



# ASSOCIATION FOR CONSUMER RESEARCH

---

Labovitz School of Business & Economics, University of Minnesota Duluth, 11 E. Superior Street, Suite 210, Duluth, MN 55802

## **Who Or What to Believe: Trust and the Differential Persuasiveness of Anthropomorphized and Human Agents**

Maferima Touré-Tillery, University of Chicago, USA

Ann L. McGill, University of Chicago, USA

Four studies test the hypothesis that consumers who are low in interpersonal trust perceive anthropomorphized agents as more credible than real persons in a persuasion context. As a result, low trust individuals are more persuaded by messages delivered by anthropomorphized entities than by those delivered by human sources.

### **[to cite]:**

Maferima Touré-Tillery and Ann L. McGill (2011), "Who Or What to Believe: Trust and the Differential Persuasiveness of Anthropomorphized and Human Agents ", in NA - Advances in Consumer Research Volume 38, eds. Darren W. Dahl, Gita V. Johar, and Stijn M.J. van Osselaer, Duluth, MN : Association for Consumer Research.

### **[url]:**

<http://www.acrwebsite.org/volumes/16094/volumes/v38/NA-38>

### **[copyright notice]:**

This work is copyrighted by The Association for Consumer Research. For permission to copy or use this work in whole or in part, please contact the Copyright Clearance Center at <http://www.copyright.com/>.

SPECIAL SESSION  
**From Evaluation to Compliance:  
Anthropomorphism and the Role of Loneliness, Trust, Uncertainty and Guilt**  
Hee-Kyung Ahn, University of Toronto, Canada

**EXTENDED ABSTRACTS**

**“Once Bitten, Twice Shy: Differences in Social Efficacy Affect the Perceived Efficacy of Anthropomorphizable Products”**

*Bart Claus, Catholic University Leuven, Belgium*

*Luk Warlop, Catholic University Leuven, Belgium*

Anthropomorphism as a practitioners' technique of imbuing brands with human-like qualities has longtime been used, and has proven to be efficient in the development of brand personality and brand relationships. Recent work by Aggarwal and McGill (2007) signals a shift in attention from brands towards anthropomorphic products. Additionally, anthropomorphization recently has been studied from a more phenomenological stance, with an interest in dispositional and situational drivers of anthropomorphization. Epley and colleagues (2007) found sociality motives to be one of the driving factors of anthropomorphization. Lonely people seek human company, which increases their susceptibility to anthropomorphize. The latter might lead to the inference that lonely consumers seek and prefer anthropomorphic products.

Loneliness can indeed be a motivator to reconnect to other people, and by extension to anthropomorphs. Loneliness then reflects a limited *quantity* of social interaction. However, loneliness is also often considered as the result of poor *quality* social interactions, i.e. negative social experiences. This kind of loneliness is caused by negative social experiences, not by the lack of social experiences. Although people may want to reconnect to others, social anxiety might influence their attitude towards new social contacts (Maner, DeWall, Baumeister, & Schaller, 2007).

In our research, we study whether attitudes that were originally directed towards humans, can spill over to non-human targets that are subject to anthropomorphization. With regard to anthropomorphization of products, we expect that lowered social efficacy will translate into lower a priori expectations towards the anthropomorph at hand. On the other hand, an unexpectedly successful interaction with an anthropomorph might bring relief to people's feelings of low social efficacy. We tested these inferences in several studies.

In Study 1, we found that people with a higher tendency to feel lonely indeed favor anthropomorphic products over nonanthropomorphic ones. However, people that were first submitted to an ostracism manipulation (Williams, Cheung, & Choi, 2000) showed the opposite effect, especially when they had a higher chronic tendency to feel lonely.

In Study 2, we this negative attitude. We again manipulated social efficacy between subjects, using the ostracism task. The product that had to be evaluated was an automatic vacuum cleaner, and we asked participants about their expectations about the efficacy of the product. We manipulated anthropomorphism by describing the product either in terms of its technical characteristics and product code “Samsung VC-RS60H”, or in terms of more human traits and the friendlier name “Roomba”. Results show that people's estimates of the product's efficacy were hampered by lower social efficacy—but only for anthropomorphs.

In study 3, we built on Leary et al.'s Sociometer Theory (Leary, Tambor, & Terdal, 1995), in assessing people's chronic efficacy in social interactions. We had participants evaluate the expected number of times they would ‘guess’ the same number as a number

generator, depicted either as an ordinary personal computer, or an anthropomorphic computer (manipulated similarly to earlier studies). Afterwards, a trait measure of self-esteem (Rosenberg, 1965) was administered. Results show that in the anthropomorphization condition, trait self-esteem is positively related to people's estimation of future outcomes the product will deliver—more than in the control condition. This indicates that what is affected is people's belief in their own efficacy to interact with anthropomorphs.

Study 4 used a similar design as study 2, but with a digital picture frame as product stimulus. Control participants were told that this prototype contained sensors that adjusted the picture on display according to the atmosphere in its vicinity. Participants in the experimental condition were told that the frame was ‘smart’ and ‘able to sense’ the atmosphere. Participants then estimated the efficacy of the frame as part of a product evaluation survey. As in earlier studies, participants that had been ostracized stated lower beliefs in the efficacy of the frame, but only for the anthropomorphic description of the product. Subsequently the frame ‘selected’ one of the pictures. Using initial evaluations as a covariate, we found previously ostracized participants in the anthropomorphic condition to be most satisfied with the frame's selection performance.

In four studies, we used different operationalizations of anthropomorphism and different products. Using chronic gauges as well as momentary manipulations, we show that differences in social efficacy affect a priori evaluations of products more when these products are more readily susceptible to anthropomorphization. We also show that product sampling can overcome this effect. Our contribution is in demonstrating that social attitudes can bridge the gap towards non-human entities when anthropomorphization takes place.

**“Who or What to Believe: Trust and the Differential Persuasiveness of Anthropomorphized and Human Agents”**

*Maferima Touré-Tillery, University of Chicago, USA*

*Ann L. McGill, University of Chicago, USA*

Current research on anthropomorphism suggests that people interact with anthropomorphized agents according to their generalized beliefs about people. Indeed, Epley et al. (2007) describe anthropomorphism as a specialized process of inductive inference in which knowledge about humans is used to make inferences about nonhuman agents. Aggarwal and McGill (2007) showed that consumers evaluate an anthropomorphized product more positively when it possesses characteristics congruent with the proposed human schema, if this schema is linked to positive affect.

In the present research, we investigate this question in the persuasion context by comparing messages from human sources to those from anthropomorphized entities. In persuasion, individual differences in interpersonal trust are particularly relevant: people low (vs. high) in interpersonal trust are harder to persuade because they generally believe that social agents are neither reliable nor credible (Rotter 1967). Based on the assumption that individuals use their knowledge about people when interacting with humanized objects, we should expect messages from anthropomorphized agents and human sources to elicit similar responses, such that individuals low in trust would be equally skeptical of both messages. We propose, however, that people who hold negative views about human nature (e.g. “people are not trustworthy”), might be motivated to perceive

anthropomorphized agents in a more positive light (e.g. more trustworthy) than humans.

Epley et al (2008) found that dispositionally lonely people were more likely to anthropomorphize pets to satisfy their need for social connection. To us, these findings suggest that lonely people might be motivated to perceive humanized agents as more capable of providing social connectedness than real persons. Within this perspective, we propose that people low in interpersonal trust will perceive an anthropomorphized agent as more trustworthy than a human under similar circumstances. In the communication context, we predict that a message delivered by an anthropomorphized agent will be more persuasive to low trust individuals than one from a human source. As a result, behavioral intentions of people low in trust should align more closely with messages from anthropomorphized (vs. human) sources. However, people high in trust should respond similarly to anthropomorphized and human sources because they do not hold negative views about the trustworthiness of social agents.

In all studies, we measured trust using Rotter's (1967) interpersonal trust scale. In study 1, we tested our hypothesis in a health communication context. Participants read a message about a disease, including prevention information. The message was delivered by University authorities (human source), or by the disease itself (anthropomorphized source). We found that low trust participants were more fearful of the disease and more likely to comply with health recommendations when the source of the message was the anthropomorphized disease than when the source was human, suggesting greater perceived credibility for the "talking" disease. In the next two studies, we sought to replicate these findings for positive attitude objects to rule out the alternative explanation that low trust individuals transferred their fear of people onto the anthropomorphized agent. In study 2, participant saw a message delivered by a car advertiser (human source), or by the car itself (anthropomorphized source). The contents of the messages were identical, but low trust participants who read the message from the anthropomorphized (vs. human) source responded more positively to the car, and were more likely to buy it. Study 3 replicated these results: low trust participants preferred a fictitious brand of floss and were more likely to buy it when they read a message from the anthropomorphized (vs. human) source. Finally, study 4 demonstrated that for low trust individuals, the credibility of an anthropomorphized source is enhanced, not only for information pertaining to the source itself, but also for other pieces of information in the message. Participants read a message delivered by a fictitious dental floss advertiser or by the floss itself (Max Floss). The message from the advertiser objectified Max Floss and presented it as the best weapon against gingivitis. In the anthropomorphized source message, Max Floss presented itself as the reader's best ally against gingivitis. Participants low in trust felt more threatened by gingivitis when the message came from the anthropomorphized source (Max Floss) than when the source of the message was human. As expected, across all four studies, high trust participants responded similarly to messages from anthropomorphized and human sources.

Taken together, these studies provide convergent evidence that people low in interpersonal trust perceive anthropomorphized agents as more trustworthy than real persons in a similar context, and as a result are more persuaded by messages delivered by anthropomorphized (vs. human) agents.

### **"Seeing Smiles: Consumers' Adoption of Anthropomorphized New Product"**

*Lan Jiang, University of British Columbia, Canada*

*JoAndrea Hoegg, University of British Columbia, Canada*

*Darren W. Dahl, University of British Columbia, Canada*

It has become a common practice for marketers to design an anthropomorphized representation of a product or a brand. This strategy has also been widely used in the verbal descriptions of a product, i.e. using the personal pronouns instead of "it". Wetmore (1998) studied the phenomena of people befriending their cars and suggested that anthropomorphism helps individuals counteract the feelings of fear, threat or confusion with technology. Epley, Waytz and Caciopp (2007) further examined the motives underlying peoples' tendency to imbue nonhuman agents with humanlike characteristics, and one of them is the need to avoid uncertainty.

In this research, we seek to investigate whether consumers would be more likely to adopt humanlike new products. Launching new products is a risky task, since consumers are faced with high levels of uncertainty in understanding and applying new products in their lives. If the need to avoid uncertainty indeed drives an individual's tendency to desire anthropomorphized products, we should expect the strategy of anthropomorphizing products to be more effective for new products that entail higher uncertainty. Three lab experiments have been conducted to test this hypothesis.

In the first study, we pre-tested four products, two rated more uncertain than the others, and introduced them to the participants in either human or object terms. The two high-uncertainty products were a green printer and a concept phone, and the two low-uncertainty products were a nightlight and a scuba mask. The human version of the verbal descriptions included the phrases like "this little guy" and "eats your coffee dregs", while in the object condition these words were replaced by "this little machine" and "takes your coffee dregs". The study adopted a 2 (presentation: human vs. object) x 2 (uncertainty: high vs. low) mixed design. Analysis revealed an interaction effect of uncertainty and anthropomorphism. Participants rated the high-uncertainty products more favorably when they were presented in human versus object terms, but for low-uncertainty products there was no difference between two presentation formats. Participants also indicated a higher intention to adopt the high-uncertainty products when introduced in human rather than object terms, but no differences for low-uncertainty products.

Study 2 followed up the same design and further tested the hypothesis. A major difference of this study was that we manipulated the anthropomorphism visually, so in the anthropomorphism condition the images were professionally-morphed to possess more human features, such as smiley eyes or mouth. We kept the green printer and the nightlight, but for the ease of visual manipulation we replaced the concept phone with a bluetooth headset and used a pair of speakers to replace the scuba mask. Results from Study 2 further supported our hypothesis that anthropomorphism exerts stronger influences when people evaluate or plan to adopt new products that are high in uncertainty. Participants formed more favorable attitudes towards the green printer and the bluetooth when they were morphed to be humanlike, and indicated a higher intention to adopt. However, for low-uncertainty products, the ratings were equally favorable, regardless whether the images were original or morphed.

The main purpose of Study 3 was to test whether it is the feeling of familiarity generated by anthropomorphism that helps to alleviate the uncertainty and facilitate the comprehension, thus increasing the liking and adoption. We selected the green printer as our focal product and varied the uncertainty by either labeling it as "product #124-green printer" or "product #124". Visual morphing

was used to manipulate the anthropomorphism. Consistent with the previous studies, a main effect of anthropomorphism emerged, where participants reported more favorable attitudes and behavioral intentions towards the green printer when the image featured a smiling face. More interestingly, we found an interaction between anthropomorphism and uncertainty. Participants indicated a preference for the anthropomorphized green printer, and this preference was stronger when the printer was labeled without a name. We further examined the familiarity measure, and the results followed the same pattern. Sobel test (Sobel 1982) confirmed the mediating role of familiarity in driving the effects of anthropomorphism.

In sum, we examined the effects of anthropomorphism, using both verbal and visual manipulations, on people's attitudes and adoption intentions towards the products and how uncertainty moderates the effects. The findings are consistent with our premise that people have a motive to avoid uncertainty and seek comprehension, and in consumption contexts anthropomorphism provides a solution when consumers are presented with new uncertain products. The human terms used to describe the products or the humanlike appearances increase the familiarity, and thus facilitate people's liking and adoption of them.

#### **"Guilt Driven Compliance by Anthropomorphized Social Causes"**

*Hee-Kyung Ahn, University of Toronto, Canada*

*Hae Joo Kim, University of Toronto, Canada*

*Pankaj Aggarwal, University of Toronto, Canada*

Finding a cost-efficient and effective tool to enhance public welfare is important given that the U.S. state governments annually spend over 85 billion dollars on environmental and health issues (U.S. Census 2007). In the present research, we argue that adding anthropomorphic features to public policy campaigns can more effectively persuade consumers to comply with a social cause.

Particularly, we hypothesize that individuals will show more favorable behavioral intentions to comply with a public policy campaign when it depicts social causes with humanlike features than when these features are absent. To explain the underlying mechanism, we draw on literature in the interpersonal domain that associates helping behavior with feelings of guilt (e.g., Carlsmith and Gross 1969). Helping is an act of communion, and guilt is based on a threat to communion regardless of whether the relationship at stake concerns a close other or stranger (Baumeister, Stillwell, and Heatherton 1994). Applying this social principle to anthropomorphism, we predict that when individuals are faced with humanlike (vs. non-humanlike) agents, feelings of guilt will arise when contemplating the consequences of not complying, which consequently leads to increased compliance. Furthermore, we hypothesize that framing matters, such that information that intensifies (e.g., monetary penalty) or alleviates (i.e., monetary substitution) guilt will moderate the effect of anthropomorphism. Three studies were conducted to test these predictions.

In study 1, we examine the effect of anthropomorphism on compliance to an energy conservation campaign. Participants were assigned to either a control condition or an anthropomorphism condition. In the former (latter), participants were exposed to a campaign poster depicting a picture of a light bulb (with humanlike physical features) and a slogan written in a third-person (first-person) perspective. As predicted, behavioral intentions to comply with the energy conservation campaign were higher in the anthropomorphism condition than in the control condition.

In study 2, we replicate this effect in the context of a food waste recycling campaign. Participants were similarly exposed to a campaign poster with a waste bin depicted as a human in the

anthropomorphism condition. Their control counterparts were exposed to the same poster in non-humanlike terms. In addition to measuring behavioral intentions of complying with the recycling campaign, we assessed participants' feelings of perceived guilt if they did not comply with the campaign. Once again, behavioral intentions to comply with the campaign were higher in the anthropomorphism condition than in the control condition. More importantly, we find that increased feelings of guilt partially mediated the effect.

In study 3 (in progress), we examine whether the framing of monetary information can moderate the effect of anthropomorphism on compliance. Participants are exposed to a food waste recycling campaign similar to study 2. In addition to an anthropomorphism manipulation, we manipulate the frame of monetary information included in the campaign poster such that it intensifies or alleviates feelings of guilt from not complying with the campaign. In the high guilt frame, the poster contains a warning for a financial penalty/fine if the participants do not recycle, "If you do not recycle, you have to pay \$5." In the low guilt frame, the sentence is modified such that participants can avoid recycling by paying a small fee (i.e., "If you pay \$5, you do not have to recycle."). When guilt is intensified by a monetary penalty we expect the compliance to be significantly greater than when the guilt is reduced by monetary substitution, showing the moderating effect of framing on feelings of guilt elicited by anthropomorphism.

To summarize, we find that campaign ads where social causes are anthropomorphized are more effective in heightening behavioral intentions to comply with the campaign compared to when the social causes contain no humanlike features. This effect was partially mediated by increased feelings of guilt upon considering the consequences of not complying with the public policy campaign. Moreover, information that can amplify or dampen feelings of guilt from not doing a prosocial act moderates the effect of anthropomorphism on compliance. Our findings contribute to the research on anthropomorphism by testing its effects in the domain of public policy and by identifying an underlying process of guilt. These findings have practical important implications for public policy makers who are concerned with improving the effectiveness of their prosocial messages. Additionally, they have practical implications for public policy makers whose concern is designing effective communication tools to increase prosocial behavior.

#### **REFERENCES**

- Aggarwal, P., and Ann L. McGill (2007), "Is That Car Smiling at Me? Schema Congruity as a Basis for Evaluating Anthropomorphized Products," *Journal of Consumer Research*, 34 (4), 468-79.
- Baumeister, Roy F., Arlene M. Stillwell, and Todd F. Heatherton (1994), "Guilt: An Interpersonal Approach," *Psychological Bulletin*, 115 (March), 243-67.
- Carlsmith, J. Merrill and Alan E. Gross (1969), "Some Effects on Guilt on Compliance," *Journal of Personality and Social Psychology*, 11 (March), 232-39.
- Epley, Nicholas, Adam Waytz, and John T. Cacioppo (2007), "On Seeing Human: A three-Factor Theory of Anthropomorphism," *Psychological Review*, 114 (October), 864-86.
- Epley, Nicolas., Adam Waytz, Scott Akalis, and John T. Cacioppo (2008), "When We Need a Human: Motivational Determinants of Anthropomorphism," *Social Cognition*, 26 (2), 143-55.

- Leary, M. R., E. S. Tambor, K. Terdal, and D. L. Downs (1995), "Self-Esteem as an Interpersonal Monitor: The Sociometer Hypothesis," *Journal of Personality and Social Psychology*, 68 (3), 518-30.
- Maner, J. K., C. N. DeWall, Roy F. Baumeister, and M. Schaller (2007), "Does Social Exclusion Motivate Interpersonal Reconnection? Resolving the "Porcupine Problem," *Journal of Personality and Social Psychology*, 92 (1), 42-55.
- Rosenberg, M. (1965), *Society and the Adolescent Self-Image*, Princeton, NJ: Princeton University Press.
- Rotter, J. B. (1967), "The New Scale for Measurement of Interpersonal Trust," *Journal of Personality and Social Psychology*, 35 (4), 651-55.
- Sobel, M. E. (1982), "Asymptotic Confidence Intervals for Indirect Effects in Structural Equation Models," In S. Leinhardt (Ed.), *Sociological Methodology* (pp. 290-312), Jossey-Bass: San Francisco.
- Wetmore, Jameson M. (1998), "Moving Relationships: Comparing the Corporate and Personal Practice of Naming Automobiles," *Interpreting the Automobile: Society of Automotive Historians/National Association of Automobile Museums Joint Conference*, Henry Ford Museum, Dearborn, Michigan, (September).
- Williams, K. D., C. K. T. Cheung, and W. Choi (2000), "Cyberostracism: Effects of Being Ignored over the Internet," *Journal of Personality and Social Psychology*, 79 (5), 748-62.