Mark Lett (2012) 23:869–881
DOI 10.1007/s11002-012-9194-1

Effects of cognitive resource availability on consumer decisions involving counterfeit products: The role of perceived justification

Jungkeun Kim · Jae-Eun Kim · Jongwon Park

Published online: 19 June 2012

Abstract In four experiments, participants made a purchase decision about a counterfeit product under either constrained or unconstrained cognitive resource conditions. Participants were less likely to purchase the counterfeit when their cognitive resources were constrained than when they were not. However, this difference was evident only when individuals had strong (vs. weak) moral beliefs, or when they had low (vs. high) accountability for their decisions. These and other results suggest that the effect of cognitive resource availability on counterfeit purchase was mediated by participants' perceptions of justification about the purchase.

Keywords Counterfeit products · Cognitive resource availability · Accountability · Illegal consumption · Moral decision making

Consumers may occasionally engage in various types of unethical behaviors, including shoplifting, fraudulent returns, financial fraud, coupon misredemption, and purchase of counterfeit products (Fullerton and Punj 2004; Muncy and Vitell 1992). Among them, counterfeit purchase has received a particular attention from consumer behavior researchers (e.g., Tom et al. 1998; Wilcox et al. 2009). For one thing, counterfeit purchase accounts for approximately 7 % of the world's merchandise trade and $600

J. Kim (✉) · J.-E. Kim
Department of Marketing, Advertising, Retailing, and Sales, AUT University, Private Bag 92006, Auckland 1142, New Zealand
e-mail: jkkim@aut.ac.nz

J.-E. Kim
e-mail: jakim@aut.ac.nz

J. Park
Department of Business Administration, Korea University, Seoul, South Korea 136-701
e-mail: amadeus@korea.ac.kr

billion (International Anticounterfeiting Coalition 2011). The product categories of counterfeits have been extended, including not only luxury fashion brands but also high-tech goods such as software, electrical appliances, automobile parts, and pharmaceuticals (Grossman and Shapiro 1998; Guttierez et al. 2006). The purpose of the present research is to increase our understanding of when and why consumers may engage in counterfeit purchases.

Specific reasons for purchasing counterfeits may vary over product categories and individual consumers, yet, price benefit is consistently one of the most common and important motives for counterfeit purchase (Cordell et al. 1996; Wee et al. 1995). On the other hand, purchasing counterfeit products which are illegal copies of original branded products is undoubtedly unethical and should be avoided (Moores and Chang 2006). Nevertheless, consumers often purchase these products *even when* they know that the products are counterfeits[1] (Cordell et al. 1996; Grossman and Shapiro 1998). The question is when consumers decide to purchase counterfeits and what factors enter into their decisions.

Consumers' purchase of a counterfeit is obviously determined in part by the level of price benefit and the functional quality. It is also influenced by the strength of consumers' moral beliefs. However, more subtle, contextual factors can also come into play. For one thing, consumers' amount of cognitive resources at the time a counterfeit product is evaluated can vary, depending on the contexts in which the product is encountered. Although the availability of cognitive resource has been shown to influence a wide range of consumer decisions (e.g., Shiv and Fedorikhin 1999, 2002; Vohs and Faber 2007), its potential influence on counterfeit purchases has never been previously considered. The present research documents evidence for this influence and identifies the conditions under which it is likely to occur.

As will be elaborated in the next section, we contend that to the extent that consumers consider counterfeit purchases as unethical, they need to generate a self-justification for purchasing the products. However, the justification process requires a considerable amount of cognitive resources. Therefore, we predict and confirm that consumers are more willing to purchase counterfeits when they have sufficient cognitive resources than when they do not. We further show that the occurrence of this effect depends on whether consumers have high or low accountability for their decisions, and whether they hold strong or weak a priori moral beliefs.

1 Theoretical background

1.1 Literature on counterfeits

The existing literature on counterfeits has documented a variety of factors that influence counterfeit purchases. These include: (1) individual difference variables, such as moral beliefs (Logsdon et al. 1994; Moores and Chang 2006), lawfulness

[1] Counterfeit purchases can occur in two different ways. First, consumers may be deceived to believe that the counterfeit products they purchase are genuine ones. This is termed a 'deceptive' counterfeiting (Grossman and Shapiro 1998). Second, consumers may purchase counterfeits even if they know that the products are counterfeits. This is termed a "non-deceptive" counterfeiting (Grossman and Shapiro 1998). The focus of the present research is the latter.

(Cordell et al. 1996), self-identity and social attitude functions (Wilcox et al. 2009), and risk attitudes (Wee et al. 1995); (2) product characteristics such as a counterfeit's price and functional quality (Cordell et al. 1996; Wee et al. 1995), its physical similarity to the original (Wee et al. 1995), and the conspicuousness of its logo (Han et al. 2010); and (3) demographic variables such as gender, age, education, and income (Tom et al. 1998; Wee et al. 1995).

Specifically, it has been shown that individuals' morality has a negative impact on counterfeit purchases (Logsdon et al. 1994; Moores and Chang 2006) and that comparability in quality and physical appearance to originals has a positive impact (Wee et al. 1995). In addition, groups of males, younger ages, low levels of education, and low levels of household income tend to have relatively higher purchase intentions about counterfeits (Tom et al. 1998; Wee et al. 1995). Nevertheless, most of these findings are descriptive in nature and are largely based on correlation analyses. Moreover, situational or contextual influences and theoretical processes underlying these influences have seldom, if ever, been investigated.

1.2 Unethical behaviors and justification

As noted at the outset, consumers might consider counterfeit products as providing utilitarian benefits at a much lower cost yet having ethical problems. To this extent, consumers may need a justification for their counterfeit purchases. For example, consumers may justify their purchase of a counterfeit product by asserting that the original product is too overpriced or by convincing themselves that they are 'smart' shoppers. It then seems reasonable to suppose that consumers need to generate a self-justification to engage in counterfeit purchases, and consequently, they are more willing to purchase counterfeits if they come up with a justification than if they do not.

This possibility is suggested by prior research. In a study by Schweitzer and Hsee (2002), for example, participants were asked to assume that they needed to sell their used car, the true mileage of which was unidentifiable because the odometer was broken. They were then given a range within which the true mileage value existed. The range was wide in high-uncertainty conditions (60,000–90,000 miles) and narrow in low-uncertainty conditions (74,000–76,000 miles). Participants were then asked to indicate the specific mileage value they would like to claim to a potential buyer. Results showed that participants in both conditions claimed a significantly lower mileage than the center value of the range (i.e., 75,000 miles), indicating that participants generally behaved dishonestly (that is, they distorted the mileage information). However, this tendency was greater under high-uncertainty conditions. Further, participants' perceived justification about their mileage claim was also higher in these conditions. These results suggested that participants were more willing to engage in the unethical behavior when they perceived that the justification was easier. A similar conclusion was drawn by Kohlberg (1984) in research on moral decision making (see also Mazar et al. 2008).

We therefore propose that consumers would be more likely to engage in counterfeit purchases if they can generate a justification for the purchase than if they cannot. Moreover, if this is so, then contextual factors that influence consumers' justification process should have an impact on their likelihood of purchasing counterfeit products.

1.3 Present research

To reiterate, consumers might consider counterfeit products as having economic benefits at a much lower cost but having ethical problems. Consequently, they need to generate justifiable reasons for their counterfeit purchases. However, consumers might not always bring all of these considerations into their decisions. Rather, their purchase decisions might depend on which considerations are most predominant at the time their decisions are made (Chaiken 1987). Therefore, decisions about counterfeit purchases could depend on the factors that determine the relative accessibility of these considerations.

The fact that a decision concerning counterfeits is considered as an ethical dilemma implies that both economic benefits and immoral aspects of such products are highly accessible at the time of the decision. However, justifiable reasons for counterfeit purchases may not be readily available. In fact, previous research shows that a justification for immoral behaviors is not spontaneously accessed but is generated through a deliberate process, and that this justification process requires a considerable amount of cognitive resources (Tetlock 1983). Consistent with this, a positive relationship between mental resources and justification in immoral behaviors has often been found (Cushman et al. 2006; Greene et al. 2008; Valdesolo and DeSteno 2006). These findings suggest that consumers need to generate a justification for engaging in counterfeit purchase but they can do so only when they have a substantial amount of cognitive resources at the time they evaluate a counterfeit product.

A recent neuroscience study by Greene and Paxton (2009) also suggests this possibility. In one study, participants' brain activity during decisions about a dishonest behavior was observed through functional magnetic resonance imaging. Participants who behaved dishonestly exhibited increased activity in control-related regions of prefrontal cortex. In other words, activity in brain areas associated with cognitive control was positively related to dishonest behaviors. This suggests that constraining cognitive resources would suppress the use of the cognitive control functions and in turn reduce individuals' dishonest behaviors.

If this is so, and if a justification is necessary for consumers to engage in counterfeit purchases as we assume, decreasing their cognitive resources at the time they consider a counterfeit product should decrease their likelihood of purchasing it. Further, this effect should be mediated by consumers' perceptions of justification about the purchase. We have obtained support for these predictions over four studies to be reported, and the results generalized over different manipulations of cognitive resource availability and different product categories. In addition, we further predict and confirm that the effect of resource availability is moderated by the level of accountability of decisions and the strength of consumers' a priori moral beliefs. We will elaborate these in the experiments to which they pertain.

2 Experiment 1

The present experiment examined the hypothesized effect of cognitive resource availability on counterfeit purchases and the mediating role of justification. After

performing an initial task that either depleted their cognitive resource or not, participants were asked to participate in an ostensibly unrelated, counterfeit purchase decision task.

2.1 Methods

2.1.1 Participants and design

Fifty-eight male and female students participated in this study to fulfill a course requirement. They were randomly assigned to one of the two cognitive resource availability conditions (*constrained resource* vs. *unconstrained resource*).

2.1.2 Procedure

Participants were given two tasks that were allegedly unrelated to each other. The first task was a cognitive resource-availability manipulation procedure, which was similar to the procedure employed in the previous research (Tice et al. 2007). Specifically, participants in the unconstrained resource condition were provided with a 2/3-page length of text and were then asked to simply cross out all instances of the letter "e" in the text. Participants in the constrained resource condition received the same text, but were asked to cross out all of the "e's" with two exceptions: they should *not* cross out an "e" that was either followed by a vowel (a, e, i, o, u) or that was preceded by a vowel two letters before the "e."

After completing the first task and a short delay, participants were provided with a counterfeit purchase scenario. A knit sweater was selected as the target product, based on two considerations: (1) famous brands of knit sweaters are frequently counterfeited in the marketplace; and (2) university students usually have ample experience in purchasing knit sweaters. Specifically, participants read the following:

> *Imagine you are in a shopping mall to buy a knit sweater. You have found a sweater that you really want to buy. It is a well-known designer brand and costs $60. Then, you happened to learn that you can buy a counterfeit of the product, and it costs only $20. It looks like the real thing in all respects, but the brand name and logo are used without the permission of the company.*

After reading the scenario, participants were asked to indicate their intentions to purchase the counterfeit along three scales ranging from 1 (likely to buy/willing to buy/interested in buying the genuine sweater) to 9 (likely to buy/willing to buy/interested in buying the counterfeit sweater). These ratings were later averaged to construct a composite index of purchase intentions (α=0.94). Participants also indicated their perceptions of justification about the purchase of the counterfeit, along two 9-point scales ranging from 1 (weakly justifiable/not easy to defend) to 9 (highly justifiable/easy to defend). These ratings were averaged to construct a composite index of perceived justification (α=0.93). Finally, participants rated how difficult the "e" crossing task was along two scales ranging from 1 (not at all difficult/not at all effortful) to 9 (very difficult/very effortful). These ratings served as manipulation checks for resource availability and were averaged to construct a composite index of cognitive difficulty (α=0.89).

2.2 Results

2.2.1 Manipulation checks

As expected, participants in the constrained resource condition evaluated the "e" crossing out task as more difficult than those in the unconstrained resource condition (7.47 vs. 4.02; $F(1,56)=39.30$, $p<0.001$). Thus, the manipulation was successful.

2.2.2 Purchase intentions and perceived justification

As expected and as shown in the first section of Table 1, participants reported higher purchase intentions when their cognitive resources were unconstrained than when they were constrained (4.43 vs. 3.18; $F(1,56)=4.12$, $p<0.05$). Further, participants perceived the counterfeit purchase as more justifiable in the former condition than in the latter (6.00 vs. 4.47; $F(1, 56)=6.58$, $p<0.05$).

To examine the mediation role of perceived justification, a regression analysis was first performed on participants' purchase intentions with cognitive resource availability as a predictor. This analysis yielded a significant effect of the predictor ($\beta=1.20$, $t=2.03$, $p<0.05$). However, this effect was reduced to nonsignificant ($\beta=0.36$; $t=0.67$; $p=0.51$) when the justification data were included as an additional predictor in the model, while the justification itself was a significant predictor ($\beta=0.57$; $t=5.01$; $p<0.01$). These results confirm the mediation role of perceived justification (Baron and Kenny 1986).[2]

2.3 Discussion

On a priori grounds, one might predict that decreasing cognitive resource, which has been shown to impair individuals' ability to exert self-control such as resistance to a temptation (Muraven et al. 1998; Vohs and Faber 2007), would increase rather than decrease consumers' purchase intentions for counterfeit products. However, our results showed that the opposite was true and that the effect was mediated by perceived justification, as we assumed.

Alternatively, one might speculate that the "e" crossing out tasks for cognitive resource manipulation influenced participants' mood and in turn, affected their purchase intentions. A follow-up study ($N=34$) evaluated this possibility by employing a similar procedure to that of experiment 1 while additionally assessing participants' mood along a scale ranging from 1 (very happy) to 9 (very sad). Results indicated that reducing cognitive resources decreased participants' counterfeit purchase intentions

[2] Note that justification questions were asked always after participants indicated their purchase intentions. To this extent, participants' justifications might have been answered to be consistent with their purchase intentions and did not actually drive the decision of purchasing the counterfeit. To evaluate this possibility, we performed a reverse mediation analysis in which justification rating was a dependent variable while purchase intention served as a mediator. This analysis indicated that including purchase intentions as additional predictor in the model did not eliminate the effect of resource availability on justification ratings to nonsignificant ($\beta=0.85$, $t=1.65$, $p<0.10$), thus calling the validity of the alternative possibility into questions.

Table 1 Experiments 1–3: purchase intentions and perceived justification as a function of cognitive resource availability

	Purchase intentions		Perceived justification	
	Unconstrained resource	Constrained resource	Unconstrained resource	Constrained resource
Experiment 1	4.43 a	3.18 b	6.00 a	4.47 b
Experiment 1, follow-up	4.93 a	3.10 b	–	–
Experiment 2				
Low accountability	4.89 a	2.56 b	–	–
High accountability	3.31 a	3.23 a	–	–
Experiment 3				
High moral beliefs	6.01 a	4.23 b	5.82 a	3.75 b
Low moral beliefs	6.49 a	6.50 a	6.13 a	6.52 a

Numbers with no common letters within each subtable differ from each other at $p<0.05$

as in experiment 1 ($p<0.05$), but did not influence their mood ratings ($F<1$). Therefore, the mood-based alternative explanation was disconfirmed.

3 Experiment 2

The present experiment identified a boundary condition for the effect of cognitive resource availability on counterfeit purchases. According to research on accountability (Tetlock 1986), decision makers tend to avoid a decision alternative that is difficult to justify when they anticipate a need to explain their decision to others, i.e., when they have a high level of accountability for their decisions. If this is so, and if perceptions of justification mediate the effect of cognitive resource availability as we assume, then decision makers under a high accountability condition would consider a counterfeit purchase to be difficult to justify, and thus might be reluctant to make the purchase. Further, this would be so even when they have the cognitive resources to generate some self-justifications. When decision makers do not anticipate a need to explain their decisions to others, i.e., when they have low accountability, however, their purchase intentions about a counterfeit product would be higher when their cognitive resources are unconstrained than when they are constrained, as in experiment 1.

3.1 Methods

Fifty-six undergraduate students were randomly assigned to conditions of cognitive resource availability (constrained vs. unconstrained) by accountability (high vs. low). The experimental procedure was virtually identical to that of experiment 1, with two exceptions. First, participants in low-accountability conditions were given a purchase decision task about a counterfeit product as in experiment 1, whereas those in high-accountability conditions were also informed that they would later be asked to explain

their decisions to the experimenter and other participants (see Zhang and Mittal 2005 for a similar procedure). Second, we manipulated participants' cognitive resources by a more natural task than the 'e-crossing out' task used in experiment 1. That is, we administered the experiment either before participants took a 1-h long mid-term exam (unconstrained resource conditions) or immediately after they took the exam (constrained resource conditions), assuming that the exam would consume their cognitive resources.

4 Results

As expected, participants in the unconstrained resource condition generally reported higher purchase intentions about the counterfeit than those in the constrained resource condition (4.10 vs. 2.90; $F(1,52)=4.83$, $p<0.05$), thus replicating the results from experiment 1. This effect, however, was qualified by a significant interaction of cognitive resource availability and accountability ($F(1,52)=4.21$, $p<0.05$). As expected and as shown in the second section of Table 1, participants in the low-accountability condition were more willing to purchase the counterfeit when their cognitive resources were unconstrained than when they were not (4.89 vs. 2.56; $F(1,52)=9.03$, $p<0.01$), whereas participants in the high-accountability condition showed low purchase intentions, regardless of cognitive resource conditions (3.31 vs. 3.23; $F<1$).

5 Experiment 3

Experiment 2 showed that cognitive resource availability had a significant impact on counterfeit purchases only when participants' accountability was low. The present experiment considered the level of individuals' ethical beliefs as another moderator for the effect of cognitive resource availability.

To reiterate, consumers might consider counterfeit products as having both ethical problems and economic benefits, and to this extent, they need to generate a justifiable reason for purchasing counterfeits. However, consumers might not always bring ethical considerations into decisions. Rather, their decisions may depend on the strength of their a priori moral beliefs. It has been shown that some people have more negative beliefs about counterfeit purchases and illegal downloads of copyrighted materials than others (Muncy and Vitell 1992; Tom et al. 1998). If perceived justification mediates the effect of cognitive resource availability on counterfeit purchases as we assume, the strength of individuals' ethical beliefs should theoretically moderate the effect. Specifically, if consumers have weak moral beliefs, then they may evaluate a counterfeit product primarily based on the utilitarian benefits of the product without thinking about its ethical problems and consequently, may see no problems purchasing the product. Further, this tendency is unlikely to be affected by their level of cognitive resources. When consumers have strong ethical beliefs, however, they need to generate a sufficient justification for their purchase, which requires cognitive effort. We therefore expected that the effect of cognitive resource availability on a counterfeit purchase would be evident among

consumers with strong ethical beliefs, but would be negligible among those with weak ethical beliefs.

5.1 Methods

One hundred twenty-seven undergraduate students participated in the study. The experimental procedure was identical to that of experiment 1, with three exceptions. First, we used a high-tech product (video game) in the counterfeit scenario, with a price of $45 for a genuine product and $15 for a counterfeit. Second, we manipulated participants' cognitive resource availability by varying the level of cognitive load at the time they evaluated the counterfeit product. Specifically, based on the procedure used by previous researchers (e.g., Lalwani 2009; Shiv and Fedorikhin 1999), we asked participants in *constrained-resource conditions* to rehearse and memorize an eight-digit number ('46751338') while reading the counterfeit scenario and those in the *unconstrained-resource conditions* to rehearse and memorize a two-digit number ("46"). As a manipulation check, participants later rated how difficult the memorization task was along a scale ranging from 1 (not at all difficult) to 9 (very difficult). Finally, at the end of the experiment, we administered the Consumer Ethics Scale of Muncy-Vitell (2005), in which participants rated 26 unethical behaviors (e.g., "Returning damaged goods when the damage was your own fault," "Buying counterfeit goods instead of buying the original manufacturers' brands," etc.), along 5-point scales ranging from 1 ("strongly believe that it is wrong") to 5 ("strongly believe that it is *not* wrong"). The ratings were reverse coded and averaged to construct a composite index of moral beliefs (α=0.72).

5.2 Results

5.2.1 Manipulation check

As expected, participants in constrained resource conditions perceived the number memorization task as more difficult than those in unconstrained resource conditions (2.72 vs. 1.19, $F(1,124)=48.53$, $p<0.001$) and this difference was not affected by individuals' strength of moral beliefs ($F<1$). In addition, the manipulation did not affect participants' mood ($F<1$), which was measured along a nine-point scale (very happy–very sad).

5.2.2 Purchase intentions

A regression analysis was performed on participants' purchase intentions for the counterfeit with cognitive resource availability, moral beliefs, and their interaction term being the predictors. As expected, participants' moral beliefs had a negative influence on their purchase intentions ($\beta=-0.28$, $t=-3.29$, $p<0.01$) and cognitive resource availability had a positive effect ($\beta=0.18$, $t=2.17$, $p<0.05$). However, the interaction of these two variables was also significant ($\beta=0.18$, $t=2.14$, $p<0.05$) and was in the direction that we expected. That is, when we calculated simple slopes at values 1 SD above and below the centered mean of moral beliefs, as suggested by Fitzsimons (2008), participants with strong moral beliefs showed higher purchase

intentions when their resources were unconstrained than when they were constrained (6.01 vs. 4.23; β=−0.89, t=−3.07, p<0.01), whereas those with weak moral beliefs showed high purchase intentions in both the unconstrained and constrained conditions (6.49 vs. 6.50; β=0.01, t<1), as shown in the third section of Table 1.

5.2.3 Perceived justification

The hypothesized interaction of cognitive resource availability and moral beliefs was significant (β=0.30, t=3.71, p<0.01). As shown in the table, participants with high moral beliefs perceived the counterfeit purchase as more justifiable when their resources were unconstrained than when they were constrained (5.82 vs. 3.75; β=−1.01, t=−1.89, p=0.061), whereas those with low moral beliefs considered the counterfeit purchase as highly justifiable in both resource availability conditions (6.13 vs. 6.52; β=0.19, t<1).

To examine the mediation role of perceived justification, participants' purchase intentions were reanalyzed with justification ratings being included as an additional predictor in the model. This analysis reduced the original interaction of cognitive resource availability and moral beliefs to nonsignificance (β=0.50, t<1), while the justification itself was a significant predictor (β=0.45, t=5.10, p<0.001), confirming the mediation role of perceived justification.[3]

6 General discussion

Consumers might consider the purchase of counterfeit products to be ethically problematic, yet sometimes they are willing to purchase these products. Our conceptualization predicts that consumers engage in a counterfeit purchase if they can justify it. However, the justification process requires a considerable amount of cognitive resources. Accordingly, the factors that influence the justification process can have an impact on counterfeit purchases.

Our four experiments showed that the situational factors that constrained participants' cognitive resource decreased their intentions to purchase a counterfeit. In such cases, participants were less able to generate justifiable reasons for counterfeit purchase and thus were less willing to make the purchase. This effect generalized over product categories (fashion apparels and high-tech products) and methods of constraining the cognitive resource (resource depletion and cognitive load). However, the effect was evident only when the accountability for decisions was low and when participants held strong moral beliefs. If participants expected that they would have to explain their decision to others and thus felt a high accountability, they had difficulty in justifying a counterfeit purchase and thus were reluctant to make the purchase, regardless of their cognitive resource level. On the other hand, when participants held weak ethical beliefs, they simply regarded a counterfeit purchase as highly justifiable and were willing to make the purchase, regardless of the resource level. These results are consistent with our conceptualization

[3] A reverse mediation analysis indicated that including purchase intention as additional predictor in the regression model did not eliminate the effect of resource availability on justification rations to non-significance (β=0.57; t=1.77; p<0.10), as consistent with results in experiment 1.

that the availability of cognitive resource influences a justification process and in turn affects counterfeit purchases. In fact, mediation analyses confirmed this mediating process. To our knowledge, these results have not been reported previously.

On a priori grounds, one might alternatively predict that constraining cognitive resource would impair individuals' ability to exert self-control against temptations (Vohs and Faber 2007) and thus might *increase* counterfeit purchases. However, the effect we found was the opposite and was mediated by perceived justification as we predicted. In fact, our results are consistent with implications of a recent, dual processing model of moral judgments (Haidt 2001, 2007). According to this model, individuals who make moral judgments first automatically engage in an intuitive system that produces spontaneous, ontological reactions to a target object. This might then be followed by a reasoning system that is more utilitarian in nature and cognitively effortful. In our case, the intuitive system might have induced participants with strong ethical beliefs to spontaneously experience negative affect about counterfeit products and to evaluate them negatively. This initial judgment might have then been overridden by a reasoning process that focused on utilitarian benefits of the products if cognitive resource was available. These interpretations are also consistent with recent neuroscience evidence that activity in brain areas associated with cognitive control is positively correlated with immoral behaviors and thus cognitive resources might be necessary for engaging in such behaviors (Greene and Paxton 2009). To this extent, the effect of cognitive resource availability may apply to other types of unethical consumption behaviors.

Research on the effect of cognitive resource for judgments typically manipulates the resource level by imposing a cognitive load at the time judgments are constructed (e.g., Shiv and Fedorikhin 1999). By contrast, research on the role of regulatory resource for self-control behaviors typically depletes the regulatory resource level by an initial, resource-consuming task *before* a target self-control task is provided and posits that regulatory resource is different from cognitive resource (Muraven and Baumeister 2000; Muraven et al. 1998). Although our research focused on the cognitive resource that was necessary for performing a cognitive activity (i.e., generating justification for counterfeit purchase), the effect of constraining the cognitive resource was consistently observed regardless of whether the resource was distracted by a cognitive load (experiment 3) or depleted by a prior cognitive task (experiments 1 and 2). Nevertheless, our findings should not be interpreted as evidence suggesting that the effect of depleting regulatory resource on counterfeit purchase would be same as the effect of constraining cognitive resource. For one thing, the regulatory resource is conceptualized as a general resource pool that governs controlled and regulated responses (Muraven and Baumeister 2000). Thus, it can be depleted by all types of self-control tasks encompassing cognitive activities (e.g., solving difficult anagrams), emotional activities (e.g., suppressing emotional responses to a humorous video clip), and physical activities (e.g., holding hands in cold water). In our research, the cognitive resource was depleted by a prior, cognitive task. Therefore, future research that depletes regulatory resource by a prior task that is not cognitive (e.g., asking people to suppress emotional responses) and tests its impact on counterfeit purchases would be of theoretical importance.

Finally, our results may not be applicable to certain types of unethical behaviors. For example, purchasing a counterfeit is different from cheating for money in that people who

purchase a counterfeit may be worried whenever they use it, whereas those who once have cheated for money may forget about the immoral behavior afterwards. For example, Mazar et al. (2008) found that people showed dishonesty concerning cheating for money sometimes did not change their positive self-image. With the counterfeits, however, people use them on a daily basis and thus know that they will be constantly reminded of the unethical purchase (see Gino et al. 2010 for a similar implication). This difference may lead to different results. Therefore, it would be desirable to replicate our results in other types of immoral behaviors including cheating for money.

There are also other limitations in our research. For example, our studies relied on a scenario-based approach and did not examine the issue in a real setting. In addition, we only considered situations in which consumers know that the product is a counterfeit and its quality is comparable to the genuine one. Further, our studies were conducted only in the USA. However, a recent finding that people in collectivistic cultures (vs. those in individualistic cultures) exhibit greater bribery because of their lower level of responsibility for bribery (Mazar and Aggarwal 2011) suggests that there may be a cultural difference in consumers' decision about counterfeit purchase. Future research that addresses these limitations would be undoubtedly desirable.

Acknowledgments The authors would like to thank the editor and the reviewers for their constructive comments on earlier drafts. This research was supported by the Hyundai-Kia Research Fellow Fund to Jongwon Park.

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