Evaluating The Role Of Empathy In Crowdsourcing User Interfaces

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ABSTRACT

Empathy induced altruism is believed to motivate people in a crowdsourcing environment to produce better quality work. However, there hasn't been any considerable investigation regarding how empathy can be effectively conveyed through user interfaces (UI). We conducted a study to find the effects of introducing empathy in task descriptions, and investigate its effect in workers' motivation. We validated that empathy is perceived to have a positive effect for workers. But merely manipulating the task description to express the empathy has produced inconclusive results.

Author Keywords

Crowdsourcing; empathy; task description.

ACM Classification Keywords

H.5.3. Group and Organization Interfaces: Computer-supported cooperative work.

INTRODUCTION

Crowdsourcing platforms are quickly growing and are currently used with multiple purposes ranging from design and evaluation [6] to problem solving and analysis [1]. With crowdsourcing platforms on the rise, the question on what motivates people (here onward referred to as 'workers') to work and contribute on these platforms is more important than ever. Research suggests that money, altruism and practice of skills are the most important factors that motivate people to work on crowdsourcing platforms [2, 5]. Experiencing empathy is a source of altruism [4]. With altruism being one of the main motivators for workers, it is interesting to investigate whether empathy has an effect on the quality and quantity of the produced work. Due to the digital nature of crowdsourcing, it is difficult to for workers to experience a full empathic response to the requester. Workers are often not aware of the context, impact, or meaning of a task and know little to nothing about the requester's background [2]. We hypothesize that this mismatch in gaining an empathic "bond" to the project or requester might influence the quantity and quality of the work produced by workers on crowdsourcing platforms.

METHOD

To gain insight into how workers on crowdsourcing platforms currently experience and encounter empathy in their work, we conducted a study in two phases. In the first phase we executed a *survey* on two different crowdsourcing platforms (Crowdflower and Google Consumer Surveys) to gauge the workers' self-perceived effect of empathy on work, and whether they believed empathizing with the requestor would in any way help them to work better or faster. This survey cost was $18 and yielded results from 200 workers in 72 hours.

To validate these subjective claims, in the second phase we conducted an *experiment* to confirm whether empathy in the UI would affect the quality and quantity of work. We presented Crowdflower workers with the task of proofreading nine abstracts. We came up with two task formulations: one with empathic elements in it, and one without. The empathic elements were designed to channel the following empathy elements: (1) Identifying with the person who is requesting the work; (2) Knowing detailed requirements for the task; (3) Knowing how the result will be used; and (4) Feeling involved in the whole project, not just an individual task. With the experiment we were interested to answer two research questions: **Q1**: Does empathy affect the quantity of work done by the crowd workers? More specifically, to investigate quantity we measured: Out of the nine abstracts, how many did workers actually correct? How many errors out of the three did they find? What was the average task completion time? **Q2**: Does empathy affect the effort the workers place on their work? More specifically, to investigate quality we measured: How detailed were the workers' responses for each of the abstracts? We iterated the experiment twice. In the first iteration we had an unrestricted worker base whereas in the second we limited worker base to English speaking. The experiment cost was $132 and yielded 134 responses within 48 hours.

RESULTS

Survey: Workers find empathy important

Salient takeaways of the survey are:

Workers have a preference for assignments that they know the context of. "*I will deliver a high quality content if I knew about the context of the work, because I would be more involved and would feel part of the project*" – Participant 9

Workers report working better and harder when they know the value of their contribution to the project. "*Generally the kind of impact my work will have or just a description of*

how the data will be used... would be good to know" – Participant 15

Workers report delivering better quality of work and are willing to work more if they can relate to the requester and the project. "*I would do the work more efficiently... if I could tune into the same wavelength with the customer*" – Participant 13

The reported motivation to work on an assignment increased when workers were presented with detailed background information on the requester and the project itself. "*I think more information about job requirements may... help us shape the work. Above all, detailed description and clarity of requirements will allow me to handle it best*" – Participant 21

This findings match with elements of empathy reported in literature [3], in the sense that a person needs to be able to feel "in the shoes" of another person to feel empathy and be compelled to take actions about it. Additionally, there is the component of feeling valuable, i.e. knowing that their work is contributing to the greater good of some cause that they can identify with.

To sum up, workers collectively reported that empathic motivation most affected their work in one of the three following ways:

- Producing higher quality work
- Performing the work faster
- Providing additional value above and beyond the requirements.

Experiment
We formulated the experiment's task description using the survey insights along with components of empathy reported in literature [3]. The task description included info on:

- Identifying with the person who is requesting the work
- Knowing detailed requirements for the task
- Knowing how the result will be used
- Feeling involved in the whole project, not just one's individual task.

The experiment did not yield statistically significant results nevertheless it was mostly in the direction of our hypothesis –i.e. that empathy increases productivity and quality in crowd sourced tasks.

For Q1, our expectation was that workers in the non-empathic condition would complete significantly less tasks, which was not the case. As for the average task completion time, in the first iteration, it was 657.83 sec (SD=588.97) in the non-empathic condition, and 670.97 sec (SD=592.17) in the empathic one – although in the hypothesized direction the difference is not significant ($t(69)$=-.093, p=.92). In the second iteration it was 776.25 sec (SD=559.88) and 936.7 sec (SD=128.39) respectively – although in the hypothesized direction the difference is again not a significant one ($t(61)$=-1.056, p=.29).

For Q2, although the questions individually varied in their percentage of detailed response received, the overall detailed response was better under the empathic setting compared to the neutral yet not statistically significant; in the first iteration, the average number of words (for all nine abstracts) the workers wrote was 9.95 (SD=12.37) in the non-empathic condition and 13.82 (SD=18.9) in the empathic one. Although in the hypothesized direction, the difference is not significant ($t(69)$=-1.04, p=.30). In the second iteration, the average number of words (for all nine abstracts) the workers wrote was 15.39 (SD=26.13) in the non-empathic condition and 13.21 (SD=12.44) in the empathic one, although once again, the difference is not significant ($t(61)$=.376, p=.70).

CONCLUSION
In this paper we report the findings of a survey and an experiment on the role of empathy for crowd workers. The main finding from the survey was that workers in a crowdsourcing context realize that empathy is an important aspect to aid them in their work: they value tasks that they know the context of; they report working better and harder when they know how their contribution is valuable to the project and expect to deliver better quality of work; they are even willing to work more for the same wage if they can relate to the requester and the project. Although with the experiment we could not corroborate the survey's findings results were supportive of our hypothesis.

The methodology we report can be used to perform further research and also incorporate the element of empathy in other fields that try to motivate user actions, such as recommender systems, e-commerce, and ERP platforms. Currently, although the effect of expressing empathy in a crowdsourcing UI through textual descriptions is inconclusive, our results highlight that this is an area that needs further investigation. We expect that a direct effect of designing empathy in crowdsourcing can foster trust among workers and requesters.

REFERENCES
1. Brabham, D.C. Crowdsourcing as a Model for Problem Solving An Introduction and Cases vol. 14, no. 1, pp. 75–90 (2008).

2. Gerber, E. M. and Hui, J. Crowdfunding : Motivations and Deterrents for Participation vol. 20, no. 6 (2013).

3. Gerdes, K.E., Segal, E.A., Lietz, C.A. Conceptualising and Measuring Empathy (2011).

4. Huber, J.T. and MacDonald, D.A. An Investigation of the relations between Altrusim, Empathy, and Spirituality (2012).

5. Schultheiss, D., Blieske, A., Solf, A. and Staeudtner, S. How to encourage the crowd ? A Study about User Typologies and Motivations on Crowdsourcing Platforms pp. 1–3 (2013).

6. Tidball, B.E. and Stappers, P.J. Crowdsourcing Contextual User Insights for UCD (2011).