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Stress and unethical consumer attitudes: the mediating role of construal level and materialism

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Abstract

Understanding why individuals behave unethically is an important topic for both theory and practice, especially nowadays when people experience many stressful events. The current research aims at examining the relationship between peoples' experienced stress and their attitude towards unethical consumption behavior, and the underlying mechanism. Empirical findings from a survey of 451 participants suggest that individuals' chronic perceived stress serves positively relate to the tolerance of unethical activities, and that this relationship is mediated by construal level and materialism value. Specifically, stressed individuals tend to develop low-level construal and high materialism values, both of which further increase their tolerance of ethically questionable behaviors.

Keywords: Stress, Construal Level, Materialism, Unethical behavior

1. Introduction

People sometimes carry out ethically-problematic activities in consumptions, including crimes (e.g., customer theft and fraud) and dishonesty (e.g., deliberate returning, price switching, and price arbitrage). The society suffers a high cost of these unethical activities. For example, British Retail Consortium's retail crime survey (2017) reports that the direct cost of retail crime had risen to over £700 million in 2016-2017, and consumer crimes accounted for nearly three quarters. Therefore, the need for understanding why consumers act unethically becomes critical. A growing body of research has examined a range of antecedents of attitude towards unethical behavior, such as the Big Five personality traits (Egan & Taylor, 2010); seductiveness, thriftiness, integrity (Hong, Koh, & Paunonen, 2012); religiosity (Arli & Pekerti, 2017); moral philosophy (Lu & Lu, 2009); moral disengagement (Egan, Hughes, & Palmer, 2015); and regulatory focus (Cornwell & Higgins, 2016). The findings suggest that unethical activities can be explained by different situational and individual factors (see Pan & Sparks, 2012 for a review).

Individuals experience stress when they feel internal or external demands that challenge one's resources and abilities (Lazarus & Folkman, 1984). Recent research suggests that people are more stressed nowadays than they were decades ago (Cohen & Janicki-Deverts, 2012). Making judgement and decision under stress are becoming increasingly common and important, drawing a growing attention (Moschis, 2007; Durante & Laran, 2016). Prior research mainly focuses on physiological responses of

stress (e.g., Starcke & Brand 2012), and little is known about how stress influences one's cognitive judgments, such as whether stress influences people's way of thinking. Calls for more attention to cognitive responses under stress becomes louder, especially in a consumption context (Moschis, 2007; Durante & Laran, 2016).

Therefore, the current study answers the calls by examining how stress influences people's ethical judgments from a cognitive perspective. We propose that stress leads to two cognitive consequences, increased low-level construal and increased materialism value, both leading to less-harsh judgements of unethical consumption behaviors. The current research not only holds practical implications to intervene the negative influence of chronic stress on consumers' individual difference in ethical judgement, but also contribute to ethics research by linking chronic stress and ethical judgments and by revealing the underlying cognitive mechanism. Below we review related literature.

1.1 Consumers' unethical behaviors

Consumer ethics is defined as "the moral principles and standards that guide behavior of individuals as they obtain, use, and dispose of goods and services" (Vitell and Muncy, 1992). Unethical behaviors include a variety of illegal or immoral actions, such as fraud, cheating, and shoplifting (Cox, Cox, & Moschis, 1990). Vitell and Muncy (1992) proposed different types of unethical behaviors: (1) active/illegal behaviors that actively benefit from illegal activities, such as changing price tags on

merchandise in a retail store; (2) behaviors that passively benefit or take advantage from sellers' mistake, such as keeping silent when getting too much change; (3) behaviors that actively benefit from deceptive practices, which is ethically questionable but not necessarily illegal, such as using an expired coupon for merchandise; and (4) no-harm/no-foul behaviors, such as returning merchandise, which are not often considered as unethical.

1.2. Experience of stress

Stress is defined as "a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and as endangering well-being" (Lazarus, 1966). This definition focuses on the intrinsic reaction of individuals, and refers stress as the subjective perception towards an unexpected change that one considers hard to cope with. While stress has been examined for more than six decades in psychology and behavioral science, only several consumption behaviors have been examined, including compulsive consumption (Rindfleish, 1997), alcohol and drugs consumption (e.g., Moschis & Lee, 2008), and saving and spending on necessities (Durante & Laran, 2016). More general unethical consumption behaviours will enrich the understanding of the consequences of stress. However, the knowledge about the relationship between stress and unethical behaviors remain limited and inconsistent. A related problem was examined in neuropsychology but produced inconsistent results. Starcke and

colleagues (2011) find that the salivary cortisol level from acute stress is positively related to immoral decisions (e.g., leaving after scratching a car when parking) in everyday moral dilemmas, whereas Youssef and colleagues (2011) show that acute stress may leads to less utilitarian choices in moral dilemmas. Moreover, neither of the beforementioned studies has examined the underlying cognitive process. In addition, chronic stress seems to have a long-running impact compared with acute stress, which is normally induced by a single specific situation. Different from prior studies focusing primarily on acute stress, the current research focuses on chronic stress. The current study finds that chronic experienced stress increase tolerance of unethical behaviors. Furthermore, we propose two processes contributing to this effect: (1) chronic stress alters individuals' construal-level by promoting focuses on short-term than long-term benefits, increasing tolerances of unethical actions, which are highly related to immediate rewards and long-term costs; And (2) stressed individuals are likely to develop materialism values during stress-coping process, which reduce their ethical standards when unethical actions generate benefits (e.g., "using a coupon for merchandise you did not buy").

1.3 Construal level

We proposed that chronic stress increases low-level construal, leading to more tolerance of unethical actions. Construal level theory suggests that people construct representations of events at high or low levels (Trope & Liberman, 2010). Individuals

with high-level construal tend to focus on superordinate goals (e.g., personal values and social norms) and long-term benefits; whereas individuals with low-level construal tend to focus on subordinate goals and short-term rewards. While construal level could be influenced by situational factors such as temporal distance and social distance (Bar-Anan et al., 2006), it is also a trait-like characteristic, such that an individual may have a habitual tendency to think and judge events at a high or low level (Vallacher & Wegner, 1989). The current research examines construal level as an individual-difference variable.

Drawing from the literature on the cognitive and physiological consequences of stress, we propose that stress may increase low-level construal. From the cognitive perspective, earlier research shows that chronic stress narrows one's attention to the stressful situation, which depletes cognitive resources (e.g., reducing working memory; Darke,1988; Eysenck & Calvo, 1992), and makes individuals focus on their current problems and how to solve the threat (Derryberry & Tucker, 1994). Prior research suggests that low-level construals are likely to be developed when resources are depleted. For example, Wan and Agrawal (2011) show that resource depletion from exerting self-control promotes low-level thinking. Two streams of neurobiology literature also provide consistent evidence. First, LaBar and Cabeza (2006) find that stress impairs the hippocampus function in the brain, and hurts the cognitive ability (e.g., reducing the reliability and preciseness of memory; McEwen, 1998), which relates to low-level construal because the hippocampus-based cognitive system

promotes high-level construal (Chang & Pham, 2012). Second, Foley and Kirschbaum (2010) find that stress increases the hormone cortisol level, which has been found to make people weight instant rewards more heavily than delayed rewards (Adam & Epel, 2007), in line with our proposition that stress increases low-level thinking which focuses on immediate benefits.

We further propose that stress-induced low-level construal increases the tolerance of unethical actions. First, individuals' attitudes towards unethical behaviors reflect their moral principles, and thus it is abstract and decontextualized by nature (Eyal et al., 2008). Therefore, individuals with low-level construal are less likely to rely on their ethical values to judge unethical behaviors, and thus make less harsh judgment. Literature on the influence of psychological distance also show that people tend to tolerate immoral behaviors less when the target behaviors are temporally or socially distant (Agerström & Björklund, 2009; Eyal et al., 2008). Second, unethical actions generate short-term rewards (e.g., unpaid goods) at the cost of potential future losses (e.g., criminal record; Hershfield, Cohen, & Thompson, 2012). Because individuals with low-level construal weight more heavily on short-term rather than benefits, they are likely hold lower ethical standards. Therefore, people with low-level construal are more likely to perceive unethical behaviors acceptable. We predict that:

H1: Chronic experienced stress is positively associated with individuals' tolerance of unethical behaviors.

H2: Individuals with high (vs. low) chronic experienced stress are more likely to

promote low-level (vs. high-level) construals.

H3: Construal level mediates the relationship between chronic experienced stress and individuals' tolerance of unethical behaviors.

1.4 Materialism

Materialism refers to "a set of centrally held beliefs about the importance of possessions in one's life", which consists of three beliefs: success, centrality, and happiness. Materialists consider material possessions as an optimal indicator of success, being central in their lives, and marking the necessity for happiness (Richins & Dawson, 1992). Stressed individuals are motivated to exert cognitive or behavioral effort to cope with the stress. One such coping strategy is consumption, which helps alleviate stress by restoring feelings of security and stability from owning processions (Chang & Arkin, 2002). Hence, people are likely to develop materialism values during this process, especially if they chronically experience the stress. This is consistent with existing findings that people experiencing stressful life events (e.g., family disruption) tend to develop materialism beliefs to cope with the stressors (Burroughs & Rindfleisch, 1997).

Drawing from existing literature, we further proposed that the increased materialism increases unethical behaviors. People with high materialism values often consider possessions as the key in life. Ethically problematic behaviors, which normally lead to personal benefits, are more likely to be tolerate. Many empirical

studies have demonstrated the positive relationship between materialism and people's tolerance of ethically dubious behaviors (e.g., Muncy & Eastman, 1998). We posit:

H4: Individuals with high (vs. low) chronic experienced stress are more likely to develop high (vs. low) materialism values.

H5: Materialism values mediates the relationship between chronic experienced stress and tolerance of unethical behaviors.

2 Method

2.1 Participants

Data was collected from 451 American adults (52.1% males) by using Amazon Mechanical Turk. The age ranged from 18 to 75 years (M = 34.2, SD = 10.94). Family income and education level were also measured as controls.

2.2 Materials and measures

Participants completed an online survey consisting of demographics questions and the following measures. Cronbach's alpha coefficients are reported in Table 1.

Experience of stress. Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) measures experience of stress by asking how often individuals experience some stress-related feelings (1 = never, 5 = very often). Higher scores indicate higher stress.

Materialism. The 18-item Material Values Scale (MVS; Richins and Dawson,

1992) measures people's materialism value by asking them to indicate the degree to which they agree with the statements on the role of material possessions in their lives, such as "I like to own things that impress people" (1= strongly agree, 5 = strongly disagree). Lower scores indicate higher materialism.

Construal level. The 25-item Behavioral Identification Form (BIF; Vallacher & Wegner, 1989) measures chronic construal level. Participants were asked to describe 25 activities in terms of either a high (scored as 1) or low-level manner (scored as 0). For example, "reading a book" is described as "following lines of print" in low-level construal, or "gaining knowledge" in high-level construal. Participant's responses for each item were summed to provide a BIF score. Higher BIF scores indicate higher construal levels.

Unethical consumption behavior. Muncy-Vitell's consumer ethics beliefs scale (CEBS: Vitell & Muncy, 1992) measures peoples' attitude towards unethical behaviors. Participants were asked to rate their attitudes towards a series of ethically dubious actions on a 5-point Likert scale from 1 ("strongly believe that it is wrong") to 5 ("strongly believe that it is not wrong"). Higher scores reflect high tolerance towards unethical behaviors.

The original CEBS (Vitell & Muncy, 1992) has four factors: proactively benefiting at the expense of the seller (factor 1); passively benefiting at the expense of the seller (factor 2); deceptive practices (factor 3); and no perception of harm or victim (factor 4). Unlike factor 1 (commonly considered as both illegal and unethical)

or factor 4(generally considered as acceptable), both factor 2 and 3measure problematic and questionable behaviors, but not necessarily illegal. Therefore, these two factors are conceptually highly related to each other and lack discriminant validity. Later research often uses a three-factor structure, combining factor 2 and factor 3 to represent consumers' questionable but legal behaviors (e.g., Kavak et al., 2009; Rao & Al-Wugayan, 2005; Rawwas & Singhapakdi, 1998). Therefore, we combined factor 2 and factor 3, and labeled the new factor as "questionable/legal behaviors".

3 Results

3.1 Descriptive statistics and validity

We first purified the items by removing items with factor loading and communalities below 0.5 (Gentina et al., 2016). Then we examined the measurement model. The average variance extracted (AVE) of each construct were all above the suggested threshold of 0.45 (Netemeyer et al., 2003), and the composite reliability coefficients were all above 0.70 (Nunnally, 1978) suggesting acceptable convergent validity of the constructs.

A confirmatory factor analysis on stress, materialism, and dimensions of unethical behaviors shows an acceptable model: comparative fit index (CFI) = 0.93, the root mean square error of approximation (RMSEA) = 0.047, goodness-of-fit index (GFI) = 0.87, Incremental Fit Index (IFI) = 0.93, chi-square value χ^2 = 1222.53 (*DF*

= 607, $p < .001$), and ratio of chi-square to the degree of freedom = 2.01. The loadings were all above 0.5. Table 1 reports the descriptive statistics and Pearson's correlations.

INSERT TABLE 1 HERE

3.2 Common method bias

We followed the procedure recommended by Podsakoff et al. (2003) to control the CMB effects. We employed procedural remedies to minimizing CMB during the questionnaire design phase. First, we created psychological separation by using cover stories and different tasks names to make it appear that the measures of the independent and dependent variables are not related. Second, we used different response formats or scale ending points for the measurement (e.g. BIF is measured by selecting one from two options, MV was measured by a five-point Likert Scale). Third, we allowed the answers to be anonymous and assured that there are not right or wrong answers, to reduce people's evaluation apprehensions

We also applied a stringent statistical remedy, single-common-method-factor approach (Podsakoff et al., 2003), to control for the effects of an unmeasured latent methods factor. In this way, items are allowed to load on their theoretical constructs, as well as on a latent-common-method-variance factor. A comparison between the model with and without the latent-common-methods-variance factor shows that the

changes in all the regression weights are not significant; all less than 0.10. The result shows that CMB has not distorted the results.

In addition, VIFs were between 1.02 and 1.18 (below 10), and the tolerance values were between 0.85 and 0.98 (above 0.1), indicating that the multicollinearity is not a problem in this study (Meyers et al., 2006).

3.3 Regression analysis

Regression analyses were used to examine the relationships between experience of stress, unethical behaviors, construal levels and materialism value. We conducted bootstrap tests of multiple mediation using Hayes' (2017) Process to assess the mediation of construal level and materialism. Age, gender, education, and income were entered as covariates, and construal level and materialism were entered as multiple mediators. Table 2 reveals support for H1 for two dimensions of consumer ethical scale: stress was positively associated with active/illegal behavior and questionable/legal behavior.

There was no support on the no-harm/no-foul dimension. The exception may because that no-harm/no-foul behaviors involve activities that do not harm people directly (e.g., returning merchandise after buying it and not liking it), and therefore are often considered as acceptable by most consumers.

INSERT TABLE 2 HERE

As seen in Table 3, stress is positively associated with construal level and materialism value. As seen in Table 2, participants with a high construal level judged unethical behavior more harshly than those with a low level regarding active/illegal and questionable/legal dimension, but not no-harm/no-foul dimension. Similar result was found for materialism. It is consistent with prior finding that materialism is not related the no-harm/no-foul dimension (e.g., Lu & Lu, 2009).

Examination of the 95% bias-corrected confidence intervals (CI) from 5000 bootstrap samples revealed that construal level mediates the influence of stress on the active/illegal (CI: 0.003, 0.040) and questionable/legal dimensions (CI: 0.004, 0.058). Similar result was find for materialism; mediation occurs on the active/illegal (CI: 0.004, 0.056) and questionable/legal dimensions (CI: 0.003, 0.069).

INSERT TABLE 3 HERE

4 Discussion

The current paper provides several theoretical contributions. First, research in psychology and marketing focuses on antecedents of consumer ethical beliefs. The current study contributes to them by showing the positive relationship between chronic stress and consumer ethical judgments for the first time. The results indicate that stressed individuals are more tolerant of unethical activities which consumers

benefit from ethically problematically behaviors. Literature has shown that stress increases short-term-oriented decisions (Gray, 1999) and choices of risky options with large reward (Putman et al., 2010), which are in line with the present finding because unethical actions are often risky and possibly generate long-term losses (e.g., reputation).

Second, prior research has suggested that stress generate various cognitive responses, such as increasing intuitive and automatic processing (Porcelli & Delgado, 2009), and reducing working memory (Darke, 1988). The current study firstly demonstrates that stress increases low-level construal, shedding light on the underlying cognitive processes under stress. Furthermore, this finding contributes to construal level theory by identifying stress as a new antecedent variable of construal level.

Third, the current research contributes to literature on materialism. Existing literature mainly focuses on undesirable consequences of materialism such as reduced happiness and increased distress (Belk, 1985). Burroughs and Rindfleisch (2002) draw from value conflicting theory and find that materialism values generate psychological tension from value conflicts, and thus reduce well-being. Ruvio, Somer, and Rindfleisch (2014) find that highly materialistic people report higher levels of post-traumatic stress. Based on stress coping theory (Lazarus & Folkman, 1984), our study examines a reversed direction of the relationship that people adopt the seeking of material possessions and materialism as a strategy to cope with stressors.

Therefore, the current study enriches the understanding of materials by examining a related-but-different topic and showing that chronic stress increases materialism. Our finding is in line with Rindfleisch et al. (1997) showing that children from disrupted family are more likely to develop materialism.

Finally, we find that stressed individuals tend to construe actions at lower levels, increasing unethical behaviors, consistent with prior research suggesting that a low-level construal is associated with less moral behaviors (e.g., Eyal et al., 2008). Because chronic stress and ethical beliefs are developed over a long period, we measure construal level as a personality trait instead of manipulating it through psychological distance, which would generate a more stable effect. Also, it broadens the scope of the stream of research on construal level by focusing on consumption-related moral judgment

Our findings are subject to several limitations. First, stress generates emotional consequences (e.g., anxiety, and fear), and it is likely that these emotions may influence individual ethics through other routes. An interesting avenue of future research is to focus on the emotional aspects of stress. Second, the proposed relationships were demonstrated by theoretical inference and survey data. However, some works also suggests the possibility of a reversed effect of unethical behaviors on stress (e.g. situation-induced acute stress; Ruedy et al. 2013). Therefore, an experimental design may be used to better investigate the causal relationships and mediation for future research, such as priming construal level and materialism and

examining whether opposite primes eliminate the influence of stress. Third, the participants were American citizens, who have more independent self-construal. The individual unethical attitude is, however, heavily influenced by various cultural backgrounds (Crittenden et al., 2009). Therefore, examining the relationship between stress and ethics in other cultural backgrounds, especially in an interdependent culture, may merit future exploration.

5. Conclusions

In summary, and the study shows that stressed people are more likely to tolerate unethical behaviors. Furthermore, two cognitive processes contribute to the effect; that is, stress increases low-level construal and materialism values, both of which reduce the perceived severity of unethical actions.

References

Adam, T. C., & Epel, E. S. (2007). Stress, eating and the reward system. Physiology & Behavior, 91(4), 449-458.

Agerström, J., & Björklund, F. (2009). Temporal distance and moral concerns: Future morally questionable behavior is perceived as more wrong and evokes stronger prosocial Intentions. Basic and Applied Social Psychology, 31(1), 49–59.

Arli, D., & Pekerti, A. (2017). Who is more ethical? Cross-cultural comparison of consumer ethics between religious and non-religious consumers. Journal of Consumer Behaviour, 16(1), 82-98.

Bar-Anan, Y., Liberman, N., & Trope, Y. (2006). The association between psychological distance and construal level: evidence from an implicit association test. Journal of Experimental Psychology. General, 135(4), 609–22.

Belk, Russell W. (1985). Materialism: Trait aspects of living in a material world, Journal of Consumer Research, 12 (December), 265-280.

British Retail Consortium (2017). 2017 Retail Crime Survey. Retrieved from https://brc.org.uk/making-a-difference/communities/retail-crime.

Burroughs, J. E., & Rindfleisch, A. (1997). Materialism as a coping mechanism: An inquiry into family disruption. ACR North American Advances.

Burroughs, J. E., & Rindfleisch, A. (2002). Materialism and well-being: A conflicting values perspective. Journal of Consumer Research, 29(3), 348-370.

Chang, L., & Arkin, R. M. (2002). Materialism as an attempt to cope with uncertainty. Psychology & Marketing, 19(5), 389-406.

Chang, H. H., & Tuan Pham, M. (2012). Affect as a decision-making system of the present. Journal of Consumer Research, 40(1), 42-63.

Cohen, S., & Janicki-Deverts, D. (2012). Who's stressed? Distributions of psychological stress in the United States in probability samples from 1983, 2006, and 2009. Journal of Applied Social Psychology, 42(6), 1320-1334.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. Journal of Health and Social Behavior, 385-396.

Cornwell, J. F., & Higgins, E. T. (2016). Eager feelings and vigilant reasons: Regulatory focus differences in judging moral wrongs. Journal of Experimental Psychology: General, 145(3), 338.

Cox D., A. D. Cox and G. P. Moschis (1990). When Consumer Behavior Goes Bad: An Investigation of Adolescent Shoplifting, Journal of Consumer Research, 17 (September), 149–159.

Crittenden, V. L., Hanna, R. C., & Peterson, R. A (2009). Business students' attitudes toward unethical behavior: A multi-country comparison. Marketing Letters, 20(1), 1-14.

Darke, S. (1988). Anxiety and working memory capacity. Cognition and Emotion, 2(2), 145-154.

Derryberry, D., & Tucker, D. M. (1994). Motivating the focus of attention. In P. Niedenthal, & S. Kitayama (Eds.), The heart's eye: Emotional influences in perception and attention (pp. 167-196). San Diego, CA: Academic Press.

Durante, K. M., & Laran, J. (2016). The effect of stress on consumer saving and spending. Journal of Marketing Research, 53(5), 814-828.

Egan, V., Hughes, N., & Palmer, E. J. (2015). Moral disengagement, the dark triad, and unethical consumer attitudes. Personality and Individual Differences, 76, 123-128.

Egan, V., & Taylor, D. (2010). Shoplifting, unethical consumer behaviour, and personality. Personality and Individual Differences, 48(8), 878-883.

Eyal, T., Liberman, N., & Trope, Y. (2008). Judging near and distant virtue and vice. Journal of Experimental Social Psychology, 44(4), 1204-1209.

Eysenck, M. W., & Calvo, M. G. (1992). Anxiety and performance: The processing efficiency theory. Cognition & Emotion, 6(6), 409-434.

Foley, P., & Kirschbaum, C. (2010). Human hypothalamus–pituitary–adrenal axis responses to acute psychosocial stress in laboratory settings. Neuroscience & Biobehavioral Reviews, 35(1), 91-96.

Gentina, E., Shrum, L. J., & Lowrey, T. M. (2017). Coping with loneliness through materialism: Strategies matter for adolescent development of unethical behaviors. Journal of Business Ethics, 1-20.

Gray, J. R. (1999). A bias toward short-term thinking in threat-related negative emotional states. Personality and Social Psychology Bulletin, 25(1), 65-75.

Hayes, A. F. (2017). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. Guilford Publications.

Hershfield, H. E., Cohen, T. R., & Thompson, L. (2012). Short horizons and tempting situations: Lack of continuity to our future selves leads to unethical decision making and behavior. Organizational Behavior and Human Decision Processes, 117(2), 298-310.

Hong, R. Y., Koh, S., & Paunonen, S. V. (2012). Supernumerary personality traits beyond the Big Five: Predicting materialism and unethical behavior. Personality and Individual Differences, 53(5), 710-715.

Kavak, B., Gürel, E., Eryiğit, C., & Tektaş, Ö. Ö. (2009). Examining the effects of moral development level, self-concept, and self-monitoring on consumers' ethical attitudes. Journal of Business Ethics, 88(1), 115–135.

LaBar, K. S., & Cabeza, R. (2006). Cognitive neuroscience of emotional memory. Nature Reviews Neuroscience, 7(1), 54.

Lazarus, R. S. (1966). Psychological stress and the coping process. New York, NY, US: McGraw-Hill.

Lazarus, R. S., & Folkman, S. (1984). Coping and adaptation. The Handbook of Behavioral Medicine, 282-325.

Lu, L.-C., & Lu, C.-J. (2009). Moral philosophy, materialism, and consumer ethics: An exploratory study in Indonesia. Journal of Business Ethics, 94(2), 193-210.

McEwen, B. S. (1998). Stress, adaptation, and disease: Allostasis and allostatic load. Annals of the New York Academy of Sciences, 840(1), 33-44.

Moschis, George P. (2007). Stress and consumer behavior. Journal of the Academy of Marketing Science. 35, 430-444.

Muncy, J. A., & Eastman, J. K. (1998). Materialism and consumer ethics: An exploratory study. Journal of Business Ethics, 17(2), 137–145.

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). Scaling procedures: Issues and applications. CA: Sage Publications.

Nunnally, J.C. (1978). Psychometric theory. New York: McGrawHill.

Pan, Y., & Sparks, J. R. (2012). Predictors, consequence, and measurement of ethical judgments: Review and meta-analysis. Journal of Business Research, 65(1), 84-91.

Podsakoff, P.M., Mackenzie, S.B., Lee, J.-Y., & Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88 (5), 879-903.

Porcelli, A. J., & Delgado, M. R. (2009). Acute stress modulates risk taking in financial decision making. Psychological Science, 20(3), 278-283.

Rao, C. P., & Al-Wugayan, A. A. (2005). Gender and cultural differences in consumer ethics in a consumer-retailer interaction context. Journal of International Consumer Marketing, 18(1-2), 45-71.

Rawwas, M. Y., & Singhapakdi, A. (1998). Do consumers' ethical beliefs vary with age? A substantiation of Kohlberg's typology in marketing. Journal of Marketing Theory and Practice, 6(2), 26-38.

Richins, M. L. & Dawson, S. (1992). A Consumer values orientation for materialism and its measurement: Scale development and validation. Journal of Consumer Research, 19 (December), 303-316.

Rindfleisch, A., Burroughs, J. E., & Denton, F. (1997). Family structure, materialism, and compulsive consumption. Journal of Consumer Research, 23(4), 312-325.

Ruedy, N. E., Moore, C., Gino, F., & Schweitzer, M. E. (2013). The cheater's high: The unexpected affective benefits of unethical behavior. Journal of Personality and Social Psychology, 105(4), 531.

Starcke, K., & Brand, M. (2012). Decision making under stress: a selective review. Neuroscience & Biobehavioral Reviews, 36(4), 1228-1248.

Starcke, K., Polzer, C., Wolf, O. T., & Brand, M. (2011). Does stress alter everyday moral decision-making? Psychoneuroendocrinology, 36(2), 210-219.

Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. Psychological Review, 117(2), 440-463.

Vallacher, R. R., & Wegner, D. M. (1989). Levels of personal agency: Individual variation in action identification. Journal of Personality and Social Psychology, 57(4), 660-671.

Vitell, S. J., & Muncy, J. (1992). Consumer ethics: An empirical investigation of factors influencing ethical judgments of the final consumer. Journal of Business Ethics, 11(8), 585-597.

Wan, E. W., & Agrawal, N. (2011). Carryover effects of self-control on decision making: A construal-level perspective. Journal of Consumer Research, 38(1), 199-214.

Youssef, F. F., Dookeeram, K., Basdeo, V., Francis, E., Doman, M., Mamed, D., ... & Legall, G. (2012). Stress alters personal moral decision making. Psychoneuroendocrinology, 37(4), 491-498.

Table 1

Means, standard deviations, Cronbach's alpha coefficients, and Pearson's correlations.

	1	2	3	4	5	6
1. Stress						
2. Construal level	-.13**					
3. Materialism	-.21**	.05				
4. Active/Illegal	.19**	-.15**	-.17**			
5. Questionable/Legal	.13**	-.18**	-.15**	.65**		
6. No-harm.no-foul	.10*	-.16**	-.08	.41**	.62**	
Mean	2.63	14.91	3.36	1.96	2.53	2.87
α	.92	.91	.91	.87	.88	.88
average variance extracted	.48	n.a.	.45	.58	.53	.79
composite reliability	.92	n.a.	.90	.87	.87	.88

Note: ** $p < .01$; * $p < .05$;

Table 2

Regression results: influence on unethical behaviors

	DV: Active/Illegal		DV: Questionable/Legal		DV: No-harm/No-foul	
IVs	B	t	B	t	B	t
	Model 1		Model 2		Model 3	
Stress	0.18	3.47**	0.16	2.59**	0.12	1.48
Age	-0.02	-6.32**	-0.02	-4.47**	-0.02	-3.17*
Gender	-0.20	-2.56*	-0.12	-1.35	-0.05	-0.44
Education	0.11	2.35*	0.11	2.08*	0.12	1.81
Income	0.03	1.17	.08	2.72*	-0.01	-0.16
R^2	0.14		0.09		0.04	
F(5, 445)	14.30***		8.22***		3.42**	
	Model 4		Model 5		Model 6	
Construal Level	-0.02	-3.09**	-0.03	-3.69**	-0.03	-3.14**
Age	-0.02	-6.66**	-0.02	-4.66**	-0.02	-3.21**
Gender	-0.21	-2.64**	-0.15	-1.61	-0.08	-0.71
Education	0.11	2.43*	0.11	2.06*	0.12	1.76
Income	0.01	0.48	0.06	2.29*	-0.02	-0.44
R^2	0.13		0.10		0.05	
F(5, 445)	13.73***		9.71***		5.01***	
	Model 7		Model 8		Model 9	
Materialism	-0.13	-2.88**	-0.14	-2.72**	-0.09	-1.36
Age	-0.02	-6.63*	-0.02	-4.70**	-0.02	-3.31**
Gender	-0.17	-2.15*	-0.10	-1.05	-0.03	-0.26
Education	0.11	2.30*	0.11	2.00*	0.12	1.77
Income	0.01	0.37	0.06	2.15*	-0.02	-0.52
R^2	0.13		0.09		0.04	
F(5, 445)	13.46***		8.37***		3.34**	

*** $p < .001$; ** $p < .01$; * $p < .05$

Table 3

Regression analysis: influence on construal level and materialism

	Model 10: DV: Construal		Model 11: DV: Materialism	
IVs	B	t	B	t
Stress	-0.98	-2.30*	-0.25	-4.60**
Age	0.04	1.31	0.00	1.18
Gender	-1.59	-2.54*	0.09	1.14
Education	-0.04	-0.18	-0.08	-1.79
Income	-0.36	-0.97	-0.04	-1.49
R^2	0.04		0.06	
F(5, 445)	3.20**		6.02***	

*** $p < .01$; ** $p < .01$; * $p < .05$