

Decision Structure: A New Approach to Three Problems in Deliberation

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1 Introduction

Offline discussion is often assumed to be the gold standard for deliberation. As a result, online deliberation environments are typically designed with the goal of creating something as close as possible to offline discussion. This has caused us to neglect certain possibilities unique to the online environment. Deliberation is an ideal form of discussion in which participants share their considerations in order to make decisions of higher quality and democratic legitimacy (Chambers 1996; Cohen 1989; Delli Carpini, Cook, and Jacobs 2004; Fearson 1998; Fishkin 1991, 1995; Gastil 2000; Gutmann and Thompson 1996). Because deliberation is an ideal that is not automatically achieved in offline discussion, it seems unwise to assume that the best that online deliberation can do is to mimic offline discussion. Designers of online forums should instead strive to take advantage of the unique design flexibility of the online discussion environment. Instead of mimicking offline discussion, online discussion environments should be designed with the goal of more closely approximating the ideals of deliberation.

This chapter will review three problems for achieving ideal deliberation that can be addressed by forum design, and introduce a forum design intended to solve each of them. First is the problem of scale, which seems to limit coherent and efficient deliberation to very small groups. Second are problems of memory and mental organization which interfere with the

purpose of the deliberative norm of open-mindedness. The third problem is that there can be an apparent conflict between the desire for organization of discussion topics and democratic legitimacy, which can make large groups feel they must accept undemocratic control over the agenda to make any progress at all.

2 Problems in Deliberation

Several of the most commonly discussed problems in deliberation are independent of the design of a deliberative forum, because they address the nature of participants, such as their diversity of views (Mutz and Martin 2001), their willingness or tendency to follow deliberative norms (Conover, Searing, and Crewe 2002), or the kind of content that should be encouraged or allowed in deliberation, such as public-spirited reasons (Chambers 1996; Knight and Johnson 1994; Young 1996) and testimony (Sanders 1997). This section will enumerate a different set of problems from those usually discussed, because it focuses on those that could plausibly be affected by forum design. These include problems of coordination and ability, which are more fundamental and perhaps more important than problems of intent and motivation, particularly if one sees deliberation as a form of ideal group decision making that is not limited to politics. In nonpolitical decision making discussions, it is easier to imagine that most participants want to reason together with open minds.

The Problem of Scale

Large groups of people often want to make decisions deliberatively. However, large group sizes seem to create a conflict between the goals of coherence and efficiency. Coherence seems to demand *full reception*: that all participants receive all messages sent. However, in large groups full reception can be painfully inefficient. In a spoken discussion, full reception means one speaker at a time, which gives each participant a decreasing fair share of speaking time as group size grows. Written online discussion does not automatically solve this problem, although it does allow any number of people to compose messages at once without a loss of comprehensibility. In written discussions, the problem of scale manifests as a difficulty in keeping up with all messages being sent. In both spoken and written contexts, as group sizes grow, the coherence of the discussion is threatened as it begins to break up into subdiscussions.

Problems of Memory and Mental Organization

Theories of deliberation often seem to assume that human memory is a perfectly reliable and uniform storage bin for all information a person is exposed to (Lupia 2002). Proponents of deliberation must confront the real limitations of unassisted human memory in order to design deliberative forums to effectively assist memory.

Even those who have the best of intentions to be open-minded may find it difficult to do so because of the limitations of human memory and the complexity of decisions. Following through with the ultimate purpose of the deliberative ideal of open-mindedness is a lot to ask given what we know about unassisted human memory. This purpose is to form an opinion at the end of deliberation based on all relevant considerations expressed. To do this, one must not only remember all of these considerations but also remember the structure of how they relate to one another. Even if one makes the very questionable assumption that people pay perfect attention to all considerations they hear, each consideration must also remain in short term memory long enough to have a chance to be stored in long-term memory (Lupia 2002). Then, even if all considerations are in fact stored in long-term memory, when participants attempt to form an evaluation by searching their memory for considerations, they are likely to recall only a sample of them (Zaller 1992). This can create systematic biases towards using more recently or more frequently expressed considerations (Price and Tewksbury 1997). Finally, even if all considerations are not only stored in long-term memory but also cognitively accessible at the point of decision making, their structure may not have been understood, remembered, or sampled. One can remember an argument without remembering what it argues against.

The Conflict between Organization and Democratic Legitimacy

Organization is a central problem not only within individual heads but also at the group level. In any deliberation, but particularly with larger numbers of participants discussing a complex topic, it often seems necessary to impose some form of agenda or organization of discussion topics in order to get anywhere at all. However, if the specific topics and decision goals of the deliberation are imposed undemocratically, this can limit the range of possible outcomes of the deliberation and thus embody undemocratic control. The potential open-endedness of decision goals in deliberation is a key argument for its superior legitimacy over mere voting. Through discussion a group can discover the appropriate ballot. With mere voting, those who determine the ballot have enormous power.

3 A New Solution

A new theoretical model of deliberation called Decision-Structured Deliberation (DSD) may be used to design asynchronous online forums that address each of these problems. DSD is a theoretical model not tied to any particular technology. For a more detailed description of DSD and its theoretical implications, see Pingree (2006). How this is expected to solve each of the three problems above will be explained in more detail below, after describing the proposed forum.

HeadsTogether

This chapter describes a particular proposed online implementation of DSD called HeadsTogether. A HeadsTogether forum is like other asynchronous online forums in that participants post messages that other participants can read later at any time. It is also like some other asynchronous online forums in that it uses a hierarchical structure of messages, meaning that each message can have any number of messages within it and that this nesting can continue to any depth. However, the relationships between messages that constitute this hierarchy are more specific than the mere reply relationships found in existing forums. They can specify, for example, that a particular message is a: solution to a problem stated by another message, reason why a problem is important, or reason why another reason is not valid.

Because this structure is created by participants during the deliberation itself, authoring messages in a HeadsTogether forum involves specifying these relationships. Message authors must first choose what type of message they are posting. The available types are specified by an administrator and can be specific to the deliberation context or a more general purpose set of types such as problems, solutions, and causes. The type of a particular message determines the ways other messages can be connected to that message. These allowed relationships between types can also be configured by a forum administrator. For example, a problem message can have solutions, causes, and reasons for and against the importance of the problem. The set of types allowed can, and usually should, include a catchall message type such as 'comments' for free-form discussions about any message of the other types.

Message authors also choose where a message fits into the structure by specifying what it relates to and how. Some message types are appropriate at the top level. Again, which types are allowed at the top level can be configured by the forum administrator. In the above example, problems would be a top level type, while solutions would not. In other words, one can post a problem without solutions, but all solutions must be solutions to at least one problem.

Any number of messages can be colocated at any point in this structure. For example, within each problem message there can be any number of solution messages. By default, HeadsTogether presents lists of colocated messages in rank order based on past participant votes on their quality. As a result, greater prominence is given to messages judged by participants to be of higher quality, although all messages remain available.

The main page for a HeadsTogether forum is a ranked list of top level messages. In our example, this would be a list of problem messages posted by past participants, rank ordered based on votes on the importance of each problem message. After clicking on a top level message, users see lists of messages contained in that message—one list for each type that can be contained in that message. For example, after clicking on a problem message, users will see a ranked list of solution messages, a ranked list of cause messages, and a ranked list of reasons for and against the importance of the problem. After clicking on a solution, users would see a ranked list of reasons why that solution should or should not be used to solve the problem.

HeadsTogether and Self-Organization

The structure of messages in HeadsTogether is a *decision structure*: a hierarchy of decisions and subdecisions the group makes collectively (Pingree 2006). Each message is a decision. For example, for each problem, the group must decide how important a problem it is, and for each reason, the group must decide how strong a reason it is. The state of this structure at any point in time can be seen as the agenda for the deliberation. Because these decision messages can be added by any participant at any time, and because they achieve prominence through the votes of other participants, this agenda is democratically determined within the discussion itself. This provides a highly detailed organization of the collective decisions without sacrificing democratic legitimacy.

HeadsTogether as a Memory and Organization Aid

Recall that deliberative norms ask that participants make their final decisions based on all relevant considerations expressed in the deliberation. Because deliberation contains many subdecisions, this is best thought of as a decision-specific requirement. When making each decision or subdecision, participants should have access to all considerations directly relevant to that decision. Because of decision structure, this exact set of messages is available to participants when viewing any decision message in HeadsTogether. When viewing a problem message at the end of deliberation in order to make a final vote on its importance, all messages marked as reasons for the problem are conveniently listed in one place. Because any of these reasons

might be worth considering as a subdecision prior to a final decision on the problem's importance, a participant can click on any reason and then see a list of subreasons directly relevant to the validity of that reason. This can continue to any depth.

Note that existing asynchronous online message boards that use hierarchical structures of replies do not provide the same benefits of organization and decision-specific memory. Instead of organizing all considerations relevant to a decision in one place, reply structures tend to bury many of those considerations deep in long chains of replies and within messages that discuss multiple topics.

HeadsTogether at Large Scales

With large numbers of participants, it is inefficient for every message to be received by every participant. This is true in HeadsTogether forums as in any other discussion. However, in HeadsTogether forums, a breakdown in full reception does not necessarily cause a breakdown in coherence. This is because coherence is a decision-specific concept. As argued elsewhere in greater depth (Pingree 2006), coherence for any given decision means that all who made that decision had access to all considerations offered for it. In other words, because of the decision structure of HeadsTogether, users can make coherent contributions to (or deliberative decisions about) one part based only on knowledge of the status of that part and its relationship to the whole, without being aware of the internal details of other parts of the deliberation. The ultimate purpose of sharing considerations in deliberation is to benefit from the pooled considerations of the group about each decision. HeadsTogether forums allow people to benefit from the considerations left by all other users who have ever visited a particular decision before, without having to synchronize with those participants or any others. Because of this, HeadsTogether forums are expected to allow much larger numbers of participants to have an efficient and coherent deliberation.

4 Conclusions

[Online forums are] a development of historic significance, for there has been practically no innovation in many-to-many communication in over two thousand years (Klein 1999: 213).

Early assessments of the Internet noted the novel possibility of cheaply and quickly gathering large numbers of geographically scattered people virtually 'into one room' (Klein 1999). The hope was that this would remove the physical constraints that the ancient Athenians thought of as the most serious limits to the size of discussion-based democratic decision making (Dahl

1989). Because this has not automatically resulted in dramatically different possibilities for democratic decision making in large groups, it has laid bare the fundamental coordination limits of discussion processes and fundamental cognitive limits of human participants. The true promise of the Internet lies not merely in its ability to bring large numbers of people *into* 'one room' but in its ability to structure that room in ways that no physical room could be structured. As HeadsTogether demonstrates, it is possible to structure an online space to resolve coordination problems for large groups and complex decisions. Face-to-face discussion spaces are, of course, more real. If the goal is social bonding or understanding of other people or groups, offline discussion may well be the gold standard. However, these are not the goals of deliberation. Instead the goal is group decisions that are of higher quality and higher democratic legitimacy.

The DSD model does not, of course, provide any magical solution to problems of intent or motivation. If people do not want to reason together, nothing can force them to do so. HeadsTogether is designed to solve the often-overlooked problems that concern the *ability* of groups of well-intentioned people to have an effective, coherent, and democratically legitimate deliberation. Even with the best of deliberative intentions, unassisted human memory is imperfect, the need for organization may make people feel they must accept undemocratically imposed agendas, and as group sizes grow, discussions may lose coherence by effectively breaking up into unrelated subdiscussions.

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