UNCHAT: DEMOCRATIC SOLUTION FOR A WIRED WORLD

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INTRODUCTION

It is a half-truth to say that democracy depends upon free speech. Rather, the participative practices that characterize democratic life require open, equal, reasoned deliberation. Deliberation is more than just talk; it involves weighing approaches to solving problems in such a way that the viewpoints of all members of the community can be heard. Deliberation is a special form of speech structured according to democratic principles and designed to transform private prejudice into considered public opinion and produce more legitimate solutions.

New technology could be an asset to democracy, not because it creates more outlets for speech, but because software can impose the structure that transforms communication into deliberation. Democratic rules of conversation can be "coded" into the software itself to ensure, for example, that each participant speaks once before anyone else speaks again.

The future of electronic democracy requires the construction of technical architectures conducive to the goals of deliberative democracy, not just commerce. Deliberative processes must be *designed* for cyberspace. This requires, first, developing the tools to facilitate deliberation and then developing methods for implementing them in political and social institutions.

This Article describes one of the first such deliberative design experiments. An interdisciplinary team of technologists and democratic theorists (including the author) developed "Unchat,"[2] web-based software for deliberative practice

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[1] Portions of this Article have appeared in the Boston University Journal of Science and Technology Law, Vol. 9, Issue 1 (Winter 2003). Beth Simone Noveck, Associate Professor, New York Law School, is the Director of the Democracy Design Workshop and President, Bodies Electric LLC.

[2] *See* Bodies Electric LLC, *Unchat*, *at* http://www.unchat.com (providing information about Unchat as its official Web site). The Unchat software was created by an interdisciplinary design team led by the Author and Benjamin R. Barber, Kekst Professor of Civil Society at the University of Maryland, with technical support from Thaumaturgix, Inc., a software development company in New York, at http://www.tgix.com, and additional advising from Jack M. Balkin, Knight Professor of Constitutional Law and the First Amendment, Yale Law School and members of the Information Society Project at Yale Law School. After searching in vain for tools that could be adapted to "do deliberation" online, the team embarked on this original design project, which is ongoing.

in cyberspace. The following essay relates this design research and addresses the prospective uses of software to promote deliberative democracy.

OF YURTS, YAKS & TELEPHONE BOOTHS: DESIGNING FOR DELIBERATION

When Mongolia wanted to expand its telecommunications infrastructure, one of the impediments encountered was how to construct a telephone booth big enough to fit two Mongols in full sheepskin winter-wear yet small enough to prevent them from corralling yaks (Taylor 2001). Design matters; value choices translate into design choices. Web sites are constructed to make transacting straightforward; the "shopping cart" must never be more than one mouse click away. Yet in the same way that we construct e-commerce technologies, we can, but do not adequately, yet build sites tailor-made for political, social and cultural uses. Such technology would enable the group collaboration processes that underlie deliberation. This means that if we are to structure the space and procedure for deliberation in cyberspace, we need to be explicit about what ideally comprise the procedures of deliberation.

A. Accessible

To be deliberative, the conversation must be accessible to all relevant stakeholders (sometimes known as the *demos*). Therefore, the space in which it occurs – whether physical or virtual – has to be available to as wide a range of participants as possible. A baseball stadium or town hall may be an important locus of public congregation, but unless easily reached by public transportation as well as by car, large segments of the public will be excluded.

Space has to be aesthetically as well as technically useable. If the acoustics in the church basement are bad, the free entrance price is not enough to ensure participation. Similarly, electronic spaces for deliberation have to be "technology neutral" so that access is not limited only to those running one particular operating system.

B. No Censorship

To be deliberative, the conversation must be free from censorship. Therefore, the space needs to safeguard freedom of thought and expression. Censorship goes beyond physical threat. It includes any distortion or restraint of speech that would hinder the independence of the discussion or cause participants to self-censor. Such incursions are just as likely to come from the market as from the government.

C. Autonomous

Participants in a deliberative dialogue are not consumers, but autonomous citizens. The process must not treat them as passive recipients of information, but as active participants in a public process. Therefore, participants cannot be

used for data profiling in the course of deliberating. To do so would not only chill free expression, but also transform citizens from autonomous decision makers into statistical probabilities whose actions are to be predicted. Autonomy also demands that participants have a controlling role in the deliberative process. In colonial New England, citizens ran their own town meetings and, by virtue of running the conversation, became better and more active participants in it (Barber, 1984).

D. Accountable

A deliberative dialogue can only take place where members of a community engage with one another in accountable and reasoned public discourse. They cannot be anonymous. Though the right to anonymous speech must be protected online and off, productive group collaboration and decision-making in political, cultural, educational and business life also require accountable, interpersonal engagement.

E. Transparent

Participants in the debate must be "visible" to each other and to those setting the agenda (to the extent they are not the participants themselves). Transparency means that the structure and rules of the space must be public so that citizens know who owns the space, whether monitoring is taking place, and the bias of any information contributed to the discussion. It is relevant that AOL moderates its chat rooms, deleting messages that are critical of corporate policy.

F. Equal

Deliberative democracy requires equality among members. To be equal, participants need not be stripped of their uniqueness; but individual attributes should not translate into more or less chance to be heard. Creating a public sphere is not about rending boundaries but rendering social and power relationships visible. In the constructed space, all participants must be equal players with like opportunities for access and voice. The architecture cannot privilege one group over another.

G. Pluralistic

In order to allow everything worth saying to be heard, it is necessary to ensure that viewpoints representing a broad spectrum are clearly expressed. As Owen Fiss eloquently argued: "[The state] may have to allocate public resources – hand out megaphones – to those whose voices would not otherwise be heard in the public square. It may even have to silence the voices of some in order to hear the voices of the others" (Fiss, 1996) by regulating the rules of the space.

H. Inclusive

Countless philosophers have envisioned the small group as the ideal democratic unit (Gastil, 1983). In a deliberative and public forum, participants must be able to "see" each other – their identities and interests laid bare. Yet at the same time, a deliberative forum must be inclusive and open to all members of the relevant community. Without capturing a wide array of voices and viewpoints, it is impossible to obtain a genuine sense of public opinion. Therefore, deliberation must be both small and inclusive. This can be accomplished at the same time by linking small groups.

I. Informed

Successful deliberation demands discipline. Participants need to take the time to inform themselves in order to base their judgments upon reasonable information. A deliberative dialogue cannot be divorced from information, and participants must have access to a wide variety of viewpoints in order to make effective and educated decisions (Fishkin 1991).

J. Public

The dialogue must be open, accessible, and explicitly dedicated to the interests of the group, rather than any individual or particular interest group. By thinking explicitly as citizens and members of a community, participants articulate rationales to serve, not only themselves, but also what they perceive to be the interests of a wider community.

K. Facilitated

One final prerequisite to deliberation is structural – namely, effective facilitation. The only way to manage the competing voices of participants is to moderate them. Facilitation may be as simple as having someone call on people as they raise their hands, or as complex as the elaborate procedures used in a courtroom proceeding.

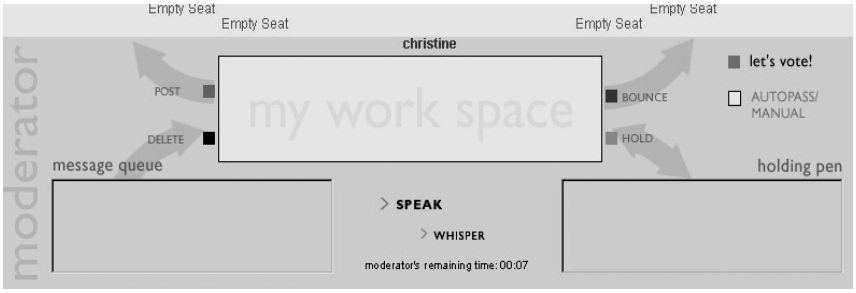
FROM THEORY TO PRACTICE – SOFTWARE AS DELIBERATIVE STRUCTURE

Unchat is an implementation of this deliberative theory in technology. The goal of the project was to create software for synchronous small group deliberation and see how it could be used to realize these deliberative qualities. The focus was less on bringing people to the table electronically than on what occurred when they got there. We were curious as to whether deliberation on-line might be possible. So we embarked on two-year research experiment to build and deploy the tool to enable deliberation in different domains.

A. How it Works

In the Yale Law School International Cyberlaw discussion group, a dozen law students met online once a week for two hours with academics, policymakers and technologists from around the world. By convening on the Internet, these American law students could converse with representatives of the European Commission and the Council of Europe to gain a deeper understanding of media and intellectual property regulation in the European legal tradition. They exchanged typewritten messages in real-time, which, though slower than speaking, conditioned the group to the reasoned exchange of ideas. Participants uploaded informational resources, such as statutes and cases, to shared electronic libraries. The array of shared information enabled them to compare American and European traditions through discussion with native experts.

With twenty highly vocal people in the room at once, moderation was enabled. Participant postings would go through a moderator, who would preview and organize the comments. The moderator could reject or hold those interventions that were not on topic.



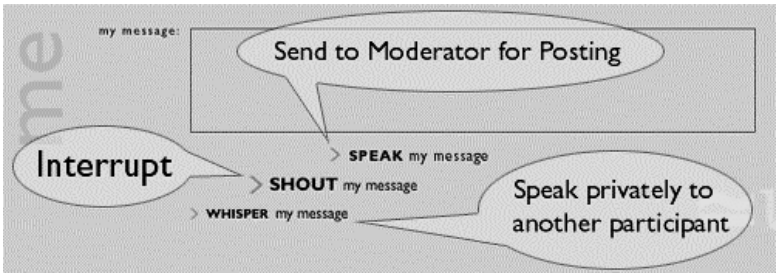
But to prevent the moderator from abusing this power, we rotated the moderation from one participant to another so that everyone had an opportunity to wield the electronic gavel (self-moderation). By taking responsibility for running the conversation, members learned to participate better and more effectively.

In another project, twenty-five fourteen year-old high schoolers convened from their respective suburban, urban and inner city schools to discuss harmful Internet content.[3] Having read in the Unchat library beforehand, they intelligently debated what should be included in an Internet acceptable use policy. Exceeding their age in terms of sophistication and civility, they discussed balancing free speech rights and educational openness against the interests of the school community in creating a safe environment for educating young students.

When they got excited about the topic, the young people could "shout" a message, bypassing the moderator altogether. One of the first things we did

[3] For more on this Internet Ethics in Schools project, see New York Law School, *Internet Use in Schools*, at http://www.nyls.edu/democracy.php?ID=26 (last visited Jan. 10, 2003).

was to decide how many interruptions each participant would have to configure the "shout" setting accordingly.



After a participant uses up his shouts, the software shuts off the ability of that person to interrupt. The shout option not only takes advantage of the flexibility of the software to enable impassioned outcries, but it also encourages participants to reflect on the impact their disruptions have on the dynamic of the larger group.

Like the shout, a whisper does not go to the moderator for posting to the larger group. Rather, it is a private message between two participants. In a third project on "Spiritual Friendship in the Digital Age," Episcopal priest and facilitator Reverend Steve Kelsey required participants to "huddle" with a partner by whispering one-on-one for five minutes to create a more intimate climate prior to the group discussion.

Principles of deliberative democracy suffuse the concept and functionality of Unchat. The knowledge of how to structure successful participation off-line informs the design of this online deliberation tool, of which the software's architecture is intended to capture the ideas of deliberative structure outlined earlier. They are as discussed in the subsequent section.

B. The Design Process: Translating Values into Code

1. Accessible

To be accessible, the software tool we wanted to build needed to be available to participants regardless of technological ability or choice of technology. Therefore, we Unchat works on Windows, MAC and Linux operating systems using both major browsers, Internet Explorer and Netscape. The universality of access was a central criterion for design.

Initially, Unchat ran on an Oracle database with a WebLogic "middleware" platform. These are powerful, yet expensive technologies. This would have been akin to building the town hall from Carrera marble and then having to charge speakers for every use to recoup the expense. So we moved the application to an entirely free back-end.

2. No Censorship

Unchat runs via the browser, communicating with a server via an open port. Some networks do not permit this kind of communications traffic. We wanted our technology to create a reason for openness and keeping ports open. The tradeoff is not unlike the risks when a large crowd gathers to protest. Free speech is a necessary activity of democracy that must be protected despite its costs for security and safety.

3. Autonomous

We wanted to build software that gave users the choice of how to structure their own communication. In real life, conversation can take place in a café, a town hall or a classroom. Cyberspace is flexible enough that users ought to be able to convene in different sorts of spaces according to the rules they set for themselves. With Unchat, a group can not only set the rules of the space, but also change them as needed.

4. Accountable and Transparent

Chat rooms are anonymous. Participants choose handles by which to hide their identities and role-play in the virtual space. Yet when communication functions as a means for public decision making and not as entertainment, participants must be identifiable and accountable (Gutmann and Thompson, 1996). Being known by name encourages responsible participation because it connects public action with personal reputation.

Though anonymity is at times a liberating feature of cyberspace, social relations are iterative not itinerant. People cannot easily change the social, business or political community they inhabit. Accordingly, they must learn to participate in these communities on an ongoing basis, which carries a cost to hateful and hurtful words or actions. Accountability creates an incentive for productive and respectful participation.

Since Unchat is a tool intended to serve real communities, participants log in with a first name and a last name. Logging in immediately signals to the participant the seriousness of the exercise, thereby linking real-life consequences directly to virtual conversation.[4]

5. Relevant and Responsive

Communication technologies can be broken down into synchronous or

[4] Though a seemingly modest requirement, this request to have real names stymied the first programmer, who was convinced that the database would not read a space between the first name and last name and could only accept "firstnamelastname" or "firstname_lastname." It took a second consultation and more technical research to uncover that the immutable "truth" of cyberspace, where individuals exist only according to nicknames, could be changed to meet the demands of democracy.

asynchronous (Mitchell, 2000). Asynchronous communication in the form of bulletin boards or weblogs has become the ubiquitous standard mode of Web-based communication. But we wanted to mimic in cyberspace the effect of getting people together in the same place at the same time to confront new ideas. Hence, it had to be a synchronous application.

6. Equal: Democratic Architecture and Graphic Design

The look and feel of the technology had to be inviting and inclusive. An overly-designed space with an excessively modernist or classical design would preclude people from imagining how to use the space. Adopting a typeface and look that was too futuristic would alienate those ill-at-ease with the use of technology. The initial design emphasized a feeling of lightness, openness and air.

The challenge to present an open look and feel was greatest in the design and building of the discussion application, otherwise known as the Applet. How to create a sense of place and purpose with very little space? So many public-purpose buildings are intentionally monumental, imbuing the visitor with a sense of awe. Yet in this tiny space – minimized by the need to design for the smallest standard monitor size – room was needed to display a group dialogue with all its participants and also leave room to type contributions to the discussion, create ballots and share information.

Unchat eschews the chat convention of listing participant names in favor of a visual metaphor of the table.[5] Participants appear in text by their first and last names in a semi-circle around a table. This circumvents the need for graphically intensive video-based technologies to create a sense of group in a space. The name of the moderator appears at the top of the screen. The name of the participant appears in the middle of the screen. These are visual aids to help situate the participant in the space and at the table. When someone "speaks," his or her name flashes and changes its color to blue to highlight the speaker.

7. Facilitated

i. Selecting a Moderator

A good facilitator makes all the difference between a productive and a divisive meeting because he sets the tone and controls the agenda. To empower participants to engage in productive deliberation, this experiment had to build in a mechanism in which participants could elect a moderator democratically and revolt against him. Unchat permits the participants to set a moderator, vote for a moderator or rotate the moderation functionality from person to person. If

[5] Conversational groups very quickly develop a "culture" whereby people start to respond to each other by name and identify comments that they are responding to by cutting and pasting from that comment or referencing it in some way.

citizens meet to discuss an issue, an expert facilitator might moderate the first session. The next time the group convenes participants might take charge of their own dialogue and start electing moderators from among the ranks. Each moderator might serve a fifteen-minute term to allow adequate time for that moderator to get acclimated, but short enough to give several people a turn.

ii. Moderator Macros

One of the primary impediments to using technology to enhance democratic life is the hurdle that technology imposes on those who are not used to it. The problem stems from the opacity of the technology. The user must acclimatize to the technology, rather than the other way around. In developing a tool for democratic deliberation, it had to be easy-to-use. Given the demands of productive deliberation, the technology had to be simple. To this end, the moderator functionality includes four macro buttons entitled "post," "bounce," "hold" and "delete." These buttons allow the moderator to perform a series of standard tasks with one click. When a participant sends a message to the moderator, the moderator can broadcast it to the group ("post"). If the message is rude or otherwise irrelevant, the moderator can send it back to the sender with an explanation ("bounce"). A comment that is not yet relevant can be "held" and delete is an option of last resort. In this way, for example, the moderator can queue all the questions to a guest speaker, ordering them and eliminating redundant messages. The macro buttons make it possible to manage the communication at a distance.

Each macro button comes with pre-programmed comments or "tags" that explain the reasoning behind the moderator's action. For example, if a moderator wants to bounce a message, he must append a reason. In cyberspace – unlike real space – with one click the moderator communicates to the participant, "please stick to the subject" and bounces the message back without embarrassing the sender. This structures the conversation without a psychological cost to the participants. They experience no public shame from receiving a private message from the moderator. The tag system is designed to make the moderator's job easier while opening a channel of communication between the moderator and the participant.

The moderator macro tags can be changed at the start of every conversation. Though the software comes with pre-programmed defaults, participants can set-up a discussion with French or Spanish tags or with responses designed to appeal to children, for example.

iii. Autopass

With one click, the moderator can allow messages to broadcast directly to the group without awaiting moderator action. "Autopass" allows the new moderator to learn the ropes and assess the group dynamic while messages continue to post automatically at a reasonable interval. It also permits the moderator to get up and leave the room for a time without halting the discussion. Autopass is an important tool to teach and learn the skills and

timing of moderation.

8. Pluralistic and Inclusive: Devolving Power Downward: Role-Based Permissions

If a single administrator controls who can participate, the inclusiveness of the discussion may be threatened. Often the individual responsible for a cyber-dialogue must have technical ability, thereby further limiting the potential for democratic participation. Unchat clearly needed to give participants control over their own conversation, the ability to choose participants and set the agenda. People needed to have options to set-up and run their own conversations just as in real life; they call meetings, convene groups and organize spontaneous water-cooler colloquies. In real life, whereas any two people can have a conversation and set the agenda for it, in larger group settings usually one person has permission to book the conference room at the office or an assembly room at school. We wanted to offer a tool for managed discussion without imposing a gatekeeper.

Unchat has a site-wide administrator responsible for initial installation, set-up and role assignment. At the next level, it has "Topic Creators" who have the power to create new discussion themes, known as topics, and designate the users who may participate in them. Topic Creators have the power to create Unchat sessions under that topic, as well as to assign the role of Chat Creator. Chat Creators can create new Unchat sessions and accompanying rules. These roles are hierarchical. The site-wide administrator has all the permissions of a Topic Creator and a Chat Creator. A Topic Creator, in turn, has the power and permissions of a Chat Creator. A participant with access to a topic has access to all the Unchat sessions in that topic, but a participant who only has access to an Unchat session does not have access to other sessions within the topic. Multiple people can occupy each role. In other words, every member of the group can control it and be able to set up conversations, change the libraries and amend the rules, or only a handful, such as a teacher, may be empowered. The settings can always be changed.

Roles	**Site Administrator**	**Topic Administrator**	**Unchat Administrator**
Set-up Management -create & edit -create & customize library -create & customize quiz	Set-up **site**		
	Set-up **topics**	Set-up **topics**	
	Set-up **Unchats**	Set-up **Unchats**	Set-up **Unchats**
User Management	Manage **site** users		

Management -add, edit and delete participants	Manage **topics** users	Manage **topics** users	
	Manage **Unchats** users	Manage **Unchats** users	Manage **Unchats** users

The same tool allows the regulator to set-up a citizen consultation with invited stakeholders and then to turn over the tool to citizens to conduct their own networking.

This permission matrix has been designed for a combination of control and freedom to maximize the ability to devolve power downward without degenerating into unstructured chaos.

9. Deliberative Communication: Speak, Shout and Whisper

In the same way that Unchat allows different people to possess keys to the public meeting space through the assignment of access roles and permissions, it also allows participants democratically to choose the style of deliberation in the same way that in real life they could choose to debate in a café or a boardroom. With Unchat, we wanted participants to select their own rules of moderation and modes of speaking.

Ordinary conversation has quiet interruptions and loud interjections, private sidebars and caucusing. The ability to vary the conversational cadence is often essential to the effectiveness of the dialogue. In a controlled and well-ordered conversation, the occasional impassioned outburst signals the importance of an issue to the speaker. Unchat mimics this by allowing the participant to choose between speaking, shouting and whispering his message. When a participant types a message and hits return, the software will, by default, send that message to the moderator, who decides whether or not to post it. Understanding that sometimes people need to interrupt to make an impassioned point, the participant can shout and bypass the moderator, broadcasting the message directly. In order to prevent the moderator from taking any blame for the interruption, a shouted message is labeled.

A whisper is the equivalent of leaning over in your chair at a meeting and remarking quietly to the person next to you. Suddenly in cyberspace anyone in the room is next to you. I can whisper to someone in Singapore without interrupting the flow. Whispering can be essential for a few people to discuss and agree on a position before broadcasting their view.

In real-life, if someone interrupts repeatedly, he will be asked to refrain or leave the room. This conversational etiquette is missing in the typical cyberspace chat room where interruption is the dominant mode of expression. To address this, we made Unchat's shout and whisper features configurable. A participant can interrupt by typing a message and selecting shout, but the shout button will stop working after the participant has used up his pre-set number of

interruptions. For a more anarchic, free-for-all dialogue, the number can be set very high. To control interruptions, the number of shouts can be set low. By imposing this rule explicitly, participants reflect on the rules of communication and adjust their behavior accordingly. It follows logically that a participant will be judicious in what he says by interruption if he knows that he can only do so five times. By highlighting the rules and making the structures visible, people begin to conform their behavior to the constraints.

10. Informed and Public: Archiving

A deliberative discussion requires the structure created by facilitation, but it also requires the development of institutional memory to allow one conversation to build and grow on the next. A Web conference, unlike a conference call, allows for easy transcription of a conversation. This ability to record the conversation also makes the discussion more inclusive by allowing those who cannot participate to keep abreast of the dialogue.

With Unchat, every conversation is logged in real time. Someone entering late can see what was said at the beginning of the conversation. This is far less disruptive than entering a real-life meeting late and having to ask someone what took place. The latecomer can catch up on what was said and immediately participate in the conversation, whereas in a real-life conversation latecomers may be hesitant to jump in.

Unchat has two kinds of logs: a transcript of the conversation and a history of all the actions and statements made, including the moderator's various actions, like bounce, hold and delete. The history is intended to make the moderator more accountable for his actions. However, it is more than a control against moderator abuses, it is also a mechanism to study the effectiveness of different rule structures and their impact on the group. The next version of the software should include text fields for summarizing transcripts and a function for automatically e-mailing transcripts to participants. Additional functions might include search tools for finding particular postings, such as threading and collaborative filtering technology to reorganize and sort comments by substance instead of chronology.

12. Informed: Integrated Libraries

By integrating content into the discussion tool, Unchat connects information to the conversation. The original Unchat design called for three levels of library: a universal library, a topic library and a personal "my" library, each one with a standard document-organizing taxonomy. But the taxonomy, designed to make using the library a easier, proved to be unworkable. Needed resources got buried amidst too many categories. There also turned out to be little need for a universal library independent of the topic of discussion.

Instead, the redesign of the library structure incorporated a flexible content management engine to make it possible to create custom libraries associated with a particular topic, Unchat session or participant. A Topic Library can be

the repository for a class syllabus and all the materials required for a semester's civic or educational discussion. For each individual weekly session, that week's organizer creates an "Unchat Library" by downloading relevant materials from the topic library and any independent materials of the organizer's choice. The organizer can also assign participants to perform a certain task, such as writing an essay or performing research on the Web, and then upload those results to the personal "My Library." In this way, participants can do hands-on learning without corrupting the library structure. Between one and everyone can have the right to edit the libraries.

13. The Deliberative Speed-Bump: Navigation

In real life, meetings are often preceded by the distribution of working papers or documents. Participants might also be required to attend an introductory lecture or a training session before being allowed to participate in a more advanced working group. Unchat is designed to encourage this reflection and preparation prior to discussion.

Pundits laud the speed of the Internet – how it makes everything that much faster (Gleick, 1999). However, we were interested in taking advantage of the Internet's flexibility to slow people down. The navigation of Unchat is expressly designed to promote the goals of deliberation. A participant wanting to jump into a conversation must first pass through the library. If so configured, he will also encounter a topical quiz, designed to frame the issues for debate and prompt reflection. While no person can be forced to read, designing the system such that participants interact with the content makes deliberation easier. This navigation exploits the Web's informational resources and ties them more closely to the human interaction that takes place inside an Unchat forum.

14. The Virtual Speed-Bump: Point-Counterpoint

After the library, participants may be asked to take a "quiz." The quiz is not a test but a point-counterpoint interaction with the participant to frame the issues for conversation. When the quiz-taker answers a question, the system responds to that answer. For instance, if this user answers with a typically left-wing point of view, the system might suggest a right-wing argument and further reading. Quiz functionality could eventually be used in a variety of ways, including testing participant knowledge before and/or after a discussion, as a sorting mechanism for organizing discussion groups according to viewpoint (i.e. to mix or segregate people of different viewpoints based on their answers to quiz questions), to poll opinions before as well as after a discussion, to measure feedback to a discussion and organize deliberative focus groups. This reduces the cost of constructing pluralistic groups and ensuring diversity of opinion.

CONCLUSION

This first fully functional real-time cyber-deliberation tool that allows a group to set up a discussion according to democratic principles and to self-moderate its own conversation enables new forms of dialogue and collaboration never before possible. The technical architecture of the software is flexible and will now allow experimentation with different conversational rule-settings. It will also lead to the development of new tools. In addition to Whisper and Shout, for example, there could be a new category of speech called "guffaw" to signal heckling or "yawn" to express boredom. Unchat and its progeny might incorporate the choice whether to speak accountably or anonymously and whether or not to have comments logged on the transcript or to appear "off the record." Providing such options might foster greater openness in controversial contexts. Moderator term limits might be imposed. The timer on the built-in voting tool could be set to increments of days or weeks, rather than minutes, to encourage thoughtful and deliberative discussion prior to decisionmaking. Additional graphical tools might be incorporated to represent the opinions in the room visually and make the culture of the conversation more transparent. These new rules will impact the way participants interact with one another. In order to develop best practices for doing deliberation on-line, the next step is to test which rules work best to accomplish which goals.

Eventually, with a "toolkit" of available deliberative software, we can begin to institutionalize cyber-democracy to enable citizen consultation and self-governance across domains. With the right tools and armed with knowledge of how to use them, we can experiment with new ways to improve democratic participation and with better methods of participation on-line from citizen juries to deliberative polls to consensus councils. For fifty years after World War II, we have understood that television and other media are important vehicles for teaching the values of democracy. The technology may be changing but its impact for democracy has not.