

# My Pet Rock and Me: An Experimental Exploration of the Self Extension Concept

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## ABSTRACT

We examine Belk's (1988) construct of self extension experimentally. Participants were given a small rock and randomly assigned to design the rock for themselves or to sell. The participants who designed the rock for themselves were more likely than sellers to say the rock symbolized themselves. Participants whose rock symbolized themselves rated its personality more similarly to their ratings of themselves than did other participants, and were less agreeable to making their rock into a product line of pet rocks. We explore process explanations for our results.

In a compelling essay, Belk (1988) posited that possessions can be extensions of the self. He argued that body parts, ideas, personal possessions, group possessions, people, and places can be woven into one's sense of self. He stated, "The functions that possessions play in the extended self involve the creation, enhancement, and preservation of a sense of identity. Possessions help us at all ages to know who we are" (1988, page 150). The self extension concept has far-reaching implications for consumer research and as such, Belk's essay presents intriguing research possibilities.

Belk's self-extension concept has been widely cited but has not received much empirical attention. It may have received little empirical attention because the self extension concept is amorphous. Cohen (1989) addressed this issue in a response to Belk's essay. Cohen argued that the concept of self extension lacks a concise definition as well as explanatory power. To address this complaint, and to contribute to the possible usefulness of the self extension concept in consumer research, we present the results of an empirical examination of self-extension. In this experiment, we theoretically derived and investigated one possible cause of self extension and two possible consequences. In brief, we gave participants a "pet rock," and examined how designing the rock for themselves, or to sell, affected their attitudes about it.

## Theoretical Definition of Self Extension

Several theories suggest that self extension can be defined independently of other concepts that represent people's attachment to, liking for, or admiration of, a product. Self extension also is not the same as the possession of a product or the value attached to a product that one possesses. Rather, self extension implies that a possession has symbolic meaning associated with a person's self identity and definition of self. Belk's argument suggests that a self-extended product symbolizes or represents aspects of the self that the person considers relevant. Likewise, Wicklund & Gollwitzer (1982) discussed the self-symbolizing role that products assume. In Burris and Rempel's (2004) amoebic self theory, possessions can become part of the so-called spatial-symbolic self. Examples of self-extended possessions might be clothing that represents a person's role within a reference group, services (such as hair stylist) that represent the person's unique self presentation to others, or art objects that represent personally significant events in the person's life. In the study we carried out, we explored a simple operational definition of a self extended product—whether or not the participants agreed that the rock we gave them symbolized themselves.

<sup>1</sup>This research was supported by National Science Foundation grant NSF IIS-0121426. We thank Sau-Lai Lee for help in constructing the posttest.

## Sources of Self Extension

Belk suggested several processes that might lead one to extend the self to include possessions, such as controlling a product, becoming attached to a product, creating a product, imitating others, and so forth. A common theme in many such discussions of self extension is that the likelihood of self extension is greatly enhanced if the product is both (a) possessed and (b) personalized. For instance, embellishing a product with personal symbols, using it in personal spaces such as the bedroom, or decorating it with self-relevant messages, should increase self extension. In this study, we held the presence or absence of possession constant—all participants possessed the rock for one week—and we varied participants' instructions to decorate the rock either for themselves or to sell to others. Decorating the rock for themselves, we predicted, increases the likelihood that the participants would embellish the rock with personally meaningful symbols. In turn:

H1: Participants in the Self condition will be more likely than those in the Seller condition to experience self-extension with the rock.

## Consequences of Self-Extension

Cohen (1989) argued that the self extension concept, as articulated in Belk (1988), lacked explanatory power. With this in mind, we examined two plausible consequences of self-extension. First, if possessions are indeed perceived as extensions of the self, then one would expect overlap between peoples' descriptions of themselves and descriptions of possessions that are part of the extended self. For example, people who think of themselves as lively and outgoing might describe clothing or furnishings that are part of their extended selves as lively and outgoing as well. Cohen (1989, pg. 127) suggested that self extension might be revealed in "a substantial perceived linkage between a possession and the . . . representation of [the possessor's] values." In that consumers can bestow brands with personalities (Aaker 1997), and consumers' self-schemata have been shown to influence their perceptions of a brand's personality differentially (Sentis and Markus 1986), we argue that people can project their personalities onto possessions that are part of the extended self. In this study, if the rock were an extension of self then we would predict the personality attributed to the rock would be more similar to the participant's self-described personality than if the rock were not an extension of the self. Thus:

H2: Participants who feel the rock symbolizes themselves (self extension to rock) will perceive the rock to be more similar to themselves than those who do not feel the rock symbolizes themselves.

Our next hypothesis addressed the boundaries of self-extension, an issue raised by Cohen (1989). Cohen argued that to have explanatory power, the self extension concept would need to put boundaries around the self and differentiate possessions that were part of the extended self from those possessions that were merely highly valued. (For example, people might resist a superior substitute if they feel a possession is part of the extended self but not if the possession is valuable in other respects.) In a recent article on their theory of amoebic self theory, Burris and Rempel (2004) explored individual differences in sensitivity to self-boundary threat for

three levels of self—bodily self, social self, and spatial-symbolic self. In their theory, possessions can be part of the spatial-symbolic self. Although Burris and Rempel did not specifically examine product possessions, through a series of studies they showed that people are differentially sensitive to threats to the boundaries of the spatial-symbolic self. Although measurement of the boundary of the self was beyond the scope of our study, we derived the prediction from the Burris and Rempel work that self-extended possessions are thought to be uniquely ours, and taking a possession that is part of the extended self outside the self-boundary will be perceived as a threat. For example, we might feel threatened if a self-extended possession were moved or copied, just as we sometimes feel this way about ourselves. In the context of our study, we predicted:

- H3: Participants who feel the rock is an extension of the self will be reluctant to copy and extend their rock design to a product line.

### Alternative Explanations

In our analyses we evaluated four alternative explanations for our hypothesized results. We examined whether the mere ownership effect (Beggan 1992; Nesselrode, Beggan and Allison 1999) and the endowment effect (Thaler 1980) could account for our hypothesized self-extension results. We also examined the role of negative and positive emotional responses to the rock as well as the role anthropomorphism (giving the rock human-like characteristics, such as a head, a body, or a personality) might play on self-extension.

## METHOD

One hundred and thirty two undergraduate students were invited to take part in the study for extra credit in an introduction to marketing course. They were each given a manila envelope containing instructions and a Mexican river rock to design as a pet rock during the following week. They were randomly assigned to one of two conditions: the Self condition or the Seller condition. In both conditions respondents were told the history of the pet rock product. Those in the Self condition were instructed to design a pet rock for themselves to keep. Those in the Seller condition were instructed to design a pet rock to sell to others in class.

One week later, all participants returned with their rocks. At that time, they filled out a survey. The variables measured in the survey are outlined in Table 1 along with the theoretical construct each question was designed to measure.

## RESULTS

Of the 132 students invited to participate in the pet rock marketing assignment, 108 participants, 54 in the Self condition and 54 in the Seller condition, completed the assignment by turning in a decorated rock and completing the posttest survey. Two participants (one in each condition) failed to read the instructions and did not complete the manipulation check so were removed from the analyses, leaving 106 participants. Many rocks were elaborately and cleverly decorated. Over half of the students gave their rocks a humanlike face; about a quarter of the rocks were designed as animals (e.g., butterfly, mouse, bug), and another 15 percent were turned into statements (e.g., Stars and Stripes, “Free Michael Jackson” sign, a menorah). Figure 1 illustrates these themes. The experimental conditions did not affect the subject matter of the rocks. Also neither gender nor age predicted any of the results reported below.

### Check on the manipulations

An item ending the survey checked on the manipulations; participants were asked if their instructions had been to “design a rock to keep” or “design a rock to sell.” The manipulation was highly effective according to a nominal logistic regression testing the effect of condition on responses to this item (L-R  $\chi^2=23$ ,  $p<.0001$ ).

### Self extension

As predicted in Hypothesis 1, those in the Self condition ( $n=53$ ) were more likely than those in the Seller condition ( $n=53$ ) to agree, “The rock symbolizes me” (32% versus 15%). A nominal logistic regression indicated these differences are statistically significant (L-R  $\chi^2=4.31$ ,  $p=.03$ ). This measure of self extension is consistent with the view of valued possessions as identity markers “that symbolize who people are, where they have come from, where they belong, and why they are here” (Burris and Rempel 2004, p. 21). Accordingly, “The rock symbolizes me” response was correlated ( $r=.32$ ) with “The rock symbolizes my beliefs.” Correlations were lower between “The rock symbolizes me” and “The rock symbolizes others’ beliefs” ( $r=.16$ ) and “The rock symbolizes a loved one” ( $r=.16$ ). There were no differences between conditions (self/seller) on the other measures of rock symbolization, that is, whether the rock symbolized the participants’ beliefs, others’ beliefs, or a loved one.

We also asked participants whether the rock was special to them personally or special to others. A mixed between (conditions) and within-subjects (item) analysis of variance showed those in the Self condition rated the rock as more special to themselves personally (5.0 vs. 4.7) and as less special to others (2.9 vs. 3.5) as compared with those in the Seller condition (Interaction  $F(1, 104)=4.5$ ,  $p<.05$ ).

### Consequences of self extension

We hypothesized that participants who were experiencing feelings of self extension about the rock (defined as rating the rock as symbolic of themselves), would perceive the rock to be more similar to themselves than those who were not experiencing feelings of self extension about the rock. Twenty-four percent of the participants, across both conditions, said the rock was symbolic of themselves. We measured similarity of the participant and the rock as the absolute difference between each participant’s self ratings and rock ratings on 18 personality traits.

Some of the 18 personality traits were drawn from each of Aaker’s (1997) five dimensions of brand personality (sincerity, excitement, competence, sophistication, and ruggedness). We also drew some items from Costa and McCrae’s (e.g., Costa, Terracciano, and McCrae 2001) “Big Five” personality dimensions (cf. Piedmont 1998). Aaker’s competence dimension overlaps with conscientiousness from the Big Five personality dimensions and Aaker’s excitement dimension overlaps with openness to experience from the Big Five. Therefore, we used Aaker’s five dimensions and the three remaining dimensions from the Big Five, namely extraversion, agreeableness, and neuroticism.

We examined Hypothesis 2 by analyzing the effect of the Rock Symbolizes Me (self extension) variable, controlling for experimental condition, on the difference between each participant’s trait ratings of the rock and of himself or herself. We used the log of these difference scores to normalize across the trait items. As can be seen in Figure 2, the difference between the trait rating differences in all scales was in the direction predicted, and overall a repeated measures analysis of variance showed that the self extension effect was

**TABLE 1**  
Dependent Variables and Process Variables

	<b>Dependent variables</b>	<b>Theoretical construct</b>
1	Like rock (7 pt scale)	Mere ownership effect
2	Enjoy decorating rock (7 pt scale)	Mere ownership effect
3	Enjoy arts and crafts (7 pt scale)	Control question
4	Time spent decorating rock (minutes)	Mere ownership effect
5	Desire to sell (y/n)	Mere ownership effect
6	Price if sell (\$)	Endowment bias
7	Rock symbolizes you (y/n)	Self extension
8	Rock symbolizes your beliefs (y/n)	Control question
9	Rock symbolizes loved one (y/n)	Control question
10	Rock symbolizes others' beliefs (y/n)	Control question
11	Rock special for you (7 pt scale)	Self extension
12	Rock special for someone else (7 pt scale)	Control question
13	Rock vs. own trait differences (18 traits, 7 pt scales)	Self extension consequence
14	Rock vs. own trait correlation	Self extension consequence
15	Agreeable to extending rock to product line (y/n)	Self extension consequence
	<b>Process variables</b>	<b>Process construct</b>
16	Rock has face (y/n)	Anthropomorphism
17	Rock has body (y/n)	Anthropomorphism
18	Rock has personality (y/n)	Anthropomorphism
19	Rock can make someone happy (7 pt scale)	Emotional significance
20	Rock can make someone sad (7 pt scale)	Emotional significance
21	Rock can make someone laugh (7 pt scale)	Emotional significance
22	Rock can hurt someone (7 pt scale)	Emotional significance
23	Gender (female=0/male=1)	Demographic
24	Age (yrs)	Demographic

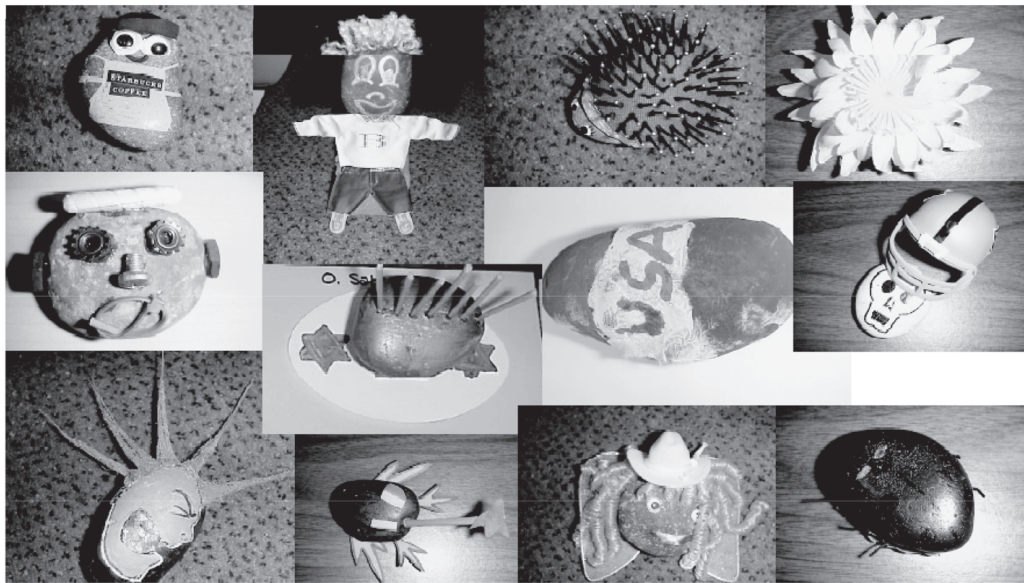
statistically significant ( $F(1, 98)=5.5, p=.02$ ). Those who felt the rock symbolized themselves rated themselves as more similar to the rock than those who did not feel the rock symbolized themselves. There were no significant interaction effects and no effects of experimental condition apart from the self extension variable, suggesting that although being in the Self condition predisposed more participants to adopt a feeling of self extension with their rock (Hypothesis 1), it was the perception that the rock symbolized themselves that led the participants to rate their rock in ways similar to the way they rated themselves.

Another approach to evaluating this hypothesis is to examine the correlations between self trait ratings and rock trait ratings. The higher the correlation, the greater is the similarity of the pattern of ratings between these two rating targets. Because people tend to use

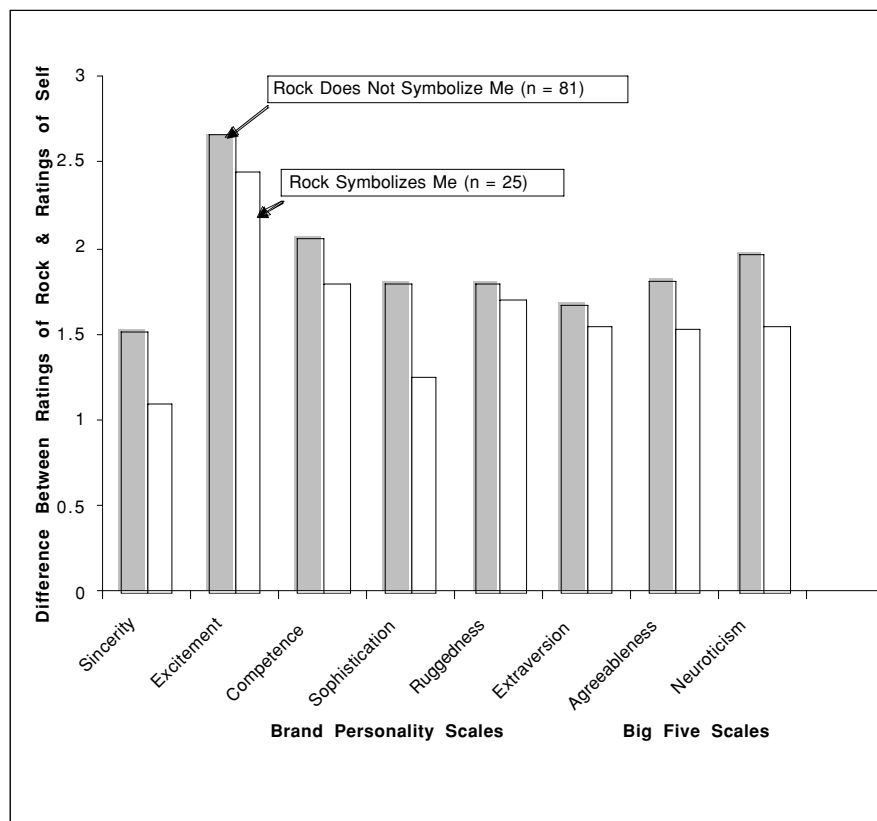
scales alike, regardless of the target rated (response bias) we should expect a positive correlation between ratings of the self and ratings of the rock. Even so, the difference between groups is striking. Among those participants who said the rock symbolized themselves ( $n=25$ ), the correlation between self trait ratings and their ratings of the rock was  $r=.51$  whereas among those ( $n=81$ ) who did not say the rock symbolize themselves, the correlation was just  $r=.12$ .

A third hypothesis, drawn from Burris and Rempel (2004) was that participants would be reluctant to copy and extend their rock design to a product line. We evaluated this hypothesis in the context of a question about marketing the rock: "Consider the rock you decorated. Do you recommend Mr. Dahl [the founder of pet rocks] sell a rock like yours as a single, special pet rock or do you think he

**FIGURE 1**  
Examples of Pet Rocks Designed by Participants



**FIGURE 2**  
Personality Trait Difference Scores, Self vs. Rock



NOTE.—Scales are the mean scores on items. Brand Personality Scale items: Sincerity (cheerful, domestic), Excitement (exciting, daring, imaginative), Competence (reliable, efficient), Sophistication (sophisticated, charming), Ruggedness (outdoorsy, rugged); Big Five Scale items: Extraversion (energetic, outgoing), Agreeableness (trusting, considerate), Neuroticism (moody, nervous). One score (inventive), included in overall analyses but not in these scales, is not shown.



should use your rock as a basis for a special product line of pet rocks? Check one of the following two alternatives. (a) My rock is so unique, you can't extend my rock to a product line. So mine should be sold as a stand alone pet rock. (b) My rock can be extended to become one in a line of similar pet rocks." We predicted that those who had feelings of self extension (Rock Symbolizes Me) would be more likely to choose the first alternative, that is, to say the rock could not become a line of similar pet rocks. The nominal logistic regression analysis showed a highly significant effect of self extension, controlling for experimental condition, on the likelihood of participants saying their rock was so unique, it could not be extended to a similar product line (L-R  $\chi^2=12.3$ ,  $p<.01$ ).

### Alternative Explanations

We evaluated several alternative explanations of the results by examining variables that might reasonably explain the effects of the experimental conditions in ways that would not require the self extension concept.

*Mere Ownership and the Endowment Biases.* Beggan (1992) argues that owners of objects evaluate these objects more favorably than do nonowners. He refers to this effect as the mere ownership effect and he shows that this tendency may result from a self-serving bias (1992, Study 3). Judgments about the self are often enhanced (Ross and Fletcher 1985; Taylor and Brown 1994) and this bias may extend to judgments about objects owned by one's self. Thus, if individuals think of their possessions as extensions of the self then these possessions might be viewed more favorably than if they are not perceived as extensions of the self. Similarly, the endowment effect (Thaler 1980) describes situations in which possession of an object leads to perceptions of higher value by those who possess an object. In a typical experiment, items (e.g., mugs) are randomly given to half of the participants. The participants are then given the opportunity to sell (if they possess a mug) or buy (the nonowners of mugs). The owners/sellers of the mugs place a higher dollar value on the mugs than do the nonowners/buyers. If the endowment effect is related to self-extension then the participants designing a rock for themselves will place a higher dollar value on the rock than will the sellers.

The variables we used to check on these effects were liking of the rock, enjoyment of decorating it (versus enjoyment of arts and crafts more generally), time spent decorating the rock, willingness to sell the rock, and selling price (see Table 1). The analyses of variance on the effects of condition (Self vs. Seller) on these variables did not show any condition effects nor any effects of self extension. These findings suggest that all of the participants valued their rocks about equally, but that those in the Self condition had a more self-relevant perception of the rock and gave the rock a more self-centered value. The findings do not support these two alternative explanations of our results.

*Anthropomorphism.* Research suggests that people often attribute human-like qualities to their pets. For instance, people readily credit their pet dogs with intentions, emotions, personalities, and preferences (Sanders 1993). The participants in the pet anthropomorphism research have self-selected their pet companion status (e.g., dog owner vs. not a dog owner). In our study, participants all possessed the rock and were randomly assigned to design their pet rock for themselves or to sell. A possible explanation for the self extension results could lie in the form factor of the rock itself. That is, perhaps the spherical rock suggested a head, which in turn led participants to anthropomorphize the rock and attach personal meaning to it that they would not have attached to another less humanlike product. However, experimental conditions did not affect the design of the rock, and putting a face on the rock was

negatively correlated with the measure of self extension ( $r=-.15$ ) and was uncorrelated with putting a body on the rock ( $r=-.03$ ). To evaluate this explanation further, we tested the simultaneous effects of experimental condition and of decorating the rock with a head and/or body, or of giving it "personality" on the self extension dependent variable, Rock Symbolizes Me.

The results of this nominal logistic regression analysis showed that adding these variables only enhanced the effect of the Self vs. Seller condition on the likelihood of self extension (L-R  $\chi^2=6.5$ ,  $p=.01$ ). Decorating the rock with a head independently reduced the likelihood of self extension (L-R  $\chi^2=7.1$ ,  $p<.01$ ), decorating the rock with a body had no effect, and giving the rock a personality independently increased the likelihood of self extension (L-R  $\chi^2=6.8$ ,  $p<.01$ ). These results suggest that imbuing a product with personality may increase the likelihood of self extension but it does not explain the results of our experimental independent variable.

*Emotional significance.* Emotional processing is implicated in Belk's (1988) discussion of self extension, as well as in studies of the self-symbolizing role of possessions (Wicklund & Gollwitzer, 1982), and more recently in studies of role identity importance (Laverie, Kleine, and Kleine 2002) and in Burris and Rempel's (2004) notion of possession as part of the spatial-symbolic self. Emotions come into play in two ways. First, the possession as extended self can act as an identity and status marker (who am I, how important I am, and so forth). Second, it can head off uncertainty or threat, especially in crisis, by surrounding the person with reassuring trappings.

To explore the role of emotional responses to the rock in this study, we asked the participants if the rock could make someone happy, make someone laugh, make someone sad, or hurt someone. The factor analysis of these items (using Eigenvalues over 1) supported two factors accounting for 64% of the variance: positive emotional response (make happy, laugh; 38% of variance), and negative emotional response (make sad, hurt; 26% of variance). Combining the items into two scales (and using a log transformation to normalize the scores), we explored the role of these emotional responses in self extension. Self extension (Rock Symbolizes Me) was modestly correlated with the positive emotion items ( $r=.17$ ) and uncorrelated with the negative emotion items.

We then pursued a mediation analysis, to test whether emotional responses accounted for effects of the independent variable (Self/Seller) on self extension. For mediation to occur, the independent variable must first be shown to affect the mediator (emotions) and the mediator (emotions) must predict the dependent variable (self extension). The independent variable (Self/Seller) did affect the rock's emotion ratings, according to a test of the between-subjects independent variable and within-subjects test of both emotion scales ( $F(1, 104)=5$ ,  $p<.05$ ). Also, positive emotions (but not negative emotions) affected the dependent variable, self extension (L-R  $\chi^2=3.8$ ,  $p=.05$ ). The next step was to examine whether the attribution to the rock of causing positive emotions could explain effects of the independent variable. This analysis showed that the attribution of positive emotion may be a partial mediator. That is, the effect of experimental condition was reduced when the positive emotion scale (rock can make someone happy, laugh) was added to the logistic regression; the effect of the independent variable (Self/Seller) is reduced to L-R  $\chi^2=3.3$ ,  $p=.06$  and there is a marginal effect of the positive emotion scale (L-R  $\chi^2=2.9$ ,  $p=.09$ ). Because we did not manipulate the perception that the rock could affect emotions, there are several plausible interpretations of this finding but it suggests further research on the role of emotional product effects in self extension.

## DISCUSSION

There has been some concern that the concept of extended self lacks meaning, empirical identification, and explanatory power (Cohen 1989, page 126). In this study we operationalized self-extension as an individual's judgment that a focal possession "symbolizes me." With this measure, we were able to explore potential causes and effects of one's extended (symbolic) self.

We showed that the simplest of activities, creating a design on a "pet rock," can lead to feelings that the object symbolizes the self. Participants who created the rock for themselves were more likely to say that the rock symbolized them than were participants who created it to sell. When self-extension occurred, we found that personality characteristics were given to the object consistent with the self-rated personality of the self. Consistent with Burris and Rempel (2004), the results suggest that the self has boundaries, within which the self-extended rock fell. These boundaries were represented by the participants' desire to refrain from extending the self-symbolic rock to a product line of pet rocks.

The process by which people extend the self to include objects still needs further exploration. Participants did not significantly differ in the price they placed on the rock (the endowment bias) nor in their evaluations of the rock (the mere ownership effect). We received mixed evidence of the effects of anthropomorphic processes on self-extension. The modest relationship between self-extension of the rock and positive emotions suggests further work is needed, with more than four items to assess the emotional significance of a possession. Finally, further validation of the measurement of self extension is needed.

## REFERENCES

- Aaker, Jennifer L. (1997), "Dimensions of Brand Personality" *Journal of Marketing Research*, 34 (August), 347-356.
- Beggan, James K. (1992), "On the Social Nature of Nonsocial Perception: The Mere Ownership Effect," *Journal of Personality and Social Psychology*, 62 (February), 229-237.
- Belk, Russell W. (1988), "Possessions and the Extended Self," *Journal of Consumer Research*, 15 (September), 139-168.
- Burris, Christopher T. and John K. Rempel (2004), "'It's the End of the World as We Know It,': Threat and the Spatial-Symbolic Self," *Journal of Personality and Social Psychology*, 86(1), 19-42.
- Cohen, Joel B. (1989), "An Over-Extended Self?" *Journal of Consumer Research*, 16 (June), 125-128.
- Costa, Paul T., Jr., Antonio Terracciano, and Robert R. McCrae. (2001), "Gender Differences in Personality Traits across Cultures: Robust and Surprising Findings." *Journal of Personality & Social Psychology*, 81(2), 322-331.
- Laverie, Debra A., Robert E. Kleine III, and Susan Schultz Kleine (2002), "Reexamination and Extension of Kleine, Kleine, and Kernan's Social Identity Model of Mundane Consumption: The Mediating Role of the Appraisal Process," *Journal of Consumer Research*, 28 (March), 659-669.
- Nesselroade, K. Paul, Jr., James K. Beggan and Scott T. Allison (1999), "Possession Enhancement in an Interpersonal Context: An Extension of the Mere Ownership Effect," *Psychology and Marketing*, 16(1), 21- 34.
- Ross, Michael and Garth J. O. Fletcher (1985), "Attribution and Social Perception," in *The Handbook of Social Psychology*, 3rd Edition, Vol 2., ed. Gardner Lindzey and Elliot Aronson, Reading, MA: Addison-Wesley, 73-122.
- Piedmont, Ralph. (1998), *The Revised NEO Personality Inventory: Clinical and Research Applications (The Plenum Series in Social/Clinical Psychology)*. NY: Plenum Pr.
- Sanders, Clinton R. (1993), "Understanding Dogs: Caretakers' Attributions of Mindedness in Canine-Human Relationships," *Journal of Contemporary Ethnography*, 22 (July), 205-226.
- Sentis, Keith and Hazel Markus (1986), "Brand Personality and Self," in *Advertising and Consumer Psychology*, Vol. 3, ed. Jerry Olson and Keith Sentis, New York: Praeger Publishers, 132-148.
- Taylor, Shelley E. and Jonathon D. Brown (1994), "Positive Illusions and Well-Being Revisited: Separating Fact from Fiction," *Psychological Bulletin*, 116 (1), 21-27.
- Thaler, Richard (1980), "Toward a Positive Theory of Consumer Choice," *Journal of Economic Behavior and Organization*, 1, 39-60.
- Wicklund, Robert and Peter Gollwitzer (1982), *Symbolic Self-Completion*, Hillsdale, NJ: Erlbaum.