed in this section, we derive the following hypothesis (see the conceptual model in Figure 1).

\[ H_1: \] Relative to a baseline condition, salience of product ownership (a) facilitates performance on product-related tasks and (b) impairs performance on product-unrelated tasks.

As discussed previously, we invoke the notion of identity activation to justify this hypothesis. An alternative perspective on why feelings of ownership may influence performance on product-related and product-unrelated tasks is that the salience of owned products simply primes product-related goals and deactivates other goals. To tease apart these two potential mechanisms, we turn to the construct of self-concept clarity. Self-concept clarity is defined as the extent to which the contents of a person’s self-concept are clearly and confidently defined, internally consistent, and temporally stable (Campbell et al. 1996; Morrison and Wheeler 2010). People with a clear self-concept are more likely to commit to one identity and are less likely to reconsider their self-view on a daily basis (Schwartz et al. 2011). Individuals with high self-concept clarity are less likely than individuals with low-self-concept clarity to have fluctuating self-views when encountering negative life events (DeHart and Pelham 2007). In contrast, people who have low self-concept clarity hold uncertain, unstable, and inconsistent self-views. If the effects are driven by the activation and deactivation of different aspects of one’s identity rather than by goal priming, ownership-induced effects on identity and task performance should be attenuated under conditions of high self-concept clarity. The reason is that individuals with high self-concept clarity have stable self-concepts, and therefore cues such as feelings of product ownership are less likely to activate and deactivate different identities. On the other hand, individuals with low self-concept clarity have less stable self-concepts, and their self-identities are more likely to be activated by environmental cues, such as products and possessions. Thus, we derive the following hypothesis:

\[ H_2: \] \( H_1 \) is more likely to hold for individuals who have low self-concept clarity than for individuals who have high self-concept clarity.

**Overview of Experiments**

Our theoretical framework posits activation of the self when feelings of product ownership are salient, regardless of whether ownership is psychological (i.e., feelings of ownership) or actual (i.e., legal ownership). Across experiments, we use both types of ownership manipulation. Experiment 1 uses the...
experimental-causal-chain design approach (Spencer, Zanna, and Fong 2005) to establish the underlying activation process. Experiment 2 uses a well-grounded psychological ownership manipulation to demonstrate attenuated task performance on product-unrelated tasks. Experiment 3 replicates the finding using a different ownership manipulation and measure of performance. Experiment 4 activates two different identities and shows that performance on the exact same task is enhanced when the activated identity is consistent with the task label and attenuated when the identity is inconsistent with the task label. Experiment 5 uses the moderation approach to discern the performance effects are attenuated under high self-concept clarity. Our participant screening rule for each of these experiments is described in Web Appendix 1.

Experiment 1: Identity (De)Activation During Shopping Tasks

The goal of Experiment 1 is to test whether shopping for products for oneself activates the product-related identity and deactivates unrelated identities, resulting in downstream consequences for performance on product-unrelated tasks. In prior psychology and marketing studies, researchers have activated participants’ identities by increasing the salience of products that people already own, using writing and/or recall tasks (Chugani, Irwin, and Redden 2015; Coleman and Williams 2013). To our knowledge, existing research has not yet shown that the mere act of shopping can activate certain identities with consequences for subsequent performance.

By employing an experimental-causal-chain design approach (Spencer, Zanna, and Fong 2005), Experiment 1 demonstrates that feelings of product ownership result in identity (de)activation and impairment of product-related performance. Specifically, Experiment 1a reveals that shopping for IKEA interior design products can activate the art-related identity and simultaneously deactivate identities unrelated to art (the independent variable → mediator link). Experiment 1b manipulates the extent to which the art-related identity is activated and shows its detrimental effect on a supposedly unrelated shopping task that requires math skills (the mediator → dependent variable link). Finally, Experiment 1c shows a direct link between the IKEA shopping task and performance impairment on the math-related shopping task (the independent variable → dependent variable link).

Experiment 1a: Shopping for IKEA Interior Design Products and Art Identity Activation

The goal of Experiment 1a is to test the first link of the conceptual model. We expect that shopping for IKEA products for oneself will lead to activation of participants’ art identity and deactivation of art-unrelated identities.

Method. We used an IKEA catalog shopping task to manipulate ownership and activate an art-related identity. IKEA is well known for its home decor products inspiring consumers to artistically decorate their living areas. IKEA can therefore be viewed as being linked with an artistic aspect of the self. Ninety-three Amazon Mechanical Turk (MTurk) participants (44.1% male; M_age = 40.07 years, SD = 12.82) first engaged in an IKEA shopping task in which they were randomly assigned to either the ownership condition or the baseline condition. All participants browsed an online IKEA catalog with three images that showed furniture and other home decor items (see Web Appendix 2). Depending on their condition, participants were asked to identify five items that they would like to own (ownership condition) or five items that they thought would be suitable for senior citizen homes (baseline condition). All participants then spent at least three minutes describing why they had chosen the products. The amount of time participants spent on the shopping task did not differ across the two conditions (F < 1).

In the next (ostensibly unrelated) task, all participants had to complete 20 sentences beginning with the stem “I am good at ____.” This 20-statement task (Kuhn and McPartland 1954; Weiss and Johar 2016) was used to measure the activation of different identities. After completing this task, participants were shown their 20 statements and were asked to code each statement as related to an art-related skill set or to a non-art-related skill set. The proportion of art-related sentences served as the dependent variable.

Results and discussion. The number of completed statements did not differ between the two conditions (Mownership = 14.42 vs. Mbaseline= 15.49; F < 1). As expected, participants in the ownership condition generated a greater proportion of statements related to art skills (Mownership = 36.02%, SD = .26) than participants in the baseline condition generated (Mbaseline= 25.52%, SD = .18; F(1, 91) = 5.09, p = .027, d = .45), in response to the 20-statement task.

Additional analysis of the first three identities listed in the 20-statement task revealed a similar pattern of results. Participants in the ownership condition reported a greater number of art-related identities than those in the baseline condition reported (Mownership = 1.48, SD = 1.14 vs. Mbaseline= .95, SD = 1.00; F(1, 92) = 5.47, p = .022), further supporting the idea that salience of ownership of art-related products activates art-related identity. Given the fixed number of statements, these findings also serve as evidence for deactivation of non-art-related identities.

Two follow-up experiments using different dependent measures (a word completion task and a cognitive accessibility task) further corroborate these findings and clearly show identity activation of owned product-related identities and deactivation of product-unrelated identities (we report the means for these follow-up experiments in Table 1).

Experiment 1b: Activation of Art-Related Identity and Downstream Consequences

Building on the results from Experiment 1a, Experiment 1b tested the downstream consequences of identity activation on
Table 1. Means Across Experiments.

<table>
<thead>
<tr>
<th>Ownership Manipulation</th>
<th>Dependent Measure</th>
<th>Product-Unrelated Task Condition</th>
<th>Product-Related Task Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ownership</td>
<td>No Ownership</td>
</tr>
<tr>
<td>Experiment 1a</td>
<td>IKEA design/art-related product shopping task</td>
<td>20-statement identity activation measure</td>
<td>—</td>
</tr>
<tr>
<td>Experiment 1b</td>
<td>Modified 20-statement manipulation</td>
<td>Pantry item shopping task that requires math skills</td>
<td>6.38 (1.92)</td>
</tr>
<tr>
<td>Experiment 1c</td>
<td>IKEA design/art-related product shopping task</td>
<td>Pantry item shopping task that requires math skills</td>
<td>6.58 (1.84)</td>
</tr>
<tr>
<td>Experiment 2</td>
<td>Calculator ownership manipulation (Peck and Shu 2009)</td>
<td>Anagram task (label: math vs. creative writing)</td>
<td>6.98 (2.00)</td>
</tr>
<tr>
<td>Experiment 3</td>
<td>Calculator ownership manipulation using own vs. library computer</td>
<td>IQ-style quiz (label: math vs. visual sensitivity)</td>
<td>3.00 (1.46)</td>
</tr>
<tr>
<td>Experiment 4</td>
<td>Calculator ownership or art piece ownership</td>
<td>IQ quiz (label: math vs. art)</td>
<td>4.16 (2.02)</td>
</tr>
<tr>
<td>Experiment 5</td>
<td>Calculator ownership manipulation (Peck and Shu 2009)</td>
<td>IQ quiz (label: math vs. art)</td>
<td>2.81 (1.30)</td>
</tr>
<tr>
<td>Follow-up Experiment I</td>
<td>Calculator ownership manipulation using own vs. library computer</td>
<td>20-statement identity activation measure</td>
<td>—</td>
</tr>
<tr>
<td>Follow-up Experiment II</td>
<td>Calculator ownership manipulation using own vs. library computer</td>
<td>Word completion task: implicit content accessibility—self-identity task (Johnson and Lord 2010; Knowles and Gardner 2008).</td>
<td>—</td>
</tr>
<tr>
<td>Follow-up Experiment III</td>
<td>Calculator ownership manipulation using own vs. library computer</td>
<td>Cognitive accessibility of different self-identities (Chugani, Irwin, and Redden 2015)</td>
<td>4.06 (1.79)</td>
</tr>
<tr>
<td>Follow-up Experiment IV</td>
<td>Dick's Sporting Goods shopping task (shopping for self vs. high school students)</td>
<td>Inclusion of Other in the Self scale for athletic/creative writing skills (Aron, Aron, and Smollan 1992)</td>
<td>4.02 (1.37)</td>
</tr>
<tr>
<td>Follow-up Experiment V</td>
<td>IKEA design/art-related product shopping task</td>
<td>Inclusion of Other in the Self scale for art/math skills (Aron, Aron, and Smollan 1992)</td>
<td>3.65 (1.92)</td>
</tr>
<tr>
<td>Follow-up Experiment VI</td>
<td>Earphone ownership or notepad baseline manipulation</td>
<td>Anagram task (label: music comprehension vs. creative writing)</td>
<td>5.44 (1.55)</td>
</tr>
</tbody>
</table>

Notes: Results reported in this table are mean scores, with standard deviation in parentheses. Participants were from MTurk in all experiments except Experiment 4 and Follow-up Experiment IV, which used behavioral lab participants. The results reported for Experiment 5 are the means from the low self-concept clarity condition. The interaction of ownership with task relevance was insignificant in high self-concept clarity conditions and thus is not reported in this table. All follow-up experiments reported here are from earlier versions of this article (for details, see Web Appendix 8).
product-unrelated task performance. Although our conceptualization highlights the role of identity activation, an alternative explanation is that performance effects are goal driven, such that participants simply find the product-unrelated task to be irrelevant and consciously disengage from the task. To test this alternative explanation, we measured participants’ involvement, effort, and perceived task difficulty.

Method. Following the procedure for the experimental-causal-chain design analysis (Spencer, Zanna, and Fong 2005), we next manipulated the mediator of art-identity activation using the 20-statement task from Experiment 1a. Specifically, 95 MTurk participants (47.4% male; M_age = 37.18 years, SD = 12.26) were randomly assigned to either the art-related identity or the baseline identity condition. Participants in both conditions completed seven sentences that started with “I am good at ____.” The only difference between the art-related identity condition and the baseline identity condition was the instruction given to those in the art-related identity condition, who were asked to fill in the blanks with the artistic/designer aspects of the self. Participants in the baseline condition did not receive this identity-specific instruction. We used a 7-statement (instead of 20-statement) task to ensure that participants in both conditions did not find the sentence completion task too difficult. As expected, participants in both conditions were able to complete most of the seven statements (M_art = 6.81 statements vs. M_baseline = 6.98 statements). After responding to the seven statements, participants were asked to indicate the degree to which each of the seven statements was related to art/design skills (1 = “this skill is not at all related to one’s skills in art and design,” and 13 = “this skill is very much related to one’s skills in art and design”). The responses from the seven statements were averaged and used as the identity activation manipulation check measure.

All participants then moved on to the ostensibly unrelated pantry item shopping study, which measured their performance on a math task. They were told that grocery stores carry products that differ in bundle sizes and prices, and that consumers often have to compare price per unit to choose bundles with the best deal. Ten pairs of bundled products (e.g., toothpaste) were shown, and participants were asked to choose the product bundle that had a lower price per unit (e.g., $6.99 for three tubes of toothpaste vs. $4.25 for two tubes of toothpaste; Web Appendix 3). Performance was scored in terms of accurately choosing a product bundle among the two bundle choices (1 = correct, 0 = incorrect), and the total possible score ranged from 0 to 10. Finally, all participants responded to questions about involvement, effort, and perceived difficulty for the pantry item task: “How involved were you in the task?”; “How much effort did you put in the task?”; and “How difficult was the task?” (1 = “not much involved”/“not much effort”/“not difficult at all,” and 7 = “very involved”/“very difficult”/“a lot of effort”).

Results and discussion. Participants’ self-reported levels of involvement, effort, and perceived difficulty did not differ between the two conditions (all ps > .127), suggesting that performance differences were not consciously driven. Participants in both conditions were highly engaged in the pantry item shopping task (M_effort = 6.06 and M_involvement = 6.00 on a 7-point scale). The task was perceived to be moderately easy (M_difficulty = 3.68 on a 7-point scale). Consistent with our prediction, participants in the art-related identity condition were less accurate in choosing products with the lower unit price than those in the baseline condition were (M_art = 6.38, SD = 1.92 vs. M_baseline = 7.28, SD = 2.11; F(1, 93) = 4.63, p = .034, d = .45). Together, Experiments 1a and 1b demonstrate that feelings of ownership activate product-related identity and deactivate product-unrelated identity (Experiment 1a) and lead to performance impairment on a product-unrelated task (Experiment 1b).

Experiment 1c: Shopping for IKEA Products and Pantry Shopping Task

Experiment 1c shows a direct link between feelings of ownership and performance impairment. In this experiment, we use the IKEA catalog shopping task as the independent variable and the pantry item shopping task as the dependent variable.

Method. We expected that participants who shopped for their own home (vs. a senior citizen home) in the IKEA catalog task would perform worse on the pantry item task that required math skills. MTurk participants (N = 102; 44.1% male; M_age = 36.12 years, SD = 11.13) were randomly assigned to either the ownership condition or the baseline condition and completed an IKEA shopping task identical to that described in Experiment 1a. They then moved on to a pantry item shopping study identical to that described in Experiment 1b, which measured their performance on a math task. Finally, all participants responded to questions on involvement, effort, and perceived difficulty for the pantry item task, identical to those in Experiment 1b.

Results and discussion. Participants were highly engaged in the pantry item task across conditions (M_effort = 6.11 and M_involvement = 6.00 on a 7-point scale). The task was perceived to be moderately easy (M_difficulty = 3.52 on a 7-point scale). Participants’ self-reported levels of involvement, effort, and perceived difficulty did not differ between conditions (all ps > .294). Consistent with our prediction, participants in the ownership condition were less accurate in choosing products with the lower unit price than those in the baseline condition (M_ownership = 6.58, SD = 1.84 vs. M_baseline = 7.58, SD = 1.82; F(1, 100) = 7.57, p = .007, d = .55).

In support of prior findings that identity-driven performance is not consciously goal-driven (Shih, Pittinsky, and Ambady 1999), our results did not show any differences in involvement, effort, and perceived difficulty between the ownership and baseline conditions. To further rule out the goal explanation, which would hold that performance after IKEA shopping is driven by ownership-condition participants’ having the goal to do well on art-related tasks but not on other tasks (such as a pantry item math task), we conducted a follow-up experiment (N = 126; 45.7% male; M_age = 34.65 years, SD = 8.19). This
experiment employed the same IKEA ownership manipulation, the same pantry item shopping task, and four items that measured participants’ goals on art- and math-related tasks: (1) “It is important for me to do well in art/design-related tasks”; (2) “I want to be good at design/art-related tasks”; (3) “It is important for me to do well in math-related tasks”; and (4) “I want to be good at math-related tasks” (1 = “not true at all,” and 7 = “totally true”). We again replicated the main findings that feelings of ownership over IKEA products lead to worse performance on the pantry item math task ($M_{ownership} = 6.07$, $SD = 1.90$ vs. $M_{baseline} = 6.76$, $SD = 1.93$; $F(1, 124) = 4.08$, $p = .046$, $d = .36$). The four goal measures (two items for art, two items for math) were averaged in pairs to compose the art-goal activation and math-goal activation scores. These scores did not differ across the two conditions (art-goal activation: $M_{ownership} = 4.73$ vs. $M_{baseline} = 4.76$; $F < 1$; math-goal activation: $M_{ownership} = 4.64$ vs. $M_{baseline} = 4.43$; $F < 1$).

Overall, the results from Experiments 1a–1c suggest that shopping for a product activates product-related identities and deactivates product-unrelated identities. In support of $H_{1b}$, we also demonstrate the downstream consequences of such deactivation; participants who shopped the IKEA catalog for their own homes performed worse on a subsequent pantry shopping task that required math skills, compared with those who shopped for a different purpose. Additional support of identity (de)activation upon product ownership also comes from Follow-up Experiments I to III (reported in Table 1), which utilize different ownership manipulations and different cognitive accessibility tasks to measure activation.

In the next set of experiments, we manipulate ownership in different ways and systematically explore downstream consequences of activation and deactivation using a full 2 (ownership: yes versus no) × 2 (quiz label relevance: product-related versus product-unrelated) between-subjects experimental design. By using the same task but framing it as either related or unrelated to the product, we can rule out any role of task content and pin down the role of identity (de)activation.

### Experiment 2: Psychological Ownership of a Calculator and Performance on Tasks Labeled as Math Versus Creative Writing

The goal of Experiment 2 is to examine the consequences of activating one identity on task performance on product-related and product-unrelated tasks. We used a validated psychological ownership manipulation (Peck and Shu 2009) and measured performance on an anagram task labeled as either product-related or product-unrelated.

#### Method

In this experiment, 187 MTurk participants (36.4% male; $M_{age} = 35.87$ years, $SD = 12.51$) were randomly assigned to one of the four conditions in a 2 (psychological ownership: ownership vs. baseline) × 2 (quiz label relevance: related vs. unrelated) between-subjects design. First, participants completed an ownership manipulation exercise (pretested in Web Appendix 4A) in which they saw an image of a calculator (the product) and either imagined bringing the calculator home (ownership condition) or described which store would carry the calculator (baseline condition). In the next, ostensibly unrelated study, participants were informed that the task would measure their math skills (vs. creative writing skills) by testing how well they recognize meaningful words from scrambled letters. The framing of the quiz—math versus creative writing—was chosen on the basis of our pretest showing that the two skills are perceived to be unrelated to each other (Web Appendix 4B). Subsequently, all participants responded to a ten-item anagram quiz that was labeled as measuring individuals’ math skills (calculator product-related label condition) or creative writing skills (calculator product-unrelated label condition). In fact, both quizzes were composed of identical anagram questions (e.g., solutions were power, matrix, slope) that could plausibly be perceived as tests of math or creative writing skills. Finally, all participants responded to demographic and debriefing questions.

#### Results and Discussion

Participants were highly engaged in the task across conditions ($M_{effort} = 5.96$ and $M_{involvement} = 6.55$ on a 7-point scale). The task was perceived to be moderately easy ($M_{difficulty} = 3.93$ on a 7-point scale). Participants’ self-reported levels of involvement, effort, and perceived difficulty did not differ between conditions (all $ps > .148$), suggesting that any uncovered performance differences were not consciously driven (Shih, Pитinsky, and Ambady 1999).

A $2 \times 2$ between-subjects analysis of variance (ANOVA) revealed a marginal main effect of psychological ownership ($F(1, 183) = 3.35$, $p = .069$), such that participants in the calculator ownership condition generally scored lower than those in the baseline condition. A main effect of quiz label ($F(1, 183) = 4.51$, $p = .035$) revealed that participants in the creative writing label condition scored lower than those in the math label condition. These effects were qualified by a significant interaction between ownership and quiz label relevance ($F(1, 183) = 5.35$, $p = .022$). Consistent with the deactivation account, participants in the calculator ownership condition performed worse than those in the baseline condition on the quiz labeled as a creative writing task ($M_{ownership, creative writing label} = 6.98$, $SD = 2.00$ vs. $M_{baseline, creative writing label} = 8.05$, $SD = 1.40$; $F(1, 183) = 7.96$, $p = .006$, $d = .62$; see Figure 2). We did not observe a significant activation effect within the math label condition ($M_{ownership, math label} = 8.13$, $SD = 1.67$ vs. $M_{baseline, math label} = 8.00$, $SD = 1.85$; $F < 1$); this finding could be due to a ceiling effect resulting from high scores ($\geq 8$ of 10) in both conditions. The quiz scores within the ownership condition were also significantly different from each other ($M_{ownership, creative writing label} = 6.98$, $SD = 2.00$ vs. $M_{ownership, math label} = 8.13$, $SD = 1.67$; $F(1, 183) = 10.38$, $p = .002$, $d = .64$). No significant differences were found within the baseline condition.
condition (M_{baseline, creative writing label} = 8.05, SD = 1.40 vs. M_{baseline, math label} = 8.00, SD = 1.85; F < 1).

Results from Experiment 2 demonstrate that participants who feel ownership over a calculator perform worse on a creative writing–labeled quiz that is unrelated to one’s activated math identity (H1b). Evidence for deactivation comes from the comparison of scores in the calculator ownership condition and the baseline condition within the creative writing quiz, as well as from comparing scores on the quiz labeled as math with scores on the quiz labeled as creative writing within the ownership condition. We do not observe evidence for activation on the math-labeled quiz in the ownership vs. baseline condition (H1a); scores are uniformly high in both conditions, and we speculate that this is because of a ceiling on possible scores on this easy quiz.


Experiment 3 demonstrates the robustness of the performance effects by using a legal (rather than psychological) ownership manipulation. We also employ a moderately difficult performance task to prevent ceiling effects.

**Method**

In this experiment, 104 MTurk participants (44.2% male; M_{age} = 35.04 years, SD = 11.57) were randomly assigned to one of the four conditions in a 2 (ownership: ownership vs. baseline) × 2 (quiz label relevance: related vs. unrelated) between-subjects design. All participants first engaged in a “computer software” study in which they were assigned to either the calculator ownership condition or the baseline condition. In both conditions, participants were asked to spend at least 3 minutes describing how they would locate a calculator program on a computer desktop. The only difference between the two conditions was that participants were asked to describe either the location of the calculator program on their personal computer (ownership condition) or the location of the calculator program on a typical public library computer (baseline condition; for pretest results, see Web Appendix 5A). Next, participants completed an ostensibly unrelated second study. The cover story described the task as measuring the variance in people’s ability to perform math (vs. visual sensitivity) tasks. Participants were randomly assigned to solve either a math-labeled quiz (product-related label condition) or a visual sensitivity–labeled quiz (product-unrelated label condition), the labels of which were chosen based on a pretest (see Web Appendix 5B). Both quizzes were composed of ten identical questions. For example, participants saw five boxes that were filled with different arithmetic signs (+, −, ×, =) and predicted the composition of the arithmetic signs inside the sixth box (see Web Appendix 6). Next, participants responded to three questions measuring their level of involvement, their level of effort, and the perceived difficulty of the quiz. Finally, all participants reported whether they used a PC or a Mac, the frequency of their use of the calculator program, and their demographics.

**Results and Discussion**

Ratings of how interesting the manipulation task was did not differ between conditions (F < 1), casting doubt on the potential alternative explanation that participants in the public computer (vs. own computer) condition were demotivated. Further, participants’ self-reported levels of involvement, effort, and perceived difficulty of the quiz did not significantly differ across conditions, suggesting that any observed performance effect was not conscious. Moreover, the levels of effort and involvement were high in all four conditions (M_{effort} = 6.03 and M_{involvement} = 6.18 on a 7-point scale), suggesting that participants across all conditions were highly engaged in taking the quiz. The quiz was perceived as difficult (M_{difficulty} = 5.72 on a 7-point scale).

The 2 × 2 between-subjects ANOVA revealed a significant interaction only of ownership × quiz label (F(1, 100) = 7.50, p = .001). In support of the deactivation hypothesis (H1b), when the quiz was labeled as a visual sensitivity quiz, participants in the calculator ownership condition performed worse than those in the baseline condition did (M_{ownership, visual sensitivity label} = 3.00, SD = 1.46 vs. M_{baseline, visual sensitivity label} = 4.00, SD = 2.02 F(1, 100) = 7.50, p = .038, d = .58; see Figure 3). In support of the activation hypothesis (H1a), when the quiz was labeled as a math quiz, participants in the calculator ownership condition performed marginally better than those in the baseline condition (M_{ownership, math label} = 4.19, SD = 1.66 vs. M_{baseline, math label} = 3.33, SD = 1.71; F(1, 100) = 3.13, p = .080, d = .50). Additional analysis revealed that participants in the calculator ownership condition performed significantly
worse on the visual sensitivity–labeled quiz than on the math-labeled quiz ($M_{\text{ownership, visual sensitivity label}} = 3.00$ vs. $M_{\text{ownership, math label}} = 4.19; F(1, 100) = 6.12, p = .015, d = .77$). However, participants’ scores did not differ in the baseline conditions ($M_{\text{baseline, visual sensitivity label}} = 4.00$ vs. $M_{\text{baseline, math label}} = 3.33; F(1, 100) = 1.95, p = .166, d = .36$). Participants’ ownership of PC or Mac did not differ significantly between conditions, and the frequency of using a calculator did not moderate the effects in any way.

Results from Experiment 3 replicate the deactivation findings ($H_{1b}$) and provide marginal support for activation as a result of ownership ($H_{1a}$). As in Experiments 1 and 2, additional analysis of participants’ involvement and perceived quiz difficulty reveals no differences across conditions. Overall, results from Experiments 1 to 3 together show that salience of ownership over a product activates product-related selves and deactivates product-unrelated selves. The deactivation of a product-unrelated self results in impaired performance on a task labeled as product-unrelated. Experiment 4 replicates these performance effects by activating two different identities in participants and showing evidence of comparative activation and deactivation.

**Experiment 4: Shifting Identity and Task Performance on Matched Versus Mismatched Tasks**

The goal of Experiment 4 is to activate different identities across participants and show evidence of enhanced performance when the task label matches the activated identity and impaired performance when the task label mismatches the activated identity. To test this idea, we use two different ownership conditions rather than a baseline condition. Thus, a matching label in one condition is a mismatching label in the other condition. Once again, the performance task is exactly the same in all conditions.

**Method**

This experiment involved 174 behavioral lab participants (31.6% male; $M_{\text{age}} = 23.17$ years, SD = 5.11) at a large Northeastern U.S. university. Participants were randomly assigned to one of the four conditions in a 2 (ownership: scientific calculator vs. art piece) × 2 (quiz label relevance: math vs. artistic sensitivity) between-subjects design. Participants first responded to the “marketing and product usage” survey, in which they spent at least 3 minutes describing a scientific calculator (or art piece) that they owned. We chose these products because most undergraduate students are required to own a scientific calculator for their core math classes and most students own art pieces (e.g., posters, sculpture, framed artwork) in their dorms.

Next, participants engaged in an unrelated second study that stated that the researchers were interested in measuring their math or artistic sensitivity skills. The quiz content was identical to that in Experiment 3 in both conditions. Note that the quiz uses mathematical symbols in boxes and can plausibly be perceived as a math or artistic sensitivity quiz (Web Appendix 6). Finally, participants reported their levels of effort and involvement in the quiz and the perceived difficulty of the quiz and then answered demographic and debriefing questions.

**Results and Discussion**

Participants’ self-reported levels of effort and involvement and the perceived difficulty of the two quizzes did not differ across conditions. Participants across all conditions were generally engaged in the quiz ($M_{\text{effort}} = 4.99$ and $M_{\text{involvement}} = 5.33$ on a 7-point scale), and perceived the quiz to be somewhat difficult ($M_{\text{difficulty}} = 5.18$ on a 7-point scale).

The $2 \times 2$ between-subjects ANOVA revealed only a significant ownership × quiz label interaction ($F(1, 170) = 13.17, p < .001$). As expected, among those who solved an artistic sensitivity–labeled quiz, participants in the calculator ownership condition performed worse than those in the art piece ownership condition ($M_{\text{calculator, artistic sensitivity label}} = 4.16, SD = 2.02$ vs. $M_{\text{art piece, artistic sensitivity label}} = 5.41, SD = 1.72; F(1, 170) = 10.02, p = .002, d = .67$; see Figure 4). In contrast, among participants who solved a math-labeled quiz, those in the calculator ownership condition performed better than those in the art piece ownership condition ($M_{\text{calculator, math label}} = 5.42, SD = 1.59$ vs. $M_{\text{art piece, math label}} = 4.62, SD = 2.08; F(1, 170) = 3.92, p = .049, d = .43$). Additional analysis revealed that participants in the art piece ownership condition performed worse on a math-labeled quiz than on an artistic
sensitivity–labeled quiz (M_{art piece, math label} = 4.62, SD = 2.08 vs. M_{art piece, artistic sensitivity label} = 5.41, SD = 1.72; F(1, 170) = 3.99, \( p = .047 \), d = .41). On the other hand, participants in the calculator ownership condition performed worse on an artistic sensitivity–labeled quiz than on a math-labeled quiz (M_{calculator, art label} = 4.16, SD = 2.02; F(1, 170) = 9.78, \( p = .002 \), d = .69).

Results from Experiment 4 provide convincing evidence of both relative performance enhancement (H_{1a}) and relative performance impairment (H_{1b}) by activation of either the art or the math identity. If, as we contend, activation of different identities is the mechanism underlying the effects of ownership on task performance, then the effects should be stronger for those with low self-concept clarity, whose identities are more malleable and change based on social cues and environmental influence (Campbell et al. 1996), than for those with high self-concept clarity. We test this idea in the following experiment.

**Experiment 5: Self-Concept Clarity as a Moderator of the Effects of Ownership on Task Performance**

Experiment 5 provides evidence for the underlying mechanism of identity activation by using self-concept clarity as a moderator.

**Method**

In this experiment, 383 MTurk participants were randomly assigned to one of the eight conditions in a 2 (self-concept clarity: high vs. low) \( \times \) 2 (psychological ownership: ownership vs. baseline) \( \times \) 2 (quiz label relevance: product-related vs. product-unrelated) design. First, self-concept clarity was manipulated by asking participants to recall a past incident in which they had (or did not have) a clear and a consistent sense of self (Rozenkrants, Wheeler, and Shiv 2017; pretest results in Web Appendix 7). After the writing task, participants were directed to an ostensibly unrelated second study, in which they responded to the calculator ownership manipulation task used in Experiment 2 (Peck and Shu 2009). Finally, participants responded to the same performance task as in Experiments 3 and 4; the task was framed as measuring either their math skills (calculator product-related label condition) or their artistic skills (calculator product-unrelated label condition).

**Results and Discussion**

Similar to results from prior experiments, no significant differences were found in participants’ self-reported levels of involvement, effort, and perceived difficulty. Participants were generally engaged (M_{effort, math label} = 6.01, M_{involvement, math label} = 6.22 on a 7-point scale). The quiz was perceived as difficult (M_{difficulty, art label} = 5.89 on a 7-point scale).

We found a significant three-way interaction between self-concept clarity, ownership, and quiz label (F(1, 375) = 5.84, \( p = .016 \)), as well as a marginally significant two-way interaction between ownership and quiz label (F(1, 375) = 3.21, \( p = .074 \)). Consistent with our prediction, the results included a significant two-way interaction of ownership \( \times \) quiz label within the low self-concept clarity condition (F(1, 375) = 7.92, \( p = .005 \)) but not within the high self-concept clarity condition (F < 1).

Within the low self-concept clarity condition, the results supported both deactivation (H_{1b}; M_{ownership, art label} = 2.81, SD = 1.30; M_{baseline, art label} = 3.65, SD = 1.87; F(1, 375) = 5.08, \( p = .025 \), d = .53) and activation (H_{1a}; M_{ownership, math label} = 3.74, SD = 1.87; M_{baseline, math label} = 3.04, SD = 1.67; F(1, 375) = 3.79, \( p = .052 \), d = .39; see Figure 5).

Within the ownership condition in the low self-concept clarity condition, participants performed significantly worse on an art task than on a math task (M_{ownership, math label} = 3.74 vs. M_{ownership, art label} = 2.81; F(1, 375) = 7.16, \( p = .008 \), d = .58). There was no significant performance difference within the baseline condition (F(1, 375) = 2.53, \( p = .11 \), d = .34).

In an additional study, we measured (vs. manipulated) individual differences in self-concept clarity and replicated the results of Experiment 5. For details, see follow-up Experiment VI in Web Appendix 8.

**General Discussion**

Across five experiments, we replicate the finding that the salience of actual or psychological ownership over a product results in performance impairment on product-unrelated tasks. Our explanation for this effect is that salient possessions activate related aspects of the self and deactivate other aspects of the self. This performance difference does not appear to be
motivated by a desire to do better on relevant tasks, given that self-reported levels of effort and involvement do not differ across conditions. By keeping the task constant and varying only the label, we also rule out inherent task properties as explanations for the effect. Finally, the finding that impairment of performance on product-unrelated tasks occurs only in low self-concept clarity conditions supports the argument that identity (de)activation stemming from product ownership salience underlies the effect. In high self-concept clarity conditions, the self-concept is not malleable, and salience of product ownership does not result in (de)activation of specific aspects of the self.

We conducted a meta-analysis of all main experiments reported in the article (McShane and Böckenholt 2017). Results confirmed a significant impairment effect ($H_{1_b};$ estimate $= -1.06$, confidence interval $= [.32, 1.02]$). Although the facilitation effect did not obtain at conventional levels of significance in all experiments, results of the meta-analysis revealed a significant facilitation effect ($H_{1_a};$ estimate $= 0.67$, confidence interval $= [-1.35, -.76]$).

**Implications**

Several important takeaways from this study deserve to be highlighted. First, innocuous everyday tasks, such as shopping, can activate and deactivate product-related and product-unrelated identities with downstream consequences for consumer behavior. Second, activation of aspects of the self can result in deactivation of negatively correlated as well as unrelated aspects of the self. These findings bolster our contention that conscious inferences about the relationship between abilities in each task domain are not necessary for the effects to obtain. Third, sheer priming of the product (as in the baseline conditions) does not produce the same results as feelings of ownership do, suggesting that identity activation is driven by possessions that are viewed as being a part of the self.

**Theoretical implications.** An overarching question concerns whether the performance effects we observe are motivational or cognitive in nature. The motivational explanation would suggest that participants are not motivated to perform well on a task that is associated with the deactivated identity, whereas the cognitive account would suggest that participants unconsciously disengage from tasks associated with a deactivated identity. Previous research suggests that both routes are possible. Evidence for the motivational route comes from research showing that exposure to a brand may automatically prime goals and motivate goal-directed behaviors (Fitzsimons, Chartrand, and Fitzsimons 2008). Although we construe our findings in terms of activation of different aspects of the self-concept, the underlying part-of-self mechanism could be viewed as conferring commitment to a particular identity. Such commitment may not be captured in our measures of goal importance and engagement. Distinguishing the role of activation from that of commitment awaits further investigation.

**Practical implications.** The finding that frequent activities such as shopping can activate product-related identities with downstream consequences for consumer behavior is a clear practical insight of this research. These downstream consequences include impaired performance on tasks such as price comparisons when non-math-related identities are activated during a shopping task. In Experiment 1, shopping for IKEA products for oneself (vs. someone else) activated participants’ art-related
identities and deactivated their math-related identities, resulting in poorer ability to identify good bargains. These results highlight purchase occasions when consumers may be less price sensitive or have lower ability to discern good deals. This finding has implications for managers making decisions about pricing and promotions in online shopping environments, where prices can be manipulated in real time and consumers' immediate prior online activities are known. We also believe awareness of this effect is important to enable consumers to guard against this tendency.

Task performance on cognitive tasks such as those used in this study is a variable of critical interest in educational settings. Our findings have implications for the design of academic schedules as well as construction of courses. To maximize learning, courses that require similar skills should be grouped more closely so that an appropriate identity is activated and maintained and identity switching is minimized. Design of online courses is particularly key because only a small percentage of enrolled students complete free online courses, such as MOOCs (massive open online courses; Coursera 2017). One factor that has been found to increase engagement with these courses is to ensure that participants are appropriately challenged (from interviews; see Appendix). Research has shown that it is possible to increase long-term engagement and achievement in online courses by using 10-minute writing exercises to reduce social identity threat (Kizilcec et al. 2017). Kizilcec et al. (2017) conducted two large field experiments in an online MOOC setting and showed that learners with threatened self-identity in developing countries become more persistent and are more likely to complete a course upon self-affirmation. In a similar manner, online courses can activate course-related identities so as to maximize engagement and learning. For example, activating a related identity (e.g., a traveler identity) before a course (e.g., an Italian class) could be an effective way to enhance engagement and performance. For underperformers, educators can explore ways to help consumers deactivate undesired identities and adopt a desired identity. Another industry that could use the insights from our study is gaming. We interviewed managers at many gaming companies and learned that designing games with the right balance between achievement and challenge is critical to retaining gamers. Identity activation could be one way to achieve such a balance. For example, relevant identities could be activated to improve performance but also deactivated to maintain challenge. While subtle cues such as avatars in a game could be used for identity activation (Kim, Chen, and Zhang 2016), participants could also be taught to adopt the identity needed to excel on each task (e.g., changing avatars depending on the upcoming task). Gamers who perform better are more likely to purchase in-game items and upgrade to paid, premium products. Helping these gamers adopt an identity (e.g., architect identity for SimCity) to increase the sales of related products (e.g., other Sim products, such as SimPark and SimSafari) could be a useful marketing tactic. Similarly, different avatars and in-game purchases can be used to facilitate game performance and loyalty.

**Future Research**

Certain aspects of our paradigm merit discussion and future research. First, we focus on basic-level identities (such as math skill), and we use ownership of a product (e.g., a calculator) to activate these identities. An obvious question concerns the level at which identities are activated: Is there a math self or a more general analytical self? We do not take a strong position regarding the hierarchy of identities but suggest that future research examine this issue. Second, the experiments reported in this article use rather mundane products. Products and brands that have strong associations are likely to have even larger effects. In sum, products can have profound implications for consumer behavior. Our findings open up exciting areas for future research on the influence of possessions on the self.

**Authors’ Note**

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