

# You Want More When You Have Something in Your Hand

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In this research, two studies show that the bodily experience of holding objects in the hand is tied to the mental concept of acquiring material wealth. Holding objects in the hand (a) increased people's desires for possessing fairly luxurious goods (Study 1) and (b) made people judge a controversial issue (e.g., "sweatshops" run by global companies) more favorably based on wanting to generate more wealth for individuals and society rather than on humanitarian concerns (Study 2). These results provide evidence that the bodily experience not only helps to represent an abstract concept but also can shape attitude and judgment congruent with the metaphor represented in the bodily experience.

Key words: Embodied cognition, metaphors, social judgments

## I. Introduction

The everyday language of "in hand" signifies the state of having something in one's possession. Almost identical versions of this linguistic expression are found in a wide range of cultures with various languages, such as French (*dans la main*), Korean ("손에 쥐다"), and Chinese

(攥在手心),. We normally use expressions with these words to describe "having something" or "possessing something". In other words, we can also associate these expressions with metaphoric meanings that could affect our judgment of phenomena. Therefore, we frequently make a decision by using the linguistic metaphors, which are a basic factor of embodied cognition. Much previous research has indicated that a

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metaphor with physical action would influence a subsequent judgment or decision (Ackerman et al. 2010; Bond et al. 1992; Eskine, Kacinik, and Prinz 2011; Zhong and Leonardelli 2008; Zhong, Strejcek, and Sivanathan 2010). Moreover, a recently emerging body of embodied-cognition research has shown that the mental representation of an abstract concept is often grounded in different sensorimotor systems (for a review, Barsalou 2008). In consumer research, decision making could benefit from embodied cognition. For that reason, we attempt to extend the research on embodied cognition using a physical metaphor, that is, hand movement.

Research on embodied cognition has demonstrated that people draw on their bodily experiences when they construe how reality is (Ackerman et al. 2010; Risen and Critcher 2011). For example, Schnall (2008) demonstrated that people report that reality is more morally pure when they experience cleanliness (e.g., hand washing). People view a person or an issue as more serious (“heavy”) when holding heavier objects (Ackerman et al. 2010). Similarly, people judge an ambiguous target as more sociable and kinder (“warmer”) when experiencing a warm temperature by holding a hot cup (Williams and Bargh 2008). In addition, people believe that global warming is more likely to happen in the future when they experience warmth (Risen and Critcher 2011). Overall, these studies suggest that a physical experience induces people to interpret external stimuli,

such as other people or some issues, as being similar to the metaphor of the experience - that is, cleaner, heavier, or warmer. These findings support the concept that bodily experiences can influence evaluation and behavior.

From these perspectives, we suggest that the perceptual and motor representation of holding something in hand is so tied to humans’ long-held representation of acquiring something significant, both tangible (e.g., food in our hunter-gatherer past) and intangible (e.g., wealth in a modern society). Although past research has examined how embodied cognition influences different evaluations, the relationship between holding something and possessing material goods has not been investigated. Many researches have indicated how the various activities of using hands impact on consumers’ perceptions and decisions (Coulter 2016; Davoli, Brockmole, and Goujon 2012; Lloyd, Azañón, and Poliakoff 2010; Lederman and Klatzky 1987).

As mentioned earlier, we suggest that the effect of a perceptual or physical experience can be more than simply juxtaposing the metaphor in interpreting how reality is. In a similar vein, we argue that the physical experience can make people hold a mindset congruent with the metaphor represented in the physical experience. That is, one’s own mindset itself can be assimilated to the meaning represented in the perceptual or physical experiences. We investigate whether a bodily experience of

holding objects in the hand is linked to an abstract concept of acquiring a possession and can shape subsequent judgment.

The aim of this research is to examine the effect of embodied cognition. Specifically, we investigate whether the activity of holding something could increase people's desire for fairly luxurious goods (Study 1). In other words, when holding something in the hand, the physical experience may lead people to hold a mindset congruent with the metaphor of the experience - "want more things" or "have more things"—and form an attitude giving priority to having more wealth. Furthermore, we examine whether the bodily experience with using hands could affect social issues, although those are generally aversive and critical (Study 2).

Study 1 examines whether the bodily experience of holding objects can increase people's desire for fairly luxurious goods. In study 2, we investigate whether the bodily experience can shape people's attitude toward a relatively serious and generally aversive social issue in a way congruent with the metaphor represented in the bodily experience. Therefore, this research contributes to showing how embodied cognition affects attitudes on products and proposes new ideas for the study of information processing in social judgments.

## II. Theoretical Background

### 2.1 Embodied cognition

Many psychologists and consumer researchers have argued that the mind is an operator that controls the body and enables people to act. As a result, actions are based on the thoughts that come to mind in any environment (Ajzen and Fishbein 1977).

According to Hung and Labroo (2011), the basic idea underlying embodied cognition is that memories, composed of previous experiences, are multimodal and spread throughout the body, not a modal semantic node stored completely in the mind. In addition, Lee and Schwarz (2012, p. 3) mentioned that "Embodied cognition means that knowledge is represented in bodily states or sensorimotor modalities in the neural system, so processing sensorimotor information should activate conceptual knowledge (concrete-to-abstract effects) and processing conceptual information should invoke the bodily states or sensorimotor modalities in which it is represented (abstract-to-concrete effects)". From this perspective, the "basic" perception may affect people's recent goals and needs, emotions and actions, stereotypes and cultural knowledge systematically (for reviews, see Balci et al. 2010; Gibson 1979; Niedenthal et al. 2005; Proffitt 2006; Zadra and Clore 2011). Thus, the early sensory experience

can have a dynamic association with a psychological state and can influence the subsequent decision (Lee and Schwarz 2012).

In addition, Bargh and his colleagues (1996) found that, compared to the control groups, people primed with a concept of rudeness interrupted the experimenter more quickly and frequently (Experiment 1); people primed with an elderly stereotype walked more slowly down the hallway (Experiment 2); people primed with the African-American stereotype reacted with more hostility to a vexatious request (Experiment 3). Thus, people's own mindset as well as behavior was unknowingly assimilated to the content of semantic primes.

There is also much support from the embodied-cognition literature for the relationship between bodily experiences and attitude formation. For instance, men who were given heavy clipboards for responding to a survey allocated more money to important issues rather than less important issues than did men who were given light clipboards (Ackerman et al. 2010). That is, the experiences of heavy weight led men to focus on the importance of social issues (i.e., "heavy" issues) when allocating funds. Also, Hung and Labroo (2011) found that the bodily experiences of firming muscles led people to engage willpower, such as by resisting the temptation to eat unhealthy food or by consuming unpleasant but necessary medicine. One study that related the act of scissoring to disconnection is an example of embodied cognition research (Chu

et al. 2014). These findings indicate that the bodily experience of firming muscles is tied to the mindset of "endurance" for the long-term goals and further makes people engage willpower in accordance with the goal.

Similarly, previous research suggests that gestures activate meaning in the gesturer's mind and influence the gesturer's own thoughts and feelings. Specifically, Lee and Schwarz (2011) found that participants who moved their hands alternately up and down with palms facing up (i.e., the "balancing" gesture) arrived at more balanced judgments and choices than did participants who engaged in non-"balancing" gestures.

Prior studies were based on cognitive processes using bodily experiences related to the outside world. These findings revealed that the environment we interact with shapes our cognition and attitude in a way congruent with the meanings of stimuli.

## 2.2 Holding Something and Wanting More Material Goods or Wealth

Many studies argue that bodily experiences would unconsciously influence thoughts or feelings about metaphorically related targets (Barsalou 2008; Williams et al. 2009). From this perspective, metaphorical effects may play a significant role in how people mentally construe decision making, which may be activated to metaphorically associated thoughts, goals, and

feelings that permeate the construal of a decision through incidental bodily experiences (Lee and Schwarz, in press).

Judgments about metaphors may be affected by early sensory-motor experiences that serve as the basis for the later development of more abstract concepts and goals (Williams et al. 2009, p. 1257). Furthermore, previous experimental studies have emphasized the role of human cognitive processes and metaphoric effects (Lee and Schwarz 2011). In other words, subtle bodily experiences affect unconscious cognition even if they are subtle actions (Barsalou 2008, Williams, Huang, and Bargh 2009). In a similar vein, current research asserts that both hand movements and hand orientation can affect perception and attention (e.g., Bekkering and Neggers 2002; Davoli and Abrams 2009).

In line with prior research, we examine metaphorical relationship between bodily experience and later judgments. Present research suggests that the act of holding something could be an early cue to develop a later decision or judgment. Specifically, we use expressions such as “holding something” or “in hand” to mean getting material goods or wealth. We propose that the representation of “have or want more wealth” is based on sensory-motor experiences of holding objects in the hand, because the act of holding something could have an important role in forming the mental representation. That is, the act of holding could be a peripheral cue, which becomes potent only when the extent of thinking about

the attitude object is low (for related discussion, see Briñol, Petty, and Wagner 2009). In this research, we hypothesize that the bodily experience of holding is construed as “have more of something”. In other words, we propose that holding objects in the hand, in accordance with the metaphor “in hand”, would elicit a higher desire for material goods and wealth (luxurious goods). We conducted two experiments to test our hypothesis.

### III. Study 1

In Study 1, we examined the effect of the bodily experience of holding objects in the hand on the desire for possession of material goods. The key prediction is that holding objects in the hand would increase desire for possessing material goods. We expected that subjects in the experiment would exhibit more desire for the items presented than would those in the control group.

#### 3.1 Method

##### 3.1.1 Manipulation

As a manipulation of the bodily experiences, participants were asked to pick up a few pencils from tables at which they were seated and hold them in their hands while responding

to questionnaires. In order to avoid demand characteristics, the experiment was disguised as a joint research of the department of Marketing and the department of Exercise Science for investigating young people's motor skills. The instruction was presented as unobtrusively as possible, so did not indicate which hand the participants should use for holding the pencils. Presumably, however, participants would use the non-dominant hand for the purpose, because they were asked to work on the questionnaire while holding the pencils.

### 3.2 Participants and Procedure

We recruited 62 undergraduates from a university in North America to participate for course credit. Participants were randomly assigned to the holding-objects group ( $n = 28$ ) or the control group ( $n = 34$ ). On each desk where a participant was seated, several pencils and a questionnaire were placed. On the questionnaire, participants in the holding-objects group were asked to hold the pencils in the air while answering questions that followed. They were told that they would be asked some questions about their experience later when they were told to put the pencils down. The questionnaire given to the participants in the control group did not have such direction, although those pencils remained visually present on each desk. Everything else was identical in

the questionnaires for both groups.

After the directions, participants were presented with a list of three fairly luxurious items, such as a cashmere muffler, a pair of vintage jeans, and a bottle of 1996 Hermitage wine. They then reported how much they wanted each item (1 = *not at all*; 7 = *very much*). Finally, participants were probed for suspicion and debriefed. No one indicated suspicion about the hypotheses of this study.

### 3.3 Results

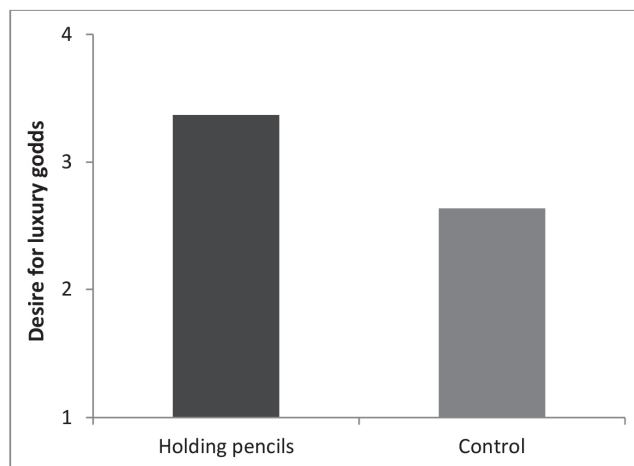
The main dependent measure was how much participants desired the presented goods, which were fairly luxurious. As predicted, participants who held pencils in one hand reported greater desire for the goods ( $M = 3.37$ ,  $SD = 1.34$ ) than did the controls ( $M = 2.64$ ,  $SD = 1.39$ ;  $F(1, 60) = 4.40$ ,  $p = .040$ ; see Figure 1). This result indicates that the physical experience of holding objects influenced the desire for possession of material goods. Study 1 thus provided initial evidence that individuals' mindsets could be influenced in ways congruent with the conceptual meaning of bodily experiences.

### 3.4 Discussion

In this study, we suggest that the representation of "have or want more wealth" is grounded in sensory-motor experiences of holding objects

<Figure 1>

Study 1: The effect of bodily experience of holding objects in the hand on the desire for possession of material goods.



in the hand. Since this study was implemented in a relatively simple and straightforward way in order to establish the proposed relationship, several possible alternative accounts may arise. First, one might wonder if the bodily experience indeed plays an important role in forming the mental representation of the abstract concept. That is, it could be viewed as a peripheral cue, which becomes potent only when the extent of thinking about the attitude object is low (for related discussion, see Briñol et al. 2009). Admittedly, expressing one's desire for a list of favorable items can be viewed as low thinking. In addition, the effect of bodily experience should not depend on the valence of an attitude object (Labroo and Nielson 2011). In order to address this issue, Study 2 sought to show that the bodily experience of holding objects in the

hand influences people's mindset for a relatively serious and aversive social issue. By doing so, it will provide further support for our notion that the representation of "have or want more wealth" is innately grounded in the perceptual and physical experience of holding objects in the hand.

Second, holding objects in the hand while responding to a questionnaire could be viewed as imposing a cognitive load on participants. Although there is no particular reason for why a cognitive load would make people desire luxurious items more, in Study 2 we sought to address this issue by using a different attitude object. Since cognitive load is known to lead people to make social perceptions more stereotypically (for a review, see Hilton and Von Hippel 1996), we chose a generally aversive

topic as the attitude object. That is, if the bodily experience of holding objects in the hand imposed a cognitive load on participants, they would automatically lower their attitude toward the object based on a general social perception about the issue. However, if not (as we propose), people's attitude change should be a function of the metaphor represented in the bodily experience. Taken together, we chose a generally serious and aversive attitude object for Study 2.

## IV. Study 2

In Study 1, we found evidence that bodily experiences of holding objects in the hand induced a mindset of desiring more wealth, presumably because the conceptual metaphor of "having something in one's possession" is grounded in the sensorimotor experience. In Study 2, we examined whether bodily experiences of holding objects in the hand could lead people to shape their attitude toward an issue, based on the mindset of focusing on generating more wealth.

As noted earlier, unlike Study 1, this study employed a generally aversive attitude object. "Sweatshop" was chosen for the attitude object in this study. "Sweatshop" is a "negatively connoted term for any working environment considered to be unacceptably difficult or dangerous

(<http://en.wikipedia.org/wiki/Sweatshop>)."

The business practice of some global powerhouses, such as NIKE, that run sweatshop-like factories in the third world has been heavily criticized and has brought negative publicity because of humanitarian concerns (<http://en.wikipedia.org/wiki/Sweatshop>). Recently, a minority view about this "sweatshop" issue suggested that the practice of running sweatshops is less vicious, because of its role in generating more wealth for the factory workers and the third-world countries that would not be viable otherwise (<http://en.wikipedia.org/wiki/Sweatshop>).

We assumed that if the bodily experience of holding objects in the hand indeed triggered the mindset of focusing on wealth, the mindset would lead people to improve their attitude toward this aversive object when given information about generating more wealth. Thus, we examined whether the bodily experiences of holding objects in the hand could make one's attitude toward the practice of running sweatshops less negative.

### 4.1 Method

We recruited 65 undergraduates from a large university in North America to participate for course credit. They were randomly assigned to the holding-pencils group ( $n = 30$ ) or the control group ( $n = 35$ ). The manipulation was the same as that of Study 1. In short, several pencils were placed on the desk of all the



participants, but only the questionnaire for the experimental group contained the direction of holding the pencils while working on the questionnaire, again presented as a joint research of the department of Marketing and the department of Exercise Science.

The questionnaire was titled “consumer survey on the business environment.” The passage about “sweatshops” followed: it included views about global companies’ controversial practice of running low-wage factories in developing countries. The passage included both unfavorable and favorable views about sweatshops. The unfavorable (and conventional) view entailed humanitarian concerns, such as extorting child labors and unacceptable working conditions. The favorable (and unconventional) view entailed economic gains for the workers and the developing countries in which the factories were located. After reading the passage, the participants responded to measures about their attitude toward sweatshops (“My attitude toward sweatshops is...”: 1 = *bad/unfavorable/negative*, 7 = *good/favorable/positive*). The questionnaire then said, “There are several well-known companies that are accused of running sweatshops in developing countries. The list below shows some of those companies/brands.” Participants indicated their intentions of buying products from each company (Nike, Abercrombie and Fitch, and IKEA), using a measure of “The likelihood of my buying from this company is...” 1 = low, 7 = high.

Finally, participants were probed for suspicion and debriefed. No one indicated suspicion about the hypotheses of this study.

## 4.2 Results

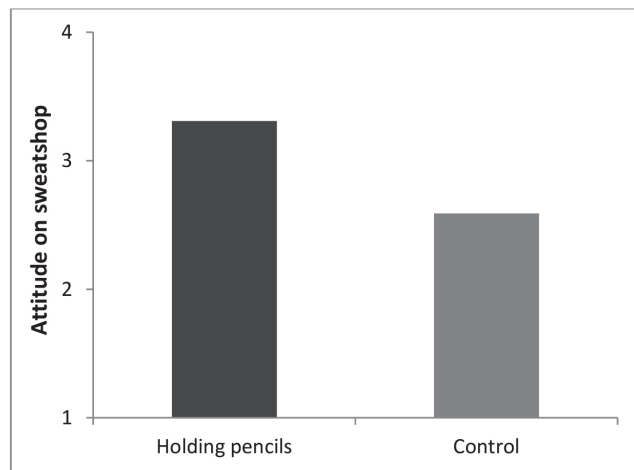
We tested whether holding pencils in hand led the experimental group to have a more favorable view toward sweatshop practice than did the control group. As consistent with our prediction, ANOVA revealed that participants who held pencils in their hands reported a more favorable attitude toward sweatshops ( $M = 3.31, SD = 1.27$ ) than did those in the control group ( $M = 2.59, SD = 1.41; F(1, 63) = 4.62, p = .035$ ). Participants also showed higher intentions of buying product from the companies known for using sweatshops when they held pencils in their hands ( $M = 4.54, SD = 1.01$ ) than did those in the control group ( $M = 3.81, SD = 1.51; F(1, 63) = 5.13, p = .027$ ).

## 4.3 Discussion

In this study, by using a relatively serious and aversive attitude object (i.e., the “sweatshop” issue), we provided converging evidence for our notion that people’s mindsets were influenced in ways congruent with the metaphor of the bodily experiences. Furthermore, this study demonstrated that the bodily experience shaped people’s judgments about the social issue,

<Figure 2>

Study 2: The effect of the bodily experience of holding objects in the hand on attitude toward sweatshops.



independently of the general social perception about the issue. By doing so, we were able to rule out the alternative accounts for our finding suggested in Study 1. First, it showed that the effects of the bodily experience were consistent for a relatively serious and aversive attitude object (high-level thinking). Second, this study demonstrated that the cognitive load account was not viable. As noted earlier, cognitive load usually leads people to make judgments in a way consistent with the general social perception or stereotype (Hilton and von Hippel 1996). However, this study showed that the bodily experience of holding objects in the hand led people to make judgments in a way congruent with the represented metaphor (“want more wealth”) rather than with the general social perception (“humanitarian concern”).

## V. General Discussion

Taken together, we obtained evidence that the abstract concept of acquiring material wealth is linked to bodily experiences of holding objects in one’s hand. The bodily experience of holding pencils led people to increase their desire for possessing material goods (Study 1), have favorable attitudes toward a firm’s controversial profit-oriented practice (“sweatshop”), and report a greater intention of buying products from such firms (Study 2). These findings suggest that people’s attitudes and judgments are not independent of physical experiences.

Our findings make contributions to prior research. First, our research contributes to this emerging body of research on embodied cognition (Barsalou 2008), which holds that representations

of abstract concepts are grounded in sensory-motor processes. Specifically, our research demonstrates the influence of physical experience on judgments about material goods. Second, our research also contributes to social issues with bodily experience. That is, our finding demonstrated that perceptual and physical experience can shape people's mindset congruent with the represented metaphor and further their judgment even on a controversial social issue.

The two studies looked at attitude toward objects with different valence. Study 1 employed a positive valence of luxurious products, whereas study 2 used a negative valence, "sweatshop". However, both results lead to the same conclusion: increasing desire for wealth. These indicate (1) that embodied cognition of holding objects increases desire for material goods regardless of the valence of the attitude object, and (2) that people do not take into account whether their decisions are moral or immoral when primed in accordance with the abstract concept of "in hand". This signifies the robustness of finding that even immoral practice could not diminish people's heightened desire for wealth that resulted from bodily experiences. We could interpret that subtle bodily experience makes it easier to change one's attitude on a product or social judgment. Past research indicated that salience, exposure, or mere reminder of money or wealth made people behave immorally or form unethical decisions (Caruso et al, 2013; Gino and Pierce 2009;

Vohs, Mead, and Goode 2006; Vohs, Mead, and Goode 2008). At this point, our research reinforces that bodily experience though holding something has an important metaphor that may lead people to want more of something even aversive. Similarly, a subtle reminder of wealth led people to endorse social inequality, support dominance of rich over poor, and even approve of the prevalence of a free organ-transplant market that assists rich people (Caruso et al, 2013). Hence, our results from study 2 are consistent with the findings of this stream of literature, because participants whose desire for wealth was heightened supported unethical products more than did those in the control group.

For years, metaphors have been treated as rhetorical tools used by philosophers and poets (for review, Ortony 1993), but the recent developments in literature on embodied cognition and metaphors have established that sensory experiences can affect behavior, cognition, and emotions across different domains that share the same metaphorical representation. In these perspectives, our finding may have practical applicability in consumer psychology. Nowadays consumers are exposed to a variety of marketing strategies in their daily lives. In particular, firms employ such strategies using certain gestures or actions. For instance, some evaluate a product in the shop while smelling it unconsciously, or people might be enticed to hold a product that the staff pushes into customers' hand. These

experiences could affect consumer information processing and judgment for making decisions. Therefore, marketers need to consider subtle actions by understanding metaphorical symbols or images. It is important for marketers to understand how their products are evaluated by exposing certain physical actions, because the actions may affect purchase intentions. In other words, understanding of embodied cognition could enhance the effect of marketing communications.

Our research has some limitations that can be addressed by future research. First, we demonstrated that the bodily experience of holding objects leads to the desire for more wealth in study 1 through an experiment. In follow-up study 2, we showed that this effect extends to attitudes on social issues (liking toward wealth gain through aversive practice). In particular, study 2 revealed that holding objects prompts a desire for more material goods and wealth even by unethical practice (i.e., sweatshops). Although our results support that people make a favorable judgment about unethical practice or wealth, future research should focus on mechanisms for these effects. In other words, our future research needs to investigate potential mediation to reveal the relation between holding something and a subsequent judgment, identifying the link.

In addition, our research also has shown that bodily experience leads to a favorable evaluation even on an aversive social issue. Future

research should consider social issues in a social psychology context. We expect that people who are exposed to aversive social issues will evaluate them depending on their mood and concern. Thus, we need to consider this effect in terms of broader social contexts to have robust results in the future, employing interdisciplinary approaches.

Building on the literature on embodied cognition, we suggest that physical movements could significantly influence consumers' decision making and judgements. Our two studies demonstrate that the activity of holding something led to more positive evaluations of luxurious goods and sweatshop. This research has implications for embodied cognition and social psychology.

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