Words make people think, ... but pictures make people feel: The effect negative vs. positive images on charitable behavior

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Abstract

We ran an experiment where the subjects initially played a four-round dictator game, after which each subject was shown either a set of positive images or a set of negative images. Finally the subjects played another four-round dictator game.

The effect of the sign of images shown is clear on the players' behaviors: *positive images have moderate effects on charitable behavior while negative images dramatically increase charity.*

We could therefore infer from our experimental results that showing negative images of the Haitian and Chilean catastrophes to the international public would have significant positive impacts on international donations to the victims and the rebuilding programs in both countries.

1 Introduction

The recurrence of catastrophes of varying proportions in different parts of the world, most especially the recent Haitian and Chilean earthquakes, has brought to the fore discussions on: *the effect of showing different types of images on the psyche of the audience.* Green [1] argued that "*great events, including terrible ones, produce great images; ... and the power of images to convince, impact, illuminate and provide long-lasting reminders of events underscores the significance of contemporary images*".

Ethical issues have been raised by many in this regard. For instance, on the showing of horrible images of death in Haiti, some comments in the print media have questioned the role of the editorial policies of news agencies in encouraging sensationalism that violate the sensibilities of their readers. Splashing upsetting images all around (even if they are real) requires taste, decency and extreme caution because of its negative impact on young folks (see [2]).

"Words make people think, ... but pictures make people feel" (quoted in [2]). It behoves on us then to know, which impacts more positively on human altruism: harmful images (of injured children, blood, corpses, destruction etc.) or constructive images (like future perspectives, developmental needs and efforts etc.)? In other words, to galvanize and sustain international solidarity for the victims of such catastrophes, what role would the kind of information or images shown to the international audience play?

Related studies in this field of research include: [3], [4], [5], [1], [6] and [7]. In particular, [5] posited that images that induce thoughts of guilt, sympathy and pity in donors would extract the greatest commitment in charitable giving.

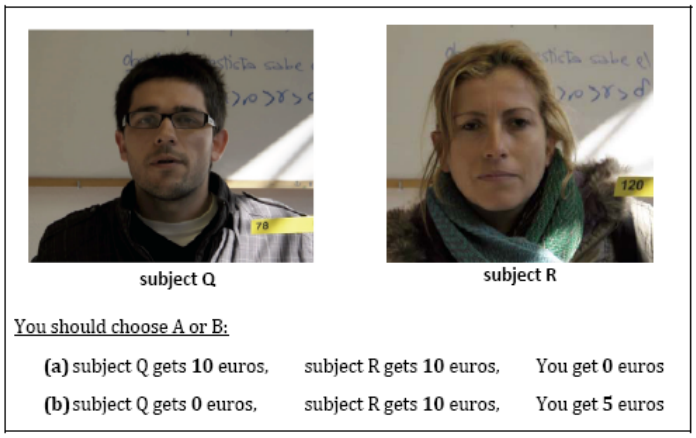
Dictator game (DG), a decision tool in which the proposer determines an allocation of some endowment (e.g. cash) between himself/herself and some passive responder(s) in a completely anonymous setting, has also been used in other studies. DG is widely known to be a good device to study human altruism. Studies have shown that altruistic behavior is sensitive to framing effects ([8], [9]) and also to the proposer's social integrity.

Furthermore, a connection is also shown to exist between the dictator's propensity to donate and the recipient's characteristics such as: *proximity* ([10]), or *poverty* that enhances solidarity among donors. Distance, in terms of income, has been shown to be a key determinant of donation ([11], [12]).

2 Experiment

In our experiment (see Diagram 1), a group comprised of three players A, B & C; with C being the dictator, and A & B were passive receivers seen only in pictures on the screen. A & B were university students like C, but from other schools. In each of the four-round pre-images and post-images sessions, Player C was matched with four different pairs of players A & B (s/he saw in total eight pairs of students).

Diagram 1: Decision per round (ST)

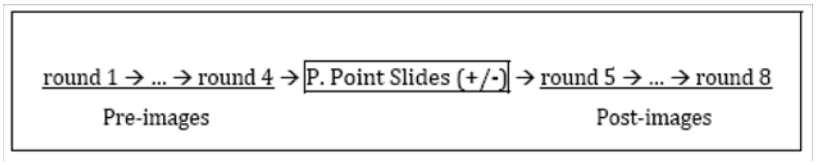


* Photos available ONLY to the Referees

63 players participated in this experiment and they were divided into two groups, that is, 32 players in the *Soft Treatment (ST)* and 31 players in the *Hard Treatment (HT)*. In the ST, the choice was between: *(a)* giving 10 *euros* to each of the players A & B and keeping 0 *euro* to himself [10, 10, 0]; and *(b)* giving 0 *euro* to player A, 10 *euros* to player B and keeping 5 *euros* to himself [0, 10, 5]. While in the HT, the choice was between: *(a)* giving 10 *euros* to each of the players A & B and keeping 0 *euro* to himself [10, 10, 0]; and *(b)* giving 0 *euro* to each of the players A & B and keeping 5 *euros* to himself [0, 0, 5].

At the end of the first four-round pre-images session, (as shown in *Diagram* 2) each player was shown a powerpoint presentation with either positive images (PI) or negative images (NI), after which they played for another four-round post-images session. In the *Soft Treatment*, 16 players were shown PI while the other 16 players were shown NI. In the *Hard Treatment*, 15 players were shown PI while the remaining 16 players were shown NI. In other words, a total of 31 players were shown PI while 32 players were shown NI in the experiment.

Diagram 2: Time Schedule



Assignment of the players to either of these two image-viewing groups (that is, PI & NI) was random. The image-induction process consisted of two sets of 10 images, each presented through Microsoft Office PowerPoint coupled with a brief text. The images were drawn from the International Affective Picture System (see [13]). The normative ratings and valence arousal for the Spanish population (see [14]) were then used to configure both the image sets. The first set consisted of PI (i.e. couples, babies or landscapes) while the second set consisted of NI (mutilated bodies, victims of natural disasters or violence). The mean valence values were 7.9 & 1.9 respectively while the IAPS values range from 1 to 9.

The text associated with each image was presented for $6s$ prior to the appearance of the image and remained on the screen for $12s$. In the positive image-induction set, the text placed premium on goal achievement (e.g. an image of a medal ceremony with the text: "*When we attained our goals in life we feel satisfied and further reinforced*"). While in the negative image-induction set, the text placed emphasis on the individual lack of control over negative events (e.g. an image of a person with a slit-throat with the text: "*No one is free from danger, and anyone can be a victim of crime, violence or accident*"). These image-views were similar to what usually transpire in the newspapers. The tasks in the pre-images and post-images sessions were similar except that in the former, there was no image-induction (for further details, see [15]).

Real monetary payoffs (as expressed in *euros*) were given to the players but its implementation was limited to only one randomly-chosen round out of the eight rounds. Additionally, show-up fees of 3 *euros* were given to each of the Economics students while for the Psychology students, it was used as extra credit points in their studies.

How effective are positive or negative images in enhancing charitable giving or altruistic behavior? To answer this question, we compared how the subjects behaved in the first and second scenarios, that is, pre-images and post-images sessions. We counted the number of times that subjects kept 0 *euro* to themselves (that is, chose option *a,* in which player A received 10 *euros* in the ST or in which both players A & B received 10 *euros* in HT). On average, in the first four rounds (that is, pre-images ST), subjects preferred 30% of the time to keep nothing for themselves; while in the pre-images HT, it was 36% of the time .

In the second four rounds (that is, post-images), the subjects' behaviors changed dramatically. The difference between the number of times option a was chosen in the pre-images and post-images is as shown in $Fig.1$: *Box Plots of Images vs Kindness Index.*

Kindness Index: It was a measure of the level of altruism displayed by each dictator (player C) in the experiment. It was computed as: the number of times a player chose option a over the total 4 (+4) rounds, that is, $KI = \sum_{t=1}^{4} a_{i,\,t}/4$; and $KI \in [0, 1]$.

3 Results

We found that a prior view of NI enhanced greater altruistic behavior towards others than either PI or no-images (as in the pre-images session) at all. In $Fig.1$, the Box Plot of the pooled data from both treatments show that in the pre-images session, the first quartile is approx. 0, the median is approx. 0.25 and the third quartile is approx. 0.5 on the scale. These results contrasted those for the post-images session, where the values for these statistics were greater for both cases of PI and NI. In particular, these values were highest for the subjects that were shown NI. This indicated that the subjects that viewed NI exhibited the greatest form of kindness or altruism through their choice of option a.

Non-parametric tests confirm these effects: *(i)* for the positive image-induction, there was no significant effect of these images on the subjects' charitable behavior and in fact there seemed to be a negative but weak effect (*Wilcoxon:* $p = 0.79$ & *sign test:* $p = 0.68$); and *(ii)* for the negative image-induction, there was a significantly strong and positive effect of these images on the subjects' charitable behavior (*Wilcoxon*: $p = 0.00$ & *sign test:* $p = 0.00$).

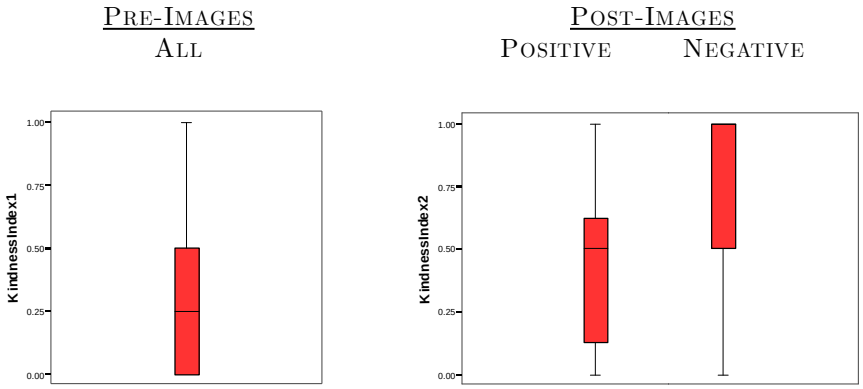


FIG. 1: BOX PLOTS OF IMAGES VS KINDNESS INDEX

The Cumulative Frequency Graph of the Kindness Index for the pre-images and post-images (PI & NI) are shown in $Fig.2$, but depicted as: *before*, *after positive* and *after negative* respectively. The NI cum. freq. is stochastically dominated by both PI and $before$, that is, the level of altruism in NI is higher.

Analysis of the treatment effect (soft vs. hard, ST & HT) showed that: (i) in the pre-images session, there was no significant influence of the treatment type on both the players that viewed PI & NI ($Mann\ Whitney$: $p = 0.953$ & $p = 0.402$) respectively; and (ii) in the post-images session, there was a (weak) significant influence of the treatment type on the players that viewed PI at 5%, while there was none for those players that viewed NI ($Mann\ Whitney$: $p = 0.024$ & $p = 0.696$).

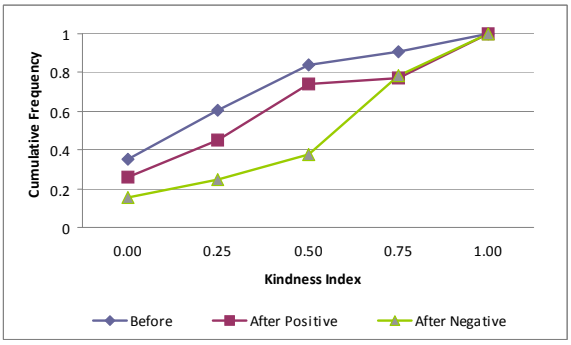


FIG 2: CUMULATIVE FREQUENCY GRAPH

4 Conclusion

We conclude that a prior view of horrible or violent images has a significant positive influence on human altruism as these pictures affect the sensibilities of audience by making the greatest shock value on them. Hence, we conclude that *the effect of showing terrible images may have a positive effect on international help.*

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