

Designing Social Psychological Incentives for Online Collective Action

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The vast open sharing of digital content has become a driving force on the internet in 2008. A large and growing number of online systems support massive collaboration to produce public repositories of information. As the prevalence, scale, and variety of these systems grows, it is essential to examine the motivations of individuals who contribute to them. This project is founded on the premise that just two categories – contributors and non-contributors – do not accurately capture either the specific products of online collective action or the variety of incentives that drive it. We need not assume, for example, that the same incentives will motivate an individual to edit content on Wikipedia, to join a social networking site like LinkedIn, or to respond to queries on Yahoo! Answers. Instead, I present an exploratory framework that identifies four common types of contribution. Based on these types, I then explore existing research in social psychology that may lend insight into designing incentives for promoting specific types of contribution behavior.

Background

This project focuses on examining the relationships between social psychological incentives – incentives that provide benefits through internal feelings and perceptions (Cheshire and Antin 2008) – and specific types of contribution. Social psychological processes have been shown to influence the behaviors of individuals who participate in collective action. (Klandermans 1984) Designers may be interested in learning to use these targeted incentives to promote specific types of contribution, rather than just a large number of contributions of any kind. To that end, this project consists of a scaffold for future research and design work. It's primary contribution is to suggest specific bodies of research which may allow us to advance research into social psychological incentives in fruitful directions.

Here I present an exploratory, theoretically-informed analytic framework that classifies how specific types of contribution create value for online collaboration systems. Research in social psychology has produced a wide array of findings on incentives for specific types of contribution behavior. By examining the manner in which online collective action systems provide value to their users, I argue that we can enhance that value with the use of targeted, theoretically-informed incentives. This point of view may help to address several important questions about the emerging genres of online cooperation. What are the characteristics of desired outcomes and what types of behaviors can promote them? What social and psychological cues and conditions can encourage these behaviors? Finally, how can we design with these factors in mind? Beginning to address these questions will, I suggest, be essential both to our theoretical understanding of online collaboration and deliberation and to harnessing knowledge about these processes to design online systems.

The framework presented below (Table 1) was compiled by completing a review of two areas: (1) the body of social psychological research dealing with incentives, motivation, exchange, and decision making, and; (2) the wide array of real-world systems (e.g. Wikipedia, YouTube, Facebook) in which individuals deliberate and collaborate to create and share content on the web. Meshing the two together, I propose mappings between bodies of research and specific types of real-world contribution behavior. For each of four proposed categories I argue for a particularly relevant strain of research.

It is necessary to provide several caveats and limitations. First, the body of literature described above is vast and varied. I do not claim to have explored every possible area of applicable research. This project does not constitute a comprehensive review, but rather a framework that may be suggestive for future

research. Second, though I argue for the relevance of specific research traditions and theories, in each case there are certainly others that apply. I view this work as exploratory, and illustrative of a type of analysis that can apply theories in social psychology to practical issues in online collaboration. Finally, this work is untested in the sense that the design-related inferences I have drawn have not been vetted in laboratory or real-world settings. Undertaking this testing is an important focus of ongoing research.

Discussion and Future Work

Table 1 (below) presents both an analytic frame (the four categories of contribution) and a theoretical grounding for future research. While this framework may be used as the basis for design recommendations, understanding the context of individual applications is key. It is beyond the scope of this project to explore the many contextual factors that influence social psychological incentives and collective action in online contexts. The informed application of this framework will also require an understanding of the tradeoffs and pitfalls involved. Social psychological incentives often require that designers convey more information through already cluttered channels. This may exacerbate the problems of information overload (see e.g. Allen and Wilson 2003) and, ultimately, the annoyance of users. Concise and focused incentives may help to mitigate the potential for overload and annoyance in contexts designed to maximize influence.

Even when carefully and cleverly implemented, however, social psychological incentives can sometimes lead to unexpected and negative outcomes. Especially when contributors are already intrinsically motivated, applying additional incentives can engage the ‘corruption effect of extrinsic motivation’ (Deci 1971). Under certain conditions, motivations can be substitutive rather than additive – strong internal motivations are replaced by weaker external ones, leading to less overall motivation and commitment (Lepper and Greene 1978).

Many of the incentives I discuss are already operating in current systems, whether by accident or by design. In order to build a better base of knowledge, we must also examine the specific ways in which incentives are instantiated in user interfaces. Even seemingly straightforward usability issues such as how messages are phrased and how long they appear on the screen may have the potential to alter the influence of incentives. Future research into designing interfaces to incorporate social psychological incentives will hopefully enable a degree of standardization that will inform future experiments and real-world implementations.

References

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	DEFINITION	DESIRED BEHAVIOR	VALUABLE WHEN...	SOCIAL PSYCH. THEORY / LIT.	DESIGN IMPLICATIONS
Contribution Size	The total amount contributed by an individual contributor	Larger aggregate contributions from each individual, either by larger one-time contribution or many smaller-contributions over time	...attention is scarce, and/or when it is essential to maximize the potential value of access to unique resources. (Ex. When photographers who have visited rarely photographed parts of the world choose to share photographs on Flickr.)	Social Loafing / Social Impact Major Paper(s): Latané 1979, Harkins 1987 Findings: <ul style="list-style-type: none"> Individuals put out less effort in groups when their efforts can't be evaluated. Individuals put out less effort when they feel that their contributions don't count, are not valued. 	<ul style="list-style-type: none"> Prominently display individuals' contributions. Allow contributors to evaluate each others' contributions. Emphasize the unique value of each individual's contribution.
Membership	The total number of individuals in the contributing group	More individuals indicate their membership in the contributing group, even if they do not otherwise contribute	... content / informational value is especially embodied by the links between individuals - the 'social graph'. (Ex. Likelihood increases the likelihood of making a business connection as a function of the number of ties in the network, even if most nodes contribute no other information.)	Social Identity Major Paper(s): Tajfel & Turner 1979, Tajfel 1982 Findings: <ul style="list-style-type: none"> Defining oneself as a member of a group tends to lead to favoritism towards the in-group at the expense of the out-group. At least 3 factors influence contributions to the in-group: <ul style="list-style-type: none"> strong in-group identity; availability of comparisons between in-group and out-group, and; relevance of in-group / out-group comparison. 	<ul style="list-style-type: none"> Advertise potential contributors' ties to existing groups. Emphasize the strength and size of existing groups in order to encourage recruitment. Promote competition between relevant groups.
Diversity	The amount of variation among contributions with respect to content, topic, or theme	Individuals contribute content in more diverse topic areas	...comprehensiveness and / or breadth are essential to increasing the value of content. (Ex. Wikipedia benefits from providing content on many diverse topics.)	Dissent, Conflict, & Creativity Major Paper(s): Nemeth 1995, Nemeth & Ormiston 2007 Findings: <ul style="list-style-type: none"> Authentic dissent, conflict promote diverse, creative idea generation. Changing group membership decreases comfort but enhances diverse brainstorming. 	<ul style="list-style-type: none"> Emphasize divergent opinions in order to facilitate diverse thinking. Avoid grouping individuals with similar attitudes, contribution patterns wherever possible.

Standardization	The degree to which contributions adhere to an accepted form or process	Individuals make contributions through a standardized contribution process and/or that adhere to stated standards for form, tone, or content	<p>...systems have well-defined goals, and /or when similarity between units is essential to efficiently aggregating them. (Ex. Contributions to eBay's reputation system may be more valuable when they adhere to norms for form and content.)</p>	<p>Sanctions & Norm Enforcement Major Paper(s): Heckathorn 1990, Horne 2001 Findings:</p> <ul style="list-style-type: none"> • Social control is often driven by shared 'compliance norms' which are influenced by individual sanctioning behavior. • Strong ties between group members who sanction for norm violations increase group cohesion and rewards for sanctioners. 	<ul style="list-style-type: none"> • Group individuals based on their willingness to enforce group norms. • Clearly advertise desired standards in order to promote their normative value. • Do not reward individuals directly for sanctioning, rather.
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