

# Products as Self-Evaluation Standards: When Owned and Unowned Products Have Opposite Effects on Self-Judgment

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Consumers frequently evaluate their own traits before making consumption decisions (e.g., “Am I thin enough for skinny jeans?”). The outcome of these self-evaluations depends on the standard consumers use and on whether they evaluate “self” in assimilation or contrast to that standard. Previous self-judgment research has focused on self-standards that arise from social aspects of the environment including people and groups. We propose that self-judgment is sometimes made relative to other standards that originate from different aspects of the environment, namely material objects, including products and goods. Two experiments demonstrate that consumers classify products they own as “self” and products they do not own as “not-self.” Consequently, consumers judge their own physical and personal traits (e.g., height, sincerity) in assimilation to traits of products they own, but in contrast to traits of products they do not own, even following imposed ownership, when a person acquires an object they may not have chosen themselves. Extending this paradigm, experiment 3 shows that simply wearing products can evoke ephemeral felt ownership, leading to consumers taking on product traits. We discuss implications for modern consumers, who often acquire objects inadvertently through gifts and are frequently exposed to products they do not own through advertisements.

**Keywords:** ownership, self-concept, self-evaluation, categorization, assimilation and contrast

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Consumers frequently make evaluations and judgments about their own traits and abilities. They evaluate their sophistication to decide whether to join a dressy wine club or a casual beer club, their outdoorsiness to select whether to vacation in a tent or at the Ritz, and their thinness to choose between wearing skinny or slouchy jeans. The outcome of every self-evaluation depends on the standard (or criterion) consumers use for the evaluation and on the way they use that standard (or criterion, i.e., a high standard of sophistication can make consumers feel more sophisticated in some situations but less sophisticated in other situations). Prior research has examined one source for self-evaluation standards, the social environment (or context) in which judgments are made. This context includes people and groups consumers interact with, or are exposed to, prior to judging themselves (Brewer 1991; Tajfel et al. 1971). That research finds that people often judge their own traits in assimilation to traits of in-group members, but in contrast from traits of out-group members (Ledgerwood and Chaiken 2007).

Although standards that arise from the social environment are important, the present article proposes that, in some situations, other standards (that originate from a different aspect of the environment) affect self-judgment. Specifically, we propose that consumers may judge their traits and abilities relative to standards that emerge from their material environment (or context); this includes traits and abilities of products and goods consumers interact with or are exposed to (e.g., the sophistication of a “Mont Blanc” pen seen in a television advertisement, outdoorsiness of a “Camelbak” water bottle received as a marketing reward, or thinness of a “MacBook Air” purchased by an employer). In their lives, and in the real marketplace, the situations and contexts in which people evaluate their own traits and abilities include both social elements (people and groups) and material elements (products and goods). Extant research on self-evaluation and judgment has focused on self-evaluation standards that emerge from social aspects of the environment (in-group and out-group members; [Mussweiler and Bodenhausen 2002](#); celebrity figures; [Shorter et al. 2008](#)), whereas standards that arise from material aspects of the environment have been understudied.

We suggest that usage of standards from the material environment will lead people’s self-judgment to either assimilate with, or contrast to, traits of products and goods. For example, using the slim figure of a “MacBook Air” as a standard for thinness may cause people to judge their own thinness in assimilation to the device and feel thinner and fitter, or in contrast from the slim gadget and feel heavier and less fit. The effect’s direction, assimilation or contrast, is predicted to depend on ownership; self-evaluation is expected to assimilate to owned products, but to contrast from unowned products. This is because people tend to categorize goods they own as “self” but goods they do not own as “not-self” ([Weiss and Johar 2013](#)), and a category (e.g., “self”) is often judged in assimilation to items it includes but in contrast from items it excludes ([Bless and Schwarz 2010](#)).

Notably, our predictions depart both in scope and in direction from previous findings that consumers strategically interpret choosing a product with a desirable trait as a signal that they personally possess that desirable trait ([Park and John 2010](#)). We predict that product traits will affect self-evaluation in a broader set of circumstances, including common “choiceless” situations of inadvertent interaction with a good (e.g., because it was received as a marketing reward or observed in a television advertisement). Product traits are also predicted to affect self-evaluation not only positively but also negatively, leading people to sometimes judge their traits less favorably.

Consistent with the previously mentioned conceptualization, three studies demonstrate that consumers judge themselves in assimilation to traits and abilities of products they own, but in contrast from traits and abilities of products they are exposed to but do not own. We begin with a brief review of previous research on factors that affect self-

evaluation. We then derive our predictions and delineate conditions under which we expect that the predicted assimilation and contrast effects will occur. Experiment 1 documents that people judge their traits in assimilation to traits of objects they own, but in contrast to traits of objects they do not own; the study also shows that this pattern is driven by individuals who are predisposed to classify products they own as “me,” but products they do not own as “not-me.” Experiment 2 further investigates the underlying psychological process; it shows that the observed assimilation and contrast effects are mediated by classification of owned objects as “self.” Experiment 3 extends findings of assimilation following product ownership to situations of felt (or psychological) ownership that is evoked merely by wearing an object. We discuss implications for modern consumers, who often acquire objects inadvertently through hand-me-downs, gifts, and marketing rewards, and who are frequently exposed to products they do not own through advertisements. We also discuss implications for consumer researchers, and we address rival accounts.

## STANDARDS FOR SELF-JUDGMENT

### Social Standards

A wide range of theories in psychology suggests that individuals interpret, judge, and understand themselves based on information (or standards) that other people provide ([Cooley \[1902\] 1956](#); [Festinger 1954](#); [Mead 1934](#)). According to that research, people frequently judge themselves in assimilation to, or in contrast from, standards that emerge from the social environment; the direction of the effect, assimilation as opposed to contrast, is often governed by social-categorization processes ([Bless and Schwarz 1998](#); [Mussweiler and Bodenhausen 2002](#)). For instance, observing a person who did well (vs. poorly) on an IQ test increased self-esteem of African Americans if the person was also African American (i.e., assimilation to an “in-group”), but it decreased self-esteem of African Americans if the person was white (i.e., contrast to an “out-group”; [Blanton, Crocker, and Miller 2000](#)).

In the present research, we argue that consumers judge themselves relative to standards set by products and goods, which arise from a separate and distinct aspect of the environment (or context) than standards set by people and groups. Specifically, we suggest that a person may judge their own traits relative to standards from their material environment (or context); self-judgment is predicted to be in assimilation to traits of owned products but in contrast from traits of unowned products.

### Material Standards

Consumers are constantly surrounded by material objects, such as electronic gadgets, furniture, and apparel. Material goods help people satisfy a wide array of desires

and needs (Belk 1988; James 1890); communication and entertainment by a phone or computer, shelter and privacy via a house or office, transportation and exploration using a car or bus. As such, material items are integral to the (taken for granted) background of every single decision, evaluation, and judgment consumers make. Together, the array of material goods people are surrounded by and exposed to comprise the material environment (or context) for consumers' judgment and decision making.

Ample research has documented the importance and ubiquity of standards that arise from the material environment (or context) in judgments of products and goods. That research finds, for example, that products are judged relative to traits and abilities of competing products in a choice set (Simonson and Tversky 1992), features of the surface on which they are presented (Zhu and Meyers-Levy 2009), or properties of the package in which they are offered (Hsee 1998). However, the possibility that standards emerging from the material environment (or context) can affect how people evaluate and judge themselves remains understudied.

Some research has examined effects of material goods on self-evaluation and judgment in the context of product choice. This research finds that choosers of a product judge their own traits and abilities as consistent with desirable traits and abilities of the products they choose (Wicklund and Gollwitzer 1982). For example, insecurity about their own intelligence increased people's choice of "intelligent" products (e.g., a Mozart CD) as a means to signal (and bolster) their personal intelligence (Gao, Wheeler, and Shiv 2009, study 1). Further, female shoppers strategically interpreted their choice of a Victoria's Secret bag (associated with "sexiness") as a signal that they personally possessed that desirable trait and reported feeling sexier (Park and John 2010, study 1). These findings imply that owning a good with a desirable trait can *positively* affect how people judge themselves on that trait. From this perspective, product ownership boosts self-evaluation along product traits only to the extent that owners *choose* the product and thus can interpret owning it as a diagnostic signal that conveys information about their personal underlying traits (Bodner and Prelec 2003).

In contrast, we propose that common "choiceless" situations of inadvertent product ownership (e.g., due to marketing rewards, inheritances, hand-me-downs) or product exposure (e.g., via television, billboard, and mobile advertising) can also affect consumer self-evaluation. Specifically, a good obtained involuntarily can be classified as "self," leading owners to judge themselves in assimilation with traits and abilities of a product they never chose to own; conversely, an incidentally observed (unowned) good can be classified as "not-self," leading observers to judge themselves in contrast from traits and abilities of a good they never chose not to own. Our conceptualization predicts situations in which owning a product can negatively (rather than always positively) affect self-evaluation on desirable

traits. This effect is predicted when acquiring a good that fares poorly on a desirable trait leads a consumer to classify the product as "self," and to consequently judge himself or herself less favorably on that desirable trait. We make our predictions based on egocentric categorization (EC), a theory that explains when individuals classify objects as "self." We next briefly review EC and use it to explain the reasoning for our predictions.

## EGOCENTRIC CATEGORIZATION THEORY

Just as people classify and understand other people in their social environment relative to the social self, as "us" or "them," people have been found to classify and understand objects in their material environment egocentrically, as "me" or not "me" (Weiss and Johar 2013). People use "self" as a reference class to spontaneously, without effort or deliberation, segment, organize, and understand objects in their material environment. People tend to classify as "me" owned objects, not only self-selected, personally meaningful, goods (Belk 1988; Kleine, Kleine, and Allen 1995) but also recently and arbitrarily obtained items (Gawronski, Bodenhausen, and Becker 2007; Turk et al. 2011). People tend to classify as "not-me" objects they do not own.

Previous research identifies a set of boundary conditions for EC (Weiss and Johar 2013). An individual difference on "mine-me" sensitivity, the extent that people associate "mine" with "me," has been shown to moderate EC predictions. People who weakly associate "mine" with "me" were found *not* to use object ownership to determine whether or not an object is "self." This includes people for whom neither owned nor unowned goods are "me," as well as people for whom both owned and unowned goods are "me"; this is because both groups do not use ownership to determine where "me" ends and "not-me" begins. Such "mine-me" insensitive people assign owned and unowned goods the same levels of "me-ness." A contextual factor, the presence of cues that activate people's personal self, was also found to facilitate EC by inducing people to think of goods in terms of "self," as "me" or "not-me." Personal self was found to be activated when people felt product ownership or were cognizant of not owning a product (and thus felt lack of ownership), such as during online or in-store shopping, gift giving or receiving, and other consumption contexts.

## PRODUCTS AS SELF-EVALUATION STANDARDS

Extending the scope of EC theory, we propose that usage of "self" as an organizing category for goods carries implications not only for product judgment, but also for self-judgment. Specifically, judging a good relative to one's

own traits and abilities may entail simultaneous judgment of the “self” relative to traits and abilities of the good. For example, when a consumer judges the creativity of a “space pen” in assimilation or contrast to his or her own creativity (Weiss and Johar 2013), he or she may concurrently assess personal creativity in assimilation or contrast to the pen’s creativity (figure 1 offers a visual example). Notably, the idea that EC can have such a two-sided effect—“self” affects product judgment and products affect self-judgment—is consistent with established categorization principles (Schwarz and Bless 1992, 2007) and was previously demonstrated in the context of social categories (Bless et al. 2001).

According to EC theory, felt ownership over a good affects how the good is egocentrically classified: from being categorized as “not-me” when unowned, a good becomes “me” once it is owned. Consequently, we predict that people will judge themselves in assimilation to traits and abilities of acquired goods because a category (e.g., “self”) is judged in assimilation to items it includes (Bless and Schwarz 2010). Specifically, a consumer is predicted to include owned products in his or her mental representation of the “self” and thus perceive himself or herself as faring higher on a trait when the owned product fares higher on that trait, but perceive himself or herself as faring lower on a trait when the owned product fares lower on that trait.

Conversely, we predict that people will judge themselves in contrast to traits and abilities of goods they do not own because people judge a category (e.g., “self”) in contrast to items the category excludes (Bless and Schwarz 2010). Specifically, a consumer is predicted to exclude unowned goods from mental representation of “self” and incorporate them in the standard for judging the “self.” Consequently, because a higher standard for judgment makes an evaluated target (e.g., “self”) appear lower on the judged dimension and vice versa (i.e., lower standard makes a target appear

higher), people will judge themselves as faring lower on a trait when an unowned good fares higher on that trait, but will judge themselves as faring higher on a trait when the unowned good fares lower on that trait.

According to our conceptualization, assimilation and contrast are driven by classification of owned goods as “self” and unowned goods as “not-self.” Consequently, owning (vs. not owning) a good should not predict assimilation (vs. contrast) when “mine-me” sensitivity is low (experiment 1). Low “mine-me” sensitivity individuals do not classify items relative to the “self” based on ownership; if ownership does not mark where “me” ends and “not-me” begins, owning (vs. not owning) a good cannot predict whether a good is classified as “self” or is included in the standard for judging “self.”

Furthermore, product traits and abilities should affect self-evaluation only when people actually engage in EC, namely mentally represent “self” in terms of goods it includes and excludes and use “self” as an organizing class for goods. In contrast, when people use self-construals that do not involve objects (see Brewer and Weber 1994 for self-construals in terms of groups and relationships), product traits should not affect consumers’ self-evaluation and judgment. Previous research finds that people tend to engage in EC when thoughts or feelings about “ownership” are contextually evoked (e.g., during online or in-store shopping, gift giving or receiving; Weiss and Johar 2013). Therefore, effects of products traits on self-evaluation are predicted when people feel ownership over goods or are cognizant of not owning them, but not when people neither feel ownership of, nor are cognizant of not owning a good (experiments 2 and 3). We provide a high-level flowchart of the theoretical model in figure 2.

The experiments reported in this article test these predictions across a variety of traits and products. Next, we describe experiment 1, which demonstrates that (1) consumers judge their personal traits in assimilation to traits of goods they own, but in contrast to traits of goods they do not own, and that (2) this pattern is driven by individuals who are predisposed to classify goods they own as “self” but classify goods they do not own as “not-self.” We subsequently report experiments 2 and 3 that highlight the classification of owned/unowned objects as “self”/“not-self” as the underlying psychological mechanism. Experiments 2 and 3 also help rule out rival accounts.

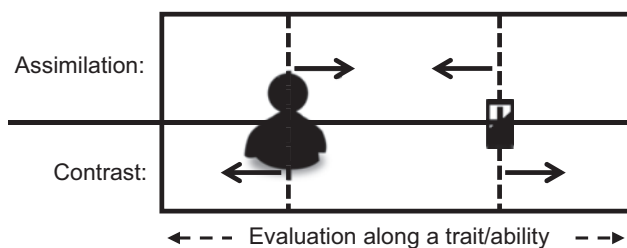
## EXPERIMENT 1: PEOPLE JUDGE THEIR APPEARANCE IN ASSIMILATION (CONTRAST) TO THE SHAPE OF A PRODUCT THEY OWN (DO NOT OWN)

### Method

A total of 185 University of Wisconsin-Madison students from an introductory marketing class participated in

FIGURE 1

CONCURRENT EFFECTS OF SELF TRAITS ON PRODUCT JUDGMENT AND OF PRODUCT TRAITS ON SELF-JUDGMENT

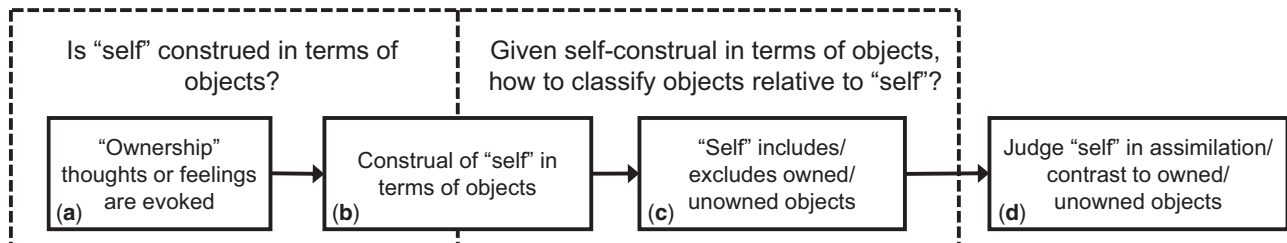


NOTE.—The two solid upper (lower) arrows represent assimilation (contrast) effects. The right arrows illustrate effects of “self” on product judgment (Weiss and Johar 2013). The left arrows illustrate predicted effects of products on self-judgment, as we propose in the present article.



FIGURE 2

FLOWCHART OF THE THEORETICAL MODEL



NOTE.—Parts of the model addressed in each study: Study 1: c->d. Study 2: a->b->c->d. Study 3: a->d.

a short lab study for course credit. The study used a 2 (ownership: owned vs. unowned)  $\times$  2 (mug shape: short vs. tall)  $\times$  "mine-me" sensitivity (measured) design. On each lab table was situated a 16-oz black traveling mug that participants were asked to evaluate as part of a marketing study. Mug shape was manipulated by using two mugs that varied on their tallness. The mug was five inches tall for participants in the "short" condition and seven inches tall for participants randomly assigned to the "tall" condition (figure 3). To increase felt ownership over the mug among participants in the "owned" condition, these participants were informed that they get to keep the mug and take it home as an appreciation gift. To make participants randomly assigned to the "unowned" condition cognizant of not owning the mug (which according to our framework fosters construal of "self" in terms of goods), these participants learned that at the end of the study they would receive as an appreciation gift (and get to take home) a *different* traveling mug than the one on their table. Then, to support the cover story, participants responded to usability questions about the mug's durability and convenience. To covertly confirm that the physical difference between the two mugs was noticeable, one of the questions involved allocating points among six names purportedly being considered for the mug; three names reflected stockier appearances (e.g., "Hefty Hal") and three lankier appearances (e.g., "Gangly Gal").

Subjects were then informed that we wanted to learn about them. To assess their momentary self-conceptions along appearance (Gardner, Gabriel, and Lee 1999), participants responded to the Twenty Statement Task (Kuhn and McPartland 1954), completing 20 self-descriptive statements ("I am \_\_\_\_"). As a trait-specific dependent measure of personal tallness, participants reported how they felt about their physical height between 1, Very short and 7, Very tall. Then, participants completed the "Appearance" subscale of the State Self-Esteem Scale (Heatherton and Polivy 1991; it includes items such as "I feel satisfied with

FIGURE 3

TALL AND SHORT MUG, EXPERIMENT 1



the way my body looks right now" anchored between 1, "Not at all" and 5, "Extremely").

The next part of the experiment assessed participants' "mine-me" sensitivity using a previously established method (Weiss and Johar 2013). Participants rated the extent to which they classified four items in immediate proximity to them as "self." Two of the items, the shoes and shirt participants were wearing, were owned by them; the other two items, their lab table and seat, were not owned by them. To assess individual differences on "mine-me" sensitivity ( $M = 3.32$ ,  $SD = 1.7$ ), the average rating of the unowned objects was subtracted from the average rating of the owned objects. With high "mine-me" sensitivity, owning (vs. not owning) a good makes it more "self."

Subsequently, participants coded their responses to the Twenty Statement Task in two ways, including (1) whether each answer referred to their physical appearance (e.g., "I am pretty," "I am heavy,"), and (2) whether the answer was positive, neutral, or negative. This coding was used for

creating a “physical appearance index” by subtracting the number of negative from the number of positive appearance self-descriptions ( $M = .79$ ,  $SD = 1.52$ ; a higher score reflects more positive evaluations). Finally, participants reported their height in inches and weight in pounds and were debriefed and thanked.

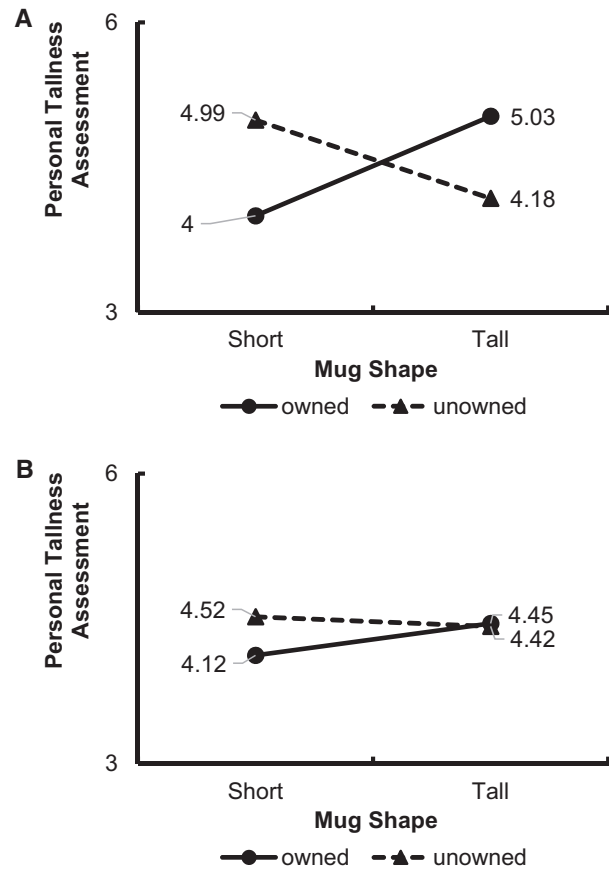
## Results and Discussion

**Personal Tallness.** Personal tallness ratings were entered into analysis of covariance with ownership (unowned vs. owned), mug shape (short vs. tall), “mine-me” sensitivity (mean centered), all two-way interactions, and the three-way interaction as predictors (a  $t$  test with “perceived mug stockiness”—points allocated to “stockier” names minus points allocated to “lankier” names—confirmed a successful mug shape manipulation;  $t(185) = 6.26$ ,  $p < .0001$ ). To account for study-exogenous factors that may affect self-assessment on tallness, the analysis controlled for height in inches ( $F(1, 176) = 478.94$ ,  $p < .0001$ ) and gender ( $F(1, 176) = 160.48$ ,  $p < .0001$ ; the same height in inches might be perceived as short by males but tall by females). Consistent with our prediction of assimilation to mug tallness among owners, but contrast from mug tallness among nonowners, the interaction between ownership and mug shape was statistically significant ( $F(1, 176) = 22.11$ ,  $p < .0001$ ). Further, consistent with our prediction that assimilation and contrast effects would be driven by individuals who tend to classify owned objects as “me” but unowned objects as “not-me,” this two-way interaction was qualified by “mine-me” sensitivity, yielding a significant three-way interaction ( $F(1, 176) = 8.36$ ,  $p = .004$ , see adjusted means in figure 4; repeating the analysis without controls does not change the observed pattern). A spotlight analysis (Fitzsimons 2008) found that the interaction between ownership and mug shape was statistically significant at high “mine-me” sensitivity, that is, at 1 SD above the mean ( $\beta = 1.84$ ,  $t(185) = 5.52$ ,  $p < .0001$ ). Mug ownership led to assimilation of personal tallness to mug tallness: assessing the short (vs. tall) mug decreased felt tallness ( $M = 4.00$  vs.  $M = 5.03$ ,  $\beta = -1.03$ ,  $t(185) = -4.59$ ,  $p < .0001$ ). Conversely, lack of mug ownership led to contrast of personal tallness to mug tallness: assessing the short (vs. tall) mug increased felt tallness ( $M = 4.99$  vs.  $M = 4.18$ ,  $\beta = .81$ ,  $t(185) = 3.30$ ,  $p = .001$ ). Similar analyses showed no effects at low “mine-me” sensitivity, that is, at 1 SD below the mean ( $p$ 's  $> .22$ ).

**Overall Self-Evaluation.** Next, we tested whether the same three-way interaction (i.e., ownership  $\times$  mug shape  $\times$  “Mine-Me” sensitivity) affected the two global measures collected in the study (“physical appearance index” and appearance subscale of the State Self-Esteem Scale) indirectly, through participants’ personal tallness judgments. Each measure was submitted to a respective

FIGURE 4

PERSONAL TALLNESS UNDER HIGH (A) AND LOW (B) “MINE-ME” SENSITIVITY, EXPERIMENT 1



NOTE.—Panel A represents 1 SD above and panel B 1 SD below the mean of “mine-me” sensitivity.

(identical) bootstrap mediation analysis using the PROCESS macro (Hayes 2013, model 4). The model for both analyses included ownership ( $owned = 1$ ,  $unowned = -1$ ), mug shape ( $short = 1$ ,  $tall = -1$ ), “mine-me” sensitivity (mean centered), all their two-way interactions, and the three-way interaction (served as the independent variable [IV]). Personal tallness judgments (served as the predicted mediator) and its controls (i.e., height in inches and gender) were also included in the model. The results of the two analyses are next reported jointly to minimize repetition.

As expected, each analysis showed negative and significant mean indirect effect of the three-way interaction (ownership  $\times$  mug shape  $\times$  “mine-me” sensitivity) on the “physical appearance index” ( $-.0510$ ) and on the Appearance Self-Esteem Subscale ( $-.0343$ ), respectively. The 95% confidence intervals (CIs) of each indirect effect

based on 10,000 bootstrapped samples excluded zero ( $-.1577$  to  $-.0029$  and  $-.0865$  to  $-.0078$ , respectively). In the indirect path, among owners of the short mug (predicted to feel shorter following assimilation) or nonowners of the tall mug (predicted to feel shorter following contrast), higher “mine-me” sensitivity *decreased* personal tallness assessment by .1767 units in both analyses ( $t = -2.89$ ,  $p = .004$ ). Further, holding constant the three-way interaction, a unit increase in personal tallness assessment respectively *increased* the “physical appearance index” by .2888 units ( $t = 2.09$ ,  $p = .04$ ) and the Appearance Self-Esteem Subscale by .1939 units ( $t = 2.88$ ,  $p = .0045$ ). The respective direct effects of the three-way interaction on either global measures were not statistically significant ( $-.0570$ ,  $p = .62$ ,  $t = -.5$ , and  $.0202$ ,  $t = .36$ ,  $p = .71$ ). Thus personal tallness judgment following assimilation or contrast to the mug predicted global self-evaluation.

**Discussion.** This experiment demonstrated that people may judge a personal trait, such as how tall they feel, in assimilation to a good they own, but in contrast to a good they do not own. Consistent with EC as the underlying psychological process, the effect was driven by “mine-me” sensitive people (predisposed to classify owned goods as “self” and unowned goods as “not-self.”) The trait-specific effect of mug shape on people’s self-evaluation of their personal tallness predicted global appearance self-esteem. One global self-esteem assessment was elicited through an open ended (less intrusive) measure taken before the trait-specific measure; another was elicited through a close-ended scale taken after the trait-specific measure. Notably, significance of the two-way interaction of ownership and mug shape in addition to the three-way interaction with “mine-me” sensitivity suggests that “mine-me” sensitivity facilitates, but it is not a necessary condition, for the assimilation and contrast effects.

An additional analysis was conducted as yet another test for our theorizing that EC is the psychological process underlying the observed assimilation/contrast effects. The analysis tested two predictions that are uniquely made by our extended conceptualization of EC. Specifically, it tested whether (1) mug ownership leads people not only to judge *themselves* as more similar to the mug (as shown earlier), but also to simultaneously judge *the mug* as more similar to themselves (as Weiss and Johar 2013 find), and whether (2) lack of mug ownership lead people not only to judge *themselves* as more dissimilar to the mug (as shown earlier), but also to simultaneously judge *the mug* as more dissimilar to themselves (as Weiss and Johar 2013 find). That is, we tested whether assimilation and contrast effects operated simultaneously in both directions—“self” affects product judgment and product affects self-judgment. Observing both effects in the data will provide converging evidence for EC as the underlying process, as well as

empirically bridge the findings of Weiss and Johar (2013) and the findings reported in this article.

To test whether participants’ traits affected mug evaluations, “perceived mug stockiness” index (measured as a manipulation check for mug shape) was entered into an analysis of covariance with participant fatness (i.e., weight controlling for height and gender), mug ownership, “mine-me” sensitivity and all their two-way and three-way interactions, controlling for mug shape. As predicted, the analysis (reported in full in online appendix A) showed that mug owners judged the mug in assimilation to their traits: fatter (vs. thinner) participants judged the mugs as *stockier*. Conversely, nonowners judged the mug in contrast to their traits: fatter (vs. thinner) participants judged the mug as *lankier*. Moreover, this pattern was driven by individuals with high “mine-me” sensitivity.

Experiment 1 presented evidence for self-judgment relative to product traits after inducing participants to have “ownership” thoughts or feelings (i.e., by informing participants whether they own the mug they judged). However, predictions that (1) products would not affect self-judgment if “ownership” thoughts or feelings are not evoked, and that (2) classification of products as “self” mediates self-judgments have not yet been directly tested. Experiment 2 tested these predictions.

## EXPERIMENT 2: ASSIMILATION (CONTRAST) ENSUES BECAUSE PEOPLE CLASSIFY OWNED (UNOWNED) PRODUCTS AS “SELF” (“NOT-SELF”)

The purpose of experiment 2 was twofold. Experiment 2 tested the prediction that classification of a good as “self” mediates the observed assimilation and contrast effects. Specifically, product classification as “self” due to ownership was predicted to yield assimilation; conversely, product classification as “not-self” due to lack of ownership was predicted to induce contrast (classification as “self” or “not-self” is used to reflect relatively higher or lower levels of classification rather than a strict dichotomy). Experiment 2 also tested whether the assimilation and contrast effects dissipate when people feel neither ownership nor lack of ownership for a good (and thus, according to our framework, do not construe “self” in terms of goods). We predicted that using an unowned good without thinking of the concept “ownership” would render participants unmindful of ownership, which would inhibit effects of product traits on self-judgment.

### Method and Procedure

**Independent Variables.** A total of 150 Columbia University students joined a lab experiment for an \$8 participation fee. The study used a 3 (ownership: owned-ownership-saliency, unowned-ownership-saliency, unowned-

no-saliency)  $\times$  2 (headphones “insincerity”: sincere, insincere) factorial design. On each lab table was placed a set of headphones that participants were asked to evaluate as part of a marketing study (see online appendix B, panel A). To induce participants in the “owned-ownership-saliency” versus “unowned-ownership-saliency” conditions to, respectively, feel headset ownership versus be cognizant of not owning the headset, we made the concept “ownership” salient to them (as in the “owned” and “unowned” conditions of experiment 1). Specifically, participants in both “ownership-saliency” conditions were informed that as an appreciation gift they would get to keep either the headset they evaluated or a different set that was featured in the study. Subjects were informed that this outcome (i.e., getting the evaluated set or a different set) would be determined later in the study by a random draw. In contrast, participants in the “unowned-no-saliency” condition were informed that they would receive a \$2 bonus in appreciation for their input; to keep them *unmindful* of not owning the evaluated headset, no information about device ownership was provided.

Participants in the “sincere headset” condition then read information portraying the headset as authentically reproducing sound. In contrast, participants randomly assigned to the “insincere headset” condition read information portraying the headset as artificially improving sound (see the stimuli employed and a pretest of its effectiveness in online appendix C). After using the headset to listen to a 30-second music track (BWV 1006, Johann Sebastian Bach), participants in the “owned-ownership-saliency” condition learned that they could keep the headset they had evaluated. In contrast, participants in the “unowned-ownership-saliency” condition learned that they would receive a different headset, and so they did not own the set they had evaluated. Then, to verify that potential effects of the ownership manipulation extend beyond the duration of product usage (experiment 3), participants in all conditions put the headphones into a large envelope, sealed it, and put it aside.

**Dependent Variables.** Later, in an ostensibly separate study, participants’ tendency to cheat by artificially inflating reports of how well they did on a task was surreptitiously documented through a trivia knowledge quiz; the quiz incentivized good performance and provided an opportunity to cheat. To sensitize the measure of insincerity, the insincere outcome of receiving an inflated score was set as the default, and participants had to opt out to act sincerely (online appendix D provides details). Next, participants responded to the classic Social Desirability scale that allows people to respond either honestly or in a socially desirable manner (Fitzsimons, Chartrand, and Fitzsimons 2008). Then, to test whether the predicted effects on self-evaluation are driven by EC, participants rated the extent to which they would classify the headset they evaluated as

“self” on a 1, “Not at all self” to 7, “Very much self” scale (Weiss and Johar 2013). As a manipulation check, participants responded to three items on whether they felt ownership over the headset (Peck and Shu 2009; includes items such as “I feel that these headphones are mine,” anchored between a 1, Strongly agree and 7, Strongly disagree), and then were debriefed and thanked.

## Results and Discussion

**Predictions.** Based on our conceptualization that owning a product fosters assimilation, but not owning a product fosters contrast, we predicted an interaction effect between ownership and headphones insincerity. Specifically, owning the insincere (vs. sincere) headphones was predicted to *increase* insincerity; *not* owning the insincere (vs. sincere) headphones was predicted to *decrease* insincerity. Assimilation and contrast effects were predicted to be mediated by classification of the headset as “self.” Finally, the assimilation and contrast effects and the mediation by classification of the headset as “self” were predicted to dissipate in the “unowned-no-saliency” condition, where participants neither felt ownership nor were cognizant of not owning the headphones.

**Analysis Overview.** We first test an interaction effect between ownership (X) and headset insincerity (W) on cheating likelihood (Y). We then show the effect of headset ownership (X) on classification of the headset as “self” (M1) and the interaction effect of classification of headset as “self” (M1) and headset insincerity (W) on social desirability (M2). Finally, we test the full mediation model presented in figure 5.

**Manipulation Check.** An analysis of variance (ANOVA) of felt ownership (composed of the three felt ownership items;  $\alpha = .92$ ) with the three ownership conditions as a single factor confirmed a successful manipulation ( $F(2, 149) = 17.17, p < .0001$ ). Owning (vs. not owning) the headset increased felt ownership for the headset ( $M_{\text{owned-ownership-saliency}} = 3.59$  vs.  $M_{\text{unowned-ownership-saliency}} = 2.26$  and  $M_{\text{unowned-no-saliency}} = 1.97, F(1, 149) = 33.42, p < .0001$ ). Further, the difference between the two “unowned” conditions (i.e., “no-saliency” vs. “ownership-saliency”) was not statistically significant ( $p > .34$ ); this is consistent with the idea that “ownership-saliency” renders nonowners cognizant of not owning the headset, rather than lowers their felt ownership over the headset.

**Cheating Behavior (Dependent Variable).** Subjects’ cheating behavior was submitted to a 3 (ownership: owned-ownership-saliency, unowned-ownership-saliency, unowned-no-saliency)  $\times$  2 (headset “insincerity”: insincere vs. sincere) logistic regression (means shown in figure 6). The (dummy) dependent variable received a value of 1 if participants cheated. Consistent with our prediction of assimilation to headset insincerity among owners, contrast



FIGURE 5

MODERATED MEDIATION CONCEPTUAL MODEL, EXPERIMENT 2

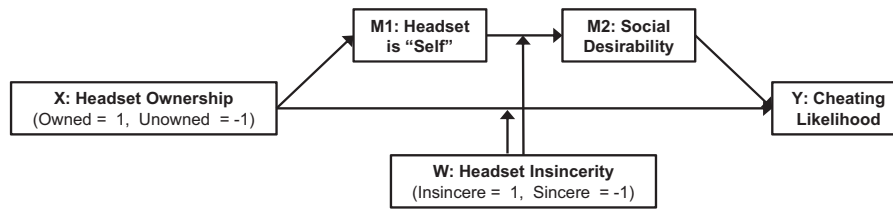
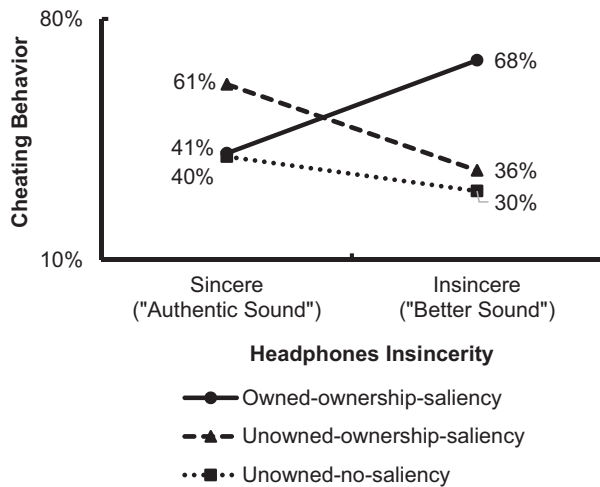


FIGURE 6

OWNERSHIP AND HEADPHONES SINCERITY  
MANIPULATIONS INTERACT TO AFFECT CHEATING  
BEHAVIOR, EXPERIMENT 2

from headset insincerity among nonowners *mindful* of “ownership,” and no effect of headset insincerity among nonowners *unmindful* of “ownership,” the analysis revealed no main effect and a statistically significant omnibus interaction of ownership and headset sincerity ( $\chi^2 (2, 150) = 7.06, p = .029$ ). The interaction contrast excluding the “unowned-no-saliency” condition was also statistically significant  $\chi^2 (1, 150) = 6.58, p = .01$ . Owning the headset induced self-assimilation to the headset insincerity: assessing the insincere (versus sincere) headset marginally significantly *increased* cheating ( $M = 68\%$ , or 17 of 25 vs.  $M = 41\%$ , or 12 of 29,  $\chi^2 (1, 150) = 3.1, p = .054$ ). Not owning the headset induced contrast of “self” to headset insincerity among participants *mindful* of “ownership” (i.e., in the “unowned-ownership-saliency” condition): assessing the insincere (versus sincere) headset marginally significantly *decreased* cheating ( $M = 36\%$ , or 9 of 25 vs.  $M = 61\%$ , or 14 of 23),  $\chi^2 (1, 150) = 2.91, p = .08$ ).

Finally, not owning the headset had no effect among participants *unmindful* of “ownership” (i.e., in the “unowned-no-saliency” condition): assessing the sincere (versus insincere) headsets did not affect cheating ( $M = 40\%$ , or 10 of 25 vs.  $M = 30\%$ , or 7 of 23,  $\chi^2 (1, 150) = .47, p = .49$ ).

*Classifying Headset as “Self” (First Mediator).* An ANOVA of classification of the headset as “self” with the three ownership conditions as a single factor showed a significant omnibus effect ( $F (2, 149) = 9.53, p < .0001$ ). Owning (vs. not owning) the headset increased classification of the headset as “self” ( $M_{\text{owned-ownership-saliency}} = 3.07$  vs.  $M_{\text{unowned-ownership-saliency}} = 1.90$  and  $M_{\text{unowned-no-saliency}} = 2.0, F (1, 149) = 18.94, p < .0001$ ). Consistent with the prediction that felt ownership (low vs. high), rather than ownership-saliency affects classification of the headphones as “self,” the difference between the two “unowned” conditions was not statistically significant ( $F < 1$ ).

*Social Desirability (Second Mediator).* Social desirability was entered into an ANOVA with classification of headphones as “self” (mean centered), headphones insincerity (insincere vs. sincere), and their interaction. To test the prediction that classifying headphones as “self” will *not* predict assimilation and contrast when people are not mindful of “ownership,” the analysis also included ownership (owned-ownership-saliency, unowned-ownership-saliency, unowned-no-saliency), and its two-way and three-way interactions with the other two predictors. The analysis revealed an unexpected positive effect of classifying headphones as “self” ( $B = 1.71, F (1, 138) = 17.95, p < .0001$ ) and its interaction with ownership ( $F (2, 138) = 3.13, p = .047$ ). We speculate about the nature of these effects in online appendix E. More importantly, consistent with the prediction that classifying the headset as “self” will yield assimilation to headset insincerity, but classifying the headset as “not-self” will yield contrast to headset insincerity, the analysis revealed an expected significant interaction between classifying headphones as “self” and headphones insincerity ( $F (1, 138) = 8.05, p = .005$ ). Consistent with the prediction that classifying

the headset as “self” will predict assimilation and contrast only if people are mindful of “ownership,” this effect was qualified by ownership, yielding a marginally significant three-way interaction ( $F(2, 138) = 2.48, p = .087$ ). Further, the interaction between classifying the headset as “self” and headset insincerity was statistically significant only in the two “ownership-saliency” conditions (*owned*:  $\beta = 4.09, t(150) = 3.17, p = .002$ ; *unowned*:  $\beta = 3.01, t(150) = 2.15, p = .033$ ), but not in the “unowned-no-saliency” condition ( $\beta = -.22, t(150) = -.15, p > .46$ ). The difference between the two significant interactions and the insignificant interaction was statistically significant ( $\beta = 3.78, t(150) = 2.13, p = .035$ ). Thus classifying the headset as “self” predicted social desirability only when participants were cognizant of “ownership” (which, according to our conceptualization, leads people to construe “self” in terms of objects and use objects as self-evaluation standards).

Next, spotlight analysis tested the nature of the interaction between headset classification as “self” and headset insincerity under the two ownership-saliency conditions, namely where this interaction was expected and found (figure 7). The analysis showed assimilation to headset insincerity among participants who classified the headset as “self,” that is, at 1 SD above the mean: assessing an insincere (vs. sincere) headset *increased* insincerity (social desirability scores: 17.97 vs. 15.19,  $B = 3.09, t(150) = 2.54, p = .012$ ). Conversely, the analysis showed contrast from headset insincerity among participants who classified the headset as “not-self,” that is, at 1 SD below the mean:

the mean: assessing an insincere (vs. sincere) headset *decreased* insincerity (social desirability scores: 11.12 vs. 14.93,  $B = -4.00, t(150) = -3.2, p = .002$ ).

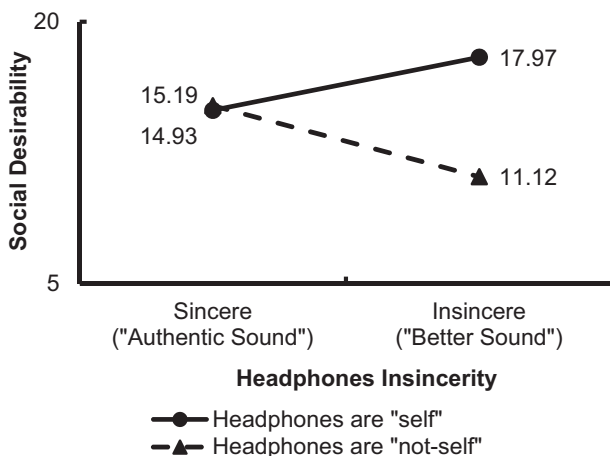
**Mediation Analysis.** We next tested the full model presented in figure 5. The model includes classification of headset as “self” and social desirability as two mediators operating serially between ownership (IV) and cheating behavior (dependent variable [DV]). The connections between the two mediators and between the IV and the DV are moderated by headset insincerity. Importantly, given that the previously mentioned analysis confirmed our prediction that classifying the headset as “self” does not predict self-evaluation in the “unowned-no-saliency” condition, the observations from the “unowned-no-saliency” condition were excluded. Thus the analysis included only the two ownership-saliency conditions (owned vs. unowned) as a dichotomous independent variable. Given potential limitations of data exclusion, online appendix F reports two analyses that confirm consistency across an analysis with two ownership conditions and a more complex analysis with all three ownership conditions. Additional details about the model estimated next, including a statistical model and description of estimation method, are provided in online appendix G.

The analysis confirmed a positive and significant indirect effect of the interaction of ownership with headset insincerity on cheating behavior (moderated mediation index = .0926) with a 95% CI based on 10,000 bootstrapped samples that excluded zero (.0078–.2420). In the indirect path, ownership increased headset classification as “self” by .3779 units (all units are standardized,  $t = 4.10, p = .0001$ ). Holding headset classification as “self” constant, a single unit increase in the interaction between headset insincerity and headset classification as “self,” namely the extent to which the insincere headset was classified as “self” and the sincere headset as “not-self,” increased social desirability by .4041 units ( $t = 4.07, p = .0001$ ). Finally, holding constant the previous two predictors (ownership and the interaction of headset classification as “self” and headset insincerity), a unit increase in social desirability increased the cheating coefficient by .5362 units ( $z = 2.11, p = .03$ ). The direct effect of the interaction between ownership and headset insincerity on cheating behavior (.7233) was also significant ( $z = 2.84, p = .0045$ ). Thus ownership increased headset classification as “self,” inducing assimilation; lack of headset ownership maintained headset classification as “not-self,” inducing contrast. Finally, assimilation or contrast to headset insincerity predicted cheating behavior.

In sum, experiment 2 demonstrated that consumers classify as “self” goods they own, but classify as “not-self” goods they do not own. Consequently, consumers’ self-evaluation and behavior along a personal trait, sincerity, were assimilated to the sincerity of an owned good but

FIGURE 7

SOCIAL DESIRABILITY UNDER “OWNERSHIP-SALIENCY,”  
EXPERIMENT 2



NOTE.—“Self” represents 1 SD above and “not-self” 1 SD below the mean of classifying the headphones as “self.” Higher social desirability reflects greater insincerity.

were contrasted from the sincerity of an unowned good. Notably, the extent people classified the headset as “self” predicted assimilation and contrast only when people were initially evoked to feel ownership or lack thereof. This pattern is consistent with the idea that participants construed “self” in terms of objects (and thus judge themselves relative to objects) only after being evoked to have thoughts or feelings about ownership.

Studies 1 and 2 showed that using an unowned good yields contrast. However, previous research found assimilation following usage of an unowned product (Gino, Norton, and Ariely 2010). Experiment 3 aimed to resolve this apparent inconsistency.

### EXPERIMENT 3: WEARING AN OBJECT YIELDS ASSIMILATION OF “SELF” TO THE OBJECT VIA EPHEMERAL FEELINGS OF OWNERSHIP

Experiment 3 tested whether lack of declared ownership could sometimes yield assimilation, rather than always contrast. Such a possibility is raised by previous research (Gino et al. 2010), where participants assessing designer sunglasses that they believed to be fake (vs. authentic) felt like “fakes” and were more likely to cheat, a pattern consistent with assimilation. In these studies, participants did not own the sunglasses and were not made mindful of “ownership,” rendering these studies compatible (yet seemingly inconsistent in results) with the “unowned-no-saliency” condition of experiment 2 (where no effect of headphones “insincerity” was observed).

Experiment 3 tested whether accounting for one notable difference between the experimental settings of the two studies would help to resolve the apparent inconsistency between their results. Specifically, in Gino et al.’s studies, participants responded to the DV *while* wearing the product, whereas in experiment 2 participants responded *after* removing the product. Previous research on the positive effect of haptic touch on felt product ownership (Peck and Childers 2003) implies that having direct contact with a good could yield ad hoc felt ownership over the good for the duration of the contact. Such felt ownership (that is evoked by wearing the product) may induce people to mentally represent “self” in terms of objects; feeling product ownership may also induce people to classify the product as “self” and judge themselves in assimilation to the product. However, removing the product after wearing it may cause such subtle feelings of ownership (that were evoked only by wearing the product) to dissolve, leading people to neither feel product ownership nor be cognizant of *not* owning the product. Thus, after removing the product, people may no longer think of themselves in terms of products and thus not use products for self-judgment (as the “unowned-no-saliency” condition of experiment 2 suggests). Experiment 3

tested whether situations in which people judge themselves in assimilation to a product while wearing it (but not after removing it) can be explained by ephemeral feelings of ownership for the worn product. This can resolve the previously mentioned apparent inconsistency by showing that assimilation to a product while it is being worn is driven by ephemeral feelings of product ownership, a pattern consistent with the ownership-to-assimilation prediction made by EC theory.

Experiment 3 used the same product category as experiment 2 (i.e., headphones) but manipulated a different trait—weight. Previous research has shown that people further “embrace into self” objects that are more consistent with their momentary perceptions of “self” (Gao et al. 2009; Reed 2004). Thus as a DV we measured the extent participants embraced into “self” activity items (e.g., running shoes, associate with lightness) versus inactivity items (e.g., a sofa, associated with heaviness). The study compared two situations in which formal product ownership was not declared. In the “while wearing” condition corresponding with Gino et al., the DV and predicted mediator (i.e., felt product ownership) were measured while participants still wore the headphones. In contrast, in the “after wearing” condition corresponding with the “unowned-no-saliency” condition of experiment 2, the DV and predicted mediator were measured after the headphones were removed.

### Method and Procedure

A total of 145 Columbia University students joined a lab experiment for an \$8 participation fee. At the lab were two boxes, each containing several headphones by JVC of one of two models, a light HA-V570 (4.23 oz) and a 64% heavier HAFX300 (6.94 oz; see online appendix B, panel B). Each participant picked up a headset from the box marked with the letter in his or her study ID (randomly assigned at the beginning of the study). To support the cover story, participants first rated the headset’s adjustability, wore the headset, and responded to more questions about the device’s comfort. Participants then plugged in the headset to their lab workstation and listened to a 30 second music track (from “Clocks” by Radiohead). Participants were asked to keep wearing the headset for a while in order to experience how it feels; while doing so, they were asked to answer questions about the headset, about themselves, and about their experience. At this point, the order of events differed between the “while wearing” and “after wearing” conditions. Participants in the “while wearing” condition first reported their body weight in pounds and indicated the extent that they classified six items, three activity related (running shoes, golf clubs, camping gear) and three inactivity related (sofa, bed, reading glasses), as “me” using wording similar to the one used in experiment 2. We subtracted the “me-ness” of the inactivity items ( $\alpha = .63$ ) from

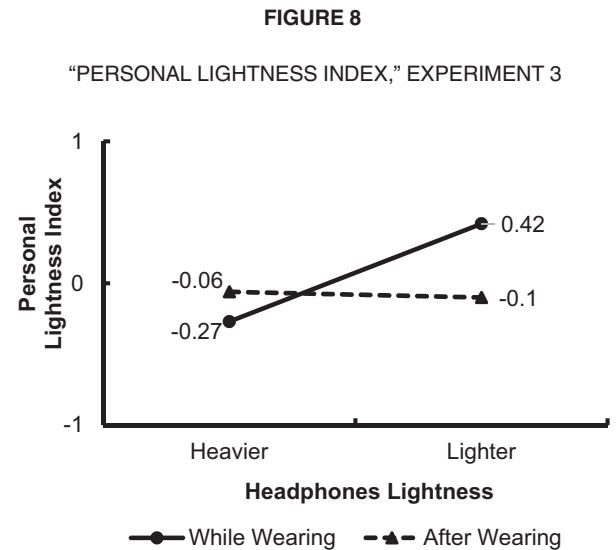
the “me-ness” of the activity items ( $\alpha = .58$ ) to create a “personal lightness index” ( $M = -1.58$ ,  $SD = 1.29$ ). Then, as a process measure, participants rated their felt ownership for the headset using the same three item psychological ownership scale employed in experiment 2 (note that, in contrast to experiment 2, we manipulated wearing rather than owning the headset, rendering felt ownership a process measure as opposed to a manipulation check). Finally, participants removed the headset and assessed its durability and comfort.

In contrast, participants in the “after wearing” condition first judged the headset’s durability while wearing it, and then they removed the headset and assessed its comfort. Only then, participants assessed their weight in pounds, reported the extent they classified activity and inactivity items as “self,” and indicated felt ownership. Finally, all participants assessed the headset’s lightness (manipulation check for product weight; three items, e.g., “the headphones are very light,” on a 1, Strongly disagree to 7, Strongly agree scale) and reported their height in inches, age, and gender. They were then debriefed and thanked.

## Results and Discussion

**“Personal Lightness Index.”** The “personal lightness index” was submitted to an ANOVA (a pretest verifying the expected association between the “personal lightness index” and actual personal lightness is reported in online appendix H). The analysis included measurement timing (while wearing vs. after wearing) and headset lightness (light vs. heavy) as factors (a  $t$  test with the average of the three headset lightness items,  $\alpha = .87$ , confirmed a successful headset weight manipulation;  $M_{\text{light}} = 5.01$  vs.  $M_{\text{heavy}} = 4.27$ ,  $t(145) = 3.49$ ,  $p = .0006$ ). Consistent with our prediction of assimilation of “self” lightness to headset lightness in the “while wearing” (but not in the “after wearing”) condition, there was a statistically significant interaction between measurement timing and headset lightness ( $F(1, 141) = 4.99$ ,  $p = .027$ ; figure 8). Responding to the “personal lightness index” while wearing the headset induced self-assimilation to headset weight: wearing the light (vs. heavy) headset increased the extent activity (vs. inactivity) items were perceived as “self,” resulting in higher “personal lightness index” scores ( $M = .42$  vs.  $M = -.27$ ,  $F(1, 141) = 9.10$ ,  $p = .003$ ; for exposition clarity, results are reported on a normalized scale). In contrast, responding to the “personal lightness index” after removing the headset did not induce an effect of headset weight: wearing the light (vs. heavy) headset did not affect “personal lightness index” scores ( $M_{\text{light}} = -.1$  vs.  $M_{\text{heavy}} = -.06$ ,  $F < 1$ , not significant).

**Felt Ownership and Body Weight Assessment.** Consistent with our prediction that wearing the headset will increase felt ownership for it, a  $t$  test showed higher felt ownership while wearing (vs. after removing) the



NOTE.—The index reflects the extent participants perceived activity objects (e.g., running shoes) as more self than rest objects (e.g., sofa); means are normalized.

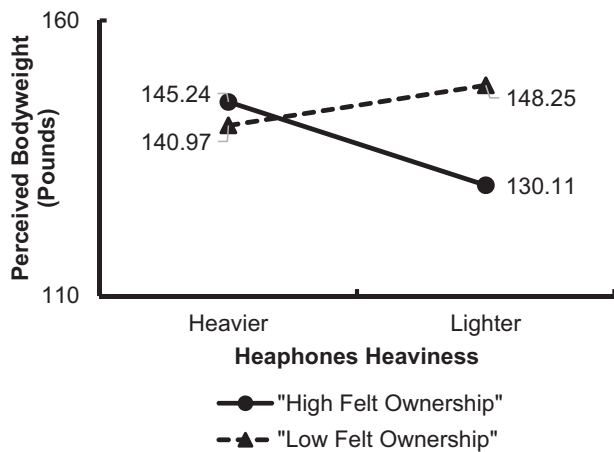
headset ( $M_{\text{while-wearing}} = 2.42$  vs.  $M_{\text{after-removing}} = 1.91$ ,  $t(145) = 2.45$ ,  $p = .015$ ). Next, to test whether felt ownership for the headset predicted self-assimilation to the headset, self-assessed body weight was entered as a DV into an analysis of covariance with felt ownership (mean centered), headset lightness (light vs. heavy), and their interaction as predictors. The analysis controlled for gender ( $F(1, 139) = 6.95$ ,  $p = .0093$ ) and height in inches ( $F(1, 139) = 15.87$ ,  $p = .0001$ ; males and tall individuals tend to have higher body weight). Consistent with our prediction of assimilation under high (but not under low) felt ownership, the analysis showed a significant interaction between felt ownership and headset lightness ( $F(1, 139) = 7.13$ ,  $p = .0085$ ; for adjusted means see figure 9). A spotlight analysis showed self-assimilation to headset weight at high felt ownership, that is, at 1 SD above the mean: assessing the light (vs. heavy) headset lowered body weight assessments (130.11 vs. 145.24,  $B = -15.12$ ,  $t(145) = 2.51$ ,  $p = .013$ ). No effect was found at low felt ownership, that is, at 1 SD below the mean: headset weight did not affect body weight assessment (148.25 vs. 140.97,  $B = 7.28$ ,  $t(145) = 1.26$ ,  $p = .21$ ).

**Mediation Analysis.** We conducted another analysis to test a model that ties together the two reported analyses. The model included felt headset ownership (M1) and headset weight (M2) as two mediators operating serially between measurement timing (IV) and “personal lightness index” (DV). The connections between the two mediators and between the IV and the DV are moderated by headset weight. Height (in inches) and gender were included as controls (the analysis is reported in full in online appendix



FIGURE 9

PERCEIVED BODY WEIGHT, EXPERIMENT 3



NOTE.—“High felt ownership” represents 1 SD above and “low felt ownership” 1 SD below the mean of felt ownership.

I). A bootstrap mediation analysis using the PROCESS macro (with a statistical model and estimation method similar to the ones used for estimating the model of experiment 2) showed a positive and significant indirect effect of the interaction between measurement timing and headset weight on the “personal lightness index” (moderated mediation index = .0114). The 95% CI of the indirect effect based on 10,000 bootstrapped samples excluded zero (.0007–.0390). In the indirect path, reporting felt ownership while wearing (vs. after removing) the headset increased felt ownership. Felt ownership, in turn, induced self-assimilation to headset weight: feeling greater ownership for the light (or lower ownership for the heavy) headset lowered self-assessed body weight, and, in turn, increased “personal lightness index” scores (i.e., greater perception of activity vs. inactivity items as “self”).

**Discussion.** In sum, experiment 3 demonstrated that people feel greater ownership for a good while (vs. after) wearing it (even without a “declared” ownership). Such ephemeral feelings of product ownership led people to assess a personal trait, their body weight, in assimilation with a similar trait of the product. Further, consistent with the idea that people are less likely to use products as self-standards when they are not mindful of ownership, when people did not feel headset ownership nor were cognizant of not owning the device, headsets’ traits did not affect self-judgment. Taken together, these results help to resolve the apparent inconsistency of the findings in experiment 2 with previous research; the results show that assimilation to an unowned good while wearing it (Gino et al. 2010) can be

due to classification of the good as “self” due to felt ownership, as predicted by EC.

## GENERAL DISCUSSION

Consumers commonly judge their own traits and abilities. The outcome of every self-evaluation depends on the standard (or criterion) used for the evaluation, and on whether “self” is judged in assimilation or in contrast to that standard (or criterion; Mussweiler 2003). Much self-evaluation research documents usage of standards that arise from social aspects of the environment including traits and abilities of people and groups consumers are exposed to prior to self-judgment (Wood 1989). The present article proposes that, in some situations, people may actually use other standards that arise from a different aspect of the environment, namely from the material environment; this includes the traits and abilities of products and goods consumers are exposed to. Specifically, when thoughts or feelings about the concept of “ownership” are contextually evoked (e.g., during shopping or gift giving), people tend to mentally represent “self” as including owned goods, but as excluding unowned goods (Weiss and Johar 2013). Consequently, consumers may judge themselves in assimilation to traits and abilities of goods they own, but in contrast to traits and abilities of goods they are merely exposed to but do not own (see Bless and Schwarz 2010 for a discussion on judgment of a category in assimilation to items it includes, but in contrast to items it excludes). In the remainder of this section, we review the key results and discuss their implications.

## Key Results

The results obtained from three experiments are consistent with the prediction that consumers sometimes judge themselves in assimilation to traits and abilities of goods they own, but in contrast to traits and abilities of goods they are merely exposed to (but do not own). Assimilation and contrast of self-evaluation to product traits was robust across different product-category/product-trait combinations; this includes mugs that varied on physical appearance (experiment 1), as well as headphones that varied on perceived sincerity (experiment 2) or on physical weight (experiment 3). The results were replicated based on physical product traits, including weight and shape, which tangibly differed across products (experiment 1 and 3) or based on a brand-personality trait, sincerity, which differed merely by how it was perceived by consumers (experiment 2).

Consistent with EC as the underlying psychological driver for the effects, process measures indicated that assimilation or contrast of self-judgment to goods (1) is mediated by classification of goods as “self” (experiment 2) and (2) is moderated by whether consumers tend to classify owned

goods as “self” and unowned goods as “not-self” (experiment 1). Further, assimilation and contrast effects and their mediation via classification of goods as “self” dissipated in the absence of cues to induce mental representation of “self” in terms of goods (experiments 2 and 3). Further, two effects that EC predicts—assimilation and contrast of self-judgment to products and of product judgment to “self”—were concurrently observed (experiment 1).

The studies help to further clarify the subtle distinction between two closely related elements in EC theory—saliency of the concept “ownership” and product ownership. Consumers judged themselves in assimilation to an owned good regardless of whether they were made mindful of “ownership” (experiments 2 and 3) or not (experiment 3). However, consumers judged themselves in contrast to unowned goods only when they were made mindful of “ownership” (i.e., in experiment 1 and in experiment 2 under “ownership-saliency,” but not in experiment 2 under “no-saliency” or in experiment 3). Thus mindfulness about “ownership,” or other ways to induce people to construe “self” in terms of goods, might be a necessary condition for contrast to ensue following lack of ownership, but not required for assimilation to ensue following ownership. This difference might be because in most contexts the default state of an object is “unowned;” this may render a feeling of lack of ownership a part of the “taken for granted” background that consumers tend to ignore. Consequently, people may notice and respond to an object’s ownership status in one of two cases: when the “unowned” status of an object changes (i.e., due to a newly formed ownership) or when thoughts and feelings about “ownership” are evoked by the situation.

Taken together, the studies help to rule out several rival accounts. The observed pattern, whereby object traits affect self-evaluation in diametrically opposing ways (assimilation vs. contrast), helps to rule out rival accounts that make a unidirectional prediction; such accounts include, for example, concept activation (Shapiro, MacInnis, and Heckler 1997), product contagion (Morales and Fitzsimons 2007), or embodied cognition (Ackerman, Nocera, and Bargh 2010). Although such accounts can explain assimilation under ownership, they cannot fully explain contrast under lack of ownership (studies 1 and 2), mediation via classification of products as “self” (experiment 2) or via felt ownership (experiment 3), nor moderation by “mine-me” sensitivity.

## Implications and Limitations

Consumers regularly make decisions and judgments about themselves and about products they own or are otherwise being exposed to. Previous research about how people make decisions and judgments about themselves and about how people make decisions and judgments about products has been largely conducted apart, within

separate and distinct bodies of research. Research on self-judgment concludes that people often assess their own traits and abilities relatively to traits and abilities of other people (Festinger 1954; Tesser 1986; Tesser and Campbell 1980). Research on product judgment finds that people often assess product traits and abilities relative to traits and abilities of other products (Hsee 1996; Hsee and Leclerc 1998; Morales and Fitzsimons 2007; Yeung and Wyer 2005). The present research shows that people judge themselves not only relative to other people, but also relative to objects. Taken together, the findings by Weiss and Johar (2013; i.e., that people judge products not only relative to other products, but also relative to how people judge themselves) and the findings of the present article jointly suggest that EC theory is well positioned to begin bridging these two separate and distinct bodies of research. Future research would benefit from further studying the interplay between how people judge products and judge themselves.

The finding that a good can affect people’s self-evaluation and behavior has worrisome implications for modern consumers, who often acquire objects without any intention to do so through marketing rewards, heritage, and gifts. Our findings suggest that when people acquire an object, not only do these people gain control over it, but ironically they also surrender control to it, implicitly allowing its traits to systematically influence the way they see themselves and behave. This implies a potential for a novel gift category of “transformative” gifts; consumers, managers, and marketers may benefit from bestowing such gifts respectively on loved ones, employees, and customers to gently nudge them in a desired direction, for example, to be more honest, creative, or generous. These findings also imply that being a “picky” recipient (Hoffman 2014), carefully screening the gifts one is willing to accept, may help people to maintain independence and autonomy. On the other hand, the massive exposure of people to product advertising highlights the importance of the effects we document for nonowners. Future research should look at whether the observed effects are long lasting or short lived. Further, while experimental research is useful for isolating the existence of such effects in controlled lab settings, additional research should examine whether such effects also hold outside the lab when ownership or lack of ownership overlaps with other signals.

This article focuses on exploring cognitive, categorization-based effects of product traits on consumer self-evaluation. Consequently, the studies tested situations in which motivational theories are either mute (e.g., self-signaling theory makes no prediction when people acquire a product without choosing to do so) or make a different prediction than EC (e.g., self-enhancement theories do not predict assimilation to traits of an acquired product if it is associated with negative traits, e.g., shortness). Nonetheless, in many consumption situations, motivational factors may come

into play and impact the observed effects. For example, when people *choose* to own a product associated with positive traits, self-signaling theory also predicts that people would judge themselves consistently with (positive) traits of the product (Park and John 2010), possibly yielding an additive (i.e., stronger) assimilation effect. Such facilitation of EC predictions can also be driven by an increased motivation for self-consistency (Heider 1946). By contrast, self-enhancement motivation (Leary 2007) may attenuate assimilation and contrast effects, leading to a more positive self-judgment overall. Future research should study the interplay between EC and motivational theories like self-signaling and self-consistency.

Is owning a product necessary for observing assimilation of self to the product? The extant research suggests that this is not the case. Assimilation patterns can be driven by various accounts including inference (Kardes, Posavac, and Cronley 2004), goal activation (Fitzsimons et al. 2008), and others (see the “alternative accounts” section). Our findings imply that cases where people feel product ownership may foster, whereas cases where people feel lack of ownership may inhibit, or even reverse, other assimilative effects. The relative strength of various effects is likely to be context dependent and may also vary based on individual differences, such as “mine-me” sensitivity. Egocentric Categorization theory awaits future investigation along these lines.

## DATA COLLECTION INFORMATION

Data for study 1 were collected at Wisconsin School of Business, September 2013. Data for study 2 were collected at Columbia Business School, October 2010. Data for study 3 were collected at Columbia Business School, May 2014. Data for all studies were collected by research assistants under the supervision of, and analyzed by, the first author.

## REFERENCES

- Ackerman, Joshua M., Christopher C. Nocera, and John A. Bargh (2010), “Incidental Haptic Sensations Influence Social Judgments and Decisions,” *Science*, 328 (5986), 1712–15.
- Belk, Russell W. (1988), “Possessions and the Extended Self,” *Journal of Consumer Research*, 15 (September), 139–68.
- Blanton, Hart, Jennifer Crocker, and Dale T. Miller (2000), “The Effects of in-Group Versus out-Group Social Comparison on Self-Esteem in the Context of a Negative Stereotype,” *Journal of Experimental Social Psychology*, 36 (5), 519–30.
- Bless, Herbert and Norbert Schwarz (1998), “Context Effects in Political Judgement: Assimilation and Contrast as a Function of Categorization Processes,” *European Journal of Social Psychology*, 28 (2), 159–72.
- (2010), “Mental Construal and the Emergence of Assimilation and Contrast Effects: The Inclusion/Exclusion Model,” in *Advances in Experimental Social Psychology*, Vol. 42, ed. Zanna Mark P., Diego San: Elsevier Academic Press, 319–73.
- Bless, Herbert, Norbert Schwarz, Galen V. Bodenhausen, and Lutz Thiel (2001), “Personalized Versus Generalized Benefits of Stereotype Disconfirmation: Trade-Offs in the Evaluation of Atypical Exemplars and Their Social Groups,” *Journal of Experimental Social Psychology*, 37 (5), 386–97.
- Bodner, Ronit and Drazen Prelec (2003), “Self-Signaling and Diagnostic Utility in Everyday Decision Making,” in *Collected Essays in Psychology and Economics*, ed. I. Brocas and J. Carillo, Oxford, UK: Oxford University Press.
- Brewer, Marilynn B. (1991), “The Social Self—on Being the Same and Different at the Same Time,” *Personality and Social Psychology Bulletin*, 17 (5), 475–82.
- Brewer, Marilynn B. and Joseph G. Weber (1994), “Self-Evaluation Effects of Interpersonal Versus Intergroup Social-Comparison,” *Journal of Personality and Social Psychology*, 66 (2), 268–75.
- Cooley, Charles H. (1902/1956), *Human Nature and the Social Order*, Glencoe, IL: Free Press.
- Festinger, Leon (1954), “A Theory of Social Comparison Processes,” *Human Relations*, 7 (2), 117–40.
- Fitzsimons, Gavan J. (2008), “Death to Dichotomizing,” *Journal of Consumer Research*, 35 (1), 5–8.
- Fitzsimons, Gráinne M., Tanya L. Chartrand, and Gavan J. Fitzsimons (2008), “Automatic Effects of Brand Exposure on Motivated Behavior: How Apple Makes You ‘Think Different,’” *Journal of Consumer Research*, 35 (1), 21–35.
- Gao, Leilei, S. Christian Wheeler, and Baba Shiv (2009), “The ‘Shaken Self’: Product Choices as a Means of Restoring Self-View Confidence,” *Journal of Consumer Research*, 36 (1), 29–38.
- Gardner, Wendy L., Shira Gabriel, and Angela Y. Lee (1999), “‘I’ Value Freedom, But ‘We’ Value Relationships: Self-Construal Priming Mirrors Cultural Differences in Judgment,” *Psychological Science*, 10 (4), 321–26.
- Gawronski, Bertram, Galen V. Bodenhausen, and Andrew P. Becker (2007), “I Like It, Because I Like Myself: Associative Self-Anchoring and Post-Decisional Change of Implicit Evaluations,” *Journal of Experimental Social Psychology*, 43 (2), 221–32.
- Gino, Francesca, Michael I. Norton, and Dan Ariely (2010), “The Counterfeit Self: The Deceptive Costs of Faking It,” *Psychological Science*, 21 (5), 712–20.
- Hayes, Andrew F. (2013), *Introduction to Mediation, Moderation, and Conditional Process Analysis*, New York: Guilford.
- Heatherton, Todd F. and Janet Polivy (1991), “Development and Validation of a Scale for Measuring State Self-Esteem,” *Journal of Personality and Social Psychology*, 60 (6), 895–910.
- Heider, Fritz (1946), “Attitudes and Cognitive Organization,” *Journal of Psychology*, 21 (1), 107–12.
- Hoffman, Jan (2014), “Think You Found the Perfect Gift? Think Again,” *New York Times*, December 23.
- Hsee, Christopher K. (1996), “The Evaluability Hypothesis: An Explanation for Preference Reversals Between Joint and Separate Evaluations of Alternatives,” *Organizational Behavior and Human Decision Processes*, 67 (3), 247–57.
- (1998), “Less Is Better: When Low-Value Options Are Valued More Highly Than High-Value Options,” *Journal of Behavioral Decision Making*, 11 (2):107–21.

- Hsee, Christopher K. and France Leclerc (1998), "Will Products Look More Attractive When Presented Separately or Together?" *Journal of Consumer Research*, 25 (2), 175–86.
- James, William (1890), *The Principles of Psychology*, Vol. 1, New York: Henry Holt.
- Kardes, Frank R., Steven S. Posavac, and Maria L. Cronley (2004), "Consumer Inference: A Review of Processes, Bases, and Judgment Contexts," *Journal of Consumer Psychology*, 14 (3), 230–56.
- Kleine, Suzan S., Robert E. Kleine, and Chris T. Allen (1995), "How Is a Possession 'Me' or 'Not Me'? Characterizing Types and an Antecedent of Material Possession Attachment," *Journal of Consumer Research*, 22 (3), 327–43.
- Kuhn, Manfred H. and Thomas S. McPartland (1954), "An Empirical Investigation of Self-Attitudes," *American Sociological Review*, 19 (1), 68–76.
- Leary, Mark R. (2007), "Motivational and Emotional Aspects of the Self," *Annual Review of Psychology*, 58, 317–44.
- Ledgerwood, Alison and Shelly Chaiken (2007), "Priming Us and Them: Automatic Assimilation and Contrast in Group Attitudes," *Journal of Personality and Social Psychology*, 93 (6), 940–56.
- Mead, George H. (1934), *Mind, Self, and Society*, Chicago: University of Chicago Press.
- Morales, Andrea C. and Gavan J. Fitzsimons (2007), "Product Contagion: Changing Consumer Evaluations Through Physical Contact with Disgusting Products," *Journal of Marketing Research*, 44 (2), 272–83.
- Mussweiler, Thomas (2003), "Comparison Processes in Social Judgment: Mechanisms and Consequences," *Psychological Review*, 110 (3), 472–89.
- Mussweiler, Thomas and Galen V. Bodenhausen (2002), "I Know You Are, But What Am I? Self-Evaluative Consequences of Judging in-Group and out-Group Members," *Journal of Personality and Social Psychology*, 82 (1), 19–32.
- Park, Ji Kyung and Deborah Roedder John (2010), "Got to Get You into My Life: Do Brand Personalities Rub Off on Consumers?" *Journal of Consumer Research*, 37 (4), 655–69.
- Peck, Joann and Terry L. Childers (2003), "To Have and to Hold: The Influence of Haptic Information on Product Judgments," *Journal of Marketing*, 67 (2), 35–48.
- Peck, Joann and Suzanne B. Shu (2009), "The Effect of Mere Touch on Perceived Ownership," *Journal of Consumer Research*, 36 (3), 434–47.
- Reed, Americus II (2004), "Activating the Self-Importance of Consumer Selves: Exploring Identity Salience Effects on Judgments," *Journal of Consumer Research*, 31 (2), 286–95.
- Schwarz, Norbert and Herbert Bless (1992), "Constructing Reality and Its Alternatives: An Inclusion/Exclusion Model of Assimilation and Contrast Effects in Social Judgment," in *The Construction of Social Judgments*, ed. Martin Leonard L. and A. Tesser, Hillsdale, NJ: Erlbaum.
- (2007), "Mental Construal Processes: The Inclusion/Exclusion Model," in *Assimilation and Contrast in Social Psychology*, ed. Stapel Diederik A. and Suls Jerry, New York and Hove: Psychology Press, 119–42.
- Shapiro, Stewart, Deborah J. MacInnis, and Susan E. Heckler (1997), "The Effects of Incidental Ad Exposure on the Formation of Consideration Sets," *Journal of Consumer Research*, 24 (1), 94.
- Shorter, Louise, Stephen L. Brown, Stephanie J. Quinton, and Louise Hinton (2008), "Relationships Between Body-Shape Discrepancies with Favored Celebrities and Disordered Eating in Young Women," *Journal of Applied Social Psychology*, 38 (5), 1364–77.
- Simonson, Itamar and Amos Tversky (1992), "Choice in Context: Tradeoff Contrast and Extremeness Aversion," *Journal of Marketing Research*, 29 (3), 281–95.
- Tajfel, Henri, Michael G. Billig, Robert P. Bundy, and C. Flament (1971), "Social Categorization and Intergroup Behavior," *European Journal of Social Psychology*, 1 (2), 149–77.
- Tesser, A. (1986), "Some Effects of Self-Evaluation Maintenance on Cognition and Action," in *Handbook of Motivation and Cognition*, Vol. 1, ed. Sorrentino Richard M. and Higgins E. Tory, New York: Guilford, 435–64.
- Tesser, A. and J. Campbell (1980), "Self-Definition—the Impact of the Relative Performance and Similarity of Others," *Social Psychology Quarterly*, 43 (3), 341–47.
- Turk, David J., Kim van Bussel, Gordon D. Waiter, and C. Neil Macrae (2011), "Mine and Me: Exploring the Neural Basis of Object Ownership," *Journal of Cognitive Neuroscience*, 23 (11), 3657–68.
- Weiss, Liad and Gita V. Johar (2013), "Egocentric Categorization and Product Judgment: Seeing Your Traits in What You Own (and Their Opposite in What You Don't)," *Journal of Consumer Research*, 40 (1), 185–201.
- Wicklund, Robert A. and Peter M. Gollwitzer (1982), *Symbolic Self-Completion*, Hillsdale, NJ: Erlbaum.
- Wood, Joanne V. (1989), "Theory and Research Concerning Social Comparisons of Personal Attributes," *Psychological Bulletin*, 106 (2), 231–48.
- Yeung, Catherine W. M. and Robert S. Wyer (2005), "Does Loving a Brand Mean Loving Its Products? The Role of Brand-Elicited Affect in Brand Extension Evaluations," *Journal of Marketing Research*, 42 (4), 495–506.
- Zhu, Rui and Joan Meyers-Levy (2009), "The Influence of Self-View on Context Effects: How Display Fixtures Can Affect Product Evaluations," *Journal of Marketing Research*, 46 (1), 37–45.