**Epilogue**

# Understanding Diversity in the Field of Online Deliberation

Seeta Peña Gangadharan

## 1 Introduction

For designers, scholars, and practitioners, the term 'online deliberation' holds many different meanings. Words or phrases like 'consensus', 'participation', 'access to information', 'voting', 'project management', 'learning', and 'collaboration' inflect the vocabularies used by those developing, assessing, or disseminating digital technologies that facilitate deliberation. Within this book alone, online deliberation has been variously applied to collectively editing a document on a political party's wiki (Raynes-Goldie and Fono 2009), collaborating among programmers to package thousands of open source software projects into a single operating system (Ristroph 2009), and using electronic voting software (Davis 2009).

Where do these different perspectives on online deliberation come from? And what does this diversity suggest for the future of the field? To answer these questions, this chapter proceeds in two main parts. First, I explore the multiple histories of the field to enumerate the various forms and practices of online deliberation. I cast a purposefully wide net over cross-disciplinary scholarship that has used the term 'online deliberation'. In many cases, I even consider literature that does not explicitly refer to either deliberating or being online, but which has since been cited as intellectual forerunner of the current field of online deliberation. Much of this literature alludes to deliberative activity, such as group decision making,

formation of consensus, group learning processes, collaborative authoring, editing, or content creation, and virtual meeting spaces or conferences.

Second, based on these histories, I create a taxonomy that aims to make sense of the field's diversity. This taxonomy focuses on the levels at which online deliberation occurs, such as deliberative processes that take place within a software agent versus deliberative projects that are institutionally managed. By focusing on the level at which online deliberation occurs, the taxonomy subsumes disciplinary boundaries that have often separated the study, design, and practice of online political deliberation, on the one hand, from that of deliberation for more general purposes, on the other.

By laying out multiple histories of the field and presenting a taxonomy of online deliberation, this epilogue brings together the seemingly disparate areas of interest within the field, exposing similarities and differences between them. In doing so, I hope to lay the groundwork for future inquiries and experiments with the idea, tools, and practices of online deliberation.[1]

## 2   Democratic Theories and Political Deliberation

For many, talk of online deliberation is synonymous with talk of changing or improving democracy and seeing it work via digital media. To fully understand this political focus, it is helpful to recall the rise in interest in deliberative democracy. The study of online political behavior, social forms, and cultural processes has emerged alongside inquiries into a new style of democratic practice that values collective interest or group dynamics in political discussion and decision making.

Deliberative democracy became a popular concept in the wake of a chorus of concern for liberal democracy (Bohman and Rehg 1997). In 1980, political scientist Joseph M. Bessette published a chapter titled 'Deliberative Democracy: The Majority Principle in Republican Government', which outlined a plan for the renewal of civic life based on citizen participation and debate. Bessette called for participation that goes beyond voting and includes dialogue of controversial issues among citizens. His model was republican in the sense that it encouraged the formation of the common good and shared civic culture. Subsequently, Sunstein (1985) and others began crediting Bessette with having first used the term 'deliberative democracy' and, furthermore, extolling the merits of republican designs. A new direction of scholarship opened, urging that the value of communal life be restored through public communication, protection of public spaces, and

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[1] An annotated list of past and current forms and practices in online deliberation can be found as an appendix to this chapter. The list is also publicly available and will be updated on the website for this book at http://www.Online-Deliberation.net.

identification of a communal ethos (Sandel 1982, 1984; Taylor 1989, 1992; see also Gutmann 1985).[2]

Increased attention to deliberative democracy also resulted from the publication in 1989 of the English translation of Habermas's *Structural Transformation of the Public Sphere* (*STPS*). The work, which had been available but less well known in German since the 1960s, argued for the necessity of procedural norms in democratic practice. According to Habermas, only the establishment of criteria for communication within a group, or what is also referred to as public communication, leads to legitimate outcomes. His work subsequent to *STPS* further developed norms of public communication—first at the level of moral philosophy (Habermas 1990, 1993) and then later in terms of democratic theory (Habermas 1996).

By the late 1990s and early 2000s, deliberative democratic theories had ascended. Bohman (1998) wrote about the 'coming of age' of deliberative democracy, noting the evolution of deliberative democratic theory into deliberative democratic theories, plural. Bohman claimed that as writings on the topic expanded, key theorists were responding to criticism concerning the impossibility—or heady idealism—of the deliberative ideal. Or, as Fishkin (2003) described, 'the move from imaginary thought experiments to real (or at least possible) institutions' (2) confronted political theorists with many pragmatic considerations. With these considerations came the revelation that not all deliberative democrats embraced the same vision. Bohman suggested that the diversity of models of deliberative democracy reflected a measure of their acceptance. Dryzek (2002) claimed 'the essence of democracy itself is now widely taken to be deliberation' (1).

Against the growing visibility and acceptability of deliberative democratic theories in law, philosophy, political science, and communication, scholars began exploring technologically mediated democracy. With innovation in digital technologies, development of the World Wide Web protocol, and wider availability of the Internet, these scholars studied information and communication technologies (ICTs) as agents—and emblems—of change, heralding a new era in democratic and soon-to-be-democratic societies. By the late 1980s, social scientists were using terms like 'cyberdemocracy', 'virtual democracy', and 'electronic democracy' to denote the potentially democratizing effect of new technologies.[3]

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[2] There is a tradition of participatory democracy that deals with renewing citizen power (Pateman 1970; for a practitioner's perspective, see Arnstein 1969). However, these works do not focus on deliberation or deliberative processes as intently as they focus on participation and influence.

[3] Carey (1992) has written a compelling history—and critique—of the recurring theme of technology as a democratizing force.

In time, scholarly discourse on cyberdemocracy grew multifaceted (see Shane 2004). It discussed computer-mediated communication as a remedy for lackluster rates of participation in politics (Johnson 1998), and included criticism of the assumption of digital media's liberatory power and of techno-centric society (Barbrook and Cameron 1998). It also ranged from an interrogation of 'cyborg politics' (Poster 1995, n.p.), in which disembodied, decentralized, and often anonymous forms of argumentation and interaction alter democratic practice, to a comparative examination of online civic experiments in Western cities (Tsagaroursianou, Tambini, and Bryan 1999).[4]

As scholarly interest in cyberdemocracy expanded, some scholars began to explore the idea of deliberation in an online setting. Early works did not use the specific term 'online deliberation' but nevertheless implicitly dealt with the idea of deliberation. Whether from a techno-determinist or socio-determinist perspective, or somewhere between utopian and skeptic, scholarship probed the nature of argumentation, debate, and decision-making; inclusion and participation in spaces for deliberation; and architecture or structures for online public communication, such as the virtual town hall or common space. For example, against the backdrop of different models of deliberative democracy, Friedland (1996) explored emergent forms of citizenship in an age of computers and the Internet. According to Friedland, electronic public journalism, government-community online projects, community-based computer networks, and advocacy networks offer new paths to social capital formation not anticipated in theoretical models.

Since the start of the new millennium, the expression 'online deliberation' has become more widely used. As the term 'cyberdemocracy' gave way to 'digital democracy', 'e-democracy', or 'Internet democracy',[5] and the volume of digital democracy studies grew, political scientists and political communication scholars, in particular, began taking a greater interest in deliberative activity in computer-mediated settings. Sunstein (2001) took stock of the dangers of personalized communication technologies and countered the 'daily me' (Negroponte 1995) with a republican model of democracy, calling for, among other things, a public sidewalk in virtual space where individuals could encounter competing viewpoints. Looking at a predominantly Western European political context, Coleman and Gøtze (2001)

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[4] Throughout the 1990s, researchers also engaged with the idea of virtual communities. This work, pushed into academic discourse in part by practitioners such as Rheingold (1993), explored community computer networks (Cohill and Kavanaugh 1997; Kollock and Smith 1996). While their work was not grounded in debates about deliberative democracy, their analyses evolved in a context of optimism for the renewal of civic life.

[5] In the era of the Xbox, iPod, and iPhone, it would not be surprising if the terms 'i-democracy' or 'x-democracy', became part of the jargon.

considered several different cases of public consultation, i.e., citizen engagement in deliberation over public policies. Meanwhile, Price et al. (2001) employed the specific term 'online deliberation', to probe the notion of citizen deliberation online. Their study examined a large-scale electronic dialogue on American electoral politics and found that individuals who were older, predominantly white, more educated, more politically knowledgeable, interested, and active, and more trustworthy demonstrated the ability to better argue political positions (see also Price and Cappella 2002).

As we near the end of the first decade of the new millennium, enquiries into the nature and possibility for online political deliberation have become much more diverse. But this explicit merging of deliberative democratic and technological interests has by no means been homogeneous. Many have adopted or are influenced by competing normative views of deliberative democracy or, more accurately, competing notions of deliberation in different models of democracy. Some scholars emphasize a Habermasian approach to deliberative democracy. For example, Froomkin (2004) questioned whether new forms of online discourse could achieve what the bourgeois public sphere did in 18th century Western Europe. Despite Habermas's 'tall order' (8), Froomkin argued that the diversity of discursive forms holds promise for the revitalization of public communication.

Others, however, part ways with the notion of the public sphere or proceduralism implied by Habermas. For example, Fishkin's (1997, 2009) Deliberative Poll is concerned with aggregate changes in individuals' political preferences that result from both large and small group discussions. Transferred to an online setting, the design of the D-Poll harmonizes the ideal of group discussion with that of the calculated, opinion-forming individual. Drawing from John Stuart Mill and James Madison, the D-Poll uses aspects of liberal and federalist (i.e., republican) democratic theory as a way to structure—and establish criteria for the evaluation of—online political discussion.

Still others embrace variations on the theme of deliberation in participatory democracy. Shane's (2009) appraisal of empowered participatory governance borrows from Fung and Wright (2003, 2004) to consider the formation, mobilization, and inclusion of citizen-led policy forums in the United States. Meanwhile, Noveck's (2008) writing on wiki-government proposes innovations in direct citizen participation in political decision making, questioning all the while who is considered an expert. Like other approaches to analyzing online political deliberation, Shane's and Noveck's approaches embrace their own brand of deliberative democracy.

The plurality of models for online political deliberation implies different criteria for success or failure. The model of democracy that is instanti-

ated in an online setting influences what types of political behavior will be emphasized, studied, celebrated, or criticized. As Barber (1998) wrote, 'unless we are clear about what democracy means to us, and what kind of democracy we envision, technology is as likely to stunt as to enhance the civic polity'. Thus, the differences between competing models of deliberative democracy 'are not only theoretically crucial, but have radically different entailments with respect to technology' (584-5).

## 3    A General Purpose Approach to Online Deliberation

Social scientists with a political interest in deliberation constitute only one strand in the evolution of the field of online deliberation. For years, computer scientists, along with cognitive scientists, linguists, social psychologists, information scientists, organizational sociologists, and scholars in management science and engineering have explored deliberation by computers themselves, by people and computers interacting, and by people interacting with each other nonpolitically in computer-mediated environments. There are four main areas of general purpose online deliberation: the design of intelligent computer systems/agents, group decision support software or groupware, computer supported cooperative work, and group learning.

### Deliberation by Artificial Agents

The first area of general purpose online deliberation relates to the study of artificial intelligence. As early as the 1950s, computer scientists began exploring the simulation of argumentation in artificial intelligence (AI) systems. As Wooldridge and Jennings (1995) described, computer scientists have long focused their attention on the design and implementation of an 'agent'—a hardware or software-based computer system capable of exhibiting specific types of intelligent behavior.[6] This work has included the design and implementation of deliberative reasoning processes in agents, or in shorthand terms, 'deliberative agents'.[7] Distinguished from reactive agents, which respond directly to inputs rather than engage in complex reasoning

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[6] A robot serves as a good example here.

[7] Wooldridge and Jennings (1995) explained that, 'The term "deliberative agent" seems to have derived from Genesereth's use of the term "deliberate agent" to mean a specific type of symbolic architecture (Genesereth and Nilsson, 1987, pp325–327).) We define a deliberative agent or agent architecture to be one that contains an explicitly represented, symbolic model of the world, and in which decisions (for example about what actions to perform) are made via logical (or at least pseudo-logical) reasoning, based on pattern matching and symbolic manipulation' (24).

processes, deliberative agents are designed to make autonomous decisions, without the presence of humans.

The link between online deliberation and the deliberative reasoning processes of artificial agents may be difficult to grasp—especially for someone who comes from the deliberative democratic tradition. The types of mathematical formalism used as the basis for agents' programming languages resemble little of the deliberative reasoning processes theorized by deliberative democrats. However, the implementation or instantiation of deliberation is nonetheless integral to the development and refinement of intelligent systems. Work on autonomous agents represents a specific type of online deliberation, where 'online' might be understood in relation to computational logics rather than an electronic public forum or computer-mediated space in which humans interact. The type of online deliberation implied by work on autonomous agents doing complex reasoning is indifferent to the nature of inputs (political or otherwise) into an intelligent system (see also Love and Genesereth 2005).[8]

## Group Software

The second area concerns groupware (group collaboration software) and decision or group decision support systems (DSS and gDSS, respectively). Like intelligent computer systems, the design and study of groupware, DSS, and gDSS differs dramatically from the focus of online deliberative democrats. Beginning in the 1960s and 1970s, decision support software was primarily concerned with organizational decision making and interactive computer systems (Power 2003; Keen 1978). GDSS emerged later and was exemplified by computer conferencing, interactive software, and distributed networks, aiding organizations in tasks such as identifying issues, assumption surfacing, brainstorming, aggregating data, modeling, team building, policy writing, voting, and more (Straub and Beauclair 1988; Nunamaker 1989; Gavish and Gerdes 1997).

Although initially this trajectory of scholarship did not use the term online deliberation, some writing on DSS and gDSS nevertheless referred to processes in which individuals and groups discuss, debate, and decide in computer-mediated settings. As early as 1969, Churchman and Eisenberg (1969) had argued for the need to understand deliberation and judgment before 'grinding through a mathematical model or computer algorithm' (53) in order to facilitate organizational behavior. By the 1980s, gDSS scholars

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[8] Mike Ananny has suggested that the study of embodied conversational agents (see Cassell 2001; Cassell et al. 2000), which use deliberative reasoning processes and which are prevalent in virtual reality environments, also links to the history of non-political deliberation. For space constraints, I have not dealt with them here.

were using the term 'computer-aided deliberation' to explore group decision making within—and across—institutional settings (Kraemer and King 1988; Nunamaker et al. 1988; Nunamaker 1989). Many scholars, however, relied on the more generic expression computer-mediated communication in their treatment of group dynamics in the formation of consensus (Kiesler et al. 1984; Siegel et al. 1986; Watson et al. 1988). Others simply focused on problem solving, decision making, and other forms of group interaction that can be linked to deliberative behavior (DeSanctis and Poole 1994; Poole and DeSanctis 1989).

**Computer Supported Cooperative Work (CSCW)**

Overlapping with the task orientation of DSS/gDSS, the third area refers to computer supported cooperative work (CSCW) and software-assisted group behavior. As Grudin (1994) explained, CSCW grew out of the interests of an interdisciplinary group of researchers and developers in the dynamics of group activity. CSCW deals predominantly with small groups, not the design and implementation of large group systems that, for example, help automate large corporations and assist in corporate managerial decision making. Applications like 'desktop conferencing and videoconferencing systems, collaborative authorship applications, electronic mail and its refinements and extensions, and electronic meeting rooms or group support systems' (Grudin 1994: 20) were originally included in the CSCW domain.

Although a large field with many areas of specialization, CSCW research and development links to issues of deliberation by virtue of its interest in cooperation. Cooperation requires that individuals identify their positions, beliefs, goals, claims, and so forth, recognize differences, evaluate differences, and eventually act upon them. Some degree of deliberation is involved—both within individuals' own minds, as they decide what to think and how to act—and between individuals as they move forward towards agreement, disagreement, or compromise. In the late 1980s, for example, Conklin and Begemann (1988) studied how a hypertext tool, gIBIS, affected computer system designers through the early stages of their work process, including designers' hierarchical work relationships and the collection and sharing of informal design information. Baecker et al. (1993) explored collaborative writing software in both asynchronous and synchronous settings, paying attention to the different roles participants assume in writing projects.

**Group Learning Systems**

Finally, in addition to intelligent computer systems, DSS/gDSS, and CSCW, general purpose online deliberation also has roots in theories and

practices of group learning, participation, collaboration, and teaching in relation to computational media. Drawing from fields such as cognitive science, philosophy, instructional design, and education, online learning experts are concerned with augmenting processes of human reasoning. The idea of augmentation links back to one of online learning's forefathers, Douglas C. Engelbart. Engelbart's (1962) discussion of 'augmenting human intellect' presaged many of the attempts at designing, developing, and analyzing learning among groups in online settings. Augmentation includes the development and design of technologies for distributed intelligence and computer-supported visualization of argumentation, whereby reasoning processes of individuals are visualized to assist in problem solving, document creation, and other forms of collaboration.

As with online political deliberation, intelligent systems, decision support systems, and collaborative systems, the field of online learning is vast and multi-layered. For example, while earlier discussions of distributed intelligence (Pea 1993) or groupware communities (Engelbart 1992) did not expressly take an interest in deliberation, their work engaged with problems of consensus, collaboration, and knowledge sharing in virtual spaces.[9] Today, that legacy is manifested in a variety of ways, from the use of text-based conferencing systems for deliberation about adult education curriculum by adult literacy stakeholders (Herod 2005) to the benefits of argument mapping tools in professional and educational settings to enhance individuals' ability to present better-founded claims and arrive at the truth. Others have investigated design issues when using argument software to teach deliberation (Easterday, Kanarek, and Harrell 2009).

## 4    Agents, Applications, Systems

The above treatments of intelligent computer systems, group decision support software, and online learning reveal a complexity in the field of online deliberation across political and more general purposes. The latter type of online deliberation involves educational institutions, transnational corporations, and even less formally organized, but geographically dispersed, groups. By contrast, political deliberation typically occurs in government or civic spaces, where individuals are equated as citizens (or citizens-in-the-making), political decision makers, or political administrators, as opposed to students, teachers, managers, employees, or consumers.

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[9] For a more explicit discussion of Engelbart's legacy in online learning, see van Gelder (2002).

**Types of Online Deliberation**

Based on the different intellectual forerunners discussed above, the following represents my classification of both political and general purpose types of online deliberation.

Online *political* deliberation is classified as follows:

A *virtual governmental debate hall* consists of an online space that facilitates the state's consultation of its citizens for political decision making. It is manifested more often than not in the form of an official government website that gather information from citizens and provide information to citizens. Online town halls convened by the state for the purposes of political decision making fall into this category. Examples: Australian Defense Department, Regulations.gov

Given that the state does more than merely consult the public, a *virtual government-citizen space* differs slightly from the agency discussed above. The purpose of this forum is to introduce or welcome the citizen to civic life (at least as it is defined by the state), provide them with information about public services, or connect with other citizens (Friedland 1996; Tsagaroursianou et al. 1998). Examples: community computer networks

A *virtual civil society* centralizes deliberative activity by creating an online space for discussion, debate, learning, and so forth. Here, nongovernmental groups/civil society organizations, rather than governmental agencies, manage deliberative activity.[10] Examples: online Deliberative Polling®, Electronic Dialogues

An *online news media space* also centralizes, manages, and stimulates debate on issues of political importance and informs governmental decision-making. Online news media may be unconventional (featuring a devolved, user-driven process of newsmaking) or traditional (exercising control over their editorial process). Examples: BBC Online, NYTimes.com, OhMyNews International

An *online public-private sphere* is another form of online political deliberation, where expressive individuals generate public opinion. Managed by for-profit corporations, these virtual spaces contain design features that facilitate deliberative activity and that transform a virtual private sphere into a public square. Corporate social networking sites and virtual worlds often play host to this type of quasi-public sphere activity. Examples: Facebook, Youtube, Second Life

By contrast, *general purpose* online deliberation includes the following:[11]

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[10] Though virtual civil society organizations may not be explicitly politicized, they hold the potential to shape and encourage civic behavior (Putnam 1993, 2000).

[11] This list is partly inspired by the work of online learning scholars. See Jonassen et al. (1995).

A *virtual meeting space* allows individuals to access an online environment remotely, asynchronously/synchronously, in an embodied/disembodied manner. The entire space may be expressly designed for deliberation or merely feature tools within the space that can facilitate deliberative behavior. Issues of authority, transparency, and accountability often come into play if this type of virtual environment allows individuals to adopt anonymous or pseudonymous identities. Examples: chatrooms, forums

A *collaborative writing tool* allows a set of individuals working remotely to produce, edit and finalize a piece of writing. Whatever technology is used, collaborative writing can be seen as deliberative to the extent that the group works toward a common objective, dealing, for example, with issues of consensus, transparency, and dissent. Examples: Google Docs, Wikipedia

An *argument visualization tool* refers to a specific feature that can fit into any number of online group decision-making systems. Argumentation visualization helps one to propose arguments, review the reasonableness of claims, and select or support a particular claim based on its reasonableness. For example, in a school environment, argument visualization can be used to help structure a student's learning of reasoning. In a professional (corporate) environment, argument visualization can be used to organize competing viewpoints on work-related proposals (see also Horn 1999). Examples: Reason!able, Austhink

A *preference aggregation tool* is software that collects, processes, and represents/reports individuals' preferences on an item that a group must debate and decide upon. The tool may collect, tabulate, and visualize votes, as with electronic voting systems or modules, and/or rank preferences for others, as in the case of recommendation systems. A preference aggregation tool may also consist of survey/polling and petition software. Examples: eVote/Clerk, PetitionsOnline.com

A *deliberating autonomous agent* refers to an intelligent computer system or component designed to make decisions without the presence of humans. Example: Codex

## A Taxonomy of Online Deliberation

From virtual government agencies to collaborative document writing software, from a virtual public-private sphere to a deliberating autonomous agent, the above list of online deliberation types shows that online deliberation includes much more than the instantiation of deliberative democratic ideals.

But how can we better understand these types? Taking its cue from Davies (2009), the following taxonomy categorizes the types listed above into

three main groups or levels. The taxonomy allows us to see similarities across deliberative activities that have political and non-political purposes.

The taxonomy is summarized as follows:

| Level | Description | Examples |
|---|---|---|
| Agent | Code for deliberative reasoning tasks of intelligent systems | Deliberating autonomous agents |
| Applications | Software for deliberative activities used on a variety of platforms | Preference aggregation tool<br>Visualization tool<br>Collaborative writing tool |
| Systems | A sociotechnical system that coordinates and sustains the overall design, implementation, recruitment, and execution | Virtual meeting space<br>Virtual government debate hall<br>Virtual government-citizen space<br>Virtual civil society<br>Online news media space<br>Online public-private sphere |

Table 1. A taxonomy of online deliberation

At the agent level, online deliberation can be understood within a set of tasks executed in an intelligent system. This type of online deliberation involves an agent involved in some form of reasoning, communicating, negotiating, and/or transferring information. It involves interactions that occur within a computer or computer network as well as between computer(s) and user(s).

At the applications level, online deliberation can be understood as a computer program. Important features of this form of online deliberation include: the goals of deliberation, the methods (e.g., moderated/unmoderated discussion, presentation of information, categorization of discussion, voting, ranking), the platform or platforms on which the software operates, the way or modality in which users experience deliberation, the setting in which the software is used, the user populations, and the legal context of software distribution (e.g., proprietary, open source, or free).

At the systems level, online deliberation can be understood as a sociotechnical system that is coordinated or managed by a government institution, news outlet, civil society organization, corporation, educational body, or other institution (or set of institutions). Apart from the question of who manages such a project or endeavor, this level of online deliberation entails

choices about the goals of deliberation, the software used to achieve those goals, the platforms that host the online deliberation experience, the modality of the user experience, the way in which participants are recruited, the types of participants being targeted, the context and scale of the user experience, the evaluation of deliberative goals, and the economics and managerial style of the deliberative endeavor.

By describing the systems level in sociotechnical terms, I am not suggesting that social values are absent at the other two levels. By contrast, as the work of social constructionists suggests, technologies have values (Winner 1986). Even with the modeling of deliberative reasoning in autonomous agents, it is plausible that developers encode their own, historically situated understanding of deliberation. However, such values may not come into play as much as they do in the case of software or social-technical systems for online deliberation. Thus, it is important to highlight the human or social element prominently in the description of the systems level.

## 5   The Future of a Diverse Field

Technologies that enhance deliberation and the social systems that support them are constantly evolving. Today, from the agent to the applications to the systems level, the field of online deliberation features an incredible diversity. Online deliberation can happen inside of software, through software, or in a sociotechnical setting. This last category, in particular, is ripe with variety: online deliberation projects occur in governmental, corporate, educational, civil society, consumer, and other contexts.

The taxonomy presented in this chapter provides us with a glimpse into how deep online deliberation runs. Far from being obscure, forms and practices of online deliberation are part of many of our everyday uses of digital technologies. For example, an autonomous agent operating inside of a computer or within a software program makes determinations about when to act on incoming available information or when to coordinate with other agents. Although deliberative reasoning is occurring, an ordinary user is typically ignorant of these processes.

But in the process of categorizing the different types of online deliberation, does the taxonomy diminish the place and rich history of online political deliberation? Designed to be as broad and accommodating as possible, the taxonomy subsumes political debate and decision making into a larger set of online deliberation projects. The system level groups projects that relate to democracy and political decision making as well as those that do not. From consulting the broad public about state regulations to brainstorming in small groups in a corporate setting, from learning about argumenta-

tion in an online classroom to disseminating information to consumers of news, a multiplicity of online deliberation projects exist.

While some might worry that political deliberation does not stand out in such a simple taxonomy, this type of broad categorization allows us to see how different projects or applications compare or translate across different settings or contexts. Already, an open slate exists for those who want to use software that facilitates one or more aspects of deliberative behavior. Users can apply a program to any context they wish—political or not. A simplified taxonomy makes it easier to explore differences in the success of online deliberation, whether tied to political debate and decision making or not. Thus, the taxonomy makes it possible to contemplate where projects or tools for e-democracy, e-government, or online civil society have influenced online deliberation for other purposes, and vice versa.

As participants in many interdisciplinary endeavors have discovered, diversity can be mobilized to advantage. In describing the interdisciplinary laboratory, RADLAB, which generated early thinking and work on the personal computer, Peter Galison (1999) once explained: 'Laboratories are about coordinating action and belief—not about translation' (157). The same might be said about the field of online deliberation as it moves forward. The field of online deliberation may not depend on translating for one another the different backgrounds of designers, scholars, and practitioners for one another and harmonizing the multifaceted interpretations of deliberation *per se*. Although such translation work might occur, a willingness to coordinate actions among designers, scholars, and practitioners—coordination to develop new and better tools or techniques for virtual discussion, debate, and decision making, to create more and richer research instruments to document and assess different software, experiments, projects, and experiences in the virtual world, and to promulgate best practices—is what will propel online deliberation into the future.

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## Appendix A: List of Online Deliberation Projects and Applications

ActionApps, http://actionapps.org, Collaborative web publishing tools for non-profits.

Akiva Corporation, http://www.akiva.com/, Collaborative web publishing tools for corporate and non-profit organizations.

AmericaSpeaks, http://www.americaspeaks.org/, Non-profit organization that coordinates in-person and online citizen forums on political issues in the United States.

Australian Department of Defense, http://www.defence.gov.au/consultation2/index.htm, Australian public consultation to inform the future of the country's defense system.

BaseCamp, http://basecamphq.com/, Collaborative project management software tools.

Beyond Yes, http://consensuspolling.org/, Online polling tool that visualizes the process or movement towards group consensus.

Breaking the Game, http://www.workspace-unlimited.org/breakingthegame/index.htm, Game environment that encourages deliberative problem-solving for political and non-political issues.

ByDesign/eLab*, http://www.bydesign-elab.net, Research and design organization interested in participatory online public spaces.

Canadian Community for Dialogue and Deliberation, http://www.c2d2.ca, Canadian-based organization focused on offline and online dialogue to build a culture of deliberation.

Citizenscape, http://www.citizenscape.wa.gov.au/index.cfm?event=publicTips, Western Australian governmental portal that provides opportunity for information-gathering, public consultation, and civic engagement.

City of Kalix, http://www.votia.com, Government project in Kalix, Sweden, to coordinate offline and online public consultation.

City of Tampere, http://www.tampere.fi, Government project in Tampere, Finland, to coordinate offline and online public consultation.

Civic Action Network, http://www.civicactionnetwork.com, Wiki-book that details strategies for activists in online and offline settings.

CivicEvolution, http://civicevolution.org/, Website that invites users to formulate and present political problems and propose solutions.

Co-Intelligence Institute, http://www.co-intelligence.org/P-groupware.html, Website that aggregates information about social software.

Community People, http://www.communitypeople.net/, British-based company that sets up online consultation, polling, communication, calendar, collaboration and discussion forums, and more.

CommunityWiki, http://www.communitywiki.org/cw/WikiDrama, Experimental wiki to explore, support, and structure debate by requiring participants to adopt characters or archetypes as a more efficient means of arriving at consensus.

Consensus Group, http://www.usemod.com/cgi-bin/mb.pl?ConsensusGroup, Wiki that models different behaviors (e.g., silence) as consensus.

Conversate*, http://www.conversate.org/, Software tool for creating and managing online discussion.

Cooperation Commons, http://www.cooperationcommons.com, Online forum for coordinating collaboration among different disciplines interested in solving social dilemmas.

County of North Jutland, http://www.nordpol.dk/, E-government website and online discussion forum that provides election and political information to and debate among citizens of the council of Northern Jutland, Denmark.

Cybervote, http://www.eucybervote.org, Research project to develop and experiment with internet voting software in Europe.

Daum Deliberative Democracy Project, N/A, Portal website set up for 2004 Korean General Elections.

David Miliband Ministerial Blog*, http://www.davidmiliband.defra.gov.uk, Website for former British minister, David Miliband, that pioneered online dialogue among constituents.

DCLG Forum, http://forum.communities.gov.uk, Main site for online public consultation and dialogue between local politicians and citizens in the United Kingdom.

Debatepedia, http://debatepedia.com, Wiki tool to organize debate on political issues.

Debatepoint, http://www.debatepoint.com/, Software tool that organizes arguments in order to facilitate consensus-making for political and non-political issues.

Debian, http://www.debian.org, Website for coordinating decision-making structures and packaging open source software projects into a single, freely-distributed operating system.

Decisions, http://decisions.gnuvernment.org/, Website that discusses development of (Drupal-integrated) software for group decision-making.

Delib, http://www.delib.co.uk/, Software tools for online dialogue and participation in government and civil society in the United Kingdom.

Deliberative e-Rulemaking Decision Facilitation Project, http://www.deer.albany.edu, A research experiment funded by the National Science Foundation to generate better and more effective public input in federal agency government rulemakings.

Deme, http://www.groupspace.org, http://deme.stanford.edu, Web-based platform being developed at Stanford University to facilitate online deliberation.

Democracies Online, http://dowire.org, Listserv started by Steven Clift to discuss e-democracy and online deliberation.

Demo-net, http://www.demo-net.org, Research network that studies online political participation in Europe.

Denmark National IT and Telecom Agency, http://www.danmarksdebatten.dk, Danish e-government project.

Department for Transport Road Safety Webchat, http://www.dft.gov.uk/roadsaftey/webchat, British e-government site for discussion on transport safety.

Dialogue Circles, http://www.dialoguecircles.com, Company that assists non-profit associations, corporations, and government in developing and implementing online and offline dialogue and consultation.

Digital Dialogues, http://www.digitaldialogues.org.uk/, Research project to study the use of online technologies for public consultation in the United Kingdom.

Digital Document Discourse Environment, http://d3e.sourceforge.net/, Document management tool that helps facilitate collaboration among contributors.

Dito, http://zeno8.ais.fraunhofer.de/zeno/web?rootid=21449&journal=21449, Software tool for content/document management.

Drupal, http://drupal.org/, Content management software developed mainly for and by political activists and community organizers.

Dutch Centre for Political Participation, http://www.publiek-politiek.nl/english, Non-partisan organization that works with governments and non-governmental groups in the Netherlands and elsewhere to encourage debate, citizen participation, and political knowledge.

EGovBlog, http://www.egovblog.com, Blog that aggregates information about worldwide practices in e-government.

e-Liberate, http://clients.rocket51.com/e-Liberate/about/, Software being developed by Computer Professional for Social Responsibility to facilitate online meetings-- either real-time or asynchronous.

Energy Technology Futures, http://www.nrcan.gc.ca/es/etf/, Canadian e-government site for energy technology.

Environmental Protection Agency, http://www.epa.gov, Website for American environmental regulatory agency that has innovated with online public consultation.

Envisioning Governance*, http://beyondvoting.wikia.com/wiki/Envisioning_Governance, Project to design software for community governance.

e-Petitions, http://petitions.pm.gov.uk/about, British e-government site that allows citizens and civil society organizations to generate and deliver online petitions to the Prime Minister.

European Youth Parliament/FCO Forum, http://www.eyptalk.net, Online forum related to the European Union's Youth Parliament.

eVote/clerk, http://www.deliberate.com/, Software tool that embeds polls into email or other internet-based software.

Extreme Democracy, http://www.extremedemocracy.com, Website/discussion forum for activists interested in new ways of practicing democracy.

Family Courts Forum, http://www.familycourtsforum.net, http://www.ofcf.net, British e-government site for adult and youth discussion of reforming family court system.

Fax Your MP, http://FaxYourMP.com, British e-government site that helps citizens send fax communciations to government officials.

FSA Chief Scientist Blog, http://www.fsascience.net, British e-government blog on food standards.

Games for Change, http://www.gamesforchange.org/, Organization that supports foundations and non-profit organizations interested in using the digital game environment for social change purposes.

Global Peoples Assembly, N/A, Hypothetical online forum for discussion of global issues.

Global Voices, http://www.globalvoicesonline.org, Aggregator site of internationally-focused, citizen-generated blogs.

Green Party of Canada/Living Platform, http://lp.greenparty.ca/tiki-index.php, Wiki for the Canadian Green Party to create its core document on environmental issues.

GroupServer, http://groupserver.org/, Community-oriented collaboration system for managing online discussion.

Group Systems, http://www.groupsystems.com, Software that assists groups in problem identification, problem solving, and consensus formation.

Hansard Society, http://www.democracyforum.org.uk, http://www.publicevidence.net, http://www.hansardsociety.org.uk/eDemocracy.htm, British organization that stimulates interest in and knowledge of democracy and helps research and organize online deliberation and e-government projects.

Hermes, http://www-sop.inria.fr/aid/hermes/table.html, Argumentation system for discussion on the Web.

Human Sciences, http://humansciences.com.au/, Company that assists local Australian government in public consultation.

HTML Gear, http://htmlgear.lycos.com/specs/poll.html, Free polling software.

ICQ, http://www.icq.com, Free instant message/chat tool.

Ideascale, http://www.ideascale.com, Crowdsourcing software tool that facilitates brainstorming, discussion, and decision making.

Ikonboard, http://www.ikonboard.com/, Free forum software.

iLogos, http://www.ilogos.com/en/expertviews/webinars/RFP/, Prototype software for classroom use to visualize processes of argumentation.

Independent Media Center(s), http://www.indymedia.org, Open publishing-based news site with anti-corporate globalization origins.

Information Renaissance*, http://www.info-ren.org, Organization that promoted participation in electronic government by assisting governments and non-profit groups in the United States to use networking technology.

Inteam, http://www.inteam.com, A suite of tools to assist groups in brainstorm, decision making, document creation, file sharing, and general project comunication.

International Teledemocracy Centre, http://www.teledemocracy.org/ourwork/our-work-projects.htm#consultations, http://www.teledemocracy.org, Research organization that studies technology-enabled democratic discussion and decision making.

Iperbole, http://www.comune.bologna.it, E-government website for the city of Bologna, Italy.

IPS Community, http://www.invisionboard.com/, Free forum software.

Issue Congress, N/A, Hypothetical tool for online discussion.

Issue Deliberation Australia, http://www.ida.org.au, Australian-based research organization that studies and conducts offline and online deliberation.

Jurat, http://www.juratcanada.com/, For-profit company that designs and implements tools for engaging groups in stakeholder discussion and decision making.

Kettering Foundation, http://www.kettering.org, Organization that facilitates offline and online deliberation on political issues in the United States.

Knowledge Forum, http://www.knowledgeforum.com, Online conferencing platform for educators.

Law Commission Forum, http://forum.lawcom.gov.uk, Website for public consultation on legal reform in England and Wales.

Limehouse Software, http://www.limehousesoftware.com/, A suite of tools to assist groups in collaborating, meeting, publishing, and creating documents.

Listening to the City Online Dialogues*, http://dialogues.listeningtothecity.org/, Project of the Civic Alliance and Web Lab to conduct online town hall meetings concerning design plans for Ground Zero (New York).

Mailman, http://www.list.org/, Free software to manage electronic discussion lists and e-newsletter lists.

Meatball Wiki, http://www.usemod.com/cgi-bin/mb.pl?MeatballWiki, Wiki that provides information exchange and discussion about tools for online organizing.

medi@komm*, http://zeno.gmd.de, E-government website for the city of Esslingen, Germany.

MeetingWorks, http://meetingworks.com, Meeting software.

MeetUp, http://www.meetup.com, Website based in the United States that helps likeminded individuals meet, share interests, and/or participate in similar causes.

Microsoft Windows NetMeeting, http://www.microsoft.com/downloads/details.aspx?FamilyID=26c9da7c-f778-4422-a6f4-efb8abba021e&displaylang=en, Videoconferencing software that runs on VoIP on versions of Microsoft Windows (from Windows 95 OSR2 to Windows XP).

MSP Resource Portal, http://portals.wi.wur.nl/msp/?Links, Dutch website that aggregates resources for participation and deliberation on issues related primarily to agriculture and water.

National Coalition for Dialogue and Deliberation, http://thataway.org/index.php/?cat=32, Organization that facilitates offline and online deliberation on political issues in the United States.

Neighborhood America, http://www.neighborhoodamerica.com, For-profit company that designs and implements online consultation projects for government and corporate clients.

NetAid, http://www.netaid.org/, Website that centralizes information about fighting global poverty.

NewAssignment.net, http://www.newassignment.net, News site that facilitates collaboration among journalists.

Obiki, http://obiki.org/, Software to create websites and documents for groups. Serves for-profit companies as well as government, educational institutions, and civil society groups.

OhMyNews, http://ohmynews.com, Korean-based citizen-generated news site.

Online Deliberative Polling®, http://cdd.stanford.edu, Social science experiment run by the Center for Deliberative Democracy at Stanford University to study political deliberation.

Online Public Disputes Program*, http://www.publicdisputes.org, Organization that provided technologies and facilitation to mainly government agencies conducting public consultation, convening expert panels, or engaging group decision making.

ONS Small Area Geography Policy Review Blog, http://www.onsgeography.net, British e-government site for discussion on neighborhood statistics.

OpenACS, http://openacs.org/, Open source software tools for building scalable, community web-oriented applications.

OPEN (Seoul Online Procedures ENhancement for Civil Applications)*, http://open.metro.seoul.kr/, A Web-based system established by municipal government in Seoul, Korea, that took advantage of process-tracking software to assist citizen monitoring of corruption-prone applications for permits and approvals.

Open Government Initiative, http://www.whitehouse.gov/open/, Website for citizens to learn about as well as collectively brainstorm, propose, and create federal policy related to open government initiatives.

OpenFlow, http://www.openflow.it/EN/index_html, Free software for workflow or project management.

Open Text Corporation, http://opentext.com, For-profit company that helps clients manage content systems.

OpenSpace, http://www.openspace-online.com, For-profit company that provides technology and facilitation for online meetings and collaboration.

Parliament, N/A, Software tool for managing online meetings according to Robert's Rules of Order.

Participatory Politics Foundation, N/A, Organization which runs OpenCongress, an online tool to track Congressional bills as they move through Congress.

Partnerships Online*, http://www.partnershipsonline.org.uk, Website that contains information for civil society practitioners interested in learning more about and accessing tools for online discussion and facilitation, and participation in electronic government, and more.

Party Funding Review Forum/Webchat, http://forum.partyfundingreview.gov.uk, http://chat.partyfundingreview.gov.uk, British e-government site for discussion on party funding.

Peer to Patent, http://peertopatent.org, Developed by the New York Law School Institute for Information Law and Policy in cooperation with the United States Patent and Trademark Office, an e-government project that enables the public to submit prior art and commentary relevant to the claims of pending patent applications in Computer Architecture, Software, and Information Security (TC2100).

Perlnomic, http://perlnomic.org/, Experimental game in which rules are adjudicated by Perl code.

Phorum, http://www.phorum.org, Open source message board system written in php.

phpBB, http://www.phpbb.com/, Open source software for developing online forums.

phpGroupware, http://www.phpgroupware.org/, Free software that facilitates content management, forums, email, and more.

Planning Portal Forum, http://www.planningportalforum.net, British e-government site that facilitates communities and local governments' online information, dialogue, and decision-making on planning and building.

Plone, http://plone.org/, Open source software for content management.

PoliticalSim, http://www.accuratedemocracy.org/s_sim.htm, Game that enables users to simulate the experience of deliberation in an online environment.

Politalk, http://politalk.org, Non-partisan discussion forum for political issues

Politika Latvia, http://www.policy.lv, Independently-run website that centralizes, organizes, and offers public policy debate in Latvia.

PostNuke, http://www.postnuke.com/, Open source content management tool.

Project PICOLA (Public Informed Citizen Online Assembly), http://caae.phil.cmu.edu/picola/, Software tool that creates multimedia environments for online structured dialogues or meetings.

Public Agenda, http://www.publicagenda.org, Organization that produces information about political issues in the United States.

Public Voice Lab*, http://www.pvl.at/solutions/ediscours/, Website that operated as a free software coop, distributing or alerting (mostly e-government related) software to its members.

QuickTopic, http://www.quicktopic.com/, Online forum/discussion that can be integrated into email and that is used for document collaboration.

Rationale, http://rationale.austhink.com/, Software that diagrams reasoning and argument.

Regulations.gov, http://www.regulations.gov, Website run by the United States government to facilitate public engagement in the rulemaking system.

Samretano 1.0, http://www.sammondano.org/products.html, Open source software tools for non-profit organizations that allow users to vote, rate, categorize, create, and organize collective knowledge.

Scoop, http://scoop.kuro5hin.org/, Software tools that facilitate content management and build bulletin boards and blog capability.

Slashcode, http://www.slashcode.com/, Website that collaboratively manages revisions and development of open source/free software for news posting and discussion.

Source d'Europe*, http://www.info-europe.fr/debat, French-European Union e-government project in early 2000.

Stackoverflow, http://www.stackoverflow.com, Website that allows programmers to collaboratively publish and tag questions and answers to programming questions and rank users that provide answers

Study Circles, http://www.studycircles.org, Organization that facilitates offline and online deliberation on US political issues.

SurveyMonkey, http://www.surveymonkey.com, Tool for designing, implementing, and analyzing online surveys.

Synanim, http://www.synanim.com, A for-profit internet-based service that offers clients enhance their cooperative and leadership capacities.

Tagsonomy, http://www.tagsonomy.com, Blog that talks about issues regarding classification or tagging.

Tana Otsustan Mina *, http://tom.riik.ee/, Estonian e-government project from early 2000.

The Blogora*, http://blogora.wetpaint.com/, A wiki-based discussion platform where users can discuss controversial political issues as well as the design of online dialogue

The Young and Fresh, N/A, Message board for a private corporation.

TikiWiki, http://tikiwiki.org/, Free software tool that enables content management.

Truth Mapping, http://www.truthmapping.com, Website that deconstructs arguments to facilitate reasoning processes, discussion, and rating of social and political issues.

UK Opening Politics, http://www.uk.openingpolitics.org/index.php?title=Deliberative_structure, British-based wiki that allows individuals to edit arguments and opinions of different political issues.

Unchat, http://www.unchat.com, Project that structures face-to-face communication in an on-line environment to enable real-time moderation and collaboration.

USENET, http://groups.google.com/, Decentralized discussion system featuring a variety of topics created in 1979 and now archived on Google.

Vacheland, http://vacheland.playmoa.com/, Simulated game environment created French Agricultural Ministry to teach people, particularly youth, about issues concerning the cattle industry.

Values Exchange, http://www.values-exchange.com, New Zealand-based website that invites visitors to debate on topics of social concern.

Vivarto-Nornorna, http://www.vivarto.com/tiki-index.php?page=Nornorna, Online conferencing software that facilitates group decision-making.

Web Lab*, http://www.weblab.org, Organization started in 1997 to discuss, design, implement, and fund online dialogue projects for non-profit and government groups in the United States.

Wikimocracy, http://www.wikimocracy.com/, Website where a user can weigh in, contribute to, add, delete, and/or modify topics of controversial nature.

Windows Meeting Space, http://www.microsoft.com/windows/downloads/default.aspx, Replacement for Windows NetMeeting, this software allows filesharing and set-up of ad hoc conferences provided that users are running Windows Vista.

Wornex World Director, http://www.demos-project.org, Hamburg-based project of the European Union to develop e-government, facilitate citizen-politician debate.

Wordle, http://www.wordle.com, Free visualization tool for analyzing word frequency of Web pages.

XML Gov, http://xml.gov, Software for virtual government.

Xoops, http://www.xoops.org/, Free software tool for content management.

YackPack, http://www.yackpack.com, A patented, voice-based interface that facilitates group communication

YouthNoise, http://www.youthnoise.org, A website for youth that includes news and information related to youth issues and that includes an online discussion forum for young people.

*No longer operating or site is unavailable.