Social Motivation and Point of View
(Doctoral Consortium)

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ABSTRACT
Social media facilitates interaction and information dissemination among an unprecedented number of participants. Why do users contribute, and why do they contribute to a specific venue? Does the information they receive cover all relevant points of view, or is it biased? The substantial and increasing popularity of social media makes these questions more pressing, but also puts answers within reach of automated methods. I investigate scalable algorithms for finding user behavior changes, predicting the effect of feedback on where users will make contributions, and evaluating the topics and points of view presented in peer-produced content. Users tend to take actions which in the past have led to social interaction, creating herding effects when large groups exchange feedback. In peer production, positive and negative interactions between users can reveal topical disputes, enabling inferences about points of view. Such learning from large-scale social interactions allows us to monitor the quality of information and the health of venues, but also provides fresh insights into human behavior.

Categories and Subject Descriptors
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Keywords
Social Media; Computational Social Science

1. IDENTIFYING BEHAVIOR CHANGES
Viewing a user’s contributions to a collective intelligence process as a graph with “knowledge artifacts” as nodes and the similarities between these artifacts as edges, what can metrics such as the clustering coefficient tell us about a user’s behavior? Even without an explicit model, this view allows us to quantify a user’s concentration on controversial topics[3]. Using readily computed scores, we can identify users who are later blocked from Wikipedia for manipulative behavior, validating their use as indicators of manipulation.

On Wikipedia, administrators can exert significant influence over the encyclopedia through rule enforcement, interpretation of consensus, and social factors. Using the aforementioned measures of manipulative behavior, we can look for suspicious behavior changes after an administrator is elected, which could indicate a user or group misrepresenting themselves in order to gain influence. Some Wikipedia administrators do show suspicious behavior changes.

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Figure 1: Splitting a reddit user’s contributions at a specific comment, the ratio of relative time spent in that comment’s community after the comment to the relative time spent in the same community before the comment, as a function of the number of replies received. Users who receive more replies in a community spend more of their time in that community in the future, indicative of learning in response to social feedback.

Administrators are elected via an open voting process. Can we identify administrators who go on to change their behavior, potentially misrepresenting themselves? The popular vote is not helpful: Some who go on to change their behavior significantly receive near unanimous support. However, more sophisticated methods, taking the voting history of participants into account, show that information about who will change behavior is revealed in the voting process. Alternative election processes might harness this collective intelligence more effectively, although more research is needed to find a mechanism that is both politically desirable and effective.

2. FEEDBACK INFLUENCES BEHAVIOR
We can detect extrinsically motivated behavior changes, but what about motivations which are intrinsic to an online social process? For example, we are social creatures: Do social interactions change our behavior? Figure 1 implies that they do. Users who receive more social feedback in a community are more likely to participate in that community in the future.

How exactly do these interactions affect our behavior? I make an analogy to games[2]. We can model decision making in social me-
4. ONGOING RESEARCH

The next question I am interested in combines two lines of my recent research: what role does social motivation play in the points of view we choose to discuss in social media? Rather than choosing a community and receiving feedback in that community, participants choose a topic and point of view and receive social feedback in response to that choice. Behavior changes in response to social feedback are again interesting from a human psychology perspective, but may also provide a richer understanding of how discourse dynamics and the evolution of discourse in social networks.

This research will require additional empirical investigation: Is the effect of social feedback on our discourse analogous to its effect on our choice of community? If so, there are important questions concerning the evolution of discourse in social networks, best answered through a combination of theory and simulation with empirical grounding. What happens to minority points of view, and what is the dependence on network structure? How does the evolution of discourse affect the formation of social ties?

5. REFERENCES