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Bolstering and restoring feelings of competence via the IKEA effect

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ABSTRACT

We examine the underlying process behind the IKEA effect, which is defined as consumers' willingness to pay more for self-created products than for identical products made by others, and explore the factors that influence both consumers' willingness to engage in self-creation and the utility that they derive from such activities. We propose that creating products fulfills consumers' psychological need to signal competence to themselves and to others, and that feelings of competence associated with self-created products lead to their increased valuation. We demonstrate that the feelings of competence that arise from assembling products mediate their increased value (Experiment 1), that affirming consumers' sense of self decreases the value they derive from their creations (Experiment 2), and that threatening consumers' sense of self increases their propensity to make things themselves (Experiments 3A and 3B).

1. Introduction

A multitude of companies have emerged that allow consumers to create and design their own products, such as t-shirts, coffee mugs and ties. LEGO has a large and profitable online community, where adult fans of LEGO can generate and submit their own designs. Local Motors even offers the unique experience of being involved in the assembly of one's own automobile. This trend is also prevalent on new media channels, where people seem to be more interested in creating and sharing their own amateur videos than consuming professionally produced content. Consumers even enjoy repurposing products beyond their original designs; for example, Ikeahackers.net provides how-to guides on reconfiguring standard IKEA products, such as bookshelves, for less-standard uses, such as artsy hamster cages. In short, consumers increasingly act as co-creators of goods rather than passive recipients of them (Firat, Dholakia, & Venkatesh, 1995; Prahalad & Ramaswamy, 2000, 2002; Vargo & Lusch, 2004). Why has the co-creation of products become so popular among consumers?

Functional fit is one of the most obvious benefits of co-creation. When consumers are involved in the production of a good and can customize it to their tastes, the good is more likely to meet their needs (Dellaert & Stremersch, 2005; Franke, Keinz, & Steger, 2009; Franke & Piller, 2004; Randall, Terwiesch, & Ulrich, 2007; Schreier, 2006; Simonson, 2005). Additionally, consumers gain utility from truly unique goods, which often result from co-creation (Franke & Schreier, 2008; Lynn & Harris, 1997; Michel, Kreuzer, Kuhn, Stringfellow, & Schumann, 2009). Finally, customers may derive utility from participating in the design process because they find it to be enjoyable (Csikszentmihalyi, 1990; Dahl & Moreau, 2007; Dellaert & Stremersch, 2005; Franke & Schreier, 2010).

Although the above-mentioned factors account for some of the benefits of co-creation, recent research has shown that, even after controlling for these factors, consumers overvalue their own creations (Franke, Schreier, & Kaiser, 2010; Norton, Mochon, & Ariely, 2012). In one experiment, participants were willing to pay significantly more for an IKEA storage box that they assembled than for an identical box assembled by someone else. This effect, labeled the "IKEA effect," shows that people place more value on their own creations, even if they are mundane products that are not unique, customized, or fun to build (Norton et al., 2012). Why is it that customers value their own creations more highly than identical products built by others? Furthermore, what conditions lead people to seek out the opportunity to create products, and what are the factors that influence the utility obtained from self-creation?

We suggest that the allure of self-created products stems partly from their role in fulfilling consumers' desire to signal a competent identity to *themselves* and to *others*. By building things themselves, people both control and shape their environments, thereby demonstrating their competence to themselves and to others. Indeed, Dahl and Moreau (2007) found that "feelings of competence" were the most commonly mentioned motivation for engaging in creative tasks. Therefore, we propose that the competence consumers associate with self-created products drives the value they attach to their creations. Consequently, consumers will be relatively more attracted to opportunities to create products when their feelings of competence have been threatened, and derive relatively less utility from creating products when their sense of competence has already been affirmed.

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1.1. Signaling identities to the self and to others

Consumers learn about their identity from their own actions (Ariely & Norton, 2008; Bem, 1972), and prefer to act consistently with that identity because behavior that confirms their identity creates utility (Akerlof & Kranton, 2000; LeBoeuf, Shafir, & Bayuk, 2010). Recent research has demonstrated that consumers not only behave in accordance with existing identities, but also actively use their behavior to send "evidence" to themselves that they possess desired identities (Benabou & Tirole, 2011; Bodner & Prelec, 2003; Gneezy, Imas, Nelson, Brown, & Norton, 2012). What important signal about identity does creating products send to the self? A large body of literature demonstrates a fundamental human need for effectance, the ability to successfully produce desired outcomes in one's environment. One of the means by which people achieve effectance is by affecting and controlling objects and possessions (Bandura, 1977; Belk, 1988; Furby, 1991; White, 1959). Therefore, self-created products can be used to signal a competent identity to the self.

In addition, completed products can signal a competent identity to others. Indeed, consumers actively use products to signal their identities to others (Belk, 1988; Berger & Heath, 2007; Wernerfelt, 1990) and use particular products, such as feature-rich electronic products, to signal their competence (Thompson & Norton, 2011). Therefore, we predict that the IKEA effect is driven by feelings of competence that are associated with self-created products. Self-created products function as signals of competence to the self and to others, leading to improved evaluations of these products and to a greater willingness to pay to possess them. Indeed, the loss of possessions can deprive people of the sense of self that is attached to those objects (Belk, 1988).

We provide initial support for this argument by examining whether feelings of competence associated with self-created products, which we operationalize as consumers' feelings of pride about their creations, mediate the IKEA effect. Pride is closely linked to experiences of success and failure across a variety of tasks that involve self-efficacy and competence, from taking math tests to winning sporting events. Pride is also strongly linked to consumers' evaluations of their own identity (Buss, 2001; Lazarus, 1991; Tracy & Robins, 2004a; Weiner, 1985, 1986; Weiner, Russell, & Lerman, 1979). Research shows that participants use words such as "accomplished" when asked to describe feelings of pride (Tracy & Robins, 2007), and that pride is associated with dominance among mammals (Tracy & Robins, 2004b), which is further evidence that pride is closely linked to feelings of success and competence. "Feelings of accomplishment," a construct similar to pride, mediates the impact of successfully designing hedonic products (e.g., t-shirts) on consumers' increased willingness to pay (Franke et al., 2010). Therefore, we predict that feelings of competence, measured by feelings of pride, similarly drive consumers' increased willingness to pay for self-created products. However, in contrast to previous research and consistent with research suggesting that pride is associated with successful completion of both boring tests and exciting competitions, we predict that pride drives consumers' increased willingness to pay even when participants create mundane products (e.g., IKEA storage boxes).

In addition to measuring feelings of competence associated with self-created products, we test our hypotheses by directly manipulating participants' need to signal competence and examining the consequences of these manipulations on the value derived from self-creation. Self-affirmation theory argues that people strive to keep a positive view of the self (Aronson, Cohen, & Nail, 1999; Sherman & Cohen, 2006) and suggests that people use a "fluid compensation" procedure, whereby affirming one important value to the self can temporarily reduce the weight placed on a different value (Steele, 1988). Therefore, if the IKEA effect is driven by the ability of self-created products to signal a valued identity, this effect should be reduced or eliminated if participants are first allowed to affirm the self. Conversely, threatening people's sense of competence should increase the value they derive from self-creation and increase their propensity to engage in such activities. Indeed, affirming the self has been shown to reduce the likelihood of choosing products that signal important components of the self, whereas threatening the self has been shown to have the opposite effect (e.g. Gao, Wheeler, & Shiv, 2009; Townsend & Sood, 2012).

1.2. Overview of the studies

We present a series of experiments in which we both manipulate and measure feelings of competence associated with self-created products. In Experiment 1, we examine whether feelings of pride associated with one's creation mediate the effect of self-creation on willingness to pay. In addition, we rule out a mood-based explanation for the effect. In Experiment 2, we provide additional evidence to support our hypotheses, not only by measuring feelings of competence associated with self-created products, but also by manipulating the need to signal competence. If our hypotheses are correct, participants who have affirmed their identity and do not require further boosts to their sense of competence will receive less benefit from self-created products and, consequently, the IKEA effect will be absent among these participants.

Finally, in Experiments 3A and 3B, we use a different methodology to demonstrate the importance of feelings of competence for self-assembly and co-creation. We first shake participants' sense of competence in one domain and then measure whether this manipulation increases their propensity to engage in self-creation. If people use self-created products to signal competence, then they may be more willing to engage in co-creation when their feelings of competence have been threatened. Taken together, these experiments provide converging evidence for the proposition that people value self-created products because of their ability to signal competence to themselves and to others.

2. Experiment 1

In Experiment 1, we examine whether the increased value of self-created products is driven by feelings of competence. In this study, participants either build a product or are given a finished product that they are asked to examine. We then elicit participants' willingness to pay for the product, the feelings of competence associated with the product, and participants' overall mood. Consistent with previous research (Franke et al., 2010; Norton et al., 2012), we predict that participants are willing to pay more for the same product if they create it themselves. Importantly, we predict that this effect is mediated by feelings of competence (i.e., pride) associated with the product.

We also distinguish our competence-based account from a mood-based account (Schwarz & Clore, 1983), in which participants' positive moods, related to successfully creating a product, might directly lead to their increased willingness to pay for the product. Consistent with previous research on task success and mood (e.g. Weiner et al., 1979), we predict that successful self-creation improves consumers' moods. However, we predict that mood alone does not mediate the effect of self-creation on willingness to pay, but that pride associated with the product acts as a mediator both for increased willingness to pay and elevated mood.

2.1. Method

Participants ($N = 79$; 33 male) were paid $5 to complete the experiment. We excluded four participants because three failed to answer all of the questions and one was an extreme outlier (more than 3 SDs from the mean on the willingness to pay measure).

We randomly assigned some participants to a group of "builders," who assembled a LEGO car. These participants were given the parts and instructions that come with the product to assemble the car. The other participants, the "non-builders," were given the car already assembled and were asked to examine it. We next solicited their

reservation price by asking them to bid on the car. We told participants that we would draw a random price from an unknown distribution. If participants' bids were equal to or above the random price, they would pay us the random price and take their LEGO car home, but if their bid was below the random price, they would not purchase their LEGO car. This technique is an incentive compatible value elicitation method and is a variant of the Becker, DeGroot, and Marschak (1964) procedure. Note that participants were not given the opportunity to customize this product; thus, participants in both conditions were effectively bidding on the same product.

Participants answered two questions that were designed to measure feelings of competence associated with the product they created. Specifically, participants were asked to rate, on 7-point scales, the extent to which they felt proud of the product they created (Franke et al., 2010) and the extent to which they planned to show off their product to other people. We averaged these two measures to create a composite measure of competence associated with one's product ($r = .33$, $p < .01$). Finally, participants completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), indicating the extent to which they felt a variety of positive (e.g., happy) and negative (e.g., upset) affective states based on 5-point scales (1: *not at all*, 5: *extremely*). We averaged items from the PANAS to form separate indices of participants' positive and negative affect (Cacioppo, Gardner, & Berntson, 1999).

2.2. Results and discussion

We found that builders were willing to pay significantly more for their cars ($M = \$1.20$, $SD = 1.35$) than non-builders ($M = \$0.57$, $SD = .76$; $t(73) = 2.44$, $p < .05$). Although both groups were given the chance to buy the same product, those who perceived themselves as creators of the product imbued it with significantly more value, despite the fact that non-builders could easily have disassembled and reassembled their cars.

We next examined the competence measure to test the underlying mechanism of the IKEA effect. As predicted, feelings of competence were higher for builders ($M = 4.39$, $SD = 1.48$) than for non-builders ($M = 2.81$, $SD = 1.34$; $t(73) = 4.85$, $p < .001$; Table 1). More importantly, feelings of competence were significantly related to participants' willingness to pay ($r = .36$, $p < .01$). Therefore, we examined whether competence mediated the effect of self-creation on willingness to pay (Baron & Kenny, 1986). While the build condition was a significant predictor of willingness to pay when entered alone into the regression ($B = .62$, $SE = .26$; $t(73) = 2.44$, $p < .05$), this effect became non-significant when competence was also included in the model ($B = .29$, $SE = .28$; $t(72) = 1.02$, $p = .30$), whereas the mediating effect of competence remained significant ($B = .21$, $SE = .09$; $t(72) = 2.35$, $p < .05$). Thus, feelings of competence associated with the product significantly mediated the effect of the experimental condition on willingness to pay (Sobel's $Z = 2.08$, $p < .05$). These results provide initial support for our claim that people are willing to pay more for products that they create because of the feelings of competence that arise from successful self-creation.

We further predicted that feelings of competence associated with creation would elevate the builders' moods, but that mood itself would not drive the builders' increased willingness to pay for their products. Builders and non-builders did not differ in negative affect ($t < 1$); however, builders reported more positive affect ($M = 2.80$, $SD = .73$) than non-builders ($M = 2.30$, $SD = .91$; $t(73) = 2.61$, $p = .01$). Moreover, the competence scale was significantly related to participants' positive affect ($r = .36$, $p < .001$), and, similar to willingness to pay, feelings of competence significantly mediated the effect of the build condition on their positive affect (Sobel's $Z = 2.05$, $p < .05$). Therefore, feelings of competence not only affected participants' liking of their self-created products, but also their overall happiness. Importantly, the effect of experimental condition on willingness to pay was not driven by participants' moods. When both variables were entered into the regression equation as potential mediators (Preacher & Hayes, 2008), competence was a significant mediator (Sobel's $Z = 2.01$, $p < .05$), but positive mood was not (Sobel's $Z = .39$, $p = .70$), thus suggesting, as we predicted, that competence plays the critical role.

Table 1
Means for Experiment 1.

	Builders	Non-builders
WTP	$1.20 (.22)	$0.57 (.13)
Competence scale	4.39 (.24)	2.81 (.22)
PANAS — positive	2.80 (.12)	2.30 (.15)
PANAS — negative	1.19 (.06)	1.19 (.06)

Note: standard errors are in parentheses.

3. Experiment 2

The first experiment provides initial support for our theory that self-created products are valued more because of their influence on feelings of competence. In Experiment 2, we test our hypotheses by not only measuring participants' competence (as in the previous experiment) but also by directly manipulating participants' need to feel competent, using a self-affirmation manipulation. Self-affirmation theory suggests that people use a "fluid compensation" procedure, whereby affirming one important value reduces the need to affirm another value (Steele, 1988). If the IKEA effect is driven by the impact of self-creation on feelings of competence, the effect should be reduced or eliminated if participants are first allowed to affirm their sense of self in another way. Unlike existing research, in which consumers used more hedonic products to reaffirm the self (e.g., Gao et al., 2009; Townsend & Sood, 2012), in this study we use a mundane product (IKEA storage boxes) to show that ordinary products can also be used to increase consumers' feelings of competence and that consumers can use a wide range of products to affirm their identities.

3.1. Method

Participants ($N = 135$; 75 male) completed this study to fulfill a requirement for an introductory undergraduate class. We excluded eleven participants who did not complete the self-affirmation task because they failed to rank their values correctly as well as five participants who did not complete all of our dependent measures.

Participants were randomly assigned to one of four conditions of a 2 self-affirmation condition (no affirmation vs. self-affirmation) × 2 build condition (pre-built vs. build) between-subjects design. Participants in this experiment were randomized by experimental session to ensure that they could not see the participants in the other conditions.

Following the procedure used by Sherman, Nelson, and Steele (2000), participants were first presented with a list of 11 values that they ranked from most to least important. Next, participants were asked to write an essay about why a particular value was important to them and to describe a time when that value had been particularly important. Participants in the self-affirmation condition were asked to write about the value they ranked as being most important, and participants in the no affirmation condition were asked to write about their ninth-ranked value.

Following the self-affirmation manipulation, participants were presented with an IKEA Kassett storage box. Those in the pre-built condition were presented with a box that was already built and were asked to examine it. Those in the build condition were given the necessary parts and IKEA instructions to assemble the box and were told to assemble it.

Participants were then asked to state the maximum amount that they would be willing to pay for the box on a scale ranging from $0 to $2 in 10 cent increments (we implemented a BDM procedure in

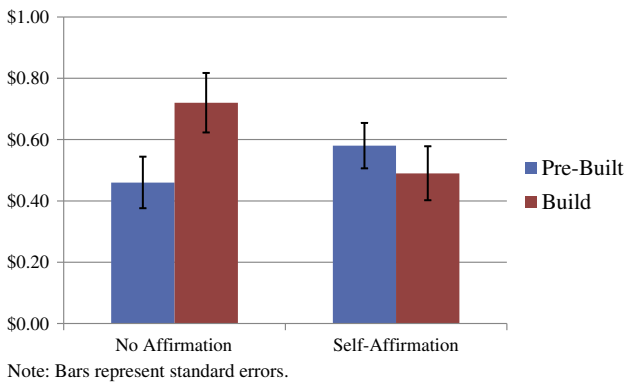
keeping with the previous study). All of the participants were paid $2 for completing this task to ensure that they all had money to spend on the box. We used a square root transformation to correct for the skewed distribution of the willingness to pay. Finally, participants completed the competence measures from Experiment 1 ($r = .47$, $p < .001$).

3.2. Results and discussion

A between-subjects ANOVA showed no significant main effects for the self-affirmation manipulation ($F(1,115) = .44$, $p = .51$) or the build condition ($F(1,115) = 1.06$, $p = .31$). Importantly, we observed an interaction effect between these two variables ($F(1,115) = 3.90$, $p = .05$; Fig. 1). In the no-affirmation condition, we replicated the standard IKEA effect: builders ($M = \$0.72$, $SD = .45$) were willing to pay significantly more than non-builders ($M = \$0.46$, $SD = .50$; $t(52) = 1.99$, $p = .05$). The IKEA effect was eliminated for participants in the self-affirmation condition, where there was no significant difference between builders ($M = \$0.49$, $SD = .46$) and non-builders ($M = \$0.58$, $SD = .46$; $t(63) = .71$, $p = .48$). Therefore, providing participants with an opportunity for self-affirmation eliminated the IKEA effect.

We next examined how the experimental conditions affected participants' ratings on the competence scale. This analysis showed that the main effect of self-affirmation was not significant ($F(1,115) = 1.0$, $p = .30$), but the main effect of the build condition was significant ($F(1,115) = 19.8$, $p < .001$). Consistent with the previous experiment, the builders reported higher feelings of competence ($M = 2.95$, $SD = 1.50$) than the non-builders ($M = 1.94$, $SD = 1.13$). This main effect was qualified by a significant interaction effect ($F(1,115) = 5.8$, $p < .05$). Participants in the no-affirmation condition reported higher feelings of competence when they built the box ($M = 3.39$, $SD = 1.62$) than when they received it pre-assembled ($M = 1.76$, $SD = 1.01$; $t(52) = 4.55$, $p < .001$). However, participants who were first given an opportunity to self-affirm their values showed no such effect ($M_{build} = 2.57$ vs. $M_{pre\text{-}built} = 2.09$; $t(63) = 1.53$, $p = .13$).

We tested a moderated mediation model to examine whether the indirect effect of competence on willingness to pay depended on self-affirmation (Preacher, Rucker, & Hayes, 2007). Replicating the above ANOVA (see Table 2), we found a significant main effect of build condition on the competence mediator ($B = 1.63$, $p < .001$), which was qualified by a significant interaction between the build and self-affirmation conditions ($B = -1.15$, $p < .05$). Moreover, when the competence mediator was included in the model predicting willingness to pay, the effect of the mediator was significant ($B = .12$, $p < .001$), whereas the main effect of build condition ($B = .07$, $p = .59$) and its interaction with self-affirmation ($B = -.21$, $p = .22$) were no longer significant. Consistent with the previous experiment, these results suggest that competence mediated the effect of building on willingness to pay, but that the effect of competence was moderated by the self-affirmation manipulation. Indeed, the analyses revealed a significant conditional indirect effect of the competence mediator in the no-affirmation condition ($B = .19$, $SE = .07$; $Z = 2.80$, $p < .01$) and a non-significant conditional indirect effect of the mediator in the self-affirmation condition ($B = .06$, $SE = .04$; $Z = 1.34$, $p = .18$).



Note: Bars represent standard errors.

Fig. 1. Mean willingness-to-pay in Experiment 2.

Table 2
Moderated mediation analyses for Experiment 2.

Predictor	*B*	*SE*	*t*	*p*
	Competence			
Constant	1.76	.23	7.67	.001
Build condition	1.63	.35	4.65	.001
Self-Affirmation condition	.33	.31	1.08	.28
Build × self-affirmation	−1.15	.48	−2.42	.02
	WTP			
Constant	.26	.10	2.63	.01
Competence	.12	.03	3.58	.001
Build condition	.07	.13	.54	.59
Self-affirmation condition	.08	.11	.70	.49
Build × self-affirmation	−.21	.17	−1.24	.22
Self-affirmation condition	Indirect effect	*SE*	*Z*	*p*
No affirmation	.19	.07	2.80	.01
Self-affirmation	.06	.04	1.34	.18

4. Experiment 3A

The previous experiments demonstrate that the IKEA effect is mediated by feelings of competence associated with assembling products. Experiments 3A and 3B provide further support for our theory. We examine whether directly manipulating feelings of competence affects consumers' propensity to engage in self-creation. Since consumers, in part, value self-created products because these items can bolster feelings of competence, consumers may be more willing to self-create products when their sense of competence is shaken (Gao et al., 2009). In both experiments, we give participants the choice to assemble products or not (see Moreau & Herd, 2010) and examine whether those participants whose confidence has been threatened are more likely to choose products that require assembly.

4.1. Method

Participants ($N = 75$; 42 male) completed an online survey and were randomly assigned to one of two conditions that manipulated their sense of competence. Participants in the high-competence condition were presented with four easy math problems (e.g., *How likely is it that a fair coin that is tossed once will come up heads?*). Participants in the low-competence condition were presented with four very difficult math problems (e.g., *You have 4 coins. Three of the coins are normal, but one of them is heads on both sides. You pick a coin at random without looking. The coin you pick has heads on one side. What are the odds that if you flip the coin over, the other side will be tails?*). All of the questions were presented with four potential answers, and participants were told that they could skip questions if they did not know the answer. Following the competence manipulation, participants were shown a picture of a bookcase from IKEA and were asked: "Imagine that you bought the above bookcase from IKEA. Would you prefer that it came pre-assembled, or would you prefer to assemble it yourself?"

4.2. Results and discussion

We first examined whether our competence manipulation was successful. Participants in the high-competence condition solved on average 92% of the questions correctly, whereas participants in the

low-competence condition solved on average only 22% of the questions correctly — no better than chance.

We next examined whether this manipulation affected participants' propensity to assemble their own products. As predicted, threatening participants' feelings of competence increased the likelihood that they chose to assemble their own bookcase (Fig. 2). Only 33% of participants in the high-competence condition preferred to assemble the bookcase, whereas 58% of participants in the low-competence condition preferred to do so ($\chi^2_{(1)} = 4.72$, $p < .05$).

These results further highlight the critical role that competence plays in the IKEA effect. Feelings of competence not only mediate the IKEA effect, but threatening consumers' confidence affects their propensity to engage in self-creation. These results also contribute to research about self-affirmation in consumer behavior (e.g., Gao et al., 2009) by demonstrating that consumers can restore their shaken sense of self even through extremely mundane activities, such as building a bookcase.

5. Experiment 3B

In a follow-up experiment, we examine whether we can replicate the effect on choice that we observe in Experiment 3A using a decision that more closely matches one that consumers face in everyday life.

5.1. Method

Participants ($N = 41$; 24 male) completed a short online survey that manipulated their feelings of competence and then were presented with a consumer choice. Participants were first presented with either one of the easy or one of the difficult math problem used in the previous experiment (see the examples above for a description of the exact problems). Following this manipulation, participants were shown two tables and were asked which they preferred. One of the tables was a pre-assembled table from Target. The other table was from IKEA and required assembly. The image of the table corresponding to the IKEA versus the Target table was counterbalanced to control for any preferences for one of the two tables.

5.2. Results and discussion

Ninety-six percent of participants in the high-competence condition correctly answered the math question, whereas 26% of those in the low-competence condition answered the math question correctly. More importantly, participants in the low-competence condition were significantly more likely to choose the IKEA table that required assembly (74%) than those in the high-competence condition (27%; $\chi^2_{(1)} = 8.79$, $p < .01$). These results further support our claim that feelings of competence play a critical role in the value that people derive from their own creations.

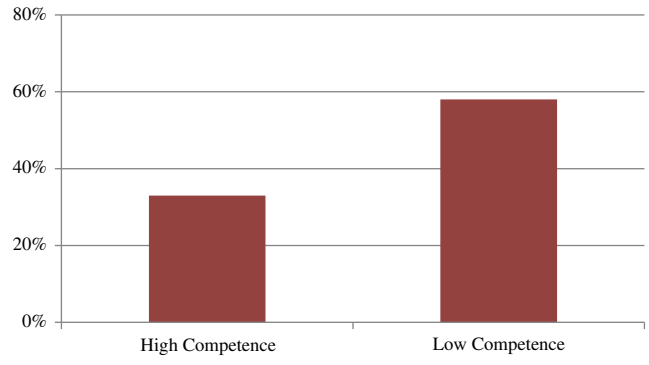


Fig. 2. Percent preferring to assemble their own furniture in Experiment 3A.

These results also have important practical implications. Despite the benefits of co-creation for firms (e.g., consumers' willingness to pay more for products they build, lower costs, etc.) and for consumers (e.g., increased feelings of competence after successfully assembling products), consumers are often reluctant to participate in such activities. A different group of consumers were asked ($N = 51$): "In general, what would you be willing to pay more for: products that you buy already assembled, or products that you buy with some assembly required?". Ninety-two percent of respondents said they would pay more for preassembled products, ($\chi^2_{(1)} = 36.26$, $p < .001$). The results from the previous two experiments suggest that consumer participation in co-creation may be increased by appealing to consumers' sense of competence and their need to signal that competence to others.

Taken together, Experiments 2, 3A and 3B demonstrate that feelings of competence (the mediator that underlies the IKEA effect) play a critical role in both consumers' propensity to engage in self-creation (with threats to their competence increasing their desire to build products) and in the benefits consumers reap from self-creation (with affirmation attenuating the positive effects of building).

6. General discussion

Prior research has demonstrated that people are willing to pay more for goods that they create than for identical goods created by someone else (Franke et al., 2010; Norton et al., 2012). We propose that this increase in valuation occurs because of the feelings of competence associated with self-created products. Experiment 1 demonstrates how the competence associated with self-created products mediates consumers' increased willingness to pay for these products relative to products created by others. Experiments 2, 3A, and 3B manipulate consumers' need to signal competence to further demonstrate the critical role of competence in the IKEA effect. Affirming consumers' sense of self causes the self-creation of products to be less rewarding, whereas threatening consumers' feelings of competence leads them to seek out opportunities to build products to restore their sense of competence. Taken together, these experiments offer evidence regarding the crucial role that competence plays, as both a mediator and a moderator, in creating consumer interest in self-created products and in making their efforts feel rewarding. These results build on prior research that shows that products can be used to affirm the self (e.g., Gao et al., 2009; Townsend & Sood, 2012) by demonstrating that even the most mundane assembling activities that consumers engage in, such as assembling a storage box, can have implications for consumers' sense of self.

6.1. Signaling to the self vs. others

Our measure of competence synthesizes two constructs: one about personal feelings of pride and another about consumers' desire to show off their creations to others. Although the two constructs are correlated in each experiment, the relative contribution of these two types of competence likely varies by context. One factor that likely determines which of the two constructs is stronger is the type of product created. The products used in the current paper are less likely to be displayed to others than products that are, by their nature, explicitly designed to be shown off to others (e.g., clothing). Indeed, when people design products meant specifically for display, such as t-shirts and watches, the prospect of showing off these products to others strongly contributes to their value (Franke et al., 2010). Another important factor is the salience of opportunities to display one's creation to others. During the current experiments, participants were not given such an opportunity. However, because the mere presence of others can increase consumers' concerns about the impressions they make (Puntoni & Tavassoli, 2007), simply making the social context more salient should increase the impact of the desire to show off products on the magnitude of the IKEA effect. Finally,

the relative strength of these two factors also likely depends on the intended recipient of the created product (Moreau, Bonney, & Herd, 2011). Most of the self-created content created for new media channels (such as YouTube videos) is made specifically to display to others. In these cases, it is likely that the utility associated with one's creations is heavily dependent on people's ability to signal their competence to others. Future research is needed to examine the relative contributions of both competence signals to understand when and how people come to value their own creations.

6.2. Co-creation and customer satisfaction

These results have implications both for firms seeking to maximize customer satisfaction and for individuals seeking to increase their life satisfaction. For firms, we note that although our results demonstrate that involving consumers in creation can lead to higher willingness to pay, the effect we document here is a retrospective phenomenon because participants value the product of their labor more highly after successfully building it. Disrupting consumers' sense of competence increases consumers' desire to engage in co-creation, but absent this manipulation, they are very unlikely to assemble their own product. Moreover, involving consumers in co-creation is not without risks. Although consumers may attribute successful co-creation experiences to their own efforts, they may attribute co-creation failures to the firm, which negatively impacts consumers' perceptions of a firm (Bendapudi & Leone, 2003). Future research should examine the best way to encourage consumers to co-create.

Results from Experiment 1 demonstrate that self-creation leads to increases in positive affect among individuals, suggesting that people may be leaving utility on the table by generally choosing to relax instead of engage in labor. A large body of research highlights the centrality of labor to people's well-being (Blustein, 2008) and shows that feelings of productivity are important to many people (Hsee, Yang, & Wang, 2010; Keinan & Kivetz, 2011). For example, unemployment has lasting psychological consequences; even when people find new jobs, the adverse impact of past job loss on well-being remains (Feather, 1990; Lucas, Clark, Georgellis, & Diener, 2004). This perspective dovetails with other research suggesting that effortful activities such as exercising (Mochon, Norton, & Ariely, 2008), making time to behave pro-socially toward others (Dunn, Aknin, & Norton, 2008), and acquiring life experiences (Van Boven, 2005; Van Boven & Gilovich, 2003) can lead to lasting changes in people's well-being (Lyubomirsky, Sheldon, & Schkade, 2005). Consequently, encouraging people to engage in labor that they would otherwise avoid may lead to increased life satisfaction. Future research is needed to explore this hypothesis.

Finally, the overvaluation of products that occurs as a result of the IKEA effect has broader implications for organizations because overvaluation contributes to two key organizational pitfalls: sunk cost effects (Arkes & Blumer, 1985; Biyalogorsky, Boulding, & Staelin, 2006; Staw, 1981), which can cause managers to continue to devote resources to failing projects they have previously invested in (Biyalogorsky et al., 2006), and the "not invented here" syndrome, in which managers refuse to use perfectly good ideas developed elsewhere in favor of their, sometimes inferior, internally developed ideas. Our results suggest that managers may persist in pursuing failed projects and concepts because they truly believe that their ideas are more valuable; not pursuing their ideas means that money is left on the table and that using a competitor's ideas would simply be choosing an inferior option. Not surprisingly, highly innovative projects are especially likely to generate over-commitment from managers (Schmidt & Calantone, 1998). While markets may sometimes correct these erroneous overvaluations, the IKEA effect may be resistant to any intervention, suggesting that the "not invented here" syndrome may be here to stay.

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