TaeWoo Kim

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EDUCATION

Ph. D., Marketing, minor in psychology (May 2019 expected)
Kelley School of Business, Indiana University, Bloomington IN

M. S., Economics, May 2012
Krannert School of Management, Purdue University, West Lafayette, IN

M. S., Statistics, May 2010
Department of Statistics, University of Iowa, Iowa City, IA

B. S., Business Administration, March 2008
Korea University, Seoul, Korea

RESEARCH INTERESTS

Impact Artificial Intelligence on Consumer Decision Making
Consumer Persuasion
Embodied Cognition
Magical Thinking and Goal Pursuit

PAPERS UNDER REVIEW & WORKING PAPERS (Abstracts in Appendix)

TaeWoo Kim and Adam Duhachek, "Artificial Intelligence and Persuasion: A Construal-Level Account," invited for 2nd round review, *Psychological Science* (Job Market Paper, Dissertation Essay 1)

TaeWoo Kim, Adam Duhachek, Pablo Briñol, and Richard Petty, "The Meaning of Consumer Actions Drives Thought Usage in Self Persuasion," under review at *Journal of Consumer Psychology*

TaeWoo Kim, Adam Duhachek, and Kelly Herd, "Activation of an Ideal Self Makes Successful Performance Contagious," under review at *Journal of Consumer Psychology*

Tae Woo Kim and Adam Duhachek, "Persuasion by Artificial Intelligence Differs along Cognitive versus Affective Routes," to be submitted to *Journal of Consumer Research* in Fall, 2018 (Dissertation Essay 2)

Tae Woo Kim and Adam Duhachek, "The Impact of Artificial Intelligence in Medical and Health-Related Decisions," to be submitted to *Special Issue on Artificial Intelligence, California Management Review*, September, 2018

Tae Woo Kim, Adam Duhachek, Pablo Briñol, Spike Lee, and Richard Petty, "Embodiment Effects in Moral Cleansing," to be submitted in Fall, 2018

SELECTED RESEARCH IN PROGRESS (Abstracts in Appendix)

TaeWoo Kim, Joseph Goodman, and Adam Duhachek, "Preference for Human and Non-human Agent in Random Events: Effect of Probability and Outcome Valence," (data collection phase)

TaeWoo Kim and Adam Duhachek, "We vs. Them: Rejection by a Non-human Agent Makes People United," (data collection phase)

TaeWoo Kim, Hye Jin Lee, and Adam Duhachek, "Cheating on Machines: Consumers Cheat More on Machines (vs. Humans) Due to Reduced Guilt," (data collection phase)

Aaron Garvey**, TaeWoo Kim**, and Adam Duhachek, "Unfair Offers Seem Less Unfair When It is From a Non-human Agent," (data collection phase)

TaeWoo Kim, Min Jung Koo, and Ayelet Fishbach, "Giving the Self: When People Prefer Giving Something that Represents One's Essence," (data collection phase)

DISSERTATION

Persuasion by Artificial Intelligence and Consumer Decision Making

Chair: Adam Duhachek
Committee Members: Scott MacKenzie, Shanker Krishnan, Edward Hirt
Proposal Defense: June 2017

Artificial Intelligence (A.I.) is increasingly common across a variety of platforms and applications created to interact with consumers. Despite these advances, our understanding of the impact of A.I. on consumer decision making is limited. As one of the pioneering examples of research in this area, my dissertation examines how persuasion by A.I. differs from persuasion by human agents, and how the difference affects consumer decision making. Essay 1 focuses on the lack of intentionality in A.I., a unique property compared to human agents, and demonstrates that the two types of agents differentially influence consumers'

construal level due to the varying level of intentionality associated with their actions. As a result, the effectiveness of an agent's persuasion depends on whether the message represents high or low construal features, an effect which is further moderated by people's beliefs about A.I.'s learning capability. Essay 2 focuses on another unique aspect of A.I., namely lack of direct emotional experience, and demonstrates that persuasion by an artificial agent is more effective for cognitive (vs. affective) consumption domains. It was also found that a persuasion message delivered by an A.I. is more effective when the recipient consumers are in a cognitive (vs. affective) mindset. Further, these effects are moderated by the extent to which the A.I. are anthropomorphized, because the degree of anthropomorphism is associated with the naïve belief that the A.I. can feel emotions.

Essay 1: Artificial Intelligence and Persuasion: A Construal-Level Account (invited 2nd round revision at *Psychological Science*)

Whereas more individuals are relying on information provided by non-human agents, such as artificial intelligence and robots, little research has examined how persuasion attempts made by non-human agents may differ from persuasion attempts made by human agents. Drawing on construal level theory, we posit that individuals will perceive artificial agents at a low-level construal, which directs individuals' focus towards "how" these agents implement actions to serve humans. Further, we posit that interactions with such agents drive individuals to adopt a low-level construal mindset more generally. We show these construal-based differences impact compliance with persuasive messages made by artificial agents such that these messages are more effective when the message represents low- (vs. high-) level construal features. We find these effects are moderated by the extent to which an artificial agent can independently learn from its environment (i.e., machine learning), as learning defies people's lay theories about artificial agents.

Essay 2: "Persuasion by Artificial Intelligence Differs along Cognitive versus Affective Routes" (manuscript in preparation for *Journal of Consumer Research*, target submission date: September)

While some advanced A.I. (e.g., Google's AlphaGo) can surpass human cognitive intelligence in many domains, their capability to mimic human emotion is still in its infancy. Thus, emotional capability has long been considered a property A.I. lacks when compared to humans. The current research shows that persuasion by an A.I. is more effective when the product is perceived as cognitive (vs. affective) in its nature. In Study 1, persuasion by an A.I. to buy a book was shown to be more effective when the book was framed cognitively rather than affectively. In Study 2, consumers were found to bet their money on a baseball team that was recommended by an A.I. (vs. human sports analyst) when baseball was framed as a cognitive (vs. emotional) sport. In Study 3, consumers demonstrated higher intention to watch a movie recommended by an A.I. when the movie was described in cognitive (vs. affective) language. However, this effect was attenuated when the same movie was introduced by a human movie expert. In Study 4, we found that the same persuasive message was more effective when a recipient consumer's mindset was cognitively (vs. affectively) oriented. In examining the underlying mechanism, we found in Study 5 that the effective persuasion from

agent-product type matching is due to a heightened attitude certainty created from the matching (vs. mismatching). In Study 6, we found that increasing anthropomorphic characteristics of an A.I. attenuates the matching effect found in previous studies because individuals perceived greater emotional capability from an A.I. that resembles human appearance.

CONFERENCE PRESENTATONS (*presenter)

TaeWoo Kim*, Adam Duhachek "Artificial Intelligence and Persuasion: A Construal-Level Account," 2018, Scheduled in October, *Association for Consumer Research Conference*, Special Session on Artificial Intelligence and Robots, Dallas, Texas,

TaeWoo Kim*, Adam Duhachek "Artificial Intelligence and Persuasion: A Construal-Level Account," 2018, *CLIK Consumer Behavior Marketing Conference*, University of Louisville, Louisville, Kentucky

TaeWoo Kim*, Adam Duhachek "Artificial Intelligence and Persuasion: A Construal-Level Account," 2018, *49th Haring Symposium,* Indiana University, Bloomington, Indiana

TaeWoo Kim*, Adam Duhachek "Artificial Intelligence and Persuasion: A Construal-Level Account," 2018, *Invited Presentation at Seoul National University, Marketing Department,* Seoul, Korea

TaeWoo Kim*, Adam Duhachek "Artificial Intelligence and Persuasion: A Construal-Level Account," 2018, *Invited Presentation at SungKyunKwan University (SKK Global), Marketing Department,* Seoul, Korea

TaeWoo Kim*, Adam Duhachek "Artificial Intelligence and Persuasion: A Construal-Level Account," 2018, *Invited Presentation at Korea University, Marketing Department,* Seoul, Korea

TaeWoo Kim*, Adam Duhachek, Pablo Briñol, Spike Lee, and Richard Petty, "The Effect of Meaning in Action Moderates Embodiment Effect: The Case of Hand Cleaning," *2018 Society for Consumer Psychology Conference*, Dallas, Texas

TaeWoo Kim*, Adam Duhachek "Artificial Intelligence and Persuasion: A Construal-Level Account," 2017, *CLIK Consumer Behavior Marketing Conference*, Louisville, University of Louisville

TaeWoo Kim*, Adam Duhachek, Pablo Briñol, and Richard Petty, "The Meaning of Consumer Actions Drives Thought Usage in Self Persuasion," 2017, *26th Annual Robert Mittelstaedt Doctoral Symposium*, Lincoln, University of Nebraska

TaeWoo Kim*, Adam Duhachek, and Kelly Herd, "Activation of an Ideal Self Makes Successful Performance Contagious," *2016 Society for Consumer Psychology Conference*, St. Pete Beach, Florida

TaeWoo Kim*, Adam Duhachek, Pablo Briñol, and Richard Petty, "The Meaning of Consumer Actions Drives Thought Usage in Self Persuasion," *2016 Society for Personality and Social Psychology Conference*, Embodied Cognition Preconference, San Diego, California

TaeWoo Kim*, Adam Duhachek, and Kelly Herd, "Activation of an Ideal Self Makes Successful Performance Contagious," Invited Talk at *Young and Laramore Advertising Company 2015 Annual Retreat*, Bloomington, Indiana

TaeWoo Kim*, Adam Duhachek, Pablo Briñol, and Richard Petty, "The Meaning of Consumer Actions Drives Thought Usage in Self Persuasion," *2014 Association for Consumer Research Conference*, Special Session for Embodied Cognition, Baltimore, Maryland

ACADEMIC HONORS AND AWARDS

Marketing Science Institute Research Award for MSI Research Priorities (target project applied: "Artificial Intelligence and Persuasion: A Construal-Level Account," 2018, $8,000)

Indiana University Dean's Individual Research Award (target project applied: "Artificial Intelligence and Persuasion: A Construal-Level Account," 2017, $3,000)

Outstanding Instructor Award, University of Iowa, Statistics Department, 2009

Merit-Based Scholarship, Korea University Business School, 2000

TEACHING EXPERIENCE

Guest Lecturer, "How A.I. and Robots Would Change the Future of Marketing?" in an undergraduate marketing course, "*Introduction to Marketing (honor class),*" Indiana University, Kelley School of Business (Spring 2017)

Guest Lecturer, "How A.I. and Robots Would Change the Future of Marketing?" in a graduate statistics course, "*Statistical Consulting,*" Indiana University, Department of Statistics (Fall 2016)

Instructor, *Introduction to Marketing*, Indiana University, Kelley School of Business (Spring 2015 & Fall 2015, average instructor rating: 5.9 / 7.0)

Instructing Teaching Assistant, *Statistics for Business*, University of Iowa, (Spring 2009, Fall 2009, & Spring 2010, average instructor rating: 5.4 / 6, "Outstanding Instructor Award" received)

TEACHING INTEREST

Artificial Intelligence Marketing, Artificial Intelligence Consumer Persuasion, Digital Marketing, Social Media Marketing, Consumer Behavior, Principles of Marketing

PROFESSIONAL EXPERIENCE

Summer Intern, Samsung Electronics, *Marketing and Sales Department*, Seoul, Korea, 2006

REFERENCES

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DOCTORAL COURSEWORK

Marketing

Consumer Behavior	Shanker Krishnan
Special Topics in Marketing (Innovation)	Rebecca Slotegraaf
Special Topics in Marketing (Branding)	Neil Morgan
Marketing Models	Hai Che
Managerial Research in Marketing I	Neil Morgan
Managerial Research in Marketing II	Rebecca Slotegraaf

Psychology (minor)

Decision Making Under Uncertainty	Edward Hirt
Attitude and Attitude Change	Robert BJ Rydell
Topical Seminar on Embodiment	Eliot Smith
Psychology and Brain Sciences: Interactive Research	Eliot Smith

Research Methods

Research Methods	Philip Podsakoff
Statistics for Research I	Herman Aguinis
Statistics for Research II	Franklin Acito
Structural Equation Modeling	Scott MacKenzie

APPENDIX: ABSTRACTS

RESEARCH UNDER REVIEW AND SELECTED WORKS IN PROGRESS

TaeWoo Kim, Adam Duhachek, Pablo Briñol, and Richard Petty, "The Meaning of Consumer Actions Drives Thought Usage in Self Persuasion," under review at *Journal of Consumer Psychology*

The current research demonstrates that thoughts can be treated as if they were physical objects, and that the actions performed related to these thoughts and the presumed meaning of those actions determine the impact of those thoughts on evaluative judgments. Across four studies, consumers first wrote either positive or negative thoughts about various consumers' products and services. Then, consumers performed different actions with those written thoughts. The meanings of these actions were varied to indicate either high validity (e.g., saving, extending, sharing) or low validity (e.g., deleting, hiding, archiving) with respect to their thoughts. We hypothesized and found that performing actions associated with a meaning of validity (vs. invalidity) increased reliance on those thoughts in forming evaluations and behavioral intentions. Furthermore, the validity of those actions' meanings impacted attitudes by affecting the proposed mediating mechanism (thought confidence). Among other implications, these findings provide the first mediational evidence regarding thought-objectification, extending the work on embodiment, meta-cognition, and consumer evaluation.

TaeWoo Kim, Adam Duhachek, and Kelly Herd, "Activation of an Ideal Self Makes Successful Performance Contagious," under review at *Journal of Consumer Psychology*

Contagion beliefs refer to the perception that another individual's traits can be transferred to the self through direct physical contact with that individual or via a contagious object. Whereas previous contagion research examines contagion effects as a function of the contagion source, we propose that recipient factors may also drive contagion effects. In this view, the same contagion source can produce either positive or negative contagion effects depending upon consumer recipients' goals. We demonstrate that activation of a goal is a key factor driving contagion effects, leading to a more positive evaluation of a contagion object (Study 1) and enhanced performance in a task related to one's goal (Study 2), but only when the object was physically touched by a goal-congruent contagion source (Study 3). We find that contagion effects are amplified when consumers are further from their goals (Study 4) and that these effects are attenuated when consumers are in an entity (vs. incremental) implicit theory mindset (Study 5). The implications of these findings for contagion and goal theories are discussed.

TaeWoo Kim, Adam Duhachek, Pablo Briñol, Spike Lee, and Richard Petty, "Embodiment Effects in Moral Cleansing," manuscript under preparation, to be submitted in Fall 2018

Immoral behavior elicits negative emotions and activates the goal of downregulating negative emotions. Prior research has shown that cleansing the body (e.g., washing hands) helps people attain this goal, owing to the metaphorical association between cleanliness and morality (Lakoff & Johnson, 1980; Lee & Schwarz, 2011; Zhong & Liljenquist, 2006). We challenge this assumption and propose that the effect of physical cleansing on reducing guilt depends on the meanings associated with the cleansing action. Furthermore, we propose that the emotion-reducing effect of cleansing is stronger when the guilt is elicited by conducting an unethical action (vs. inaction guilt) because the former is more associated with metaphorical associations with contamination and cleansing (e.g., "putting blood on one's hands"). In Study 1, we showed that, when consumers applied gel to their hands, they were more likely to experience a greater reduction of induced guilt when the gel was framed as "hand sanitizing"—as opposed to having a different meaning, unrelated to cleansing (e.g., handgrip enhancement). Study 2 further demonstrated that this effect emerges only when an actual physical action was present, thus excluding an alternative explanation of semantic priming. In Study 3, it was shown that the effect of physical cleansing on the reduction of guilt emerged when the guilt was caused by an action (i.e., conducting an unethical action) but not when the guilt was caused by inaction (i.e., omitting an ethical action). The current research shows that embodiment effect is driven not by the cleansing action itself, but by the meaning ascribed to the action by consumers.

TaeWoo Kim and Adam Duhachek, "We vs. Them: Rejection by a Non-human Agent Makes People United," data collection phase

Artificial intelligence (A.I.) is exerting increasing role in evaluating humans in various context such as loan approval decisions, hiring decisions and legal decisions. Drawing on self-construal theory positing three levels of identity (i.e., individual identity, social identity, human identity), the current research hypothesizes that being rejected by an A.I. (vs. a human) would make a rejected consumer's human identity more salient, thus leading to reduced perceived self-other distance. In support of this hypothesis, we found that being rejected by an A.I. (e.g., rejected by an A.I. in a job application) increases empathy and perspective ns tendencies of the rejected consumer. These results show that that rejection by an A.I. may increase perceptions of closeness between the self and others because rejection makes rejected consumer's human identity salient and induces a mindset that tends to embrace others.

TaeWoo Kim, Joseph Goodman, and Adam Duhachek, "Preference for Human and Non-human Agent in Random Events: Effect of Probability and Outcome Valence," data collection phase

Prior research on illusion of control has shown that individuals prefer to make their own choices in a random event (e.g., preferring to choose a lottery number on their own vs. to have it chosen by someone else), believing that they can control the outcome. In the current research, we introduce a novel framework in which we compare human agents with a previously unexamined novel agent in this literature, namely, an artificial agent (e.g., A.I., algorithms, robots). We hypothesize that people will perceive a greater illusion of control in a moderate probability event (i.e., 50% chance of winning) when a human (vs. an artificial agent) is involved. In the case of a high probability event (i.e., 90% chance of winning), we hypothesize that people will feel stronger certainty for the outcome when an artificial (vs. human) agent is involved because artificial agents are perceived as more likely to translate 90% into a real outcome, whereas human agents are considered to be relatively more error-prone, thus making the low probability negative outcome (i.e., 10% chance of losing) loom larger compared to an artificial agent. In support of these hypotheses, we found that individuals would prefer a human (vs. artificial) agent in a random event (e.g., as an agent who throws the dice) when the probability of the positive outcome is moderate (e.g., 50% chance of winning $100 in a card game) (Study 1). In high probability events (e.g., 90% chance of winning $100 in a card game), however, we found that consumers feel a greater sense of control when an artificial (vs. human) agent is involved in a random event (Studies 2 and 3). We currently seek more evidence of the hypothesized effect in various probabilistic consumer contexts – for example, in receiving medical treatment (e.g., 50% chance of recovery from a disease) or in choosing products with given probabilities of positive or negative outcomes (e.g., 70% chance of a satisfactory restaurant experience).

TaeWoo Kim, Hye Jin Lee, and Adam Duhachek, "Cheating on Machines: Consumers Cheat More on Machines (vs. Humans) Due to Reduced Guilt," data collection phase

Building on the burgeoning literature of consumer dishonesty, the current research examines whether consumers' dishonest behaviors amplify when interacting with non-human artificial agents. We hypothesize that consumers would act more dishonestly when interacting with an artificial (vs. human) agent due to a reduction in anticipatory guilt from engaging in unethical behavior. In support of this hypothesis, we found that consumers are more likely to cheat on artificial (vs. human) agents when an economic incentive for cheating was provided to do so (e.g., e.g., when providing false reasons for a product return leads to the return being free) and that this effect was mediated by the reduced anticipatory guilt associated with the dishonest behavior (Study 1). In an extension of this finding, we hypothesized that consumers would be more likely to disclose guilt-laden personal experiences to an artificial (vs. humsn) agent, as disclosure to an artificial (vs. human) agent feels less emotionally taxing (e.g., less embarrassing). In support of this hypothesis, we found that consumers are more likely to reveal their guilt-laden experiences in general episodic recall tasks (Study 2) and marketing

related contexts (e.g., when a consumption experience made them feel guilty) (Study 3) when consumers believed that they were interacting with an artificial (vs. human) agent. We reconcile these two seemingly different findings – that individuals are more likely to be honest about one's guilt-laden experiences when interacting with artificial agents, and, that individuals are more likely to be dishonest to artificial agents when given with an economic incentive – by attributing both observations to the attenuation attenuation of guilt tendencies when interacting with artificial agents.

Aaron Garvey, TaeWoo Kim, and Adam Duhachek, "Unfair Offers Seem Less Unfair When It is From a Non-human Agent," data collection phase

From an economic standpoint, the rational decision in an ultimatum game is to always accept any positive offer because a small monetary reward is better than nothing. However, numerous studies have shown that a concern for fairness is deeply embedded in the human mind and leads people to reject unequal offers that seem unfair (e.g., $10 offered for the self and $90 for the other). The current research proposes a new framework which introduces a novel agent—namely, a non-human, artificial agent. We hypothesize that individual willingness to accept an unfair offer will increase if the offer is made by an artificial agent (vs. human) agent, as fundamental differences in the perceived motives of human and non-human agents attenuate fairness concerns. In support of this hypothesis, we show that, in varying contexts and levels of unfairness, individuals are more willing to accept unfair offers from artificial agents (Studies 1 and 2). To explain our findings, we examine several potential underlying mechanisms, including the following: decreased perception of exploitation intentions, decreased perception of intentionality of an action (i.e., in the context of an algorithm-based offer), cognitive (vs. emotional) reactions to the offer. Additionally, we also examine whether the extent of an artificial agent's anthropomorphism moderates our findings.

TaeWoo Kim, Min Jung Koo, Ayelet Fishbach, "Giving the Self: When People Prefer Giving Something that Represents One's Essence," data collection phase

Different forms of giving may vary by the extent to which people believe that they are giving something that represents their essence (i.e., how much givers sense they are "giving the self"). For example, blood or possession donations often feel more like the giving of one's essence than money donations of comparable value, and signing a petition with one's name similarly feels more "self-giving" than signing an anonymous petition. The current research explores *when* people prefer self-giving over giving comparable non-personal resources. Prior research has shown that givers perceive themselves as more generous individuals when giving involves the self because contributions appear subjectively more valuable and people internalize the act of giving as part of who they are (Koo and Fishbach 2016). Building on this finding, we hypothesize that givers will prefer self-giving over giving comparable non-personal resources when givers focus on their own (vs. recipients') benefit (e.g., how positive they would feel after the giving). In support of this hypothesis, we found that the ratio of blood (vs. money) donation was higher when givers focused on their own (vs. recipients') benefit (Study 1). The same effect was replicated with clothes donation (Study 2) and toy donation (Study 3) where

the extent of self-giving was measured by the degree to which donors identified clothing as part of the self. However, this effect was attenuated when donors adopted a third-person perspective because donors recognized that self-giving and its value-equivalent in non-self-giving (e.g., money instead of blood) are comparably beneficial to the recipient (Study 4). The current research contributes to the literature on selfish vs. selfless motivation of donation and to the burgeoning literature on non-money donation (e.g., donation of one's time or skills).