Defining, Designing, and Evaluating Civic Values in Human Computation and Collective Action Systems

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Abstract

Collective action is often described in terms of the relationships, learning, principled processes, and community capacities it fosters. Despite this, human computation and collective action systems are often designed and evaluated with system outputs in mind: the quality of answers, the number of votes, the accuracy of content created. In this proposal, we review literature on the design values of "citizen-x" systems, put forward a series of models for describing the civic values in "citizen-x", and classify systems by those models. We conclude by urging greater attentiveness to civic values when designing and evaluating human computation and collective action systems.

Introduction

When people in society come together to collectively perform a task -- from cleaning up a park to deciding on a political leader -- the benefits of their collaboration extend far beyond the specific task at hand. They get to know each other, build bonds of trust, work out a common understanding of a situation, and often form long-lasting partnerships, organizations, and communities. For example, the Wikipedia Loves Monuments project focuses as much on recruiting newcomers and building relationships between Wikipedians in a local region as it focuses on documenting monuments for Wikipedia articles. Yet much of human computation research has focused on how to improve the performance of specific tasks by placing them in a computational paradigm. As civic values are not easily computable or measurable, it is easy to pass over the exogenous roles of more informal collective action systems in the communities who use and rely on them. We believe there needs to be more robust

work focused on supporting civic processes and values when designing and researching collective action systems.

Output Values in Human Computation

The Human Computation is often framed as an approach to carrying out tasks that computers are not yet able to do. Quinn and Bederson (2011) argue that most definitions of human computation seek to tackle "problems [that] fit the general paradigm of computation, and as such might someday be solvable by computers." In the mean time, human computation seeks to leverage "human participation [that] is directed by the computational system or process." In contrast, civic values like community building are not easily cast as a computational problem and do not easily lend themselves to computational solutions.

New research is emphasizing the role of workers in crowdsourcing systems (Kittur et al 2013). Furthermore, existing human computation and crowdsourcing projects have become spaces in which civic values have thrived. Further work is needed to identify what factors, affordances, and design approaches are at work when platforms like Wikipedia, Amazon Mechanical Turk, or GalaxyZoo are re-designed in ways that support not just an efficient task, but the formation of a community. Such research could investigate and question the apparent tradeoff between designing efficient task completion and supporting more civic-oriented goals?

Civic Values in Collective Action

The relationship between civic activity and systems is often described in terms of the goals of the activity, the process values of the activity, the nature of the communities engaged in the activity, or the collective actions taken in pursuit of civic ends.

In the Participatory Politics Model, socio-technical systems support organizers to (1) reach large audiences and mobilize networks for a cause, (2) shape agendas through mobilized dialogue with leaders, and (3) enhance the agency of participants by involving them in the circulation as well as the production of content (Cohen, Kahn, et al). Other notions of civic activity emphasize the process of organizing with pre-figurative politics that carry out civic ends by modeling a proposed way of community life. We

Table 1: Systems with civic or outcome values

Domain	Tends towards civic values	Tends towards outcome values
Crowd Labor	Turkopticon (Irani and Silberman 2013)	Amazon Mechanical Turk
Infrastructure Reporting	FixMyTransport	StreetBump
Peer Production Moderation	Wikipedia's Snuggle (Halfaker et al 2014)	Wikipedia's Huggle
Voting Behavior	Obama Campaign NARWHAL	WhoWorksForYou
DDOS Activism	Low Orbit Ion Cannon	Botnets
Twitter Campaigning	Hashtags KONY 2012	ThunderClap
Scientific research	GalaxyZoo	Scientific cyberinfrastructure
Social news	BlockBot & Digg Patriots	Flagging Systems & Automated Moderation
Censorship	HerDict	Encore
Public Safety	Hollaback (Dimond et al 2013) & Narcotweets	Crime maps
Transparency	Promise Tracker	UK MP Expense Crowdsourcing
Citizen Science	Public Laboratory & SafeCast	Crowd Cyclone Classification
Language	Duolinguo	ReCaptcha

see examples of pre-figurative politics when communities like Wikipedia, Anonymous, Github, Occupy Wall Street, or other "decentralized," "leaderless," or "horizontal" communities are praised as models for widespread civic life (DeTar 2013).

In contrast, the Community Information Model emphasizes the people within place-based communities, focusing on the role of information infrastructures, civic capabilities, and relationships in a region to create a rich ecosystem of place-based community health. In this model, local media outlets, libraries, and education programs support highly-connected community members to acquire capabilities to coordinate peer action on anything from school boards or neighborhood watches to street cleaning in collaboration with local open government (Knight 2009).

Finally, the Computer Supported Collective Action Model focuses on specific activities within a process of cooperation, describing system failures that might obstruct coordinated activity by communities for civic ends (Shaw et al 2014).

Comparing Output Values and Civic Values

Civic technologies like pothole reporting systems have taken a variety of stances on the tension between civic values and task completion. The FixMyTransport system invites people with mobile phones to report problems with roads and public transportation, scaffolding opportunities to learn community organizing in cases where local governments don't respond. In contrast, Street Bump by the Boston office of New Urban Mechanics uses accelerometers on phones to detect and report potholes. While Street Bump is more effective at detecting large numbers of potholes, it has dispensed with the civic and community values of peer reporting that are central in FixMyTransport (Stempeck 2012). We see this divergence of values across a wide variety of human computation systems. (Table 1)

Within human computation, Amazon Mechanical Turk was explicitly built to not be a human-centered crowdsourcing community, instead falling cleanly into the computational paradigm that focused on optimizing for the completion of tasks by interchangable, autonomous workers. In contrast to community-oriented crowdsourcing platforms like GalaxyZoo (where users also perform microtasks), there are a number of design decisions made in the development of AMT that explicitly make it difficult for Turk workers to interact with each other. However, through a participatory design project that used a browser extension and external message boards (Turkopticon), civic values were built back into the AMT system: Turk workers could

interact with each other, discuss issues relevant to them (both about task completion and broader issues), form a community, and even began to articulate a common 'bill of rights' for Turk workers.

Evaluating Civic Activity in Collective Action

Since civic ends focus on the strength of community relationships, community knowledge, participant learning, agency, and political efficacy across multiple platforms, they are notoriously difficult to evaluate, especially in a research context. We have noticed that publications emphasizing civic values tend to apply qualitative evaluation methods (Dimond et al 2013), while papers emphasizing output values tend to emphasize quantitative methods. We are eager to discuss methods for studying civic values in collective action systems in a group activity at HCOMP Citizen + X.

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