

Situational Materialism: An Extension and Replication

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Materialistic thoughts have been associated with poorer life-satisfaction, increased incidence of depression, and lowered self-control. Invoking materialistic thoughts seem to impact health behaviours, such as consuming unhealthy snacks. Kim (2013) found that when materialistic thoughts are activated, participants are more likely to engage in unhealthy behaviours, such as increasing consumption of candy. Kim proposed that the mechanism for this behaviour is that materialistic thoughts lower self-control, which then leads to an increase in consumption of unhealthy food. In the current study, the role of envy on self-control, using a similar experimental paradigm as Kim was investigated. Over the course of three studies, replication of the finding that inducing materialistic thoughts has an impact on eating behaviour was unfounded as none of the differences between experimental conditions were significant. Possible explanations for this failure to replicate are presented.

Keywords: materialism, replication study, self-control, envy

From a theoretical perspective, understanding the impact of materialistic thoughts on self-control can potentially improve well-being and reduce unhealthy behaviours. Materialism is the desire or motivation to acquire and possess material goods (Richins & Dawson, 1992). The acquisition of such possessions can be used as a means to achieve happiness or as a measure of success. Materialism is associated with poor social relationships, lower life satisfaction, increased incidence of anxiety and depression, and lowered self-control (for a review, see Moldes & Ku, 2020). The lowered self-control associated with materialistic thoughts has implications for health-related behaviour. Specifically, Kim (2013) found that playing the lottery activated materialistic thoughts, which in turn lowered self-control and led to an increase in the consumption of unhealthy snacks.

In Kim's (2013) research, participants were brought into a lab and seated at a table containing a bowl of 30 M&M candies. Half of the participants were given a scratch and win lottery ticket as a thank you for

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participating in the study, while the other half were only greeted and not provided with the ticket. The participants that received the lottery ticket were not allowed to scratch it until the completion of the study. All participants were told that the study had two components, the first being an assessment of general attitudes towards lotteries and the second part was a measure of cognitive reflexes. The experimenter mentioned to the participants that they were welcome to eat the M&Ms while they were completing the study. The M&Ms were in fact the key dependent variable. Kim found that participants who were given a lottery ticket consumed significantly more candy than those that did not ($M_{\text{lottery}} = 9.84$, $M_{\text{control}} = 5.85$). These findings support the notion that materialistic thoughts lower self-control.

The methodology used in Study 1 was similar to Kim's (2013), though we had participants imagine winning the lottery, rather than actually receiving a lottery ticket as in Kim's procedure. Also included was a condition to explore the role of envy, as well as additional questionnaires to supplement Kim's dependent measure of M&M's consumed.

Study 1 was designed to build upon Kim's (2013) work and further explore the relationship between materialism and lotteries. Additionally, we sought to explore the impact of envy on self-control. Although a significant amount of research has been conducted in the areas of materialism and envy individually (e.g., Belk, 1985; Schroeder & Dugal, 1995) there is little work conducted on the interaction of these constructs. In this study, we failed to replicate Kim's findings on the impact of materialism on self-control.

The current research was designed to supplement Kim's (2013) work and further explore the relationship between materialism and lotteries. Specifically, we proposed that just the thought of winning the lottery would elicit materialistic thoughts. Additionally, the impact of envy on self-control was also explored. Although a significant amount of research has been conducted in the areas of materialism and envy individually, there is sparse empirical work conducted on the interaction of these constructs. The goal of our research was to examine the role of envy in materialistic thoughts and on self-control; however, we failed to replicate Kim's findings on the impact of materialism on self-control over three studies.

STUDY 1

Method

Participants Participants were 226 university students (164 females, 62 males, mean age = 19.92, $SD = 2.82$) who volunteered as part of an optional credit component towards an introductory psychology course.

Two participants were removed due to incomplete data leaving a final dataset of $n = 224$. The participants completed an online informed consent form and were free to withdraw from the study at any time without consequence and participation was completely voluntary. The studies were approved by the University Research Ethics board.

Measures – Belk Materialism Scale. This 24-item scale provides an overall materialism score and measures the traits: possessiveness, non-generosity, and envy (Belk, 1985). The measure has an internal reliability $\alpha = .66$ for the full test and uses a 1-5 Likert scale (Belk, 1985). Richins and Dawson (1992) obtained a median alpha of $\alpha = .62$ with several samples. Two sample items are: “I would rather buy something I need rather than borrow it from someone else,” and “I don’t like to lend things, even to good friends.” (Belk, 1985, p. 270). The Belk (BMS) most likely has lower internal reliability due to a greater diversity in the items, also the test measures materialism indirectly, as a combination of three traits: possessiveness, non-generosity, and envy. The *Material Values Scale* (MVS) was included as a method for addressing this limitation.

Material Values Scale (MVS). The MVS is a 15-item scale that measures overall materialism and three values associated with materialism: success, centrality, and happiness (Richins & Dawson, 1992; Richins, 2004). The test uses a 1 to 5 Likert scale and the internal reliability is $\alpha = .86$ according to Richins (2004). Two sample items are: “I admire people who own expensive cars and clothes,” and “Buying things gives me a lot of pleasure.” (Richins, 2004, p. 217).

York Envy Scale. This is a 20-item scale measuring a feeling of ill-will towards another person because of the desire to possess something that this other individual has but the first individual does not (Gold, 1996). The test uses a 6-point Likert scale with an internal reliability coefficient of $\alpha = .91$ (Gold, 1996). Sample items are: “The better off someone else is the worse I feel,” and “It makes me feel good to ‘rain on someone else’s parade’” (Gold, 1996).

The Dispositional Greed Scale (Seuntjens et al., 2015). This is a 7-item scale that measures the “...tendency to always want more and never being satisfied with what one currently has...” (Seuntjens et al., 2015, p. 917). The scale uses a 1-5 Likert scale and is internally reliable with Cronbach’s alphas ranging from $\alpha = .82$ to $\alpha = .90$ across four samples. Two sample items are: “Actually, I am kind of greedy” and “I always want more” (Seuntjens et al. 2015, p. 921).

Procedure

Participants were brought to the lab in groups of up to three and did not have an opportunity to interact prior to or during the study. The lab consisted of a large seating area, as well as three small rooms with a

door. Each room contained a desk and computer. The participants were seated individually in one of the three rooms. From each room, the participant was able to view the experimenter when the door was open but were not able to see one another.

The experimenter explained to the participants that they would be asked to complete a series of questionnaires regarding personality characteristics as well as an imagination task. The imagination task was in fact the experimental manipulation. Participants were randomly assigned via instructions on a computer to a lottery ($n = 74$), envy ($n = 74$), or control condition ($n = 76$). In the lottery condition, participants were asked to imagine that they just won a major lottery of several million dollars, and to list the first three things they would purchase. In the envy condition, participants were asked to imagine that a friend said to them that they could have anything that they own, and to list the first three things they would like to take from their friend. In the control condition, participants were asked to imagine that they were going to decorate a room and list the first three colors that they would use.

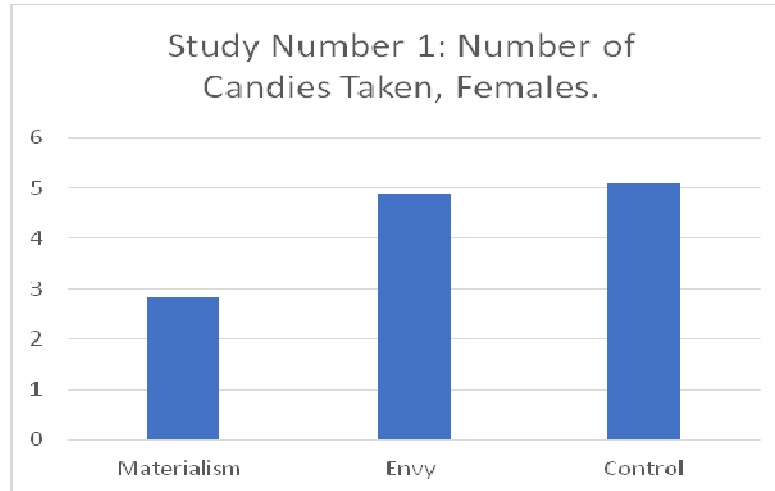
Each room contained a bowl of 20 tinfoil wrapped Hershey's Kisses chocolate candies. While Kim (2013) used amount of M&M's consumed as a measure of loss of self-control, Hershey's Kisses were used to minimize any potential concern that participants might have regarding the handling of the food (e.g., prior participants put their hands in the bowl of candy, etc.). Hershey's Kisses are individually wrapped, alleviating the possibility of food contamination. Participants were told that as a thank you for participating in the research that snacks were provided which they were free to eat during the duration of the study.

The participants were then instructed to follow the instructions on the computer screen. The experimenter closed the door to each individual room and moved to a different section of the lab, out of view of the participants. As the rooms were soundproof, the participants were not able to hear how much candy was being unwrapped or consumed by participants in the other rooms. Using Qualtrics software, participants were randomly assigned to condition. By having the conditions randomly assigned through Qualtrics, the experimenter remained blind to condition for the duration of the study. Following the manipulation, participants completed the measures. To standardize the amount of time in which the participants could consume the chocolates, participants were made aware that they would have ten minutes to complete the imagination tasks and questionnaires. At the completion of the ten-minute time interval, participants were debriefed. Following this, the experimenter recorded the number of chocolates consumed.

Results

The mean number of chocolates taken by the participants was 4.88, $SD = 7.88$, range = 0-50. A one-way ANOVA for the three conditions of materialism, envy and control was not significant $F(2,221) = 1.45$, $p =$

FIGURE 1.



Note: Post-hoc comparison (Materialism versus envy and control): $F(1,161) = 3.99$, $p = .047$

.23. As an exploratory analysis, gender was considered separately, with $n = 164$ females, a post hoc contrast comparing the materialism condition with the envy and control conditions combined was significant at $F(1,161) = 3.99$, $p < .05$, see figure 1. With males, $n = 60$, the control group was compared to the envy and materialism conditions combined, with a value of $F(1, 57) = 3.23$, $p = .077$. Analysis of the normality of the distribution of number of chocolates taken revealed a skewness of 2.80. Given the non-normality of the distribution, all the above analyses were repeated with Kruskal-Wallis nonparametric test for independent groups. There were no observed differences in the results. With the questionnaires, there were no significant differences between the three groups with the MVS, the *York Envy Scale* or the *Dispositional Greed Scale*.

STUDY 2

Study 2 was a replication of study 1 with the only change being the type of candy offered. In study 1, participants were offered Hershey's Kisses, whereas in study 2 participants were offered M&M's. M&M's

were used in Kim's original (2013) research. As Hershey's Kisses are a significantly larger candy than M&M's, we hypothesized that our null results may be due to the type of candy.

Method

Participants Participants were 106 university students (83 females, 62 males, mean age = 19.92, $SD = 2.82$) who volunteered as part of an optional credit component towards an introductory psychology course. As with study 1, participants were randomly assigned to a lottery ($n = 36$), envy ($n = 35$) or control condition ($n = 35$).

Procedure The procedure was the same as in Study 1, however in this study, M&M candies were used instead of Hersey's Kisses. As in Study 1, there was concern that participants would be hesitant to eat from a bowl of candy that may be perceived to be contaminated. We attempted to contact Empire Marketing, who, as described by Kim (2013), was responsible for data collection in the original study. We were unable to obtain any information related to the specifics of the experimental settings. As such, we followed the procedure as described in the original article. A bowl of 30 regular M&Ms was placed in each room. As in study 1, participants were told they would be participating in an imagination task and that they were welcome to help themselves to the M&Ms as a thank you for participating. There was a small spoon in each bowl, and participants were instructed to use the spoon to grab the candy and pour it into their hands, rather than placing their hands directly in the bowl. After each session, the bowl was cleaned, and 30 new M&Ms replaced any leftover candy.

Results

The overall mean number of candies taken was 2.05, $SD = 3.38$, range 0-20. An ANOVA comparing the three conditions for number of candies taken was not significant at $F(2,103) = 1.47, p = .23$. A post-hoc contrast comparing the envy condition with lottery and control condition was $F(1,103) 2.94, p = .089$. When females ($n = 83$) were examined separately, there were no significant differences between the groups. With the males ($n = 23$), the envy condition was higher when compared with the lottery and control condition combined with a value of $F(1,20) 3.92, p = .062$. The number of candies consumed was also a non-normal distribution with a skewness of 2.63. There were no observed differences in the above results with the Kruskal-Wallis test. There were no differences of statistical significance between the groups with the MVS and the *York Envy Scale*.

STUDY 3

In the previous 2 studies, participants were asked to imagine winning the lottery. In Kim's (2013) original study, participants were given an actual lottery ticket. In this study, we wanted to test if our previous manipulation using an imagination task was not sufficient to impact participant's behaviour. In this study, participants in the experimental condition were provided with a lottery ticket which they were allowed to keep.

Method

Participants Participants were 100 university students (62 females, 38 males, mean age = 19.93, $SD = 2.49$) who volunteered as part of an optional credit component towards an introductory psychology course. Participants were randomly assigned to a lottery with experimenter blind ($n = 28$), lottery with experimenter unblinded ($n = 44$) or control condition ($n = 28$).

Procedure As the manipulation in our previous studies had no impact on the amount of candy consumed, we aimed to replicate the original Kim (2013) study as closely as possible. In the previous two studies, participants were asked to imagine winning the lottery, whereas in Kim's research the participants were provided with a lottery ticket. For Study 3, participants were given a scratch and win lottery ticket. As we were not able to contact the marketing agency that conducted the original study, we did not have information regarding how the experimenters remained blind to condition. Study 3 used a similar methodology to Studies 1 and 2, with the addition of a third condition in which the experimenter was unblinded.

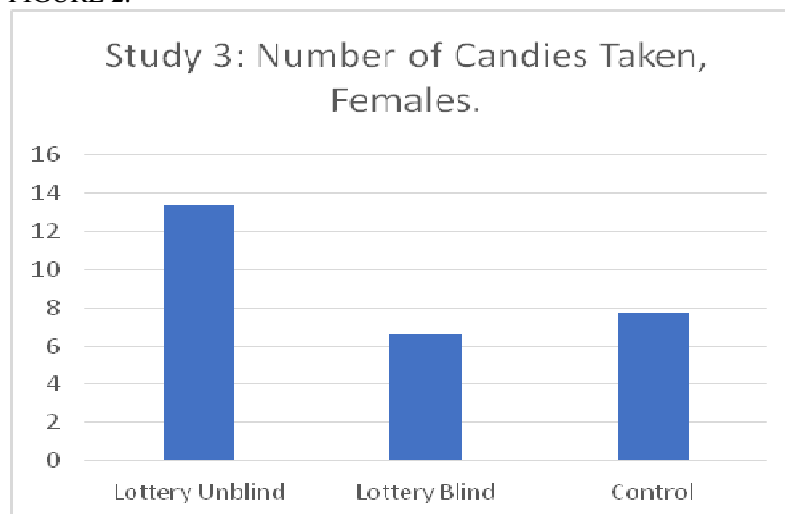
Participants were randomly assigned to one of three conditions. In the experimenter-blind conditions, the researcher provided the participants with an envelope and told them they would be asked to open it shortly before the study began. Inside the envelope was either a lottery ticket or a piece of cardboard which was roughly the same size as the lottery ticket. The lottery ticket also contained instructions with the following information, "As a thank you for participating, please feel free to take this lottery ticket with you upon completion of the study. We ask that you do not scratch the ticket until the study is over. Thank you again for your participation..". In the control condition, the instructions read, "As a thank you for participating, please hold on to this coupon until completion of the study. Please present this to the experimenter after the study is complete. Thank you again for your participation." In the blinded conditions, the experimenter closed the door of each room before the participant opened the envelope. The experimenter remained blind to condition throughout the study, and the participants in the adjoining

rooms did not know to which condition the other participants were assigned. In the experimenter unblind condition, the experimenter handed a lottery ticket to the participant and said, "As a thank you for participating, please feel free to take this lottery ticket with you upon completion of the study. We ask that you do not scratch the ticket until the study is over. Thank you again for your participation." Following this, the experimenter closed the door to the experimental rooms, and waited out of sight for the participants to complete the questionnaires.

Results

The mean number of candies taken was 11.29, $SD = 11.53$, range = 0-30. The three conditions: lottery blind, lottery-unblinded and control,

FIGURE 2.



Note: Post-hoc comparison: (lottery unblind versus lottery blind and control) $F(1,60) = 5.43, p = .02$.

were not significantly different with the number of candies taken, $F(12,98) = .99, p = .37$. In exploratory analyses by gender with females only ($n = 62$), the unblinded lottery condition was significant when compared to the lottery blind and control conditions, $F(1,60) = 5.43, p < .05$, see Figure 2. There were no differences obtained when the males ($n = 36$) were examined separately. With this sample, the skewness of the number of candies taken was 0.566, and the Kruskal-Wallis analyses were similar to the above ANOVA analyses. With the set of

questionnaires, there were no significant differences between the groups with the Belk, MVS, *Dispositional Greed Scale* and the *York Envy Scale*.

GENERAL DISCUSSION

The results of the three studies are evidence of a failed replication of the 1st study in the Kim (2013) paper that provided evidence for a relationship between materialism and self-control failure using number of candies taken as a dependent measure.

Materialism can be examined in terms of a dispositional versus situational perspective. Dispositional materialism is the notion of materialism being a pattern of consistent traits or values as in the Belk (1985) *Materialism Scale*: possessiveness, non-generosity and envy or in the Richins & Dawson (1992) *Material Values Scale*: success, centrality and happiness. The dispositional perspective has consistently shown a negative relationship between materialism and well-being, and most of the materialism research examines materialism in terms of a dispositional perspective, e.g., Dittmar et al. (2014)

Past research has demonstrated that materialistic tendencies can be increased or decreased through either experimental manipulation or training. For example, long-term mindfulness training has been shown to decrease materialistic goals (Gentina et al., 2021). Bauer et al. (2012) demonstrated that showing participants pictures of luxury goods can increase materialistic concerns and found increased competitiveness, selfishness, increased negative affect and reduced social involvement in a series of experimental studies. Zawadzka et al. (2021) demonstrated that using three different priming methods materialistic aspiration can be increased with adolescents when primed with situational activation of materialistic social models.

Therefore, research has demonstrated that materialism can be manipulated situationally. However, the current replication studies failed to find any significant differences between the conditions and, therefore, while the lottery ticket manipulation is likely to engage materialistic thoughts, the use of candy as a dependent measure is questionable. While materialism has been related to a failure in self-control (e.g., Nepomuceno & Laroche, 2017), the current replication studies show that candy may not be an effective measure of self-control failure, since in the three studies, between 29 and 48 % of the participants failed to take any candies at all. Given the smaller sample sizes in study 2 and 3, lower statistical power is a potential limitation. However, there were virtually no differences obtained between the conditions with the dependent variable of average number of candies taken in any of the three experiments.

One possible reason for the differing results between these studies and Kim (2013) findings is that the age of the participants was considerably older with an average of 34.5 years compared to 19.92 years in the present study which had a large percentage of younger participants. Another possibility is that experimenter bias may have had an impact on the results, as in Study 3, the females took more candies in the unblinded condition.

Future research could investigate the effect of materialistic thoughts on self-control failure with other dependent measures besides the candy measure employed in this study and the Kim (2013) research. Also, expanding the range of dependent measures across a range of ages may provide further insight into the impact of invoking materialistic cognitions on self-control.

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