Direct Deliberative Governance and the Web: The Collaborative Work of Democratic Decision-Making Mediated by an Online Social Environment

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Abstract Direct deliberative democracy presents a conceptually attractive model of civic governance – particularly relevant at local scale. We outline the 'work' of direct deliberative democracy by considering its underlying principles and objectives, and discuss four fundamental challenges that are commonly proposed: the difficulty of coordinating direct participation, the expertise required of participants, the often underestimated dynamics of power in direct action, and that deliberation is not necessarily the sole, ideal mode of participation. At hand of a case study of an online "community of interest", the paper investigates the potential role of social media to facilitate this work, and to mitigate the challenges cited.

Introduction

Direct deliberative democracy (DDD) presents a conceptually attractive model of civic governance – particularly relevant at local scale – where stakeholders engage directly in cooperative decision making. This paper investigates the role of an online social environment in mediating the collaborative work of democratic local decision-making viewed as DDD. We consider the 'work' of direct governance by referring to the underlying principles and objectives of DDD. The literature further proposes four fundamental challenges: the difficulty of coordinating direct participation [1], the expertise required of participants [2], the often underestimated dynamics of power in both deliberation and direct action, and that deliberation is not necessarily the sole, ideal mode of contributing to decision making [3].

At hand of a case study of an online "community of interest" [4], the paper investigates the potential role of social media to facilitate this work, in particular relating to the challenges cited. We develop a typology of the acts which contribute to the work

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of DDD in the online community, and consider these in terms of their level of empowerment. We consider also how acts are expressed in terms of the social network structure of the online community by developing a network model of interactions. This shows how initiative is distributed and suggests further dynamics of action. A synthesis of these two dimensions, of action and structure, leads to clearer understanding of how the online social space mediated direct governance in the context of the case study, and potentially addressed aspects of the four challenges above.

The following section of the paper considers the theoretical background to our study, outlining the principles and challenges of DDD, before investigating a number of threads in the literature of cooperative work that potentially relate. This is followed by a brief case description, after which we describe the methodology and results each of the two analytical stages – an investigation of acts and of network structure.

Theoretical Background

A Description of the Work, the Principles of Direct Deliberative Democracy

To provide context for the discussion, we briefly outline our use of, as well as the theoretical contributions of the notions of 'civic governance' and 'direct deliberative democracy'.

While research frequently focuses on the role of social media to engage citizens with formal institutions of government, we use the concept of '*civic governance'* to denote a broader process. Isin [5] proposes that the traditional notion of what it means to be a citizen, of the relationship of subjects with a state, has recently evolved to encompass a much wider range of actions and contexts. 'Activist citizenship', as he frames it, implies diverse forms of involvement, in issues that may not fit the remit of traditional government in any number of ways – for example because they are too local, not yet 'on the agenda', or even outside of its constitution [6]. Our concern then is with a notion of governance which, much as it acknowledges the significant role of the formal institutions we call government, more broadly considers the role of citizens in governing the world they are part of. This paper investigates this process particularly at local scale.

By associating civic governance with the principles *democracy*, we imply a mode of governance that shares the democratic fundamental of "rule by the people" [1]. Dahl proposes that this principle follows from two fundamental values: intrinsic equality – that all are equally fit to contribute to decisions that affect the general welfare; and personal autonomy – that all have the right to be self determining, in other words to contribute to decisions that affect them to the maximum extent possible. There is long standing debate whether these objectives are best served in systems where people contribute to decisions directly, referred to as *direct democracy*, or in systems where an elected government and its officials conduct the business of

governance, referred to as representative democracy. While the complex reality of participative decision-making quickly dispels notions of an ideal process [3], and there are compelling arguments for both direct and representative forms of decision making, Manin [7] points out that in practice a strict theoretical division is artificial, since neither implies an absolute form and the practical implementation of 'directness' has multiple dimensions. Barber [8], a strong supporter of direct democracy, proposes the intention is not so much to advocate one mode at the expense of the other, as to supplement representative forms "with a critical overlay of participatory institutions." While we accordingly do not labour the distinction, this paper focuses on more direct forms of democratic decision making, which we argue are particularly relevant at local scale.

As a final point of definition – the introduction refers to direct *deliberative* democracy. Bohman [9] provides an idealized characterisation of deliberative democracy: that legitimate, broadly acceptable decisions are the result of a process organised around the ideal of political justification, and which requires free public reasoning of equal citizens. In principle then, all forms of democratic governance are deliberative to the extent that they rely on reasoned evidence to support choices – much as their mechanisms may be more or less participatory, and more or less transparent. While Saward [3] points to the pitfalls of uncritically advocating deliberative decision making based on comparing such an idealized notion to the reality of its alternatives, Gutmann and Thompson [2] propose that its core value lies in the 'reason giving'. Decisions based on reasons (which have been made broadly accessible), rather than simply based on a position, are more open to be engaged and evaluated against their justification.

To operationalise the notion of direct deliberative democracy at local scale, Cohen [10] proposes that "[b]ecause of the numerosity and diversity of sites, we want a structure of decision-making that does not require uniform solutions … because of the complexity of problems, we want a structure that fosters inter-local comparisons of solutions." Cohen presents the basis for a form of localism [11], where citizens can make collective decisions through public deliberation, while their choices are examined in the light of relevant deliberations in comparable situations. This potentially combines the advantages of self-government and local learning with wider processes of social learning and heightened political accountability.

Civic governance, as we have framed it in terms of direct deliberative democracy, potentially relies on technologically mediated collaboration:

- To support processes of governance that do not necessarily have traditional government or any particular political party at their centre, and which are expressed in diverse contexts and across multiple networks.
- To facilitate decision-making which respects the democratic principles of intrinsic equality and personal autonomy.
- To allow exchanges between actors that focus on directly solving local problems, "where it matters" in terms of potential impact and their personal interest.
- To provide an accessible deliberative space where decisions are potentially subject to reasoned debate.

Specific Critiques of Direct Deliberative Democracy

While direct deliberative democracy offers an appealing model of governance, this next section confronts four challenges that are frequently raised. As we outlined in the introduction, these are the difficulty of coordinating direct participation [1], the expertise required of participants [2], the often underestimated dynamics of power in deliberation [12], and that deliberation is not necessarily the sole, ideal mode of participation [3].

Dahl [1] considers that large scale direct participation is not realistic considering the size and complexity of the modern nation state. Citizens have limited time to be involved, and do not have the specialist skills or expertise provided by a representative administration. Indeed, Dahl proposes that representative forms of decision-making evolved in part to overcome these two challenges. Gutmann and Thompson [2] similarly consider both practical and ethical concerns with direct forms of *deliberative* democracy. Particularly targeted at the national level, they essentially recast the objections raised by Dahl in terms of deliberative process: It is not practical to include everyone in deliberation, and the public are not all skilled (equal) deliberators – they may not give the best reasons, nor make the most astute decisions. Authors further question the accessibility of deliberation as a political process, where public opinion is largely formed in a "media space" [13] that is not equally accessible to all. We would argue that, in the local decision making context targeted by our research, these criticism are somewhat mitigated. The knowledge and commitment of participants is harder to question where they are most familiar with the contingency of local situations, and also most directly affected. The number of potential participants in any given decision is also significantly lower and channels of communication relatively accessible.

Related to the role of power in DDD, Foucault [14] notably criticized the ideal of dialogue "that circulates freely without coercion or distortion," as utopian. Though the comments were most directly addressed at Habermas' notion of communicative action [15], Foucault's point was essentially that power strongly influences what is considered true, and so that dialogue is inextricably linked to power. Though fundamentally supportive of deliberative democracy, Gutmann and Thompson [2] acknowledge that deliberation can be used cynically, as cover for power politics. They propose however that in such instances, the "giving of reasons" is its own best defense. Even in absence of overt conflict or coercion, power might however control the agenda – by determining what is "on the table" for discussion, or more subtly by framing what role players consider in their interest [12]. While such use of power is often framed in terms of control by institutions of government, Saward [16] proposes that where citizens participate directly there are no less "claims of representation." In other words, participants claim to represent the interests of a constituency they effectively "create" to support their argument. We cite these notions not to suggest that direct deliberative governance is more sensitive to the effects of power than for example representative democracy, they do however point to potential dynamics that cannot be ignored in a grounded analysis.

The fourth criticism is not so much that people do not have the ability, but that proponents discriminate against preferences that are not stated deliberatively [3] by proposing that only deliberative claims are legitimate. Cohen [10] acknowledges that deliberation typically relies on a particular discursive style – formal, rational, deductive and generalized – and so potentially excludes people who have a different style of communication (e.g. emotive or narrative) and also the information conveyed by these styles. Saward argues more broadly that deliberation is democratically secondary, a component in the larger process of enacting democratic governance. He points out that deliberative process typically relies on aggregative mechanisms such as a vote as soon as there is not perfect consensus. We agree that deliberation has shortcomings as sole mode of participation, and that a much broader range of acts do (and should) contribute to the process of civic governance, but propose that at local scale, where a small number of people directly cooperate to solve an issue, it has a central role.

The Potential Role of Social Technologies

We have outlined a specific model and context of governance, as well as some of the challenges frequently attributed to it. This section now briefly considers literature that informs our approach to the role of social technologies in this domain, particularly related to the aforementioned challenges.

Related to the notion that direct participation presents logistical problems in larger groups, Shirky [17] and Benkler [18] propose that online social media substantially reduce the co-ordination cost associated with collaborative action. They contextualise earlier work by Coase, who proposes that organisational forms are the result of attempting to institutionally minimise the extraneous costs associated with transacting. Because of changes in co-ordination cost brought about by the web, Benkler argues, collective governance and flat organisational hierarchy are becoming increasingly dominant forms of social organisation. Shirky claims that loosely co-ordinated online groups are supporting "… serious, complex work, taken on without institutional direction." Castells [13] similarly describes the development of a new communication sphere as the result of efficiencies in networked organisation. He refers to "mass self communication" with cautious optimism, where communication is self-produced as much as self directed in consumption, yet has the potential to connect a mass audience. We would point to the work of Cordella [19], who investigates the impact of introducing ICT within and between organisations, and reports that while some co-ordination costs are indeed reduced, new costs such as information overload are introduced in what is a complex web of interaction. While social media undeniably has potential to facilitate the group action required of direct governance, it would be unwise to oversimplify the mediation.

The mention of information overload raises the second challenge of DDD – which relates both to information and skill. Cohen [10] proposes that deliberation has the advantage that it potentially aggregates the reasons for decisions, information

which might also inform future decisions in comparable jurisdictions. Undeniably digital conversations leave a record, such as the archive of a discussion forum – however research on decision support systems and automated argument summary [20] shows that these records are not always easy to mine and interpret. Presenting the information in digested form invites questions of bias, whether deliberate or simply by omission, though admittedly this is not specific to the digital domain. Accepting the information literacy and technical skills required of participants in the new domain, one might nonetheless argue that social technologies have the potential to empower participation in governance. While research frequently highlights the challenges associated with the reduced information bandwidth [21] of online social interaction, one might conversely make the argument that it is a less intimidating environment within which to engage than for example to make a public speech, and that the relative anonymity overcomes differences in social status. The asynchronous nature of online deliberation further allows a considered style of input – while at the same time the medium is dynamic in that it affords direct feedback and the ability to edit, append or qualify.

A number of the points raised above relate also to the discussion of power – particularly Castell's notion of 'mass self communication' [13], which implies the deliberative process is more accessible within the "networked" public sphere composed of social media. His analysis acknowledges however that technology, used in this sense to refer to a socio technical system, is not neutral. In network terms, nodes are privileged to do only that which "[the network] is programmed to do", and conversely, the network discriminates against anything not considered a node, or not a member [22]. In other words, both in terms of technical and social programming, social technologies potentially mediate participation by their affordances, by what they are programmed to accept as legitimate behavior, but also by what and who they exclude. One of the key objectives of our study is to understand the balance of opportunities and challenges in the context of the case study, how the system might have empowered and who were afforded relative control over the governance agenda.

Further indication of how interrelated the aspects of interaction are, our discussion of the problem of expertise has already touched on the fourth challenge by referring to the nature of deliberation online. Deuze et al. [23] propose that, in the context of blogs and online journalism, digital culture is characterised by blurring of the distinction between the producers and consumers of media. The audience have an expectation to be able to participate in the process of meaning making. If deliberation is characterized in the broadest sense as a process of meaning making, online media afford participants significant diversity in the mode, style and scale of their contribution – from comments on articles, to video blogs, social bookmarking or even developing an independent online community to name but a few. Hindman [24] however proposes that this process of meaning making is highly unequal online. His research shows a power law distribution both of traffic and contribution – very few sites get most of the attention and so have a disproportionate influence on public opinion. What is not clear however, is the extent to which social media, potentially a single community of interest such as targeted in this paper, contributes

to or mediates deliberative governance at very local scale – in particular where participants set out not to influence broader opinion, but make direct contributions to governance.

Case Study Description and Context

This paper draws on research into an initiative, launched in 2002 to promote information sharing and collective action between coastal stakeholders in southern Africa. In this section we describe the case study, but we also provide contextual interpretation that, we hope, enables the reader to better assess our later analysis.

The project donors hoped to incubate a community of interest [4] focussed specifically on sustainable development and environmental governance. A central project team was established, with both permanent and temporary employees to act as administrators and facilitators of the community. The team implemented a web enabled approach to participation and governance focused not only on socially inclusive interaction of citizens with government, but also, significantly, on citizen to citizen networking, capacity building and knowledge sharing. They aimed for governance to be as much driven from the bottom up, as from the top down.

The objectives of the initiative have clear parallels with key proposed attributes of direct deliberative governance [10] in that it seeks to support pluralistic, locally relevant solutions through collective decision making, while providing opportunity for social learning through inter-local comparison of solutions. In other words, while the scope of the overall initiative was regional, and it encouraged sharing solutions between countries even, its goal was to support pragmatic, local governance action. There were established environmental and development governance initiatives in the target region, but they acted in fragmented networks with little co-ordination between organisations. This resulted in the diffusion of effort and relatively little success against large, co-ordinated opponents such as local primary industry. The project aimed to provide a "meta network" to connect these fragmented initiatives. In the process of connecting stakeholder groups, the initiative sought also to reconfigure local networks to particularly afford disempowered communities increased voice or agency. This steered the points of engagement it sought.

In the 18 months prior to our study the online community platform had served 103,677 page views and recorded 2,200 unique monthly visitors – of these 57% were from within the region. More significantly, there were 650 registered members who had made 1,855 message posts to the discussion list. These statistics substantially exceeded the expectations of the project initiators given the relatively specialised focus, in a sparsely populated region with low level of technical development. The archive of discussion contributions further indicates that the community facilitated participation from across traditional organisational and geographic networks – members of civil society and NGO's, academics, the business sector, donor organisations, as well as local and regional government.

Discussion focussed on practical issues of governance. In some cases the deliberation was mainly opinion forming, or of "inter-local comparison of solutions" as Cohen [10] put it. There was e.g. an extended discussion of the impact of commercial firewood collection on the environment, and another providing advice about how to best deal with (protected) wildlife damaging farmers' crops. In other cases discussion lead to, or supported direct, local action. In three instances the online community had e.g. contributed to taking inequitable property development to task – cases where decision makers had distorted the mandated process, potentially blocking common access to natural resources. The online network provided opportunity for participants to raise issues when they arose, and though response was not guaranteed, to engage both like minded and the opposed in dialogue. In this sense, the social media created an accessible interface to the "media space" [13] – at least for anyone with access to the technology. The initial discussion of property rights had been started by a community member who found that, with local authorities abusing their position of authority, attempts to engage those responsible were simply ignored. Once the issue had however been published online, members of the online community rallied to the cause and attracted the interest of regional newspapers. The local authorities were ultimately forced to change their approach, and the development was interrupted until proper protocol had been observed – in that case resulting in a ruling against the developer.

By providing a library of locally relevant materials, from research reports to media articles, as well as aggregating information from burning discussion issues in topic pages and newsletters, the community platform further made it easier for participants to contribute in an informed manner. The property discussion was augmented by an accessible summary of the relevant laws and protocols by a member who was an expert in the subject. This proved to be a useful resource in subsequent cases also. Similar summaries were developed for, amongst others, coastal tourism, aqua culture and marine litter. Where a discussion touched on local issues, often there would be a reply from someone within the affected community, providing contextual information which a broader process would have missed. In the discussion relating to wood collection, it emerged that while policy targeted local communities collecting the wood for fuel, the resource was in fact being commercially exploited to supplement local income. A local stakeholder was able to give detailed account of the problem, the conflict of use, but also the complexity of organisational relationships that made the issue complex to truly resolve fairly and sustainably.

As the community grew, representing members across diverse sectors, so its potential as a space of governance deliberation grew, providing not only an audience, but also resources through its network as we have presented. However, to not gloss over limitations, the 650 dispersed members of the online community were not a sufficiently representative group to make legitimate, democratic decisions on many of the governance issues raised. To be fair, as we have described this was also not its intended purpose. For this reason then, aggregative mechanisms such as voting or polling were entirely absent from the interaction. None the less the dialogue facilitated within the community was in some cases sufficient to move along or

resolve an issue – for example by involving stakeholders from previously excluded sectors, by creating awareness which then spread through related networks, or providing a member with information and social support.

This preliminary review proposes there are strong elements of direct deliberative governance to the community interaction, and broadly supports optimistic views expressed of the role of social media in literature. However, in order to more clearly account for the dynamics of interaction in terms of the principles and challenges discussed in "Theoretical Background", we investigate the online community in a more systematic manner in the following sections of analysis.

Analysis

Investigation of Acts that Contribute to the Process

As first step to investigating the range of contributions, we compiled a list of individual acts, in the context of the case platform, which might contribute to processes of governance. This was done by referring to affordances of the community web platform as well as reviewing project activity reports and previous case study material. In the introduction we referred to online participative governance driven by multiple types of action. De Cindio, Di Loreto et al. [25] similarly refer to "modes" of public participation in a socio-technical system, which proposes that participation in governance may be more diverse than purely deliberative action. If the community is analysed as a socio-technical interaction network [26], there is complex interaction between a range of actions – online and offline, from direct participation to informing others and moderating discussion, even externally orientated actions such as recruiting new members or promoting the initiative in the press. We considered the actions of various roles in the community – the agency supplying funding, the project team supporting the network, its users at different levels of engagement. The objective was to capture as much diversity as the case community offered, rather than trying to be literally complete. Each action was captured at approximately the same level of description [27, 28] in order to facilitate further analysis. The unstructured list of acts was subsequently synthesised through a series of open, "all in one" card sorts [27] Rather than setting specific criteria for the sorts, only a general framing "facet" was provided – in this instance it was to group cards in clusters of "overall similarity" in the context of types of governance action. Rugg reports this a useful method where a large number of items (42 in this case) are to be explored by a domain expert aiming to identify underlying factors.

Six groups of actions emerged after several rounds of sorting. Further reflection on the underlying factor, or organising principle to emerge from the sort suggested the groups might be characterised by "what a person might achieve with respect to their aims and values" – what might otherwise be interpreted as "level of empowerment" [29], or degrees of "agency freedom" [30]. In other words, organising the six

groups of acts from relatively high levels of empowerment, to the lowest (in the context of this online community), gave the following typology:

- Animating
- Facilitating
- Filtering
- Creating
- Contributing
- Observing

We briefly discuss the acts in each group:

Animating indicates the ability to start or animate an independent initiative. This implies direct involvement in, or control over each of the other steps and also constitutes the opportunity to define a new network. The donors and key members of the project team were essentially the animators of the case project. They developed the initial project design, recruited members to the community from their own networks and provided much of the initial drive.

Facilitating refers to the process of shaping or steering the communication and actions of others. While a skilled (impartial) facilitator might e.g. attempt to ensure that everyone is given fair opportunity in discourse, this process is often strongly influenced by personal capacity and point of view, as well as a defined deliverable of the process of facilitation. The case community included discussion moderators who "seeded" conversation, posted provoking articles and were required to make judgements on inflammatory posts, or which contributions were considered "off topic". The project management functions relevant to our typology were also considered facilitating actions.

Filtering/editing actions shape or interpret the information visible to others a priori. These actions typically have influence on much larger scale than the filtering implicit in the creation of a single document. It also occurs in the background – filtering is not often exposed, or even explicitly considered in terms of its impact on shaping a governance agenda. In the case community filtering would refer to, for example, deciding what stories are reported in a newsletter, how images should be categorised in the reference library, or what constitutes a body of subject knowledge in a course.

Creating actions might have included developing subject briefings, writing a course module, or uploading documents to a central repository as group assets. This presents more than just a personal statement in an informal discussion. The act positions the creator as an expert, and contributes to community in more deliberate manner than through automated aggregation of informal actions.

Contributing actions differed from creating actions in both scope and nature – they include communicating in the online discussion groups or setting up a personal profile – in other words giving some form of input. At this level a participant potentially takes an active role in multi directional communication, much as they communicate largely in their own capacity.

Observing includes generic acts such as 'presence' and 'information seeking' – relatively passive engagement with the online resource. Also referred to as

"lurkers" [31] in the context of online forums, people who mainly observe none the less contribute to the governance process: They provide an audience for those who contribute more directly, helping provide critical mass [32] and their actions further constitute an implicit vote – what they pay attention to is interpreted as important, their presence considered a measure of relevance.

While we needed to do further investigation to understand how these groups of acts might have been representative of segments of the online user community, a preliminary investigation indicated that while there were 650 "observing" members, only 163 had "contributed" by making message posts to the forum. Far fewer still, 20 depending on exact definition, had been involved explicitly in "creating" or "filtering" actions, while as few as three members had been involved in "animating" the online community itself. While absolute numbers are a matter of interpretation, there was strong indication that few users had acted at the highest level of empowerment, and that there was an overall decline in participant numbers from "observing" though the hierarchy to "animating". While this creates the further impression that initiative lay with a small relatively cohesive group, what Wenger [4] might have called the core of a community of interest, our subsequent investigation shows this would be an incorrect conclusion.

Investigation of Network Structure

To better understand the questions posed by our previous analysis, we conducted a follow on study to consider how groups of acts were expressed in terms of the social network structure of the online community. The objective was to understand how initiative was distributed and to suggest more detailed dynamics of action.

The structure of the network was derived from the community discussion system, which provided a record of all online communications archived by discussion thread. In the 42 months between October 2005 and March 2009 there were 145 "conversations" – threads with at least one reply – involving 163 unique users and 850 individual messages. Each participant was recorded as a *"node"* in the network diagram, and reciprocal links *("ties")* recorded between all those present in any given conversation. The number of shared conversations determined the strength of the link between any two nodes. Huberman & Adamic [33] successfully used a similar approach in several studies to develop a network description based on email conversations. For the purpose of this analysis, members who did not participate in at least a two way exchange of communication were not included, as we were unable to infer their relationship to any of the active nodes.

This method developed a network model comparable to the dynamic characterisation of networked social organisation proposed by Wellman [34, 35], with ties defined by actions rather than by a description of static relations between nodes. We acknowledge that this analysis maps relations between only 163 of 650 registered users, based on only one aspect of their interaction. It does not consider relations that may have pre-existed the community, nor relations which are expressed in

ways other than through online discussion – for example by users who were very active in "offline" activities of the community. Cautions considered, relevant features could none the less be discerned from the model. By being able to identify nodes as well as the content of interactions, the features that emerged could further be grounded in a detailed case history that had been developed over several years of study (Figs. 1 and 2).

The figures above show the resulting network diagram for 2 consecutive years. Squares represent "nodes" (participants) in the network, and have been scaled to reflect their degree of connectedness to make the diagram easier to read. Lines connect any nodes who have shared three or more conversations during the year. Each of the 163 nodes, or participants, were assigned an identifying number in order of them joining the community.

The two diagrams show similar characteristics of organization, but significantly share relatively few nodes – in other words, the more active participants change from 1 year to the next. One feature that is however evident in both diagrams is what network theorists refer to as a star [37] or "hub and spoke". These are characterized by a central "hub" (for example the larger nodes 6 and 8 in Fig. 1), with "spokes" connecting to other nodes who are themselves mostly not interconnected. The hub effectively mediates the connection between a number of nodes. There are by comparison no distinct groups of well connected nodes with only limited ties to the rest of the network. In other words, the network appears to consist significantly of "weak ties" [38], mediated by a few active hubs – rather than to consist of distinct, tightly interconnected subgroups bound by strong, homogenous ties. These hubs also change from 1 year to the next. This suggests a highly dynamic environment with perhaps less in common with the relatively stable models of community proposed by Wenger [4], than the loosely structured network models described by Wellman [34] and Castells [36].

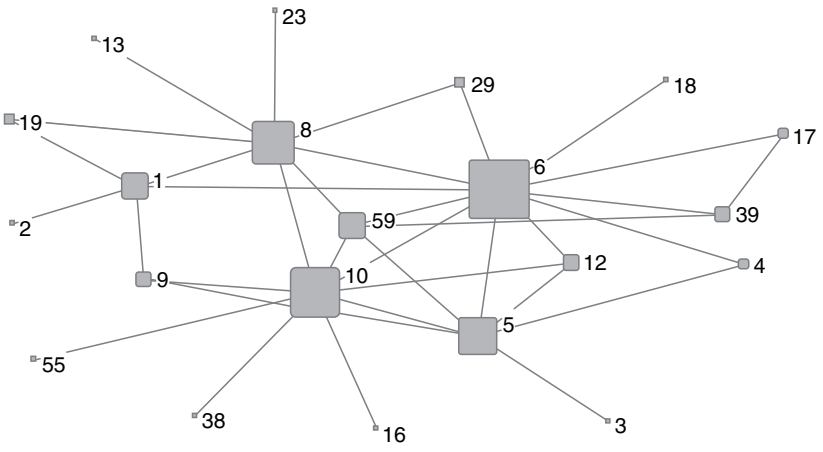

Fig. 1 Nodes connected by ≥3 relations during 2006

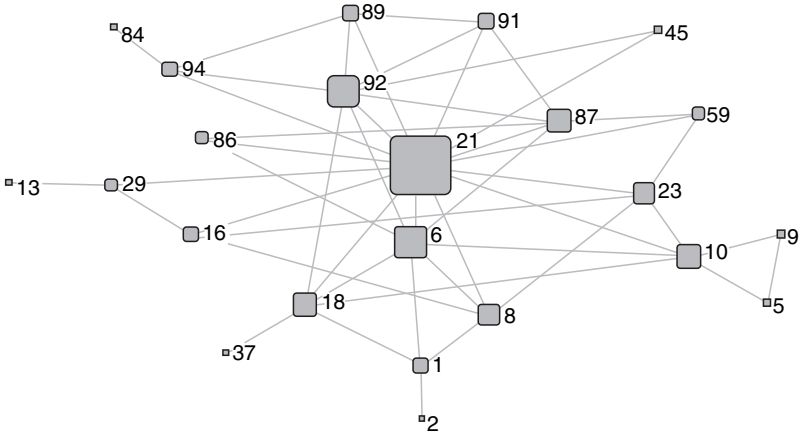

Fig. 2 Nodes connected ≥3 relations during 2007

Analysis of the discussion data indicates that while in some cases hubs were community administrators who interacted relatively frequently as part of their duty, in most cases they were normal participants. In the diagram for 2006, there are six nodes with four or more ties – three are normal participants. In 2007, of 13 nodes with four or more ties, nine are participants. The case history further indicates that most of these "participant hubs" acted in a way that was significantly embedded in a local community. They had strong personal interest in resolving or mediating specific local issues and were frequently animators in their local (offline) communities, with significant ability to facilitate or initiate action and significant "social capital" [40]. To refer back to the discussion of property development in our case description, the initial contributor temporarily became a "hub" of interaction online after using the online community to extend their reach. They however already had significant local support and were acting as informal community representative.

One possible interpretation of the turnover in hubs then relates to the issue driven nature of interaction, that participants interact as they are motivated by issues at hand, and disengage when discourse moves to topics that concern them less. This would fit the observation also that very active users, the "hubs", most frequently maintain their level of input for a year at most. In other cases interaction was however also driven by the professional role a participant occupied in the offline world – for example being employed as community development worker gave incentive to contribute broadly as a perceived civic responsibility. When their roles or situations change, participants appeared to again adapt their level of engagement. The two patterns of contribution are evident in discussion analysis also, where community activists typically make multiple contributions each to a small number of threads. In the latter case, a hub typically makes single contributions to a broad range of discussion threads.

Discussion

How the Typology of Acts Relates to Direct Deliberative Governance

The diversity of acts captured under our typology further supports the earlier claim that the online environment offered opportunity, at least in principle, for diverse forms of input to governance. Participants might deliberate an issue directly, provide emotional or technical support, signal preference or affiliation through their profile, contribute information or learning materials, simply provide an audience by being present, and so on. By contributing to the existence of the community in any substantive way, participants were effectively supporting or directing a broad process of governance. This proposes a broader view of deliberative governance, at least in this particular context, than assumed by critics who question the bias toward a single form of contribution.

In terms of the typology, the act of deliberation might be characterised as either a 'contributing' or 'creating' act, though either of these categories include other types of interaction. The broader deliberative governance process, as we have defined it a process of collective meaning making [23], encompasses all the categories of action. It is significant that the act of deliberation falls relatively low in the hierarchy of empowerment of our typology. In contrast, by creating and filtering content, a participant affords themselves greater capacity to determine "what is on the agenda" [12]. Setting up a community such as our case subject offers even more potential to have a significant impact on directing the larger discourse. This raises the question of who is empowered in this case – in terms of the principles of direct democracy, do the observed patterns of interaction violate the objectives of intrinsic equality and personal autonomy?

Progressing from observing to animating, power and the potential to influence or exert control over others increases, but we have also reported that case study data shows that

- The number of actors reduce as we ascend the hierarchy.
- And the ratio of project administrators to regular members increases.

We use the term 'administrators' to refer to members of the project team who were employed on part time basis to facilitate community affairs. It is then somewhat unsurprising that they were significantly visible in our visualisation of interactions. Their contributions were however not so much motivated by the content of governance deliberation, as to impartially facilitate and maintain the community itself in accordance with their responsibility to donors, as well as to the community members. We discuss their role and its implications in more detail in the following section.

In principle, the platform offered indiscriminate opportunity for members to act with high level of empowerment – we indicated the project further explicitly sought to solicit contribution by those who might have been discriminated against as

"un-equal." In absence of coercion, the distribution of actors may simply reflect the economic reality that it requires much less effort to 'observe', than to 'facilitate' a group discussion or 'create' an article. While we have argued that these costs [19] are reduced as a result of the affordances of social media, there are costs associated with more empowered forms of action all the same. Unless a participant had good reason, they would be unlikely to engage the cost of coordinating, risking unfriendly response, associating significantly with an issue and so on. While in reality not all chose to act at highest level, or were able to make use of the affordance, one might conversely argue that the online environment provided opportunity for a significant number of people, even those who mainly contributed with their attention or presence, to behave in a way that was more significantly empowered than they might have done in its absence.

This does further raise the issue of agenda – that the goal orientation [39] of the community is potentially provided through acts at higher level in the hierarchy, so directing other contributions. While all the acts in the typology contribute to the process of deliberation, individual acts are not coordinated towards an overall goal as such. Participants respond to an issue, or in many cases narrower still, they respond to the previous contribution. This creates the assumed need for 'animators' or 'facilitators' to provide some form of overall direction – e.g. to broadly keep discussion "on topic", to stimulate new threads, and to provide supporting information. However, while the project design of our case implied goals for the community, there was no formal agenda for deliberation. Threads of discussion arose bottom up, from the issues that concerned members of the community, and were sustained only by their participation. The dynamic and interactive nature of online participation meant that the community were by no means a captive audience.

To forestall making premature conclusions – the investigation of the network structure gave further insight to the patterns of interaction.

The Network Structure

Our analysis of the network structure first remarked on its dynamism – how both dominant actors and network configuration changed year on year. We consider that the dynamic structure potentially indicates the absence of long term power dynamics within the community. We noted the absence of clusters of nodes in the network diagrams. No one person or group appeared to be significantly steering the community, rather it seemed responsive to issues as they arose. This would support for example Wellman's [35] dynamic characterization of networked social organisation, where participants act in multiple, overlapping networks each specialised to a need. In Granovetter's terms [38], the community mobilised 'weak links' to provide input or support to governance. This may be an artifact of a governance environment where, though intended action is local, the participants are geographically spread out. In other words, any network in the offline world was only very partially represented in the online network, and so members have only the relatively fleeting and limited

association of individual governance issues to link to one another. This might be considered a shortcoming in terms of direct deliberative process – in that any given constituency has very limited representation in this particular environment. On the other hand, given the explicit goal for the community to act as meta-network, to develop links *between* networks, it may exactly strengthen one aspect of governance. Either way, this is a reality that must be confronted when social media is deployed in this context.

A further significant feature of network analysis was the hubs as mediators of links – that a relatively small number of people contribute the bulk of communication and have a proportionately large impact on the apparent "sharedness" of conversation. While this is certainly not unique to this instance [32], it presents a challenge in terms of the principles of direct democracy, which would expect broad ranging participation. It is somewhat mitigated by the range of acts which potentially contribute to deliberation online, we have proposed that even 'presence' has an impact on the process, but the principles of direct democracy none the less propose the imperative to design so that these contributions are made sufficiently visible. On one hand, the system has the imperative to support those who choose to strongly engage with issues, participants who may have had no access to the deliberative process in absence of the social media – on the other the needs of inclusiveness and diversity demands we encourage also the quiet voices. This highlights a challenge of deliberative democracy, where more contribution equates to increased visibility, and the potential for one person to dominate an issue. Aggregative mechanisms such as voting naturally allocate decision resources more evenly.

Acts Considered in Terms of Network Structure

If we consider a synthesis of the two stages of analysis, of acts and network structure, the network diagrams present a more diverse picture of the impetus in the community than initially imagined. Where previously the acts of hubs might have been simply aggregated to a community core, the network models show instead a distributed system of star patterns [37], a community with what appears to be multiple, temporary cores that arise from bottom up, ad hoc interactions. This might be interpreted as more fundamentally democratic – that all are considered intrinsically equal to contribute and further have the autonomy to decide what is 'on the agenda'. We have argued that the hubs might be said to act with relatively high level of agency in terms of the hierarchy we proposed. While we have presented that relatively few participants engaged at this level of activity in the online community, dismissing this as undemocratic would be a narrow view. It potentially affords a number of people the opportunity to directly contribute to governance they might otherwise have been excluded from. To refer to the theoretical introduction – we do not consider direct democracy in exclusion to other processes [8], and similarly acknowledge the role of this online community as supplementary to other online and offline networks.

Network analysis did further show that administrators play a significant role in the network – as mediators of links, as well as contributors of content. While we have chosen to interpret the role as neutral, we acknowledge the potential for such institutionalized mandate to dramatically impact the discourse, e.g.

- By steering discussion toward topics that they understood, considered sufficiently relevant and further that they were comfortable with
- By mediating interaction with potential new hubs in terms of their own views and relationships
- By implicitly presenting an "identity" of the community through their visible interaction

We do not attach normative value to these acts – their impact may variously have been positive or negative in terms of the community. The principles of democracy do however consider that such 'filtering', 'facilitating' and 'animating' actions need to represent diverse interests for equitable direct deliberative governance. While this presents a duty of care and careful consideration of the administration role, it also relates to the broader institutional arrangements that animate an online community. The socio-technical system in this case not only provided a context for stakeholder dialogue, but also a context for donors to promote a particular agenda through project design and subsequent governance arrangements. However benign, this part of the system was largely invisible to regular participants, who could not provide input to its development, nor later steer its course directly.

Conclusion

The analysis appears to support our contention that the online community, through social media, provided a context for diverse role players to engage in civic governance which in some instances met the ideals of direct deliberative governance. In sympathy with Cohen's characterization [10], it allowed participants to engage directly in local decision making, while affording inter-local comparison of solutions. Participants were afforded multiple ways of contributing to a process which did not have traditional, representative government at its centre. At the same time, it must be acknowledged that the system represented only fragments of any given constituency, and so was limited in its ability to facilitate broadly democratic processes of decision making. It arguably afforded all its participants at very least an additional channel through which to engage in governance, at best empowered a number to act with significantly increased agency.

While the discussion engaged both the principles and challenges of direct deliberative democracy outlined in the theoretical overview, the notion of power is perhaps most complex, both in its interrelation with other challenges, and how it is expressed in social interaction at multiple levels. Network analysis shows that while the case community was not dominated by closed groups of 'strong ties' [38], there were users who acted in ways that afforded them more control over the deliberative agenda than others. The hierarchy of actions implies that all forms of online contribution

are not equal in their potential to impact decisions. In this sense, while the online environment potentially provides plurality, it does not fundamental overcome a key challenge of deliberative decision making when compared to aggregative mechanisms. We also touched on the notion that setting up the community itself was a form of 'animating' action, a way of steering discourse, which potentially affords its proponents a stronger position in the discourse. However, to not take a narrow view, this community is but one mechanism in the larger landscape of civic governance. Its pragmatic influence can only be evaluated in the context of how it is embedded in broader networks, where it appears to have empowered a number of community members to engage directly in decision making on local issues. This interface, between the online network and those that exist offline, is perhaps the least understood aspect of our research objective – to understand how globally or regionally distributed online networks pragmatically remediate the influence of power at the local level.

It is a shortcoming of the methodology of this study that it was largely "blind" to actions that happened beyond the online network, both in terms of how the online overlapped with networks of action in the offline world, and to understand the dynamics "behind the scenes" of the community. It also had limited capacity to explain directly how technology influences the process and balance of power – much as we had briefly touched on the notion of transaction cost [19] as a mechanism to frame this. For these reasons we propose to do a follow up study using Kling's [26] 'socio-technical interaction network' methodology. It has the advantage that it views technology not as neutral medium, but a vector of influence. It further affords the modeling of heterogeneous networks, in terms both of components and their relations, allowing a closer investigation of the questions raised by this study.

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