

The Effect of a Cute Stimulus on Personally-Initiated, Self-Administered Surveys

John Bellfield, Chloe Bimont, Jeanette Blom, Curt J. Dommeyer, Kaitlin Gardiner, Erin Mathenia and Jenny Soto

Two experiments are described that used a cute stimulus to enhance the response to a personally-initiated, self-administered survey. A picture of a cute infant was used as the stimulus in the first experiment while a live Yorkie puppy was used as the stimulus in the second experiment. Both experiments found that the cute stimulus dramatically increased the response rate to the survey, causing it to increase by 88% in the first experiment and by 42% in the second one. Both experiments also found that females were more likely than males to respond to the cute stimulus. Suggestions for future researchers are offered.

Key Words: Survey response rates, cute stimuli, self-administered surveys

Introduction

Charles Darwin (1872) was perhaps the first to record that there is something special about infants that stimulates a care giving response from adults. Later, Konrad Lorenz (1943) proposed that certain facial features of infants, i.e., large rounded forehead, large eyes, rounded cheeks, short puffy limbs, chubby body, and small nose, mouth, and chin are perceived as cute, and that humans tend to respond in affectionate, caring, and protective ways to anything that is perceived as cute. Some researchers have theorized that adults' response to cute things is Mother Nature's way of ensuring that infants are nurtured and cared for by adults (Glocker et al. 2009; Lobmaier, Sprengelmeyer, Wiffen & Perrett 2010).

Adults appear to derive pleasure from viewing cute images or objects. Kringelbach et al. (2008) showed adults facial pictures of unfamiliar infants and unfamiliar adults. Brain imaging scans revealed that when viewers saw pictures of the infants, brain activity occurred within a seventh of a second within the viewer's medial orbitofrontal cortex, a part of the brain associated with responses to rewards. No such brain activity occurred when the viewers looked at pictures of adults. The same results occurred regardless of whether the viewers were parents or not. Because of the short time span between the viewing of the infant's picture and the brain's response, the researchers felt that the response was involuntary. It appears that adults' immediate response to viewing infants is innate and instinctive.

Numerous studies have been conducted that illustrate that adults enjoy looking at pictures of young mammals. Berman, Cooper, Mansfield, Shields and Abplanalp (1975) found that when college students were shown pictures of infant and adult nonhuman primates, they preferred the pictures of the infants more than those of the adults. Fullard and Reiling (1976) found that adults preferred pictures of infants over adults, regardless of whether the pictures depicted animals or humans. In a similar study, Brosch, Sander, and Scherer (2007) had eleven college men and women rate pictures of infant and adult humans, dogs, and cats. They found that within each species, the infant stimuli generated higher ratings than the adult stimuli on both pleasantness and arousal.

Although adults' response to cuteness affects both males and females, many studies illustrate that females are more likely to react to cute objects. In two relatively recent studies, researchers used computer graphics software to alter the level of cuteness of babies depicted in photographs (Sprenghelmeyer et al. 2009; Lobmaier et al. 2010). In general, both studies found that women were better than men at discriminating cuteness correctly in the photographs. They attributed these findings either to the fact that women are more hormonal or more emotionally responsive to cuteness than men. Another study that varied the cuteness of babies' faces in photographs found that although both sexes scored similarly on their cuteness ratings, women rated higher than men on their motivation to provide care to the babies (Glocker et al. 2009). Other studies have shown that women are more likely than men to show a preference for babyish head shapes (Huckstedt 1965), to smile at cute children (Hildebrandt and Fitzgerald 1978), to be interested in infants and caretaking activities (Berman 1980; Maestriperieri & Pelka 2002) and to show concern for animal welfare (Tennov 1986; Gallup, Jr. & Beckstead 1988; Herzog, Betchart, & Pittman 1991).

To make their advertisements more appealing to the target market, some companies have created advertisements that use cute animals, babies, or mascots to hawk their products or services. Examples of this type of advertising include Taco Bell's talking Chihuahua, Aflac's talking duck, E-trades' talking babies, Geico's talking gecko and white pig, Evian's roller skating babies, and the Pillsbury DoughboyTM. Products also have been embellished with babyish features to enhance their appeal. This kind of design is especially prevalent in the toy, videogame, and cartoon industries, but it can be seen in other products as well. For example, automobiles that embellish cute features are the MINI Cooper and the Volkswagen New Beetle. These cars are not only small – which enhances their cuteness - but, from the front, appear to have babyish facial features with a large “windshield” forehead, large “headlamp” eyes, a hood design or grill work that serves as a smiling face or cute mustache, and a perky looking emblem that acts like a cute button nose. Moreover, these cars are often painted with bright colors that heighten their cuteness. A recent book by Cheok (2010) describes how cuteness can be designed into products through clever use of color, texture, motion, sound, shape, size, and proportion.

Despite the widespread appeal of cuteness to adults, there appears to be little published evidence of its ability to motivate people to help others in a marketing context. We could find only one study that investigated how a cuteness manipulation affected people's tendency to help others. In this study, Huddy and Gunnthorsdottir (2000) created two flyers: one was “pro-environmental” and argued for saving a fictitious animal called the Guatemalan Cobyx; the other was “anti-environmental” and argued for developing the land that was inhabited by the fictitious Cobyx. The flyers either came without a picture of the endangered animal or with a picture that supposedly depicted the Cobyx, either a cute mammal, an ugly mammal, a cute insect, or an ugly insect. At the bottom of each flyer, subjects were asked to complete a card and make a donation to the cause. Although the researchers found that the cuteness of the depicted animal had no effect on the subjects' attitude or support for the flyer's sponsoring organization, they did find an interesting interaction effect. They found that subjects who were already supportive of environmental causes were more likely to support a campaign saving the Cobyx when it depicted a cute rather than an ugly animal on the flyer.

The purpose of the present paper is to describe two experiments that used a cute stimulus to attract people's attention and to make them receptive to completing a self-administered survey.

Method

Treatments

For the first experiment, the treatment consisted of an 8.5" X 11" color picture of a cute, male infant wearing a short sleeved shirt and hat. Both the shirt and hat had an identical theme – a blue, Polynesian flower print. The boy appeared to be a Pacific-Islander, looked about one year old, and was a little chubby. He sported an adorable smile that enhanced his cuteness. The picture was placed on an interviewing table in between the interviewers and the potential respondents.

The second experiment, rather than using a picture, used a live seven-month old Yorkie puppy as the treatment. The puppy was on a leash and held in the arms of a female interviewer as she and an interviewing partner approached each potential respondent.

Manipulation Checks

The cuteness level of each treatment was determined by having 28 upper division business students at a large public California state university view and rate a picture of each treatment. They rated each picture on a ten-point scale, where one was labeled "not cute" and ten was labeled "cute." On this ten-point scale, the pictures of the male infant and Yorkie puppy received average cuteness ratings of 8.0 and 7.8, respectively. A paired t-test did not reveal a significant difference between the two averages.

It is interesting to note that females had a significantly higher average cuteness rating on each picture than the males. The females, on average, rated the male infant 8.3, whereas the males gave him a 7.1 average rating (two-tailed $t(24) = 2.17, p < .05$). Similarly, the females' average rating of the Yorkie puppy was 8.2, whereas the males gave it a 7.1 average rating (two-tailed $t(24) = 1.84, p < .10$).

Experimental Procedures

The first experiment was conducted on two consecutive Saturdays from 8 a.m. to 5 p.m. in front of an Albertson's supermarket in Los Angeles, California. Near the entrance of the supermarket, an interviewing table was set up. On the first Saturday, two female interviewers stood behind the table with the picture of the cute boy positioned on the table so that it could be easily seen by anyone entering or exiting the store. As patrons passed by the interviewing table, the interviewers asked them if they would complete a self-administered survey on organ donation. Anyone asking about the purpose of the picture was told that the little boy depicted an example of a person who might benefit from an organ transplant. Throughout the interviewing period, interviews were attempted with 50 males and 50 females. On the second Saturday, another 100 interview attempts were made – 50 with males and 50 with females - using procedures identical to those that were used on the first Saturday, except that the picture of the cute infant was absent.

The second experiment was conducted on three consecutive Saturdays from 12:00 p.m. to 4:00 p.m. outside the entrance of a family restaurant in Porter Ranch, California, called T.G.I. Friday's. Every other patron who exited the restaurant was asked to complete a survey on nutritional labeling of menus by a team of one male and one female interviewer. Throughout the three interviewing periods, the interviewers systematically switched between the treatment and control condition every ten survey attempts. When the treatment was in effect, the female interviewer held a leashed Yorkie puppy in her arms while she and her interviewing partner asked the patron to complete a self-administered survey. During the control condition, the Yorkie puppy was absent when the interviewing team attempted an interview. A total of 160 survey attempts were made - 80 with the Yorkie puppy and 80 without the puppy.

Respondent Characteristics

Table 1 displays a summary of the demographic data for those who responded to the survey. The data suggest that both experimental groups were composed of mature audiences, as those responding from the first and second experiments had average ages of 33.9 and 40.6, respectively. The vast majority of the respondents (75% or more) had at least some college education. Forty-eight percent or more of those responding from each experiment were Caucasians.

Table 1. Respondent characteristics

	Experiment 1	Experiment 2
Respondents' avg. age	33.9 ¹	40.6 ¹
Respondents' individual avg. annual income	\$40,133 ¹	NA
Respondents' household avg. annual income	NA	\$58,048 ¹
Male respondents	44%	47%
Respondents who have at least some college education	75%	82%
Caucasian respondents	48%	60%
Married respondents	40%	NA

¹Grouped data was used to calculate the average.

Dependent Variables

For both experiments, the treatment and control groups were compared on their response rate and average item omission rate. The response rate is expressed as a percentage and is determined by dividing the number of usable questionnaires by the number of survey attempts. The average item omission rate is determined by the following ratio: average number of questions left unanswered divided by the number of questions that everyone should have answered. In the first experiment there were no “skipping instructions,” and all 21 questions should have been answered by every respondent. In the second experiment, “skipping directions” allowed some respondents to skip up to two questions. Consequently, a complete response on the second experiment’s questionnaire would require answers to 29 of the 31 questions.

A final item measured for each experiment is sample bias. Any significant difference on any of the demographic variables between the treatment and control groups suggests that a sample bias has occurred.

Hypotheses

The first experiment used a picture of an adorable male infant as the cute stimulus while the second experiment used a live Yorkie puppy as the cute stimulus. Based on the information in the literature review, we believe that the cute stimulus will not only draw people to the survey takers but will put potential respondents into a pleasurable state. We believe this pleasurable state will make the potential respondents more receptive to completing a self-administered survey. Moreover, since women are affected more by cute objects than men, it is assumed that women will be more likely than men to respond to the cute stimulus. Consequently, the following hypotheses are proposed for each experiment:

H₁: The cute stimulus will generate a significantly higher response rate to the survey than the control condition.

H₂: Women will be more likely than men to participate in the survey.

Results

Table 2 displays the experimental results. Although the cute stimulus had no effect on the average item omission rate for either experiment, it significantly increased the response rate to the survey for both experiments. In the first experiment, the picture of the male infant almost doubled the response rate, causing it to go from 26% to 49%. In the second experiment, the live Yorkie puppy increased the response rate by 42%, causing it to go from 38% to 54%. Both of these results support H₁.

Table 2. Experimental results

	<u>Experiment 1</u>			<u>Experiment 2</u>		
	Control Group (n = 100)	Treatment Group (n = 100)	Test Statistic¹	Control Group (n = 80)	Treatment Group (n = 80)	Test Statistic¹
Response rate	26%	49%	$X^2(1) = 10.34^{***}$	38%	54%	$X^2(1) = 3.64^*$
Percentage of female respondents	39%	65%	One-tailed, Fisher's Exact Test ^{**}	40%	63%	One-tailed, Fisher's Exact Test ^{**}
Average item omission rate	0	0	$t(73) = 0$.07	.02	$t(71) = .70$

¹Yates' correction for continuity was used when calculating the X^2 value (Parsons 1974).

*** $p < .01$, ** $p < .05$, * $p < .10$

In the sample bias analysis, the treatment and control groups were compared on their responses to the demographic questions. Six demographic variables were analyzed in the first experiment while five were analyzed in the second one. For both sets of analysis, only one demographic variable resulted in a sample bias, namely, gender. As shown in Table 2, both experiments revealed that females were significantly more likely than males to participate in the survey. These gender results support H_2 .

Discussion & Conclusions

Both experiments show that a cute stimulus can dramatically increase the response rate to a personally initiated, self-administered survey without affecting the average item omission rate. Moreover, the present experiments demonstrate that the cute stimulus can be presented in a variety of forms and still be effective. Regardless of whether the cute object was presented in a picture (as was the case in the first experiment) or as a live mammal (as was the case in the second experiment), it enhanced the survey's response rate. An added benefit of the cute stimulus is that it is virtually free to implement. All a researcher needs is access to a cute mammal or object that can be easily displayed to potential respondents.

Previous research has shown that females are more likely than males to be affected by cute stimuli. Our results are consistent with those findings. We not only found that females rated our cute stimuli higher on the cuteness scale than did the males, but females were also more likely to respond to our cute stimuli during the surveys. The gender bias associated with cute stimuli could be turned into an advantage if a researcher's goal is to interview females. However, any researcher who wants the survey results to be representative of population gender proportions could use quota sampling or an appropriate weighting scheme to ensure the survey data reflects gender proportions correctly.

One can only conjecture as to why the picture of the male infant appeared to have a greater impact on the response rate than the live Yorki puppy. Although both experiments used a cute stimulus to enhance the survey response rate, they differed on a number of factors, namely, the survey population, survey location, survey topic, time of the interviews, and the interviewers. Any one of these factors, or a combination of them, could account for the difference in results between the two experiments. However, in addition to all of those differences, there may be other factors that explain the greater success of the male infant stimulus. First, the male infant was an integral part of the survey in that he was serving as an example of someone who might benefit from an organ transplant, the subject matter of first experiment's survey. The Yorki puppy, in contrast, had no such tie-in with the survey topic in the second experiment. Our having the cute stimulus directly related to the survey topic in the first experiment may have enhanced the effectiveness of the stimulus. Second, the fact that a live animal (and not a picture of the animal) was used in the second experiment may have dampened the effectiveness of the Yorki puppy. That is, some potential respondents may have shied away from the survey out of fear of being bitten, licked, or pawed by the puppy. No such fear would have occurred in the first experiment. A final explanation comes from an examination of the control groups' response rates. The control group in the first experiment achieved a lower survey response rate than the control group in the second experiment (26% vs. 38%). The higher control group response rate in the second experiment made it more difficult for the cute stimulus, i.e., the Yorki puppy, to produce a dramatic increase in the response rate.

Both experiments in this study were vulnerable to bias. In the first experiment, the treatment was applied on the first Saturday and not used on the following Saturday. This procedure left the experiment vulnerable to a selection bias since subjects were not randomly assigned to the treatment and control condition. We, however, can see no reason why the subjects exposed to the interviewers on the first Saturday would differ significantly from those exposed to the interviewers on the second Saturday. A virtue of the first experiment is that it used a sampling strategy that ensured the treatment and control condition were exposed to an equal number of males and females. Consequently, we can be assured that the gender bias we incurred in the first experiment was caused by the treatment and not by some other factor.

In the second experiment, a selection bias was avoided, or at least minimized, by our alternating the treatment and control condition every ten survey attempts throughout the three Saturdays of interviewing. We, however, made no attempt to ensure that an equal number of males and females were exposed to the experimental conditions. Nonetheless, our procedure of alternating the treatment and control condition throughout the interviewing periods should have resulted in similar proportions of males and females being exposed to the experimental conditions. Thus, we can be reasonably sure that the gender bias we observed in the second experiment was due to the treatment.

The manipulation checks that were conducted for our experimental treatments could have been improved. College students rated each treatment on its level of cuteness. However, since our experimental subjects had an average age of 31 or higher, we might have received more accurate cuteness ratings had we used older people for the manipulation check. Another limitation to our manipulation check was due to the fact that we had students rate the picture of the Yorki puppy. However, since a live puppy was used in the second experiment, our manipulation check should have been conducted with the live puppy rather than with a picture of the puppy.

There are a variety of projects that future researchers should consider to extend the present research. First, they can determine the type of mammal that would be the most effective as a cute stimulus (e.g., infant, puppy, or kitten) and the most effective manner to display the mammal (e.g., shown in a picture, tied to a post, displayed in a cage, or held in an interviewer's arms). Second, they can determine if a collection of cute mammals would serve as a more effective cute stimulus than a single mammal. Third, they can conduct experiments that will examine whether there is a direct relationship between the cuteness level of the stimulus and the survey's response rate. Finally, they can determine the extent to which the cute stimulus can be successfully applied to other types of surveys, e.g., the mail survey and website survey.

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Curt J. Dommeyer is a Professor in the Department of Marketing, College of Business and Economics, California State University at Northridge. John Bellfield, Chloe Bimont, Jeanette Blom, Kaitlin Gardiner, Erin Mathenia and Jenny Soto are marketing Alumni, California State University at Northridge.