

A Collective Action Inspired Motivation Framework for Crowdsourcing

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Abstract. In this paper, we propose a framework of motivations about why people participate in crowdsourcing without monetary incentives. The framework is based on the four pillars of crowdsourcing as well as the motivations referenced from collective action studies. We argue that crowdsourcing is not only about collective intelligence but is also similar to collective action, particularly when there is no monetary incentive. We discuss the commonalities between crowdsourcing and collective action. The framework provides a different research lens on crowdsourcing relative to the prevailing economic, psychology, and information system perspectives that form prior scholarship in this area.

1 Introduction

Crowdsourcing as an approach to activate or use the wisdom from a large group of people to solve problems has existed for a long time. For example, the collaborative effort by hundreds and thousands of amateurs to create the Oxford English Dictionary under the appointee of James Murray in 1879 could be regarded as a primitive crowdsourcing project (Sally Ellis 2014). However, as a concept, crowdsourcing has only recently been defined (Howe 2006). Howe (2006)'s definition, which is proposed in the context of business, implicates that participants to crowdsourcing activities may have heterogeneous backgrounds and diverse purposes other than for mere commercial interests. A more recent and integrated definition in academia on crowdsourcing is coined by Estellés-Arolas, E. and González-Ladrón-de-Guevara, F. (2012) who explicitly point out that participants in crowdsourcing will receive “*the satisfaction of a given type of need, be it economic, social recognition, self-esteem, or the development of individual skills.*” It further assumes that participants' motivations to crowdsourcing are multi-faceted than merely money oriented.

Monetary incentives are typically used to encourage people to participate and contribute to crowdsourcing (Frei, B. 2009). However, people's motivations are often more complicated than just money. Kaufmann et al. (2011) find that monetary payoff only constitutes a small portion of motivations for people to do crowdsourcing task on Amazon Mechanical Turk (AMT). Besides money, there are intrinsic motivations like the sense of enjoyment and community; and extrinsic motivations such as commendation from the task initiator (Kaufmann et al. 2011). There are a few studies that have proposed motivational theories for crowdsourcing activities, and they aim to adapt theories from various disciplines, such as the transaction cost theory in economics. As an example, it is found that in paid crowdsourcing, such as AMT, workers' reservation wage (the smallest wage a worker is willing to accept a task) is log-normally distributed (Horton, J. J. and Chilton, L. B. 2010). However, we believe that crowdsourcing is more like an umbrella concept or a generic phenomenon that have several variables or sub-categories, such as different types of crowdsourcers, for-profit vs. non-profit, monetary vs. non-monetary incentives. Hence, it could be a problem to implement a specific theory from another discipline to explain crowdsourcing as a generic phenomenon. There are also studies that examined non-monetary incentives for people to participate in crowdsourcing activities yet they tend to fall into too narrow contexts and are primarily empirical based, such as the work from Alam, S. L. and Campbell, J. (2012), who theorize crowdsourcing incentives in the context of GLAM (galleries, libraries, archives, and museums).

There are studies that relate crowdsourcing with collective intelligence and argue that crowdsourcing is an instance of collective intelligence. For instance, Eric Bonabeau (2009) put crowdsourcing as an application under collective

intelligence. But in our paper, we propose that crowdsourcing not only can be seen as collective intelligence but also can be investigated from a collective action perspective, which to our knowledge, is under discussed. We posit that collective action and crowdsourcing share several commonalities and the motivational factors in collective action could inspire and help theorize motivations for crowdsourcing. We hope that our work could contribute to the discussion in Starbird's (2012)'s paper about what "crowdsourcing obscures" and resonate with her argument that "current understanding of crowdsourcing may not be broad enough to capture the diversity of crowd work in disaster" (Starbird's 2012).

2 Comparing collective action and crowdsourcing

Collective action is interpreted as "people doing something together, and it is assumed that this involves their having a collective intention to do that thing together" (Margaret Gilbert 2006). Collective action is a broad term usually used in social and political science. An important feature of collective action is that usually it is not self-interest or money driven but is carried out for public good or group interest (Mancur Olson. 1965). As aforementioned, crowdsourcing can also be initiated without monetary rewards and it also can be implemented for public good and social betterment (Alam, S. L. and Campbell, J. 2012) (Starbird, K. 2012). Apart from this general commonality between collective action and crowdsourcing, we compare them in detail in four aspects: the initiator(s), the participants, the task, and the platform. These four aspects correspond to the four pillars of crowdsourcing: the crowd, the crowdsourcer, the crowdsourcing task, and the crowdsourcing platform (Hosseini, M. et al. 2014).

The initiator(s)

There are salient similarities between initiator(s) of a collective action and crowdsourcing. Both can be initiated by an organization or by individuals. For instance, a collective action can be initiated by an organization such as the American Legion, or it can be initiated by individuals, even a single person, as can be seen on the MoveOn.org - an online platform for various petitions. Likewise, a crowdsourcing activity can be initiated by an organization, such as Ushahidi - a crowdsourcing platform for social movements, or it can be initiated by individuals, such as researchers who publish a survey on Amazon Mechanical Turk.

The participants

There are five distinctive features of the crowd (participants) in a crowdsourcing activity: diversity, unknown-ness, largeness, undefined-ness, and suitability (which means suiting a given purpose, occasion, condition etc.) (Hosseini, M. et al. 2014). From these features, we could also see several similarities between participants in collective action and crowdsourcing activity. First of all, both of them could have a large number of diversified and un-defined

participants. For example, Wikipedia is created by a large number of contributors with various backgrounds, and Civil Right movement in the 1960s had participants from different demographics. Secondly, by unknown-ness, the participants to a crowdsourcing activity are usually anonymous (Hosseini, M. et al. 2014), which is also common in collective action, such as on MoveOn.org, where many petitions signed by people are in anonymity.

The task

We compare the task for a collective action and a crowdsourcing activity in the following respects: purpose, solvability, contribution type, and driven force (Hosseini, M. et al. 2014). First, the purpose for both collective action task and a crowdsourcing task can be diverse and multiple, ranging from social issues to individuals' requests to solve some problem they concern about. Second, in terms of solvability, a crowdsourced task is usually simple enough for humans to solve but might be too complicated for a computer to solve. For collective action, likewise, the task usually needs human effort and devotion, which cannot be substituted by technology, because collective action usually calls for participation in person at scene.

Third, in terms of contribution type, both crowdsourcing activity and collective action could be contributed from individuals, or by a group of people as a team, e.g., a branch of advocacy campaign in a certain district and a team of contributors to a certain article in Wikipedia. Also, the content of the contribution in both crowdsourcing task and collective action usually involve human intelligence, effort, donations, and time. Finally, in terms of driven force, crowdsourcing is user-driven, which means that it is powered or controlled by participants (Hosseini, M. et al. 2014); in parallel, collective action driven by traditional organization is more or less eclipsed by those driven by individuals or groups of advocates (Karpf, D. 2012).

The platform

The platform of collective action and crowdsourcing activity can be roughly the same, as both of them can be supported by and launched on the Internet or mobile devices. For example, collective action such as political campaign is transforming from professional lobbyists relying heavily on the relationship between advocacy elites and politicians, to net-roots who are more likely to be in a networked community of online political activists (Karpf, D. 2012). Similarly, crowdsourcing can take place on the Internet, or on a smartphone.

3 A Motivation Model for Crowdsourcing

According to the similarities between crowdsourcing activity and collective action, we propose a framework for crowdsourcing activity based on the four pillars as well as the motivations for individuals to participate in collective action. To start with, we propose that the four pillars of crowdsourcing should not be

independent to each other, but inter-related with each other. If initiator(s) and participants are not closely connected with other, it would be hard for initiator(s) to communicate the task clearly to participants, and what participants do may not very well fit the goal of initiator(s). If crowdsourcing task and initiator(s) are not closely integrated, there would be a danger that the result of crowdsourcing strays from the task plan. If task is just loosely connected with participants, the engagement of crowdsourcing would be low and quality of outcome cannot be guaranteed. Finally, if platform is not firmly integrated with the other three pillars, the communication of people in crowdsourcing and implementation of task would be impeded.

Second, several motivational factors from collective action could bridge these four pillars together. Personal factors motivate initiator(s) to setup a crowdsourcing activity, which might be for public good, advocacy campaign, or non-profit. Such factors might be altruistic e.g., personality of empathy, compassion, and concern for other people (Batson, C. D. et al. 1995); and might be for “universal orientation” e.g., compassion for strangers, or even humanity as a whole (Omoto, A. M. 2010). These factors would attract participants to engage in the crowdsourcing activity and connect them with initiator(s). As an example, Causes (<https://www.causes.com>) is a crowdsourcing platform that aims to gather people’s intelligence and action for various advocacy purposes. Individuals, political agency or non-profit organization could all start a campaign free of charge, and we can see many participants join Causes out of empathy for various inequality issues such as women’s rights.

Interpersonal factors such as reciprocity (Kahan, D. M. 2003) that drive collective action, could also motivate initiator(s) and participants to engage in crowdsourcing activity and attach them more closely to each other. Interaction between initiator(s) and participants, as well as within participants themselves would blur the boundary and let them be more committed to the task (Bimber, B. et al. 2012). For instance, Waze users interact to each other in real-time traffic and could help figure out the best route. In this case, the boundary between initiator and participants themselves are blurred, and they are motivated by and benefited from reciprocity.

Finally, the contextual factors, which we primarily refer to technology and organization, act as a catalyst for people to initiate and participate in crowdsourcing. For example, both Ushahidi and Causes have integrated with popular social media such as Facebook, Twitter etc. These social media could bind the participants together and enable them to communicate with each other more easily. To some degree, these social media could also be regarded as a platform that organize the participants together as a group. It would give initiator(s) and participants a sense of group identity and consciousness, which again will function as a sort of personal factors to motivate them to engage in the task.

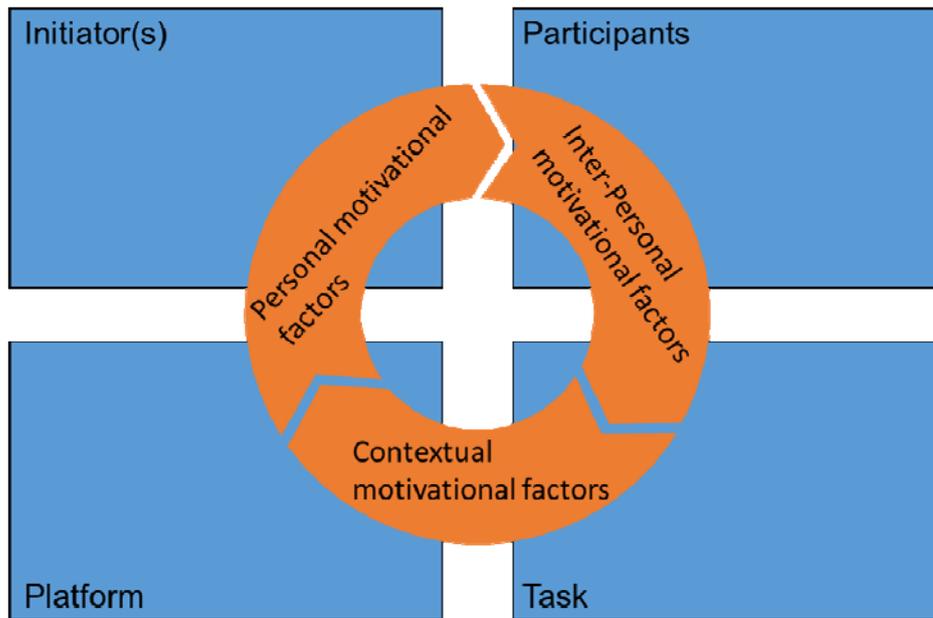


Fig.1 A collective action inspired motivation framework for crowdsourcing

4 Conclusion

Our proposed framework with motivations for crowdsourcing is still primitive and needs further investigation and refinement. However, we hope that it might shed some light on crowdsourcing related studies that motivations for crowdsourcing could also be referenced from collective action. In future, it might be useful to apply this framework to a concrete case to illustrate how such a re-framing could be used to understanding crowdsourcing in a new way.

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