1998

Are We Ready For Mediation in Cyberspace?

Joel B. Eisen

University of Richmond, jeisen@richmond.edu

Follow this and additional works at: http://scholarship.richmond.edu/law-faculty-publications

Part of the Computer Law Commons

Recommended Citation


This Article is brought to you for free and open access by the School of Law at UR Scholarship Repository. It has been accepted for inclusion in Law Faculty Publications by an authorized administrator of UR Scholarship Repository. For more information, please contact scholarshiprepository@richmond.edu.
Are We Ready for Mediation in Cyberspace?

Joel B. Eisen*

The idea of mediating disputes online has captured the imagination of the dispute resolution profession. Mediators propose creating “spaces” in cyberspace where disputes would be

* Associate Professor of Law and Director, Robert R. Merhige, Jr. Center of Environmental Law, University of Richmond School of Law. B.S., Massachusetts Institute of Technology; J.D., Stanford Law School. I thank Zygmunt Plater, Karen Donegan Salter, Lee Scharf, Michael Lang, and my colleagues, Michael Allan Wolf, W. Wade Berryhill, Ann Hodges, Paul Zwier, John Paul Jones, and Tim Coggins for their invaluable assistance and comments on earlier drafts of this article. I am indebted to Paul Birch for his efforts to assist me in understanding the dynamics of online communities. I would also like to gratefully acknowledge the Law School for its generous financial support of my research, and thank student research assistants Terrell Mills and Bethany Lukitsch Hicks for their help and insights about online communities. Last, but certainly not least, I would like to thank my editor for life, Tamar Schwartz Eisen. The ideas and opinions expressed herein are my own, and I am responsible for any errors or omissions.

1. At its most basic level, mediation involves a third party who assists the disputing parties in reaching a voluntary resolution of their dispute. See, e.g., Henry H. Perritt, Jr., Electronic Dispute Resolution: An NCAIR Conference (visited Sept. 30, 1997) <http://www.law.vill.edu/ncair/disres/perritt.htm> [hereinafter Perritt, Electronic Dispute Resolution]; see also Nancy Kubasek & Gary Silverman, Environmental Mediation, 26 Am. Bus. L.J. 533, 536 (1988); V. Lee Scharf, Environmental Dispute Resolution: Annotated Bibliography, Essays and Guide 1 (Sept. 18, 1997) (unpublished manuscript, on file with author) (reporting that the EPA’s ADR Project Coordinator defines environmental mediation as “a voluntary and informal process in which the participants select a neutral third party to assist them in reaching consensual agreement concerning environmental decisions either at issue or in dispute”).

The familiar observation about neutrality is worth repeating here. The mediator’s function is to assist the parties “not by imposing rules on them, but by helping them to achieve a new and shared perception of the relationship, a perception that will redirect their attitudes and dispositions toward one another.” Kubasek & Silverman, supra, at 536 (quoting Lon Fuller, Mediation—Its Forms and Functions, 44 S. CAL. L. REV. 305, 325 (1971)). The mediator is not a decision maker; she cannot “impose a solution on either side.” Richard S. Granat, Creating an Environment for Mediating Disputes on the Internet (visited Sept. 25, 1997) <http://www.law.vill.edu/ncair/disres/granat.htm>.

2. The term “cyberspace” is credited to science fiction writer William Gibson. See, Todd H. Flaming, The Rules of Cyberspace: Informal Law in a New Jurisdiction, 85 ILL. B.J. 174, 174 (1997); Ethan Katsh, Law in a Digital World: Computer Networks and Cyberspace, 38 VILL. L. REV. 403, 414 n.27 (1993) [hereinafter Katsh, Law in a Digital World]. The term represents the “sense of place created by interaction and communication over online computer environments such as the Internet.” Flaming, supra, at 174.
resolved electronically. Online mediation is not the mere stuff of conjecture. Experiments are already underway on a small scale, and it is likely that more online mediation will take


4. Several ongoing online ADR projects are noteworthy. The “Online Ombuds Office” is “an attempt to bring the resources of an ombudsperson to disputes arising out of online activities.” Katsh, ADR in Cyberspace, supra note 3, at 966; see Online Ombuds Office (visited http://September 9, 1998) <http://129.119.139.27/center/ombuds>. The On-Line Mediation Service is an experiment in online mediation of small-scale disputes sponsored by the Program for Dispute Resolution at the University of Maryland School of Law and the Center for On-Line Mediation. See Maryland’s On-Line Mediation Service (visited Sept. 7, 1998) <http://mediate-net.org>. While it is not a mediation service, the “Virtual Magistrate” project, a “specialized, on-line arbitration and fact-finding system” for certain online disputes, has attracted considerable attention. Virtual Magistrate (visited Sept. 9, 1998) <http://vmag.vclp.org/>; see also Cona, supra note 3, at 987-90 (discussing the Virtual Magistrate project (to which the author is a consultant), the Online Ombuds Office, and University of Maryland projects); Friedman, supra note 3, at 700-05 (describing the Virtual Magistrate project); Katsh, ADR in Cyberspace, supra note 3, at 964-76 (describing the Virtual Magistrate project, the University of Maryland project, and the Online Ombuds Office); Lide, supra note 3, at 219-20 (describing the Virtual Magistrate project); Granat, supra note 1 (describing the University of Maryland project).

Recent conferences and meetings devoted to online ADR that indicate the considerable interest in this type of mediation include the Conference On-Line Dispute Resolution sponsored by the National Center for Automated Information Research (NCAIR), held on May 22, 1996, in Washington, D.C., see NCAIR, Dispute Resolution Conference (visited Sept. 25, 1997) <http://www.law.vill.edu/ncair/disres> (listing papers submitted to the conference), and the panel discussion on Conflict Resolution on the
place. Cyberspace seems especially well suited to a process that allows parties to resolve disputes without resorting to formal law. Because the Internet makes direct links of communication available to anyone, it empowers its users to bypass existing legal institutions. Decision making in cyberspace is already private and decentralized. "There is," says Dean Henry Perritt, "no such thing as a president or board of directors of the Internet." In this decentralized environment, we could develop private dispute resolution fora where participants, not judges, would be decision makers. In multiparty disputes, public interest groups already well represented on the Internet could use the Internet's grass-roots, pluralistic architecture to develop information for use in the proceeding.

Among dispute resolution professionals, there is an almost limitless optimism about online mediation's potential. One article confidently asserts that, "In a relatively short amount of time, we will have 'virtual' ongoing mediation and other confidential decision making forums on the Internet . . . ." Another proponent claims mediators could create "a virtual [dispute reso-
olution] architecture that reflects our profession's highest aspirations." Mediators assert online dispute resolution can be done with today's technology. They believe it will save the parties money (particularly travel costs), foster enhanced communication among participants, and reduce the emotional temperature of disputes.

Many mediators believe the online setting presents straightforward challenges that can be readily surmounted. I disagree. At this stage of the Internet's development, it is still too soon to mediate disputes online because mediators cannot adequately address many difficult issues. Electronic communication is no substitute for the ability of face-to-face conversations to foster important process values of mediation. Given the profession's current orientation to listening and processing oral information, mediators would find it largely impossible to translate their skills to the online setting. The predominantly written character of the online mediation proceeding would create communication breakdowns; this is ironic, as mediators claim disputants' inability to communicate is precisely why mediation is necessary in the first instance. Finally, using computers for decision making

13. See Katsh, ADR in Cyberspace, supra note 3, at 953 n.2 ("[T]he technology is there for widely separated parties to meet in cyberspace, exchange and analyze complex information on preferences and needs, do deals, and execute binding settlements." (quoting G. Richard Shell, Computer-Assisted Negotiation and Mediation: Where We Are and Where We Are Going, 11 NEGOTIATION J. 117, 121 (1995))).
14. See infra notes 159-64 and accompanying text.
15. See infra notes 92-104 and accompanying text.
16. See infra notes 105-17 and accompanying text.
17. Participants in the conference fora have generally been optimistic about overcoming any obstacles to more widespread use of online mediation. See supra note 4. In a recent discussion, an experienced mediator expressed similar optimism. See Telephone Interview with Professor Michael Lang, Former Director of the Masters in Conflict Resolution Program, McGregor School, Antioch University (Oct. 1, 1997) [hereinafter Telephone Conversation with Professor Michael Lang]. In the fall of 1997, Professor Lang joined the Mediation Information & Resource Center (MIRC) as the chief editor for two Web-based publications, Resolution and MIRC News. See Mediation Information and Resource Center (visited Sept. 9, 1998) <http://www.mediate.com>.
18. See, e.g., Harry T. Edwards, Alternative Dispute Resolution: Panacea or Anathema?, 99 HARV. L. REV. 668, 678 (1986) (terming this the "broken-telephone" theory of dispute resolution). In the environmental mediation context, see Douglas J. Amy, Environmental Dispute Resolution: The Promise and the Pitfalls, in ENVIRONMENTAL POLICY IN THE 1990s TOWARDS A NEW AGENDA 217 (Norman J. Vig & Michael E. Kraft eds., 1990) (observing that mediation proponents claim that mediation participants "may find that the controversy has been caused largely by miscommunication and misunderstanding").
MEDIATION IN CYBERSPACE

raises fundamental concerns about societal ordering in the technology age. Online mediation could cede substantial authority for decision making to those who have familiarity with computers and their use.

This article addresses these and related issues. I use environmental mediation as a paradigm for online resolution of multiparty disputes, as mediation is the dominant form of ADR in environmental enforcement actions. In Part I, I provide a brief model of a hypothetical multiparty environmental mediation proceeding. I describe limits on environmental mediation common to both the online and offline settings, and provide a model for analysis of the hypothetical proceeding. In Parts II and III, I consider limits on online mediation's potential that derive from the electronic character of the proceeding. In Part II, I discuss challenges for online mediation and conclude that such mediation, particularly complex proceedings such as environmental disputes, should be deferred for the time being. In Part III, I discuss additional concerns about the flow of communication in online mediation suggested by an analogy to the dynamics of online communities. My example is the avocational or scholarly groups in which participants post electronic mail (E-mail) messages to a common forum (mailing list forums, or "listservs"), which have elements in common with the hypothetical mediation proceeding. Insofar as these groups suggest that the mediator and participants would have difficulty communicating with

19. In addition to mediation, contemporary ADR practice in environmental law (as discussed in this article) encompasses virtually all of the numerous techniques that assist disputing parties to reach settlements (often with the assistance of third-party neutrals), rather than proceed to or continue with litigation or the extensive adversarial procedures of federal environmental rulemaking. These techniques include facilitation, convening, arbitration, fact-finding, mini-trials, appointment of special masters, and structured public participation dialogues. See generally ENVIRONMENTAL PROTECTION AGENCY, STATUS REPORT: USE OF ALTERNATIVE DISPUTE RESOLUTION IN ENFORCEMENT AND SITE-RELATED ACTIONS (1997) [hereinafter EPA ADR DRAFT STATUS REPORT]. For a description of the various ADR techniques, see LEONARD L. RISKIN & JAMES E. WESTBROOK, DISPUTE RESOLUTION AND LAWYERS 2-6 (2d ed. 1997). See also Ann L. MacNaughton, Collaborative Problem-Solving in Environmental Dispute Resolution, NAT. RESOURCES & ENV'T, Summer 1996, at 3-4 (distinguishing among ADR techniques used in resolving environmental disputes on the basis of a continuum involving criteria such as the voluntariness of the proceeding); Charlene Stukenborg, Comment, The Proper Role of Alternative Dispute Resolution (ADR) in Environmental Conflicts, 19 U. DAYTON L. REV. 1305, 1306 (1994) (describing the use of each technique in the environmental context).

20. See infra notes 52-66 and accompanying text.

21. See infra notes 165-93 and accompanying text.
each other, the communication dynamics in listservs offer more reasons for caution about online mediation.

I argue that the limitations of online mediation at this stage of the Internet's development are too great. Online mediation is an unwise idea until at least two substantial developments take place. First, the mediation profession must fundamentally reorient itself to take account of the different demands of the online medium. Second, and no less important, technology must progress to the point where replicating face-to-face interaction is universal, inexpensive, and easily understood by every participant.

I. A MULTIPARTY ONLINE MEDIATION PROCEEDING

A. Modeling a Hypothetical Online Mediation Process

The great paradox of online mediation is that it imposes an electronic distance on the parties, while mediation is usually an oral form of dispute resolution designed to involve participants in direct interpersonal contact. Obviously, this means that today's mediation practices cannot simply be duplicated in cyberspace. Cyberspace is not a "mirror image" of the physical world. Its properties of time and space are different, and one's presence there is based solely on electronic communication. Online mediation is different from any dispute resolution "space" in the physical world.

22. Paradoxes abound in mediation. For example, a mediator's role is defined by neutrality at the same time that the mediator asks the parties to trust her to help them reach a resolution of their dispute. See Scharf, supra note 1, at 34-35 (citing several sources).
23. See, e.g., Perritt, Electronic Dispute Resolution, supra note 1.
24. See Katsh, ADR in Cyberspace, supra note 3, at 970-71 ("It is, in addition, necessary to understand the nature of ADR processes so that what may not be possible to duplicate in cyberspace can be redesigned . . . .").
25. See id. at 955.
28. The use of a spatial analogy here is quite deliberate. Lawrence Lessig asks, "Just what is it—cyberspace—apart from what we can describe by analogy?" Lessig, supra note 26, at 1744. The world of architecture and construction offers ready analogies for Internet users: incomplete web sites are "under construction," and the Internet is said to be transforming into "our new town square." See generally Blair Kamin, Spatial Relations: The Internet Brings Us Together, But Is It the "New Town
would be connected electronically but remain where they are, unlike a conference center where parties have changed their surroundings and are often ready to consider a new perspective on their dispute. In online mediation, there is no comparable sense of "getting away," as the participants create a new environment without leaving their familiar space.

Communication is also different. The oral nature of a telephone conference call, for example, is not the same as textual communication online. Conventions of personal interaction that would apply in a telephone call or a face-to-face conference do not apply in cyberspace. One's ability to express emotion online is different; cyberspace currently "comes without all five senses attached." Oral expressions of feelings in a face-to-face setting have a richer and more meaningful context than written expressions of feelings in an E-mail exchange.

---


Online mediation proponents are comfortable with the analogy to the construction of physical-like "spaces," however unlikely it may be to think of a "space" or "place" in a medium that is an electronic construct. For an example of this metaphor in the online mediation context, see American University Conference, supra note 3, at 454 (remarks of Professor Ethan Katsh):

If you can create a space on the Internet where people are comfortable transacting and exchanging data and information, then I think you can create spaces on the Internet that have parallels to many physical places where we are comfortable. I think that dispute resolution areas are exactly these types of places.

Id.

29. See Hardy, supra note 3, at 232.

30. See id. ("[F]ace-to-face conferences feature a strong sense of leaving one's day-to-day world behind and thereby freeing one's attention for the new matters at hand. Because e-mail conference participants remain at their offices or homes, they have no corresponding sense of getting away.").

31. Telephone mediation is being used already for some mediation proceedings. See Yamshon, supra note 3 (discussing a telephone mediation proceeding); Granat, supra note 1 (discussing similarities between telephone mediation and online mediation).

32. See Katsh, *Law in a Digital World*, supra note 2, at 423-24 ("One communicating today using a computer gives up some of the personal quality that comes from hearing the human voice on the telephone as well as from obtaining the immediate feedback that occurs as two people are connected at the same time.").

33. Kamin, supra note 28, § 5, at 1 (quoting Anders Nereim, School of the Art Institute of Chicago).

34. See id.

The worst of cyberspace's] social architecture makes for communication that is, at best, primitive. . . . Where people in different places type text on keyboards and watch others' words appear on their computer screens, one can only peck out the letters "lol" — shorthand for "laughing out loud" — when
I. Mechanics of a proceeding conducted by E-mail

It is difficult to design an appropriate model process for online mediation. Divergences from the offline setting pose serious challenges. Mediation practitioners and participants cannot agree on a basic model of mediation, let alone one that would apply to this new setting with which we have virtually no experience. Mediation is far more complex than we sometimes make it out to be. There are many different types of mediation. Not all mediation proceedings are alike; different mediators follow different procedures; and mediation is often structured differently to address different types of disputes. Moreover, advances in technology might make any model process obsolete in a matter of a few years. Unfortunately, the choice of process does matter: process decisions often influence the outcome of mediation proceedings.

someone tells a good joke. The cavemen sitting around the fire chewing mastodon meat had it better than that. At least they could hear each other grunt as they recounted the day's hunt.

Id.


36. The recent debate over whether mediators should evaluate the parties' positions or simply facilitate their agreement illustrates just one of the many ways in which mediations may differ from one another. See Jeffrey W. Stempel, Beyond Formalism and False Dichotomies: The Need for Institutionalizing a Flexible Concept of the Mediator's Role, 24 FLA. ST. U. L. REV. 949 (1997) (noting that debate exists over whether mediators should be "evaluative" or "facilitative," but claiming that this is a false split that may be reconciled); see generally Robert A. Baruch Bush & Joseph P. Folger, The Promise of Mediation: Responding to Conflict Through Empowerment and Recognition (1994) (suggesting evaluative mediation as an alternative to current practices); Ann C. Hodges, Dispute Resolution Under The Americans With Disabilities Act: A Report to the Conference of the United States, 9 ADMIN. L.J. AM. U. 1007 (1996); Lela P. Love, The Top Ten Reasons Why Mediators Should Not Evaluate, 24 FLA. ST. U. L. REV. 937 (1997); Carrie Menkel-Meadow, What Will We Do When Adjudication Ends? A Brief Intellectual History of ADR, 44 UCLA L. REV. 1613, 1617 (1997) [hereinafter Menkel-Meadow, What Will We Do].


38. In fact, mediators are often unaware of the process assumptions they make and how they affect the disputants. See Scharf, supra note 1, at 47.

The choice of process, I believe, is no less important in cyberspace than in the offline setting. To invoke the architecture metaphor, "design matters as much in cyberspace as it does in physical space." Kamin, supra note 28, § 5, at 1.
With these qualifications in mind, I offer the following model process for purposes of evaluation. The technology in online mediation must be easy to use. Thus, I propose that a hypothetical mediation proceeding should be conducted by E-mail. Ongoing online mediation experiments currently use E-mail because mediators and others claim it is the easiest technology to use. The rapid evolution of the Internet guarantees that even more revolutionary opportunities for interaction will soon be available. New forms of electronic meeting places may eventually allow participants to simulate face-to-face meetings.

39. There are some rather obvious reasons for reaching this conclusion. To cite just one, many potential participants in mediation already harbor some doubt that ADR is appropriate for their disputes. See infra note 73 and accompanying text. A steep technology learning curve, and the associated frustration of being unable to use the dispute resolution technology, could cause some to balk at the idea of mediation altogether. The use of sophisticated technology exacerbates disparities in access to and familiarity with computer resources. See infra notes 137-64 and accompanying text.

But there is another idea at work here. Not everyone needs or wants "cutting-edge" technology; in fact, our society is replete with settings where people prefer "low-tech" solutions to the advanced technology available to them. See, e.g., Robert Ellis Smith, Corporations That Fail the Fair Hiring Test, 88 BUS. AND SOC. REV. 29 (1994) (noting that employers are increasingly relying on low-tech methods in hiring); Janet Bodnar, Making Money Is All in the Game, KIPLINGER'S PERS. FIN. MAG., June 1996, at 85, 86 (discussing the superiority of low-tech tools over high-tech tools for teaching kids about money); Margaret Knox, High-tech World Taps Typewriters—Low Tech Machinery Holds Place in Offices, HERALD-SUN (Durham, N.C.), April 27, 1997, at F1 (recounting the virtues of low-tech equipment in the high-tech work place).

40. See, e.g., Granat, supra note 1 (noting that in the On-Line Mediation Service, "E-mail will be used by the mediator to communicate with each of the parties"). The On-Line Mediation Service also supports the "Internet Relay Chat" technology, which enables users to communicate textually in real time. See id. This communication, being textual, has many of the same drawbacks for mediation as E-mail. See infra Part II. Technology such as the "Instant Message" capability available on the America Online service is similarly limited.

In the On-Line Mediation Service, the mediator and the parties may agree to use more sophisticated electronic communication tools such as electronic conferencing in addition to communicating by E-mail. See Maryland's On-Line Mediation Service: How does on-line mediation work? (last modified Sept. 13, 1996) <http://mediate-net.org/frequent1.htm#work> [hereinafter Maryland's On-Line Mediation Service]. Because this depends on participants having "access to the required equipment," I assume that this is not an option that all participants would agree upon in an online environmental mediation proceeding today. See id; see also infra notes 137-59 and accompanying text. Professor Katsh, who serves as the project co-director for the University of Massachusetts Online Ombuds Office, notes that, "Our assumption has been that access to any tools we make available should be easy to use by disputants. Thus, while software such as CUSeeMe can make video conferencing possible and affordable, it is not likely that we shall avail ourselves of this at the beginning." Katsh, ADR in Cyberspace, supra note 3, at 970.

41. See, e.g., Perritt, Electronic Dispute Resolution, supra note 1.

42. See Yamshon, supra note 3, at 34; Kamin, supra note 28, § 5, at 1
Until technology allows for full personal interaction over the Internet, however, I assume the use of E-mail.

In online mediation, the mediator and disputants would be separated by a physical distance. Each party would use its computer to generate E-mail messages it would send to the others. To ensure that participants learn about all important messages, I assume that all E-mail communication must pass through the mediator as an intermediary, with the possible exception of interparty caucuses. Thus, participants would send E-mail messages to the mediator. The mediator would open and read each message, and would rebroadcast it to other participants, perhaps editing or paraphrasing it before doing so.

The process should take advantage of what mediators perceive as the benefits of computer technology, such as the asynchronous character of E-mail (each user can launch a message at the same time without waiting time). For this reason, I assume a dynamic process, that is, one not conducted wholly in real time. While the mediator might impose time limits for certain responses, participants would be free to compose others at their leisure and to respond when they felt prepared to do so. I also assume that common documents or other resources could be posted on a web site available to all participants with Internet access, allowing for ready viewing. Finally, I assume interaction among participants is not a "hybrid" of offline and online contacts. A face-to-face meeting among participants could take place early in the proceeding. Some mediators claim this could foster a sense of interdependence among the participants and

("Proponents of the Internet argue that just as television advanced far beyond its pioneer days of black and white, so the Internet eventually will offer a more sophisticated means of communication."); Perritt, Electronic Dispute Resolution, supra note 1 (commenting on the likely availability of more sophisticated technology for personal interaction).

43. See infra notes 196-99 and accompanying text.
44. See infra notes 215-28 and accompanying text.
45. See Katsh, Law in a Digital World, supra note 2, at 424; Perritt, NII Initiative, supra note 3, at 1012.
46. As I note later, conducting online mediation in real time would require organizations to dedicate their computers to the proceeding, which could have serious adverse consequences. See infra notes 145-50 and accompanying text. It would also provide an advantage to those who could compose computer text more quickly. See supra notes 145-50 and accompanying text.
47. See Maryland's On-Line Mediation Service, supra note 40 (noting that there is no face-to-face meeting unless the parties desire this "traditional" alternative).
avoid complications later. Any more personal interaction would be precluded for cost considerations or other reasons.

2. Focus on a multiparty environmental dispute

Online mediation experiments currently focus on mediation of one-on-one disputes such as family law disputes. While no multiparty dispute has been mediated online, there is considerable interest in doing so. Involving multiple participants would maximize the purported advantages the computer offers. Online multiparty mediation would utilize and test such capabilities as the asynchronous character of E-mail. It would also test proponents' claims about online mediation's advantages; for example, there could be greater cost savings due to reductions in travel if more participants were involved. Many multiparty disputes are recursive: parties tend to come and go, issues resurface upon further reflection by the parties, and so forth. The E-mail technology might allow for better handling of such disputes.

For these reasons, I assume the existence of an online multiparty mediation proceeding, in this case an environmental mediation proceeding, that could involve perhaps as many as hundreds of disputants. Mediation involving the parties to an environmental enforcement dispute would be a typical but hardly exclusive type of multiparty online mediation proceeding. A possible use of online mediation could involve resolution of a dispute under CERCLA, as mediation is now increasingly used

---

48. This claim was, for example, made by an experienced mediator in a conversation with me about online mediation. See Telephone Conversation with Professor Michael Lang, supra note 17.
49. The University of Maryland's On-Line Mediation Service, for example, focuses on domestic disputes and "health care disputes between either consumers and insurance companies, or consumers and health care device manufacturers." Granat, supra note 1.
50. See Telephone Conversation with Professor Michael Lang, supra note 17.
51. See, e.g., Scharf, supra note 1, at 1 (describing this feature of environmental disputes). A recent example of the complexity of mediation in environmental disputes is the case study described in Janet C. Neuman, Run, River, Run: Mediation of a Water-Rights Dispute Keeps Fish and Farmers Happy—For a Time, 67 U. COLO. L. REV. 259 (1996).
52. 42 U.S.C. §§ 9601-9675 (1994 & Supp. I 1995). Beginning shortly after the initial enactment of CERCLA, a wide spectrum of interest groups and commentators endorsed increasing use of voluntary resolution of CERCLA disputes. See, e.g., Patricia M. Wald, Negotiation of Environmental Disputes: A New Role for the Courts?, 10 COLUM. J. ENVTL. L. 1, 8 (1985) ("It is obvious to almost everyone that voluntary settlements are the best and perhaps only hope for Superfund's success."). At that time, ADR in environmental disputes was a "promising infant with unknown potential and a short
at Superfund sites. For example, the EPA might bring an action against the parties responsible for contaminating a Superfund site and then propose to retain a mediator to decide remedy design and implementation issues. Or it might suggest mediation for the often contentious process of allocating the response costs among the responsible parties. In either case, track record." Id. at 11. Five years previously, environmental ADR was considered "novel." Lawrence Susskind & Alan Weinstein, Towards a Theory of Environmental Dispute Resolution, 9 B.C. ENVTL. AFF. L. REV. 311, 352 (1980). Later, the EPA's Region V Office of Regional Counsel conducted a pilot mediation program in 1991 that involved six cases. See EPA ADR DRAFT STATUS REPORT, supra note 19, at 4; see also Lynn Peterson, The Promise of Mediated Settlements of Environmental Disputes: The Experience of EPA Region V, 17 COLUM. J. ENVTL. L. 327 (1991) (describing the mediation experiment in detail). In five of these cases, mediation resulted in settlement agreements. See EPA ADR DRAFT STATUS REPORT, supra note 19, at 4.

Since then, ADR (and mediation in particular) has become a regular feature of enforcement actions under CERCLA. In fiscal years 1995 and 1996, the years for which most recent information is available, the EPA's use of ADR expanded dramatically. Environmental mediation has been encouraged and promoted by amendments to federal environmental statutes, specialized federal statutes on ADR, and governmental policy. See EPA ADR DRAFT STATUS REPORT, supra note 19, at 3-4 (describing statutes, regulations, and policies promoting ADR, such as the Administrative Dispute Resolution Act of 1990, 5 U.S.C. §§ 571-484 (1994 & Supp. II 1996), Civil Justice Reform Act ("CJRA"), 28 U.S.C. §§ 471-482 (1994 & Supp. I 1995), and the EPA's 1987 Guidance Memo on ADR, U.S. ENVIRONMENTAL PROTECTION AGENCY, GUIDANCE ON THE USE OF ALTERNATIVE DISPUTE RESOLUTION IN EPA ENFORCEMENT CASES (1987)); id. at 11-18 (setting forth summary tables describing uses of mediation at Superfund sites).

53. Since the early 1990s, mediation has become a prominent means of voluntary resolution of CERCLA disputes. The EPA claims "substantial progress" toward a goal of making the use of ADR routine in enforcement actions. See EPA ADR DRAFT STATUS REPORT, supra note 19, at 10; see also Lois J. Schiffer & Robin L. Juni, Alternative Dispute Resolution in the Department of Justice, NAT. RES. & ENV'T, Summer 1996, at 12 (describing the DOJ's involvement in environmental mediation). One mediator has termed mediation a "routine" feature of Superfund disputes. Francis Flaherty, Superfund and ADR A Good Fit, in CPR INSTITUTE FOR DISPUTE RESOLUTION, ENVIRONMENTAL & HAZARDOUS WASTE ADR III-38 (1994) (quoting Daniel Dozier of Clean Sites, Inc. and quoting the statement of Linda Singer, Center for Dispute Settlement, that there has been "an upsurge in Superfund ADR").

54. The EPA may bring cost recovery actions against any or all of the parties enumerated in Section 107 of CERCLA, 42 U.S.C. § 9607 (1994).

55. The Remedial Design/Remedial Action (RD/RA) step, in which the preferred remedy is designed and implemented, follows the Record of Decision (ROD), which memorializes the remedy. See W. RODGERS, ENVIRONMENTAL LAW § 8.5, at 724-48 (2d ed. 1996). Mediation at this stage is designed to resolve issues similar to those encountered in construction projects: allocating responsibility for performing the work, scheduling the work, and so forth. See, e.g., EPA ADR DRAFT STATUS REPORT, supra note 19, at 5 (describing a pilot project in EPA Region 1 in 1994 involving mediation at two NPL sites on issues of developing "a scope of work for remedial design efforts and a remedy implementation plan").

56. CERCLA liability is joint and several. See, e.g., Joel B. Eisen, "Brownfields of Dreams": Challenges and Limits of Voluntary Cleanup Programs and Incentives, 1996...
the EPA would invite the parties to agree voluntarily\textsuperscript{57} to mediate under the terms of a negotiated agreement.\textsuperscript{58} The EPA and the parties would contract with a mediator, who would bring the participants online together and would assist them in resolving their dispute.\textsuperscript{59}


\textsuperscript{57} See U.S. Environmental Protection Agency, The Alternative Dispute Resolution Fact Sheet (last modified May 1995) <http://es.epa.gov/oeca/osre/950500-2.html> [hereinafter EPA ADR Fact Sheet] (stating that mediation is voluntary). To date, the EPA has not made the use of ADR mandatory in any case. See Scharf, supra note 1, at 14.

In the few environmental situations when ADR has been mandatory, the results have been disastrous. Perhaps the most noteworthy of these is the failure of ADR mechanisms embodied in state solid and hazardous waste siting statutes, which I discussed in another forum by comparison to nascent state brownfields policies. See Eisen, supra note 56, at 989-1030.

\textsuperscript{58} See, e.g., EPA ADR Fact Sheet, supra note 57 (describing the process for establishing a mediation agreement).

\textsuperscript{59} In some instances, it would be necessary to establish the universe of participants before proceeding. See Stukenborg, supra note 19, at 1310 ("[E]ven such basic issues as who will participate in the negotiations . . . must be worked out during [the] preliminary stage of the process." (quoting Gail Bingham \& Leah V. Haygood, Environmental Dispute Resolution: The First Ten Years, ARB. J., Dec. 1986, at 10-11)). Unlike, say, mediation in domestic disputes, it is not always so easy to identify a constrained group of parties interested in a CERCLA dispute. Potentially responsible parties (PRPs) are not the only entities interested in mediation. A neighborhood group might have considerable interest in making sure a polluter does not avoid paying for its misdeeds. Identifying interested parties is less problematic in CERCLA cost allocation mediation, however, if the nature of the proceeding is to divide fixed sums of response costs among readily identifiable PRPs.

Once the interested parties are known, the mediator may attempt to limit the number of those who participate in the proceeding, particularly through the use of party representatives. See Amy, supra note 18, at 222 (claiming that mediators "often opt to keep the number as small as possible to facilitate the process of coming to an agreement"). The mediator would almost certainly yield some control of this issue to the participants themselves. See J.B. Ruhl, Thinking of Mediation as a Complex Adaptive System, 1997 BYU L. REV. 777, 788 ("Although disputants generally self-select each other . . . basic mediator training instructs that a mediator should look for issues that require other participants for full resolution and then ask the mediating parties whether that is not the case.").

As in the offline setting, representation may pose problems. One E-mail address representing a "participant" would essentially be required to speak for entire constituencies. See Susan Rose-Ackerman, Consensus Versus Incentives: A Skeptical Look At Regulatory Negotiation, 43 DUKE L.J. 1206, 1210 (1994) ("In negotiations about environmental pollution, for example, the diverse, geographically scattered individuals who [are affected] cannot always be represented effectively by standard environmental groups. These knowledgeable and ideologically committed groups must be heard by the
Mediation of any sort would not be appropriate for certain environmental disputes. Some believe mediation is never appropriate in an environmental dispute; others claim it is useful in limited circumstances. An early commentator stated that only ten percent of all environmental disputes are suitable for ADR. This is a shorthand way of recognizing that "the exis-

bureaucracy, but they do not necessarily speak for ordinary citizens."). The mediator would also have to decide who speaks for future generations. See generally EDITH BROWN WEISS, IN FAIRNESS TO FUTURE GENERATIONS: INTERNATIONAL LAW, COMMON PATRIMONY AND INTERGENERATIONAL EQUITY (1989).

60. Ever since the first environmental mediation efforts, there has been considerable discussion about the utility of environmental mediation. See, e.g., Amy, supra note 18; Leonard F. Charla & Gregory J. Parry, Mediation Services: Successes and Failures of Site-Specific Alternative Dispute Resolution, 2 VILL. ENVTL. L.J. 95 (1991); Richard C. Collins, The Emergence of Environmental Mediation, 10 VA. ENVTL. L.J. vi-x (1990) (discussing the programs of the University of Virginia's Institute for Environmental Negotiation, by its Director); Carol E. Dinkins, Shall We Fight or Will We Finish: Environmental Dispute Resolution in a Litigious Society, 14 ENVTL. L. REP. (ENVTL. L. INST.) 10398 (Nov. 1984); Frank P. Grad, Alternative Dispute Resolution in Environmental Law, 14 COLUM. J. ENVTL. L. 157 (1989); Issues in Developing the Practice of Environmental Mediation in Ohio: A Mini-Symposium, 1 OHIO ST. J. ON DISP. RESOL. 299 (1986); Kubasek & Silverman, supra note 1; John P. McCrory, Environmental Mediation—Another Piece for the Puzzle, 6 VT. L. REV. 49 (1981); Robert V. Percival, The Bounds of Consent: Consent Decrees, Settlements and Federal Environmental Policy Making, 1977 U. CHI. LEGAL F. 327; Barbara Ashley Phillips & Anthony C. Piazza, The Role of Mediation in Public Interest Disputes, 34 HASTINGS L.J. 1231, 1234 (1983); David Schoenbrod, Limits and Dangers of Environmental Mediation: A Review Essay, 58 N.Y.U. L. REV. 1453 (1983); Lawrence Susskind, The Special Master as Environmental Mediator, 17 ENVTL. L. REP. (ENVTL. L. INST.) 10239 (Jul. 1987); Susskind & Weinstein, supra note 52; Wald, supra note 52; Karen L. Liepmann, Comment, Confidentiality in Environmental Mediation: Should Third Parties Have Access to the Process?, 14 B.C. ENVTL. AFF. L. REV. 93 (1986); Stukenborg, supra note 19; see generally Scharf, supra note 1 (containing an exhaustive and thorough annotated bibliography of sources on environmental ADR and mediation generally).

61. See infra note 128 and accompanying text; see also Hodges, supra note 36, at 1053 (noting that a frequent criticism of ADR is that "courts also play a role in establishing norms—a process of giving 'meaning to our public values'" (quoting Owen M. Fiss, Foreword: The Forms of Justice, 93 HARV. L. REV. 1, 30 (1979))).

Some commentators argue that environmental disputes must be aired in court. See, e.g., Edward Brunet, Questioning the Quality of Alternate Dispute Resolution, 62 TUL. L. REV. 1 (1987). Others claim, however, that mediation should be used for a broader spectrum of environmental disputes. See, e.g., Bradford F. Whitman, ADR Merits Wider Use in Superfund Cases, in CPR INSTITUTE FOR DISPUTE RESOLUTION, ENVIRONMENTAL & HAZARDOUS WASTE ADR III-42 (1994) (arguing that a broad spectrum of issues in CERCLA cases can be handled by ADR techniques such as mini-trials).

62. See Wald, supra note 52, at 7 (citing ALLAN R. TALBOT, SETTLING THINGS: SIX CASE STUDIES IN ENVIRONMENTAL MEDIATION 91 (1983)); see also Liepmann, supra note 60, at 104.
tence of numerous parties or factions, ideologically based disputes, or nonpredictable long term trends militate against successful negotiation of environmental disputes." As in the offline setting, a proceeding involving the allocation of fixed sums of response costs among a limited number of PRPs (those persons or entities facing liability for paying for response costs) would be a better candidate for mediation than an ideologically charged dispute. I assume the dispute in question is one where the legitimacy of using mediation is less controversial (cost allocation proceedings, for example). This allows me to focus on evaluating the utility of online mediation.

B. What Goals Should Be Pursued in Online Mediation?

In the remainder of this Article, I analyze a hypothetical multiparty environmental mediation proceeding, and I argue that the electronic character of the proceeding limits online mediation's potential. Before doing so, one must address a rather obvious threshold question: how should we assess the utility of online mediation? In discussions of mediation generally, this issue generates considerable controversy. Commentators disagree about the goals of mediation and the indicia to use in measuring success. One could simply conclude that online mediation should be judged a success if it enables the participants to reach an agreement. However, leading practitioners soundly reject such an outcome-determinative justification for mediation.

63. Numerosity alone does not preclude success in an environmental mediation proceeding; the EPA and the parties have concluded mediations at Superfund sites involving up to 1200 parties. See EPA ADR Fact Sheet, supra note 57.

64. Wald, supra note 52, at 7 (citing TALBOT, supra note 62, at 91); see also Amy, supra note 18, at 222-26 (describing similar limitations on the use of ADR in environmental disputes); Kubasek & Silverman, supra note 1, at 553-55 (discussing the situations in which mediation is appropriate); Stukenborg, supra note 19, at 1332-33 (listing the characteristics of controversies appropriate for ADR).

65. A PRP ("potentially responsible party") is a person or entity that falls into one of four categories of CERCLA § 107 subjecting it to liability under this act. 42 U.S.C. § 9607 (1994); see JEFFREY G. MILLER & CRAIG N. JOHNSTON, THE LAW OF HAZARDOUS WASTE DISPOSAL AND REMEDIATION 479 (1996).

66. See, e.g., EPA ADR Fact Sheet, supra note 57 (suggesting that if "precedent-setting issues" are involved, mediation is inappropriate in environmental cases).

67. See, e.g., Riskin, supra note 37, at 11 (noting that "disagreements [about mediation] arise out of clashing assumptions—often unarticulated—about the nature and goals of mediation").

68. See, e.g., Menkel-Meadow, What Will We Do, supra note 36, at 1622 ("[I]n
ters for most participants: there are associated process values as well.\textsuperscript{69} One could survey the participants afterwards about their satisfaction with the process.\textsuperscript{70} While disputant satisfaction is an important value, it is not an exclusive one. If disputants were satisfied with an agreement that was clearly contrary to public policy, we should not judge that proceeding as a success.\textsuperscript{71}

Recognizing that our ability to decide what mediation is all about is imperfect, I think the optimal near-term objective of online mediation is a transparency of sorts. Using the offline mediation setting as a benchmark, we should cultivate its substantive and process values in the online setting, at least to the extent that practitioners and participants currently accept them as important. One could argue for a more expansive view; online mediation may be so different that it may spawn entirely new uses of ADR and benefits we cannot currently imagine.\textsuperscript{72} My reach here is more modest: to assess whether online mediation

evaluating satisfaction with dispute processes, it is not only outcome, but process values that matter—and parties may value different things.
	
\textsuperscript{69} Carrie Menkel-Meadow has observed that ADR is defensible if it features process values such as opportunities for catharsis. See Menkel-Meadow, \textit{Whose Dispute Is It Anyway?}, supra note 68, at 2669-70; \textit{infra} Part II.A.

\textsuperscript{70} This survey mechanism is becoming more common in evaluating mediation practices. See Scharf, \textit{supra} note 1, at 8. Surveys of mediation participants have found that participants are satisfied with the process, even when it does not reach a satisfactory outcome. See, e.g., Hodges, \textit{supra} note 36, at 1057 n.292; Scharf, \textit{supra} note 1, at 11 (reporting that the EPA ADR Project Coordinator, in unpublished manuscript, notes from interviews with 48 PRP representatives that mediation at CERCLA sites yields satisfaction with the process).

\textsuperscript{71} The central question in much of the discussion devoted to this issue, as it is in debates over ADR generally, is whether public adjudication of disputes is necessary. Of course, there are many commentators who claim that mediation or other forms of ADR are inappropriate for many disputes, regardless of whether ADR leaves the parties satisfied with the process. See, e.g., Menkel-Meadow, \textit{Whose Dispute Is It Anyway?}, \textit{supra} note 68, at 2665 (“When do our legal system, our citizenry, and the parties in particular disputes need formal legal adjudication, and when are their respective interests served by settlement, whether public or private?”).

One logical response would be to evaluate both the parties' satisfaction with the process and the societal impacts of mediation outcomes. To that end, a commentator proposes an “impact evaluation model” for mediation that would provide a “more comprehensive and much-needed evaluation picture.” Scharf, \textit{supra} note 1, at 11 (study of the Administrative Dispute Resolution Act of 1990).

\textsuperscript{72} See, e.g., Johnson, \textit{supra} note 3, at 119 (suggesting that “the potential for the impact of new technologies on ADR is as great as the scope of our imagination”)

could be used where mediation is already commonplace. There is still enough resistance to mediation that disputants will not turn to online mediation unless they are already convinced that mediation is appropriate.73 Thus, whatever functions mediation serves at present, any impact of superimposing a technology-based process on it should be as limited as possible. In other words, technology should not, in and of itself, influence the outcome.

II. LIMITS SUGGESTED BY THE PROCEEDING'S ELECTRONIC CHARACTER

The Internet's private, cooperative, virtual and decentralized character make it a tantalizing model for organizing other forms of human activity through technology.74

It could be argued ... that it is too early in the development of the 'information superhighway' to consider on-line mediation a practical alternative.75

Could the use of E-mail accomplish the usual functions of mediation, which is predominantly oral? I believe online mediation's electronic character creates severe limits on its current potential. The most obvious set of shortcomings inheres in the substitution of writings for meetings.76 The electronic character of the proceeding will make it difficult, if not impossible, to pursue important process values of mediation. Furthermore, the absence of face-to-face conversation in online mediation is problematic because mediators are not currently trained to mediate online and because asymmetries of computer resources exist.

73. See, e.g., Robert A. Baruch Bush, “What Do We Need a Mediator For?”: Mediation's “Value-Added” for Negotiators, 12 OHIO ST. J. ON DISP. RESOL. 1, 1 n.1 (1996) (stating that “disputants must be convinced that using the [mediation] process will be beneficial to them privately, or they will simply refrain from using it”); see also Scharf, supra note 1, at 39 (citing several sources).
74. Perritt, Environmental Movement, supra note 6, at 326.
75. Granat, supra note 1.
76. This point, it should be noted, is not completely lost on proponents of online ADR. Frank Cona, a consultant to the Virtual Magistrate Project, notes with respect to the use of online ADR in international arbitration that “[w]hile information technology can be used to reduce the time and cost involved in some of the traditional [ADR] mechanisms . . . , it cannot truly replace oral discussion . . . .” Cona, supra note 3, at 992.
A. Pursuing the Process Values of Mediation Requires a Face-to-Face Setting

As I have already demonstrated, my experience with mediation convinces me that there is no generally accepted understanding of what mediation is or ought to be.⁷⁷ There seems to be common agreement, though, about core elements of the mediation process.⁷⁸

One common element is that a mediator assists the parties in reaching an agreement that resolves their dispute, whether or not they in fact do so.⁷⁹ As noted earlier, one should not judge the success of mediation solely on an outcome-determinative basis, but this is undeniably important for many participants. As far as this is concerned, it may not depend on the medium chosen for doing so. I surmise that E-mail might work as well as a telephone conference call or even a face-to-face conversation for this purpose. However, the outcome itself is not usually the only thing that matters about mediation for most participants: there are process values. Mediation participants often value the transformative and reconciliatory potential of ADR more than the adversarial process of litigation.⁸⁰ Mediation can be about healing, educating, informing, and persuading. It can open lines of heartfelt interpersonal communication where none have existed, allowing parties to transform and to recharacterize the

---

⁷⁷. See supra notes 67-71 and accompanying text.
⁷⁸. See, e.g., Carol J. King, Are Justice and Harmony Mutually Exclusive? A Response to Professor Nader, 10 OHIO ST. J. ON DISP. RESOL. 65, 73 (1994) ("Although no two mediators can be expected to agree completely on a standard definition of mediation, most would concur that certain essential elements distinguish the process."); see also RISKIN & WESTBROOK, supra note 19, at 207 ("Approaches to mediation are extraordinarily diverse, and yet there are commonalities in most mediations.").
⁷⁹. See Hodges, supra note 36, at 1055 ("Mediation offers the promise of settlement with assistance of a neutral party.").
⁸⁰. See, e.g., id. at 1056 n.290 (citing several sources for the proposition that "[m]ediation may be effective in preserving relationships between the parties that might be destroyed or at least severely damaged by the adversary process"); Gerald R. Williams, Negotiation as a Healing Process, 1996 J. DISP. RESOL. 1, 41 (describing interpersonal benefits of nonadjudicatory processes such as mediation).

That mediation can be relational for participants is perhaps best understood through the lens of the care perspective, "a relational ethic which views the primary moral concern as one of creating and sustaining responsive connection to others." Paul J. Zwier & Dr. Ann B. Hamric, The Ethics of Care and Reimagining the Lawyer/Client Relationship, 22 J. CONTEMP. L. 383, 386 (1996). See generally CAROL GILLIGAN, IN A DIFFERENT VOICE (1982). Zwier and Hamric have posited that an "ethic of care" could potentially serve as a basis for a client's choice between litigation and mediation. See Zwier & Hamric, supra, at 384.
nature of their dispute. It can develop a base for the parties' future relationship and can help them create empathy for one another.\textsuperscript{81}

Here I believe online mediation has serious limitations, for it cannot sufficiently foster these process values. The substitution of E-mail for dialogue, for example, makes it difficult to give any weight to emotion in mediation. My example of a de-emphasized process value in this calculus is the function of catharsis.\textsuperscript{82} The mediation process is often therapeutic.\textsuperscript{83} For many participants, mediation is about the “venting” of feelings and emotions that they would be unable to express in a more formal setting such as a courtroom.\textsuperscript{84} The opportunity to tell one's version of the case directly to the opposing party and to express accompanying emotions can be cathartic for mediation participants.\textsuperscript{85} Perhaps me-

\textsuperscript{81} See, e.g., Riskin, \textit{supra} note 37, at 20-21.
[A] principal goal of mediation could be to give the participants an opportunity to learn or to change. This could take the form of moral growth or a “transformation,” as understood by Bush and Folger to include “empowerment” (a sense of “their own capacity to handle life's problems”) and “recognition” (acknowledging or empathizing with others' situations).

\textit{Id.}

\textsuperscript{82} It should be noted that experienced mediators often see this as the most important process value in mediation. \textit{See, e.g.}, Joseph T. Mclaughlin, \textit{A View from the Front Lines}, 59 ALB. L. REV. 971, 971 (1996).

\textsuperscript{83} \textit{See, e.g.}, Joan B. Kelly, \textit{Mediation and Psychotherapy: Distinguishing the Differences}, 1 \textit{MEDIATION} Q., Sept. 1983, at 33 (noting that “the mediation process is often highly therapeutic”).


\textsuperscript{85} \textit{See, e.g.}, Nancy Illman Meyers, \textit{Power Imbalance and the Failure of Impartiality in Attorney-Mediated Divorce}, 27 U. TOL. L. REV. 853, 857 (1996); Thomas J. Stipanowich, \textit{The Quiet Revolution Comes to Kentucky: A Case Study in Community Mediation}, 81 KY. L.J. 855, 870-72 (1993) (describing mediation as cathartic because it “may offer parties the first opportunity to express their point of view in the presence of others and be heard by the other party”).

Undoubtedly, “having one's day in court” can be cathartic as well. \textit{See, e.g.}, Kubasek & Silverman, \textit{supra} note 1, at 552 (noting that “in some [environmental] cases a lawsuit, because it is an adversarial process, will have the cathartic effect that the parties need”). However, it can be argued that mediation can provide superior
mediators take this too much as an article of faith; some who have studied the mediation process note that emotional release is not a feature of every proceeding. 86

Still, for those for whom it is important, I am extremely doubtful that catharsis could happen in any setting other than a face-to-face conversation. Without articulating reasons for saying so, most commentators assume catharsis requires the physical presence of the other party. 87 This seems accurate, even if one were to assume that all that is required for the emotional release is the act of expressing one's position on the dispute. 88 The emotional impact of articulating one's position is attenuated if one is separated from the listener by an electronic distance. If an element of the catharsis is not simply to tell one's story, but also to have an effect on the listener, 89 then online mediation opportunities for catharsis to court hearings. See Menkel-Meadow, Whose Dispute Is It Anyway?, supra note 68, at 2688. Menkel-Meadow notes that overly formalistic proceedings in court may discourage parties from articulating their concerns. See id.; see also Meyers, supra, at 857 (“The mediation process may also incorporate a measure of emotional catharsis, which is prohibited by the procedural formality of the court.”).

In addition, because cases such as CERCLA disputes can be protracted over a period of years, the opportunity to articulate one's position in a public forum may be postponed indefinitely. See, e.g., Eisen, supra note 56, at 908 n.113 (noting that the CERCLA cleanup process may take up to eight to ten years or more to complete).

86. See Lynn A. Kerbeshian, ADR: To Be Or . . . ?, 70 N.D. L. REV. 381, 401 (1994) (calling for testing of the assumption that the function of catharsis is part of mediation proceedings).

87. See, e.g., King, supra note 78, at 80 (“Speaking directly to the party blamed for the problem is one factor required for catharsis.”); McCammon, supra note 84, at 6 (discussing how a mediation works).

88. One commentator, for example, defines the cathartic effect of mediation as follows:

It is the need for the parties to feel that somehow or other, even if they disagree in part sometimes in large part—with the result, they have been heard; someone has listened to their story, and somehow or other they have purged their system of what it was they needed to talk about.

Mclaughlin, supra note 82, at 971.

89. See, e.g., King, supra note 78, at 80 (noting that “expression of feelings may allow the listening parties to recognize the effect of their actions on others”).

Recently, Carrie Menkel-Meadow suggested another justification for offering a party an opportunity to articulate its positions in the hope of influencing the listener: that the postmodern world demands a mediation approach that allows for the airing of the positions of marginalized groups in society. See Carrie Menkel-Meadow, The Trouble With The Adversary System in a Postmodern, Multicultural World, 38 WM. & MARY L. REV. 5 (1996). For the multiple stories of disenfranchised groups to have the desired effect, they cannot be told by text alone. Menkel-Meadow explains the importance of the conversation as follows: “If we can really listen to each other and . . . deal fairly with difference, in experience, in material and psychological advantage and in privilege, then parties who choose to listen might learn from each other just how they experience the
seems hampered as well by the limitations on one's ability to emote online.

Viewed from the mediator's perspective, a related function in much of mediation is the quest to help the parties empathize with one another. Mediators believe that what makes them effective is their ability to listen to each party, to foster communication, and to build trust. Creating an atmosphere in which the parties trust the mediator to help them reach a resolution of their dispute is considered vital, if not indispensable, by most mediators. For mediators to attempt to establish this trust in writing at a distance is as preposterous as a therapist foregoing face-to-face evaluation and treating a patient by reading her journal. Sending E-mail is a solitary endeavor, bereft of the opportunity to engage the parties in a therapeutic conversation and to listen to and understand their concerns, emotions and feelings. To the extent that this is an important value of the mediation process, online mediation could not accomplish it.

B. Online Mediation Will Not Yield “Thoughtful” Answers or Reduce a Dispute’s Emotional Temperature

Argument may be made that having the option of asynchronous (not at the same time) discussions on the Internet, which allow participants to craft their contributions, as opposed to needing to respond in the moment, may enhance the thoughtfulness of agreement-reaching efforts.

As the quote above indicates, online mediation proponents believe the electronic medium creates a distance between participants that would be beneficial. This assumes that decisions

world.” Menkel-Meadow, What Trina Taught Me, supra note 84, at 1425.

90. See Menkel-Meadow, What Trina Taught Me, supra note 84, at 1424 (“How are we alike so I can feel your pain or understand you? How is your situation like mine? This is the work that mediators do with parties.”).

91. See Granat, supra note 1. This is particularly important in environmental mediation. There usually is no preexisting bond among the participants except the adversarial relationship of litigation.

Unlike labor or commercial ADR, there are relatively few precedents to govern the participants' interaction in the environmental situation. Because mediation is still a relatively new form of grappling with environmental issues, each environmental dispute presents a new set of issues to the participants.

92. Melamed & Helie, supra note 3.

93. See Johnson, supra note 3, at 118; Granat, supra note 1; Melamed & Helie, supra note 3.
made at a distance by participants acting alone would be inher­
etly superior to those forged in the crucible of conversation. 
Proponents claim several salutory effects of getting the partici-
pants out of the same room. Because E-mail dialogues do not 
generally take place in “real time,” participants could choose 
when they wanted to send messages; this would give them time 
to reflect on their positions before articulating them.94 Doing 
this would allow participants to “assess the facts, fairly evaluate 
both sides’ positions, and benefit from the suggestions and judg-
ments of others.”95 Some also claim that the distance would re-
duce emotional hostility and diminish expressions of power or 
bia96 Disputes about factual information might also be re-
duced. If participants wanted to view important documents such 
as a “waste-in” list97 or a proposed cost allocation formula, the 
mediator could post them on the web site and allow any partici-
pant to view their full content.98 Because the parties decide what 
the process will be beyond a set of initial ground rules, multiple 
decision-making pathways are possible in mediation. The use of 
computer technology would purportedly fit this nonlinearity by 
allowing for simulation of a variety of decision-making options.99 
The mediator could present the parties with various hypotheti-
cal scenarios for them to contemplate over a period of time.100 
The claims about the benefits of electronic distance amount 
to blatant double-talk. Like litigation, where parties send briefs

94. See, e.g., Johnson, supra note 3, at 118-19; Melamed & Helie, supra note 3 
(“Parties can participate at times that are convenient and respond when they are 
capably prepared.”).

95. Johnson, supra note 3, at 119. David Johnson also claims that because the 
computer allows for visual presentation of data and documents, seeing a party’s 
presentation instead of listening to it could reduce misunderstandings. See id.

96. See, e.g., Granat, supra note 1.

97. A “waste-in” list is a list of known generators of hazardous wastes and the 
amounts of wastes each has contributed to the site. See, e.g., Michael P. Healy, The 
Effectiveness and Fairness of Superfund’s Judicial Review Preclusion Provision, 15 VA. 
ENVTL. L.J. 271, 337 (1995). This information is useful in CERCLA cases for enabling 
PRPs to allocate liability and costs among themselves. See id.

98. See Ferritt, Electronic Dispute Resolution, supra note 1.

99. See Johnson, supra note 3, at 119 (proposing an architecture using the new 
Virtual Reality Markup Language to create an environment with multiple decision-
making possibilities).

100. See id. at 118-19; see also Ruhl, supra note 59, at 796 (noting that this 
process of “options brainstorming” is “a significant stage of any mediation”). The idea 
being presented here, of course, is that the process of coming up with options for 
constructive solutions of disputes and of weighing the options could be facilitated by the 
visual capabilities of the online environment. See, e.g., Johnson, supra note 3, at 119.
to each other without the benefit of face-to-face interaction, using E-mail isolates the participants from one another. Mediators cannot assert that a face-to-face conversation is indispensable for transformation of the dispute and reconciliation of the participants, and simultaneously claim that the distance that prevents participants from ending their conflict will make their hearts grow fonder for one another. Furthermore, claims about the therapeutic effects of distance rely on two questionable assumptions about the likely behavior of participants and mediators. First is the belief that "a much higher percentage of e-mail . . . comments will be constructive," and second is the hope that distance would enable the heat of confrontation to dissipate.

As for the first assumption, there is no guarantee that participants would take advantage of the opportunity for reflection and introspection. They might respond quickly to others' messages, taking advantage of the ability E-mail software gives them to respond instantly. If they did deliberate, there is no question some participants might consider their responses more carefully. But this deliberation will not necessarily make their positions any more constructive or "thoughtful." A participant might be deliberately deceptive and cover that deception with a well-rehearsed justification. This is especially problematic because the ability to reflect on messages before sending them gives an advantage to participants that can process computer-based information more quickly. Industry participants might use the extra preparation time to blanket other participants with massive quantities of documents. Furthermore, participants might misunderstand even those messages intended to be constructive. There are fewer clues to interpretation in the online setting that features none of the nuances of oral speech.

101. Hardy, supra note 3, at 234. Professor Hardy's comment was directed to an E-mail conference, not a mediation or negotiation proceeding. The sentiment, however, is equally valid in a mediation proceeding.

102. See, e.g., Lide, supra note 3, at 219 ("[D]ispute resolution alternatives [such as mediation] are more conducive to the electronic medium than is the courtroom, especially when there is a lack of trust between the parties, and emotions stand in the way of effective communication." (quoting Ronald J. Poslums, The Trillion Dollar Risk, BEST'S REV., Sept. 1998, at 36, 110)).

103. See infra notes 144-49 and accompanying text.
Parties in disputes often distrust each other and can easily misinterpret written messages.

As for the second assumption, there is no evidence whatsoever to support the claim that establishing distance would be therapeutic for mediating parties. There is no guarantee that messages composed upon reflection would be less heated than those sent instantaneously. A sender of an E-mail message, like a general who can launch a bomb with the push of a button, faces no immediate responsibility for her actions. Moreover, the anger in environmental disputes is not a simple function of time and distance from one's adversaries; pollution and polluting behavior is what makes environmentalists angry. The ability to reflect on this anger in private might intensify it, not lessen it. The written character of the proceeding would encourage this. E-mail messages would be kept in a written archive, which

---

104. See James T. Price, ADR Steps to Fore in Environmental Disputes, SONREEL NEWS, Nov./Dec. 1994, at 5 (citing comments of Professor Mnookin to this effect with respect to CERCLA disputes).

105. The only evidence advanced by proponents is limited anecdotal information derived from experience with the distance created in a telephone conference call. See Granat, supra note 1; see also Yamshon, supra note 3 (describing a mediation proceeding conducted by telephone).

106. That an E-mail message could still reflect anger to some degree is readily apparent. However, an E-mail message loses many of the nuances of interpersonal conversation. See Hardy, supra note 3, at 219; Granat, supra note 1. Yet it is hardly impossible to be angry online, as anyone who has received an E-mail message SHOUTING IN ALL CAPS will attest. See, e.g., Flaming, supra note 2, at 176 (noting that "netiquette encourages users to write E-mail messages using . . . upper case letters only when the writer intends to shout"); Eric J. Ray, TECHWR-L: A History and Case Study of a Profession-Specific LISTSERV List, TECHNICAL COMM., Fourth Quarter 1996, at 334, 336 (noting that E-mail messages on the TECHWR-L listserv convey an "intensity of feeling on many of the topics covered [that] lead[s] to interesting emotional exhibitions").

107. See Amy, supra note 18, at 226.

108. See Johnson, supra note 3, at 118. The presence of the written archive, of course, raises serious confidentiality concerns about online mediation. See, e.g., Katsh, ADR in Cyberspace, supra note 3, at 971-74 (discussing the considerable challenges involved). Confidentiality in mediation is an essential element of the process. See, e.g., Hodges, supra note 36, at 1089 (discussing the need for confidentiality in mediation); Alan Kirtley, The Mediation Privilege's Transition From Theory to Implementation: Designing a Mediation Privilege Standard to Protect Mediation Participants, the Process and the Public Interest, 95 J. DISP. RESOL. 1 (1995). Maintaining confidentiality in an online mediation proceeding today would be difficult, given the limitations of existing encryption technology. See, e.g., Friedman, supra note 3, at 713-14; Katsh, ADR in Cyberspace, supra note 3, at 971-74. A technical solution (such as the use of more advanced encryption technologies) may manifest itself in the future. See Katsh, ADR in Cyberspace, supra note 3, at 971-74. Except to the extent that it is necessary to address the related issue of the mediator's accountability, I do not discuss this issue
would allow parties to reflect on past messages, to look at them frequently and to become more angry. Participants could escalate a disagreement easily by mirroring messages back at their senders.109

Moreover, in making the assumption that introspection may be desirable, proponents are inappropriately considering "thoughtful" reflections to be more valuable than instinctive articulations of emotion or anger.110 Removing the ability to articulate in the moment might prevent participants from making spontaneous proposals about issues in dispute,111 and would disadvantage those participants who are not introspective. Deductive reasoning is not the only way to reach a mediated result; some participants need the impetus of the face-to-face conversation to consider a new solution to the dispute. Finally, it would be an unwarranted arrogation of decision-making authority if an online mediator deliberately suppressed expressions of anger or emotion in order to promote "constructive" responses. No one but the mediator and the participant would know that the participant had been angry. Anger, however, is a common feature of disputes and participants have legitimate rights to express it to other participants.112

An online mediator must deal with power or bias as well. When opposing parties are physically present in the same room, expressions of power imbalances or biases can make mediation proceedings quite heated.113 Some say mediators could control
this online.114 E-mail signatures are nominally race and gender neutral except to the extent that some names appear to be masculine or feminine; even this presumably could be controlled by such means as assigning gender-neutral names to participants.115 This introduces a potential problem of authenticity. There is a plasticity in the online setting that allows a participant to disguise his or her identity; while it has obvious drawbacks, many find the potential for anonymity to be one of the Internet’s most attractive features.116 This would force the mediator to develop some way to assure that participants were at all times who their E-mail addresses represented them to be, and that messages were not transmitted by impostors.117

C. Skilled and Accountable Online Mediators Don’t Exist

[W]e don’t know whether trust between mediator and participants can be developed as quickly in an on-line context, rather than a face-to-face environment.118

114. See Granat, supra note 1; see also Hardy, supra note 3, at 223 (stating that “the neutrality, leveling effects, and optional anonymity of e-mail offer tremendous potential for opening up communications and furthering understanding”).
115. See Hardy, supra note 3, at 222:

In particular, e-mail used to create an electronic conference eliminates many of the usual indicia of status and station. You cannot see what the other participants are wearing, cannot hear their accents, cannot distinguish them by race, age, national origin, or disability. But for the fact that some names sound masculine and others feminine, e-mail users would have no means of recognizing gender (and if non-recognition of gender were an important goal, participants in an e-mail conference could use pseudonyms).

Id.

116. Recent articles have, for example, discussed physically challenged individuals who welcome the ability to avoid disclosing their conditions to those with whom they communicate online. See, e.g., Abby Albrecht, Exploring Telecommunications, EXCEPTIONAL PARENT, Nov. 1995, at 37 (containing first person account by a woman who states that, “[M]any of my on-line friends still don’t know I have a disability. It has never come up because it just doesn’t matter”).

Some users, favoring the anonymity of cyberspace, experiment with roles different from their real personas. See Lessig, supra note 26, at 1746-47. This can have disastrous consequences, as shown most poignantly in recent articles about calamitous face-to-face meetings between people who romanced in cyberspace. See, e.g., Eric Blom, Mainer’s Log On, Looking for Love in Cyberspace Despite the Dangers Sometimes Associated with Anonymous, Online Romance, Hundreds Take the Chance, PORTLAND PRESS HERALD, March 30, 1997, at 1A; Cheryl Kirk, Safety in Cyberspace: Be Careful out There, ANCHORAGE DAILY NEWS, Feb. 15, 1996, at 1E.

117. See Friedman, supra note 3, at 714 (noting that at present E-mail does not have this capability).

118. Granat, supra note 1; see also Hardy, supra note 3, at 232 (quoting the
Proponents advance a rather naive premise that mediators can mediate as well online as offline. This is by no means clear, and there is every reason to believe mediators' skills would not translate so easily to the online setting.

1. Mediators are ill-equipped for online “listening”

No mediator can presently claim the skill to moderate an online discussion successfully, and it is not hard to see why. The mediator would have to possess significant skills at evaluating written information. Her tasks would include deciding whose message would take priority over others, separating relevant messages from irrelevant “off-topic” messages, keeping the group focused on the goal of the proceeding, and defusing angry, prejudicial or emotional messages. One mediator suggests proving the ability to do this by providing participants with a “short bio demonstrating your computer literacy.” Computer proficiency, however, does not translate directly to prowess at moderating an online discussion any more than the ability to listen makes one a good mediator.

A mediator might claim that her instincts and training for neutral evaluation will enable her to “listen” as well online as offline. However, in making this claim, she fails to recognize that her function will be fundamentally different in the online setting. Developing online mediation skills would require training to read and interpret information generated by computers. This in turn would require nothing less than a reinterpretation of the profession. Listening, not reading, is thought to be indispensable for successful mediators. Listening is a complicated

comment of one participant in the E-mail conference that “[a] mediator might ask whether one can build trust in this kind of place”).

119. See, e.g., American University Conference, supra note 3, at 455 (containing remarks of Professor Ethan Katsh that one unanswered question in online mediation is: “Can [the mediator] apply his or her skills online?”).

120. The mediator could not lessen her responsibility by filtering out certain classes of written information based on relevancy in the legal sense. The information generated in online mediation would be more extensive than that which would be admissible evidence in a courtroom; it would also encompass those parts of E-mail messages expressing the participants’ “desires, feelings, fears, and other emotions.” See, e.g., Ruhl, supra note 59, at 794.


122. See, e.g., SOCIETY FOR PROFESSIONALS IN DISPUTE RESOLUTION, COMMISSION ON QUALIFICATIONS, QUALIFYING NEUTRALS: THE BASIC PRINCIPLES (1989) (listing this as an
mental process involving more than simple aggregation of information from speakers. Listening with empathy, that is, understanding the sum total of the speaker's verbal and nonverbal communication, requires considerable skills. It requires the ability to encourage and to allow others to express their message, "to anticipate the speaker's next statement, . . . to question or evaluate the message, [and] to consciously notice nonverbal cues" and identify their effect on the speech. Reading involves none of these activities.

The distance created by the electronic medium forces the mediator to do more than simply read E-mail messages. The mediator must read an entire message without having the ability to interrupt a participant. She will make certain decisions about the messages unilaterally without consulting the participants. She might, for example, edit an E-mail message to exclude material she believes to be overly lengthy or irrelevant, or decline altogether to rebroadcast an E-mail message to other participants. This sort of judgment is different from listening and working with oral information.

Training mediators in these sorts of skills will take time. In the meantime, the participants in our hypothetical proceeding would have to select an unqualified mediator. While there is considerable debate over the qualifications necessary to be a mediator, in environmental disputes it is critical that a mediator have both expertise in dispute resolution techniques and understanding of complex federal environmental laws such as CERCLA. In addition, the online mediator would have to be

\textit{\textsuperscript{123}} I hardly claim to be an expert in this subject. My discussion here is based on the popular self-teaching guide to listening, \textit{MADELYN BURLEY-ALLEN, LISTENING: THE FORGOTTEN SKILL} (1995).

\textit{\textsuperscript{124}} See generally id. (discussing characteristics of ideal listeners). On the average, people listen at only a 25% efficiency rate. See id. at 2 (citing RALPH NICHOLS, \textit{ARE YOU LISTENING?} (1957)).

\textit{\textsuperscript{125}} Id. at 95.

\textit{\textsuperscript{126}} See generally Bruce C. Glavovic et al., \textit{Training and Educating Environmental Mediators: Lessons from Experience in the United States}, 14 \textit{MEDIATION Q.} 269, 278-84 (1997) (describing the diverse characteristics required of a "consummate environmental mediator," including \textit{inter alia} "[\textit{e}nvironmental literacy, that is, familiarity with the language and substance of environmental science and public policy]" and "[t]he ability to adopt different dispute resolution styles and behaviors"); Susskind & Weinstein, \textit{supra} note 52, at 323 (stating that the parties "must find a neutral (but concerned) party capable of employing dispute resolution techniques and understanding the technical issues underlying the dispute"); cf. Hodges, \textit{supra} note 36, at 1080-81.
"computer literate" or somehow skilled at managing an E-mail discussion. It is extremely unlikely that one mediator or even co­mediators would possess all three skills. 127

2. An online mediator is not accountable to the participants or the polity

Assuming a mediator could moderate an E-mail discussion successfully, the analysis above suggests problems of the mediator’s accountability to the participants. Decision making in ADR is already removed from the articulation of public values in the courtroom. 128 Online mediation decouples the mediator’s decision making still further from any source of accountability by removing the constraints of ADR’s microsocial setting. In the face-to-face setting, potential sanctions by group members operate to restrain the mediator if she takes actions that appear to exceed the scope of her authority. A mediator’s announcement that a participant’s comment is not constructive, for example, might be met with objections from other participants. 129 In the online setting, however, there would be few comparable means for participants to hold the mediator accountable for her decisions. 130 Her actions would not be observed by the group as a

(continuing similar requirements for mediators handling disputes arising under the Americans With Disabilities Act).

127. Specialization in environmental law practice, for example, is so acute that Chief Justice Rehnquist recently remarked that, “You don’t become an environmental lawyer now, or Clean Water Act lawyer, but a Section 404 Clean Water Act lawyer.” Carlos Santos, Rehnquist Chides Legal Profession; Remarks Come at U.Va. Law School Dedication, RICHMOND TIMES DISPATCH, Nov. 9, 1997, at C3 (quoting Chief Justice Rehnquist).

The participants could rely on a team of two mediators, each skilled in different areas. See, e.g., Hodges, supra note 36, at 1090; Stipanovich, supra note 85, at 897; Allan Wolk, Divorce Mediation: Today’s Rational Alternative to Litigation, Disp. Resol. J., Jan.-Mar. 1996, at 39, 41 (discussing comediation in divorce disputes); Walter A. Wright, Mediation of Private United States–Mexico Commercial Disputes: Will It Work?, 26 N.M. L. REV. 57, 69 (1996). Because both would currently lack the ability to moderate a textual discussion, this would be an unsatisfactory solution.


129. Mediators often make this sort of judgment in private conversations with participants outside the hearing of other participants. In that case, there may still be an ability to sanction the mediator for suppressing speech if her decision to caucus with the participant was noticed by others.

130. In moderated listservs, for example, the only check on the mediator’s ability to suppress speech is based on a list member’s guess as to what the moderator is doing, particularly if she does not announce her decision. See infra notes 215-28 and accompanying text.
whole. If a mediator edited a message or refused to rebroadcast it, the other participants would not know this had occurred; the sender would have little choice but to rebroadcast its message and to urge others to challenge the mediator's authority. Of course, if the mediator did not explain her reasoning for an adverse decision, that participant and the group at large would have to speculate about the decision.

There is also a problem of accountability to the polity. Some form of judicial intervention may be necessary in order to prevent mediation participants from wielding excessive power. If an online mediation agreement conflicts with positive law, there should be a role in curbing the participants' authority. So too may judicial supervision be required to address questions of implementing the agreement among the participants. If this requires discovery of the written record of the mediation proceeding, it will raise confidentiality concerns. Assuming discovery did take place, a reviewing court might want to assess the mediator's understanding of the parties' dispute over legal issues. This would be more difficult to obtain in online mediation. As has been noted frequently, mediators are usually unwilling to testify directly about their decision-making processes, believing that would violate their neutrality. Some evidence could be gleaned from examining the E-mail exchanges, but in other cases the litigants would have to guess unless the mediator was willing to divulge her reasoning. In the offline setting, there is more indirect evidence available to disputants: the tim-

131. Summing up difficulties with establishing and maintaining environmental agreements, many of which may require judicial intervention, Professor William Rodgers divides them into four challenges: validation, prediction, direction, and representation. See William H. Rodgers, Jr., Deception, Self-Deception, and Myth: Evaluating Long-Term Environmental Settlements, 29 U. Rich. L. Rev. 567, 571 (1995); cf. Hodges, supra note 36, at 1082 (stating that “b]ecause the issues [in mediation under the ADA would] involve statutory rights,” agency review of mediation agreements may be necessary).

132. This problem is discussed in detail in Lawrence S. Bacow & Michael Wheeler, Binding Parties to Agreements in Environmental Disputes, 2 Vill. Envtl. L.J. 99 (1991) (describing difficulties of making parties honor the commitments made in ADR). Some would argue, of course, that compliance with a mediation agreement “is more likely because the solution was designed and agreed to by the parties.” Hodges, supra note 36, at 1056.

133. See supra note 108 and accompanying text.

134. See, e.g., Hodges, supra note 36 (suggesting that in order to facilitate this understanding in cases arising under the ADA, the mediator or the parties might provide a statement on relevant issues upon assent by the parties).

135. See, e.g., Kirtley, supra note 108, at 31 (citing several cases).
ing of particular remarks in face-to-face conversations or body language may yield clues about the mediator's position.\footnote{See, e.g., Kamin, supra note 28, § 5, at 1 ("[A] human conversation, seemingly so simple, actually is pretty complex, with our gestures and body language communicating at the same time we speak. . . . Right now, it's hard to do that in a chat room.").}

D. The Use of Computers Creates Additional Limitations

1. Online mediation shifts power to those who understand computers

Even when there is a serious economic imbalance between the parties, access to the [online] highway to resolve the dispute makes sense: the economic size of the parties is 'invisible' to the particular dispute resolution process.\footnote{Lide, supra note 3, at 219 (quoting Ronald J. Poslums, The Trillion Dollar Risk, BEST'S REV., Sept. 1998, at 36, 110).}

[T]he World Wide Web is nothing less than a gated community, open almost exclusively to those who speak English and who have enough money to buy a computer and a modem.\footnote{Kamin, supra note 28, § 5, at 1 (quoting comments of Professor Christine Boyer of Princeton University).}

The first quote above illustrates wishful thinking. The playing field in online mediation could easily be anything but level. Those who have access to computers and know how to use them for developing and transmitting information and for persuasion (or who have access to experts who do) would have an advantage over other participants. This is especially problematic because ADR already shifts power away from those who lack the bargaining power and resources to prosper in informal negotiations.\footnote{See, e.g., Edwards, supra note 18, at 679 ("Sometimes because of this inequality [of power and resources] and sometimes because of deficiencies in informal processes lacking procedural protections, the use of alternative mechanisms will produce nothing more than inexpensive and ill-informed decisions."); see also Amy, supra note 18, at 223 (criticizing this aspect of environmental mediation); cf. Hodges, supra note 36, at 1086 (noting that this may be a feature of mediation in certain employment disputes).} Disparity among the parties in access to negotiating expertise is a problem in ADR generally.\footnote{See Kevin C. McMunigal, The Costs of Settlement: The Impact of Scarcity of Adjudication on Litigating Lawyers, 37 UCLA L. REV. 833, 856 (1990) ("Imbalance in financial resources, for example, may impair one party's ability to conduct adequate investigation.").}
disputes, the complexity of the subject matter amplifies this disparity, leaving environmentalists at a disadvantage compared to better financed and prepared industry groups. 141

A public interest group desiring to participate in an online mediation proceeding would need to have a computer, sufficient software, and an account of some sort for E-mail communication. 142 For a smaller neighborhood-based group, this may pose a financial and logistical challenge. 143 In addition to access, the group must also have the ability to use the technology. Expertise with computers, however, is not distributed universally in the population. Better educated persons with higher incomes are disproportionately represented in the ranks of computer users. 144 Those who have worked with online graphical environments would be able to process information more readily than others. Because most communication would be textual, disparities in literacy levels would give an advantage to those who read quickly; those who cannot read at all or who do so less well would be disadvantaged. Participants with extensive expertise in complex litigation will have additional advantages over those who do not. For example, industry groups with experience in document management could threaten to dominate the process by generating voluminous E-mail messages that other partici-

141. The scientific and technical complexity of the disputes plays a central role in environmental disputes. See Amy, supra note 18, at 224. The disparity in financial resources between environmentalists and industry representatives may make it difficult for environmentalists to develop the expertise needed to address the relevant issues. See id.

142. At the very least, online mediation done by E-mail requires each participant to have access to a personal computer and some means for sending E-mail, such as a modem. See Perritt, Electronic Dispute Resolution, supra note 1. A participant lacking these resources would have to obtain them elsewhere, perhaps by renting them from a private provider.

143. Dean Perritt acknowledges that some disputants may be "less likely to have their own access to the requisite technology." Id.

For this reason, the EPA would also face a problem in publicizing the existence of the proceeding. If it did not do some outreach offline, only those familiar with the electronic medium would learn about the proceeding.

144. See Kamin, supra note 28, § 5, at 1 (quoting Professor Christine Boyer of Princeton University that "[t]here are black holes of electronic communication" like the areas housing the nation's poorest citizens). Critics such as Professor Boyer see the World Wide Web as "nothing less than a gated community, open almost exclusively to those who speak English and who have enough money to buy a computer and a modem." Id.; see also Granat, supra note 1. See generally ROBERT B. REICH, THE WORK OF NATIONS: PREPARING OURSELVES FOR 21ST-CENTURY CAPITALISM 177-80 (1991) (describing the rise of the "symbolic analyst" class of workers).
pants would have to read and digest. This advantage would be even more formidable if these groups had ever used E-mail for the sophisticated negotiations often undertaken in complex cases.

One commentator claims that education is the "key" to remediating these disparities and asserts that according to some estimates "35% of the U.S. population will have access to on-line resources by the year 2000." This means that 65% of the population will not have this access. Moreover, the gap between computer haves and have-nots is not likely to be closed easily. As some people are learning how to use the technology, experienced users are not standing idly by. They are strengthening their grasp of technology, using the Internet for new and more sophisticated purposes.

Dean Perritt suggests that intervention by "intermediaries such as public libraries, the AAA [American Arbitration Association], and suitably equipped members of the bar" might help alleviate these problems. This is hardly likely to be effective in most cases. Any effort relying on businesses' altruistic spirit is risky at best in the present climate. Even assuming a library or law firm would want to help, which is a dubious assumption, there are considerable challenges involved.

145. See Amy, supra note 18, at 224 (noting that industry groups have the resources to "produce volumes of research to support their position on a particular dispute").
146. See id. at 223.
147. Granat, supra note 1.
148. Even though Internet usage is expanding rapidly, it is still not universal. At present, less than 25% of American adults have access to the Internet at home or work. See Kamin, supra note 28, § 5, at 1 (citing figures developed by the U.S. Department of Commerce).
149. One proponent of online ADR claims that objections based on asymmetries of computer resources will soon be "moot" because the "use of e-mail has increased dramatically in the legal and business worlds during the past two years, and will continue to do so . . . ." Friedman, supra note 3, at 713. This view ignores the potential ability of experienced users to employ the online mediation proceeding to the disadvantage of new users.
150. Perritt, Electronic Dispute Resolution, supra note 1.
151. Law firms, for example, are doing less pro bono work and concentrating more on the bottom line. See William J. Dean, Meeting the Challenge of Cuts in Legal Services, N.Y.L.J., Jan. 3, 1997, at 3 (stating that total pro bono hours have declined in the last few years); David E. Rovella, Can the Bar Fill the LSC's Shoes? Law Firms Find Meeting the ABA Pro Bono Goal for Billable Hours Is Tough, Nat'l L.J., Aug. 5, 1996, at A1.
152. Some entities that might want to help would be unable to do so. Many public libraries, for example, are finding it difficult to modernize their computer equipment.
organization would have to dedicate a computer to the online mediation proceeding for its duration. It might lack the resources to prepare a neighborhood group for a mediation proceeding. To correct for the imbalance of computer expertise, the library or firm would have to train participants, lest online mediation become a tool for those who can use computers most efficiently. Teaching others how to evaluate information on the screen requires more than giving them experience with the hardware and software; it demands intensive hands-on training because the solitary trial-and-error way of developing familiarity with computer software is not appropriate for everyone. For all these reasons, the imbalance of computer resources and expertise alone requires us to forego online environmental mediation until computer use is universal, or at least to limit it to situations where a constrained group of participants with equal computer resources and expertise can be assembled.

One proponent argues that "even the skeptics would be hard-pressed to argue that we cannot benefit from presenting the

---

See Libraries Try to Keep Pace With Technology, GRAND RAPIDS PRESS, Oct. 7, 1996, at B1 (stating that decisions about the purchase of computers are financially daunting given prior scale of decisions limited to thirty dollar books); Laura Shapiro, What About Books?, NEWSWEEK, July 7, 1997, at 75, 75 (citing a Library Journal survey that revealed that public libraries' technology costs have increased 85% since 1995, forcing smaller libraries to cut book budgets).

153. This also means, of course, that the participant would have to locate physically wherever the computer happened to be for the duration of the proceeding.


155. Even proponents of online mediation concede that inequalities in access to online resources pose problems. See, e.g., Granat, supra note 1.

I assume for analytical purposes that the EPA intends to address these asymmetries of computer resources in the same fashion as it deals with imbalances of expertise at CERCLA sites: with technical assistance grants of some sort. 42 U.S.C. § 9617(e) (1994) (authorizing grants, better known as "TAGs," for members of the affected public at CERCLA sites to "obtain technical assistance in interpreting information with regard to the nature of the hazard [and remedial and removal actions at the site]"); see Richard A. Du Bey Jr. & James M. Grijalva, Closing the Circle: Tribal Implementation of the Superfund Program in the Reservation Environment, 9 J. NAT. RESOURCES & ENVTL. L. 275, 290-91 (calling for expanded TAG grants to tribes to participate in CERCLA response actions). In another forum, I have called for similar grants to be awarded to communities affected by brownfields redevelopment projects. See Eisen, supra note 56, at 1015; cf. Hodges, supra note 36, at 1087-88 (suggesting technical assistance grants as a possibility in mediation of employment disputes).
parties with a range of analytical and introspective procedures." In this view, online mediation spaces would be "rooms with many doors" featuring "pathways with many branches" that enable participants to choose the most constructive way to resolve their dispute. This metaphor, of course, echoes the original "multi-door courthouse" justification for ADR. What cannot be forgotten is that some people are more experienced than others at entering these doors. This precludes the early use of online mediation in all but a very small number of multiparty environmental disputes, lest we create a dispute resolution universe where a technocracy of skilled computer users dominates the process.

2. Online mediation might be more expensive

The asymmetry of computer resources also suggests that online mediation may cost more than conventional mediation, not less. Proponents claim online mediation would be less

---

156. Johnson, supra note 3, at 119. As I pointed out earlier, not every mediation participant is or wants to be introspective; some need the conversation in order to consider new ways of resolving the dispute. See supra notes 80-91 and accompanying text.

157. Johnson, supra note 3, at 119. J.B. Ruhl observes that this flexibility is inherent in mediation and might be attractive to the inhabitants of an island society in deciding whether to select mediation over adjudication as a preferred mode of decision making. See generally Ruhl, supra note 59. Flexibility, of course, is one attribute that proponents cite as an advantage of online mediation.

158. See Frank E.A. Sander, Varieties of Dispute Processing, 70 F.R.D. 111, 126-34 (1976) (proposing the establishment of "a flexible and diverse panoply of dispute resolution processes"); see also Jethro K. Lieberman & James F. Henry, Lessons From the Alternative Dispute Resolution Movement, 53 U. Chi. L. Rev. 424, 427 n.17 (1986) ("[T]he ADR movement perhaps had its modern beginnings [when] Professor Frank E. A. Sander introduced the concept of the 'multi-door courthouse'—that courts could use different processes to resolve disputes in different 'rooms.'").

159. Proponents of mediation claim it saves the participants lawyers' and consultants' fees spent in protracted litigation. See, e.g., Schiffer & Juni, supra note 53, at 11 ("We believe that ADR may be especially useful in settling many of the complex, multi-party cases the Division handles because ADR techniques can provide a quicker, cheaper resolution."). On a personal, anecdotal level, I offer the response given by my law school classmate Ann Johnston to a question on a form submitted for a ten-year class reunion. The question was: "What has been the most fulfilling thing you've done in your professional life?" Her answer was: "Successfully mediating a large environmental cost allocation dispute, which collectively saved the parties approximately $10-15 million in litigation costs." Stanford Law School, Class of Greater 1985: 10 Years (1995) (on file with author).

It is not obvious that mediation is always more efficient than litigation. See Amy, supra note 18, at 222 (claiming that mediation is not less expensive than litigation for public interest groups); Hodges, supra note 36, at 1055 n.287 ("Empirical evidence
expensive because it would eliminate expenses of physically assembling disputants.\textsuperscript{160} Cyberspace allows multiple parties separated by great distances to communicate with one another without traveling.\textsuperscript{161} However, the costs of providing participants with access to technology and training may offset any travel savings. I have assumed that the online mediation proceeding would be dynamic, that is, not conducted in real time. This would require disputants to have enough computer time available for unlimited access to the mediator and other disputants. This might be a considerable burden on a small group when one figures in costs of Internet access and the opportunity costs of tying up its computer resources for the duration of the proceeding. There are also costs necessary to research and articulate one's position. These may be higher than in the offline setting due to the need to generate textual information.\textsuperscript{162}

As Dean Perritt acknowledges, there is another potential cost problem that stems from the "asymmetry of costs" for an online mediator. She would incur higher transaction costs than the participants, because she must evaluate each message in its entirety (i.e., open, read, and close it).\textsuperscript{163} This could be particularly costly in environmental mediation, where the mediator might have to devote considerable effort to reviewing complex submissions.\textsuperscript{164} Developing the mediation space and creating hypothetical scenarios for the parties' consideration would also be time-consuming and costly. All of this might lead a mediator to generate high fees that would offset any potential cost savings.

\textsuperscript{160} See Granat, supra note 1; see also Hardy, supra note 3, at 232-33 (claiming that an E-mail conference saved the participants considerable expense).

\textsuperscript{161} See, e.g., Katsh, Law in a Digital World, supra note 2, at 415 ("Cyberspace assumes that the removal of spatial barriers combined with the high level of online interaction creates a feeling among those electronically connected that they are indeed in the same place even though they are physically separated by great distances."); Perritt, Electronic Dispute Resolution, supra note 1.

\textsuperscript{162} As Douglas Amy points out, this is also a reason to believe that any form of mediation may be more expensive than litigation for a public interest group. See Amy, supra note 18, at 222.

\textsuperscript{163} See Perritt, Electronic Dispute Resolution, supra note 1.

\textsuperscript{164} See id. (referring to the effort involved in reviewing submissions as an "asymmetry of costs").
III. LIMITATIONS SUGGESTED BY THE ANALOGY TO ONLINE COMMUNITIES (MODERATED LISTSERVS)

In Part II, I focused on concerns about online mediation stemming from its electronic character. In this Part, I focus on additional problems posed by analogy to the communicational dynamics of a type of online community, the mailing list forum or "moderated listserv." Listservs are avocational, scholarly, or professional groups that allow persons to conduct E-mail dialogues with others who share their interests. Conversation in listservs is an online dialogue consisting of electronic "postings" to a common E-mail address. In a moderated listserv, the list administrator reviews E-mail posts, then distributes them to list members.

At the outset, one might wonder why the analogy is useful. A listserv is admittedly different from a mediation proceeding, where the purpose of the dialogue is to resolve a dispute. The listserv usually involves a group assembled for avocational or scholarly purposes and the mediation proceeding involves collaborative problem-solving of a conflict within a legal framework. As one commentator observes, ADR is not "analogous to a therapy session or a friendly, disinterested discussion of policy options." There is an initial distribution of legal rights and responsibilities in our hypothetical mediation proceeding not present in a listserv.

165. For the most part, I focus on moderated listservs because the influence of an online mediator will compare in certain ways to that of the list administrator in a moderated listserv. Each, for example, has the power to suppress speech.

166. "Bgrass-L," for example, is a listserv dedicated to musicians and others interested in bluegrass music. <listserv@lsv.uky.edu> (administrative E-mail address).

167. For example, "envlawprofs" is a listserv for environmental law professors. <envlawprofs@darkwing.uoregon.edu> (administrative E-mail address).

168. To cite just one of the many examples, a recent article on mailing lists discusses "LIFEGARD," a list "for lifeguards that deals with any issue they feel is worthy of discussion with relation to their job." Shirley Duglin Kennedy, The Internet As a Communication Tool; Mailing Lists on Specific Topics Allow Broad Exchange of Information Via Electronic Mail, INFO. TODAY, Feb. 1997, at 39.

169. There are an estimated 25,000 or more of these groups currently in operation. See America Online Mailing List Directory, What Are Internet Mailing Lists? (visited Sept. 7, 1998) <http://ifrit.web.soi.com/mld/production/mld-general.html>. It is difficult to pinpoint this number accurately, as many lists are either private or restricted in their membership. See id.

170. Rose-Ackerman, supra note 59, at 1209.

171. In a CERCLA mediation proceeding, for example, the parties operate under a significant and very real constraint: if the proceeding is unsuccessful, the government...
However, participants in online communities behave in certain ways that might find analogies in an online mediation proceeding. My intent here is not to draw a comprehensive correlation between the two types of dialogue; I do not mean to suggest that an online mediation proceeding should be modeled after a listserv. Instead, I aim to illustrate some commonalities and show how they buttress an argument about flaws in online mediation. Many communicational dynamics will be similar in both groups. One of the participants' goals is the same in both groups—the construction of interdependent personal relationships. In both cases, this construction process will take place through an E-mail dialogue moderated by an intermediary. For this reason, the communication in a moderated listserv is closely related to that of online mediation. Moreover, this type of communication has been taking place for some time in listservs and has led to the development of various norms of E-mail use in cyberspace. Analyzing these norms and the flow of communication in online communities can offer valuable insight about the future of online mediation.

may recover all of the cleanup costs from any solvent party under the theory of joint and several liability except to the extent that the party can prove divisibility of the harm. See Eisen, supra note 56, at 904 n.101 (citing several cases).

172. In drawing this parallel, I am not ignoring the importance of utility maximizing in ADR. Any calculus about entering into ADR features an assessment of the transaction costs of ADR compared to commencement or continuation of litigation. See, e.g., Robert H. Mnookin, Why Negotiations Fail: An Exploration of Barriers to the Resolution of Conflict, 8 OHIO ST. J. ON DISP. RESOL. 235, 239-41 (1993) (stating that strategic behavior, conduct of a “self-interested party concerned with maximizing the size of his or her own [benefits in negotiation]” is a central characteristic of negotiation).

However, the attraction of personal interdependence is powerful, as ADR forms, such as mediation, promise by their very nature to facilitate increased interpersonal communication. In mediation, this is an essential element of the process. See supra Part II.A. Participants may claim, for example, that mediation allows them to form a relationship that enables them to “do business with one another in the future.” See Betty Joyce Nash, Finding Middle Ground: Mediation Growing as a Way to Settle Disputes, RICHMOND TIMES DISPATCH, July 14, 1997, at D-14 (quoting Alan Rudlin, Hunton and Williams, Richmond, VA). Mediators “typically suggest that the parties ‘eschew[] the language of individual rights in favor of the language of interdependent relationships.’” Grillo, supra note 113, at 1560. See Flaming, supra note 2, at 174 (noting that “cyberspace has been ‘civilized’ for quite some time”); Lide, supra note 3, at 195 (stating that “cyberspace is replete with customary ways of doing things”); Maltz, supra note 27.
A. Communication in Listservs

To satisfy our basic need to associate with others in groups, or, in the famous words of Marshall McLuhan, "to retrialize," we find ourselves taking advantage of the revolutionary opportunities to form online communities. People meet and talk in virtual communities in ways that differ from the offline setting. My example of online communities is probably familiar to many readers: mailing list forums, or "listservs" as they are more commonly known. These communities involve multiple

174. SHERRY TURKLE, LIFE ON THE SCREEN: IDENTITY IN THE AGE OF THE INTERNET 178 (1995) (quoting Marshall McLuhan). Observing that Americans have an associational character is not new; it dates back to de Tocqueville's statement that "Americans of all ages, all conditions, and all dispositions constantly form associations." 2 ALEXIS DE TOCQUEVILLE, DEMOCRACY IN AMERICA 513 (J.P. Mayer ed. 1969); see also Gregory S. Alexander, Dilemmas of Group Autonomy: Residential Associations and Community, 75 CORNELL L. REV. 1, 1 (1989) (noting that de Tocqueville's statement is "as valid today as it was in the mid-nineteenth century").

175. "Virtual communities," according to one popular definition, are "social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace." Howard Rheingold, The Virtual Community (visited Sept. 22, 1997) <http://www.well.com/user/hlr/vcbook/vcbookintro.html>; see generally TURKLE, supra note 174 (describing and analyzing the rise of virtual communities). These communities include multiuser domains ("MUDs"), and multiparty simulations available to anyone who has the requisite software and an Internet connection. See id. No one would seriously argue that these communities will replace offline communities. In the postmodern era, we appear interested in participating in both online and offline communities. Turkle argues that the advent of online communities has transformed us into a "culture of multiplicity" in which we form self-identity through groups in multiple and flexible ways. Id. at 258. Each mode of communication is another "window," affording us a new and distinct possibility for constructing a community of like-minded others.

176. See Lessig, supra note 26, at 1746 ("What results from this association [in virtual communities] is a dialogue of sorts, but one very different, I suggest, from dialogues that we now know.").

The popular notion that the only model of speech followed in these communities is a model of radical pluralism like that of an unregulated town hall meeting is inaccurate. Through dialogues, some online associations have constructed elaborate sets of informal norms comparable in some ways to those of different types of associations in the offline setting. See id. at 1745-46; see also Henry H. Perritt, Cyberspace Self Government: Town Hall Democracy or Rediscovered Royalism?, 12 BERKELEY TECH. L.J. 413 (1997).

177. See, e.g., Internet Mailing Lists: Guides and Resources (visited Sept. 17, 1997) <http://www.nlc-bnc.ca/ifla/l/training/listserv/lists.htm> [hereinafter Guides and Resources]. While the term "listserv" is popularly used to refer to any mailing list, this usage introduces some confusion, as "Listserv" is the original name of the Unix ListProcessor software designed for mailing list management. See James Milles, Discussion Lists: Mailing List Manager Commands (visited Sept. 17, 1997) <http://lawlib.slu.edu/training/mailser.htm> [hereinafter Mailing List Managers].
participants communicating with each other using E-mail technology; some groups feature a moderator or other person with responsibility of some sort to steer the discussion.

A listserv is controlled by a "list administrator" with software designed for managing E-mail messages and distributing them to multiple recipients. After joining the list, a member receives all E-mail "posts" that members send to the list. Some listservs are "unmoderated"; all messages sent to the list address are rebroadcast automatically to all list members. On a moderated listserv, the list administrator receives each incoming message, evaluates it and broadcasts it if she deems it relevant to the list's general subject. Although some listservs never generate more than a trickle of posts, a mature one can have dozens or even hundreds of posts each day, running the

178. The E-mail technology is the same in both settings, and there is reason to believe the style of messages would be similar. E-mail is a technology with which many participants have limited or no experience and in which actions are taken on a self-guided basis. When we compose E-mail, we do so alone. We do not send a message until we have completely composed it; there is no ability for others to influence development of our speech. We develop a style of communicating by E-mail primarily by drawing upon our individual experience with it, with only rudimentary norms to govern our interaction.


180. Software products for managing mailing lists are popularly called "list servers" or "mailing list managers."

181. An interested person joins a list by "subscribing": sending an E-mail message to the listserv's administrative E-mail address. See Guides and Resources, supra note 177.

182. See id.

183. See, e.g., Grant Parsons, There's An E-Mail List Just For You, THE NEWS AND OBSERVER, June 27, 1996, at E1; Ray, supra note 106, at 337.

184. See, e.g., Ray, supra note 106, at 337 (discussing the unmoderated nature of the "TECHWR-L" listserv for technical communicators); see also Carol Ebbinghouse, Current Awareness in the Law: Legal Listservs, SEARCHER, March 1997; Parsons, supra note 183.

Unlike a mediator, a listserv moderator usually makes no pretense of expertise at this evaluation, having started a list primarily by reason of her interest in the subject matter. Her success or failure at her role is judged by the group as a whole throughout the listserv's lifespan. See Kovacs et al., supra note 179.

185. See, e.g., Ebbinghouse, supra note 184.

186. See, e.g., Laura Bell, Mailing Lists: One of the Best-Kept Secrets on the Net, LINK-UP, July 1996, at 26 (noting that the "market-I" list generates over 100 messages on some days); Ray, supra note 106, at 337 (noting that the TECHWR-L list has 2,300 subscribers and generates an average of 40 messages daily).
gamut from messages requesting and sharing information\(^{187}\) to discussions of topics of interest. The flow of information can appear overwhelming, and the enthusiasm of joining a list can be quickly dampened by the tedium of wading through dozens of messages to find those of interest.\(^ {188}\)

Some listservs evolve far beyond the paradigm of the soap-box in the village square. Listserv members can take part in a remarkable transition from viewing others as mere names and E-mail addresses to identifying with them as part of an online community.\(^ {189}\) Each community establishes its norms in exchanges of E-mail messages that discuss and refine group purposes and values.\(^ {190}\) The process of normative construction is hardly formal or regularized.\(^ {191}\) Therefore, group norms can be

\(^{187}\) See, e.g., Ebbinghouse, *supra* note 184.

\(^{188}\) The use of “digest” mode, which condenses each day’s messages into one daily message with subject headings, can help cut down on the time spent sifting through messages. See *id.* At times, discussions conjure up angels dancing on the head of a pin. Lengthy discussions can be devoted to deciding such esoteric issues as whether “on-line” or “online” is the correct usage. See Ray, *supra* note 106, at 337 (describing this discussion on the TECHWR-L list).

\(^{189}\) Commentary about lists often refers to a listserv’s “strong sense of community.” “Liszt,” one of the largest directories of mailing lists on the Internet, offers the following “warning” about participation on listservs: “The main thing to remember is that, unlike a web page or a search engine or an ‘Internet resource,’ these groups are groups. They often have a strong sense of community, and their own rules and traditions, and you want to be polite on their turf.” *Liszt: Intro to Mailing Lists* (visited Sept. 17, 1997) <http://www.liszt.com/intro.html>; see also Parsons, *supra* note 183, at 336; cf. TURKLE, *supra* note 174, at 183.

“Community,” of course, is a complex and controversial term in legal literature. See generally Alexander, *supra* note 174, at 21-33 (examining various theories for discussing communities as regulative ideals and as institutions). Some would claim a listserv is not a “community” because list members never meet in person. See, e.g., Kamin, *supra* note 28, § 5, at 1 (noting that “it is far easier to slap a label that says ‘community’ on a product than to come up with the real thing”). A MUD or listserv is only a simulation of “real life,” as life off the screen is termed by its participants. See TURKLE, *supra* note 174, at 12, 234-35. The inference that this prevents community formation online contradicts a widely accepted tenet of modern communitarian theory that the shared understanding of a community is experiential, not territorial. See Alexander, *supra* note 174, at 25. If an individual cannot perceive the “experience of belonging,” there is no community. See *id.* at 26. At the core of a community is a sense that “[m]embers of communities are drawn together by shared visions that constitute for each of them their personal identity.” *Id.*

\(^{190}\) The shared understanding in listservs is created by a dialogic process of community construction by which list members establish, nurture, and maintain multiparty relationships in order to make and enforce group norms. It is not accidental that exchanges about subjects of interest to listserv members are known as “threads,” for they create and strengthen the fabric of the community.

\(^{191}\) Conversations about group norms arise periodically throughout a listserv’s lifespan. Most participants do not consciously express the sentiment that they are
described as rough at best and any conclusion about their nature is open to interpretation. Some norms are reflected in "netiquette," but others are reflected both formally (in archives of past posts that serve essentially the same function as libraries) and informally (in unspoken understandings among group participants). Enforceability derives in part from the list administrator's authority and in part from the creation of a shared understanding that prompts list members to become invested in the group and fosters interdependence among them.

B. The Analogy to Communication in Listservs: Specific Issues

The potential parallels between interaction in listservs and online mediation groups include the dynamics of attachment which inhere in a community of group members and the rules of engagement which moderate the group's speech. Both of these suggest reasons to be concerned about online mediation.

engaging in group definition, which makes it difficult to separate important posts undergirding group norms from esoteric or mundane posts.

A group can establish its norms indirectly. Group veterans, for example, may rebuke newcomers who flout list conventions. A newcomer to a listserv is a "newbie." See, e.g., Bell, supra note 186. An example of a newbie's act that might prompt a rebuke is a post that attempts to initiate discussion on a subject that group members have "settled" in the past. See, e.g., Ebbinghouse, supra note 184, at 26 (discussing the function of archives in averting such posts). The process of establishing norms may be more explicit. A provocative posting by a list member may result in a series of posts that discusses a group purpose or value. That post may express an interest in group definition very literally; it might begin with a comment that, "I think this group is all about [a particular subject]." The resulting series of E-mail messages and responses can give list members a sense of common understanding about the subject matter at hand. While they may not agree on the subject, the vigorous give-and-take among members is a sign of a healthy group in most instances.


193. See, e.g., Ebbinghouse, supra note 184 (discussing this function of archives in legal listservs). An archive might contain a set of responses to the most common inquiries by list members. It also can and often does contain the original statement of group identification, perhaps updated to reflect an evolution of group purposes and values. See id.
1. Problems of fostering continued attachment to the proceeding

In both groups, members' continued participation is not usually compelled. Any member of a listserv may choose at any time to end her affiliation with the list. Any party to a CERCLA mediation proceeding may convince other PRPs to end the mediation or to negotiate a private settlement with the government at any time during the proceeding. In order for an online environmental mediation proceeding to succeed, there must be some means of ensuring that attachment is not completely transitory. If participants perceive that there is no bond among them, they will disengage completely or reach individual settlements with the EPA, and mediation is unlikely to succeed.

Here the electronic "distance" that is so appealing to mediators can work against them. Participants are only visibly taking part in the proceeding when they are posting E-mail messages. They can use this distance to create temporary or permanent breaks in the online mediation proceeding. To the extent that the mediator cannot correct for this behavior, it is problematic.

a. Temporary breaks (offline caucusing and "lurking"). An interesting phenomenon in listservs is the frequency of communication among individual members in private E-mail messages "off list." List members often see this as a valuable way of forming friendships and exchanging information they believe to be of a more private nature. No one on the listserv receives notice of this communication unless the participants provide it. For example, they may suggest that an online discussion go off-list. Unless they do this, the moderator would have little if any ability to limit off-list communication.

---

194. The EPA's attachment to the mediation group is also not compelled. It retains all of its authority to decide whether or not to settle a CERCLA case, including the authority to discontinue participation in the mediation. See EPA ADR Fact Sheet, supra note 57. The ability to withdraw from the proceeding is usually a matter for negotiation. See id.; see also Hodges, supra note 36, at 1068-69 (discussing whether mediation in cases arising under the Americans With Disabilities Act should be voluntary or mandatory, and proposing that "given the risks . . . the first effort should be voluntary mediation").

195. A CERCLA mediation proceeding might founder without the continued participation of parties viewed as either necessary or indispensable. If only some PRPs continue in the proceeding, there is a high likelihood that beneficial relations among the participants would be offset by adverse relations with others not present. See, e.g., EPA ADR Draft Status Report, supra note 19, at 44-45 (citing the Purity Oil case, where "[t]he lesson we learned is that the sense of participation in the process was critical in getting the PRPs to accept the settlement").
Off-list communication resembles the practice in mediation of convening caucuses of members outside the presence of the full group of participants. A mediator often assumes that parties have discussed matters of mutual interest before entering into a mediation proceeding. She might want to prohibit or otherwise control caucusing after the proceeding begins. However, in online mediation a caucus could take place without anyone's knowledge. Because one can communicate offline without appearing to whisper, it is unlike a face-to-face conversation where one must physically leave the room to caucus. A ground rule attempting to forbid this would be unenforceable. The mediator would have little ability to know whether valuable or sensitive information was being disclosed only in a caucus and to the exclusion of other participants. A rump group of participants, for example, could agree on cost allocation criteria that worked to the disadvantage of other parties. The potential for this is particularly high in CERCLA disputes, as a major barrier to resolution in many such disputes is often the refusal of some participants to share vital information with others.

So far I have assumed the temporary break stems from an alternate conversation taking place among participants offline. There is another way in which a participant can take a temporary break: by simply not responding to other participants' E-mail messages. On listservs this familiar practice is known as "lurking." Invariably, certain list members come to be generally identified as prominent members who participate in most

196. See, e.g., Hardy, supra note 3, at 232 ("Some of the productive aspects of face-to-face conferences lie in taking a break from the conference but still being able to talk with colleagues.").

A mediator may also convene a caucus with one or more participants to explore issues privately. See Raymond E. Tompkins, Mediation, the Mediator and the Environment, NAT. RESOURCES & ENV'T, Summer 1996, at 27, 28 (describing a caucusing process); see also John D. Feerick, Toward Uniform Standards of Conduct for Mediators, 38 S. TEX. L. REV. 455, 463 (1997); Hodges, supra note 36, at 1089. In online mediation, caucusing would presumably be done online by a private E-mail discussion.

197. See Hardy, supra note 3, at 232.

198. Of course, participants in a "real time" mediation proceeding could caucus privately during breaks or between sessions. My point here is that the ability to caucus in online mediation is much more expansive, as other disputants would not know that caucuses were taking place.

199. See, e.g., Price, supra note 104, at 5 (citing comments of Professor Robert Mnookin, Harvard Law School, to this effect).

200. See, e.g., Parsons, supra note 183, at E1.
debates; others are lurkers who rarely post, if at all. Other participants would not know the purpose of a lurker’s silence. As the earlier discussion about “thoughtful” responses indicates, some would argue the ability to lurk is beneficial in online mediation. It could allow a participant some time to read and formulate a response to previous posts. But it also could be done for a less desirable reason such as purposeful delay.

Could a mediator regulate lurking by compelling participants to speak? This is the intent of one proponent, who suggests that “[i]nsofar as the parties dawdle or prevaricate, we can create paths and prompts that call their bluffs and speed them towards more serious and honest efforts.” The electronic distance and asynchronous nature of E-mail create serious shortcomings for this approach. Coercing the participants to speak threatens to make the mediator more authoritarian than in the offline setting, where participants are not compelled to speak. It also contradicts the stated goal of letting participants have time to deliberate. Mediators cannot have it both ways: either participants can “respond when they are capably prepared,” or they can be forced to speak by some deadline. Putting time limits on responses, as one mediator suggests doing, implies the possibility of sanctions for those who fail to respond in a timely fashion. In a face-to-face conversation a mediator can interpret silence as assent. It would be dangerous to do the same thing in online mediation, for the mediator would have no way of know-

201. Identification as an influential member of the group can happen simply by posting enough messages to sway others’ opinions. Sometimes, however, members express what they believe to be a general consensus that another member is a central member of the listserv. A thread may not be considered exhausted until this person has had a chance to speak.

202. See, e.g., Hardy, supra note 3, at 233 (stating that in an E-mail conference, “[i]t was a distinct advantage for participants to be able to ‘drop in’ or out of the conference from time to time and yet fairly quickly be able to read over the transcript of all comments”).

203. See, e.g., Krivis, supra note 121 (recognizing this possibility and suggesting that the agreement among the parties contain provisions for “managing delays in responding online”).

204. Johnson, supra note 3, at 119. For example, a mediator might suggest a ground rule that articulated a time limit for responding to another party’s message. See, e.g., Krivis, supra note 121 (proposing this as a “tip” for online mediation).

205. Melamed & Helie, supra note 3.

206. To the extent that the mediator sets time limits, of course, the mediator would arrogate to herself the authority to decide when each participant has had enough time to contemplate a proposal.

207. See Krivis, supra note 121.
ing the reason for a participant’s silence. Assuming a mediator did enforce time limits, she might be inundated with messages, perhaps receiving them from all participants at once. She could face the problem of sifting through numerous messages sent just before the deadline.

b. Permanent departures from the proceeding. In addition to breaking temporarily from the proceeding, a participant can leave permanently in two ways. The first is a publicly announced departure. In a listserv, a member may end her participation by sending an E-mail message to the list administrator asking to be removed from the list or by forming another listserv. Any participant’s attachment to either a listserv or online mediation proceeding will depend on whether she perceives that participating in the group meets her important needs. In both settings, the moderator or mediator must leave some flexibility on this issue. Participants cannot readily determine in advance whether their needs will be met. In a listserv, a member subscribes, then reads the E-mail traffic and perhaps even posts her own messages. If she is then dissatisfied by the quality of interaction, she can unsubscribe. In our mediation proceeding, a party must decide whether to be bound by any agreement, which it typically will not do until it knows what the agreement is. This usually requires a commitment that it cannot give in advance.

However, if parties are completely free to leave the group, there is little investment in the process. As in the offline setting, continued participation depends on each participant’s ongoing

208. This is an excellent example of what Dean Perritt terms the “asymmetry” problem in online dispute resolution: it would not require much effort on each participant’s part to send a message, but considerable involvement on the mediator’s part to sift through the group of messages. See Perritt, Electronic Dispute Resolution, supra note 1.

209. See Guides and Resources, supra note 177.

210. Nonbinding mediation “carries the risk that disgruntled parties will refuse to enter into a settlement.” Stephanie Pullen Brown, Alternative Dispute Resolution: An Alternative to Superfund Litigation (visited Sept. 7, 1998) <http://www.pipermar.com/article10.html>; see Susskind & McMahon, supra note 52, at 140-41. This article states that in negotiated rulemaking:

Each party must feel that the negotiated rule serves its interests at least as well as the version of the rule most likely to be developed through the conventional process. The only way of testing this latter criterion is to compare the attitudes of the participants at the end of the process with their initial statements of expectations.

Id.
assessment of whether the mediation process is leading to a desirable result. This has both a substantive component (the participant continues to believe the outcome will be better for her client) and interpersonal component (the "venting" of issues in environmental mediation builds the notion of reciprocal and lasting personal attachment). To put it another way, the participant will continue to belong to the online mediation proceeding whenever the perceived costs of withdrawal are higher than the benefits of connectedness. This is also true in a listserv, which will collapse of its own accord if no one posts a message to the common forum.

The second way of departing the proceeding permanently is unique to the online setting. A PRP, like any member of a listserv, can withdraw for all practical purposes from a CERCLA mediation proceeding by lurking for a prolonged period or by responding only sporadically. The difference here, of course, is that this participant is not publicly announcing its departure. Perhaps this participant is making the same calculus as above, that is, that the costs of continued participation outweigh the benefits. This might be a highly strategic decision: a PRP might be free riding on the benefit of information disclosed by other participants, with the intent of using that information in subsequent litigation. If that is the case, the other participants should have the benefit of this knowledge. Because no one can bind this PRP to the mediation agreement, it is important for the mediator and other participants to ascertain whether the participant has in fact "checked out." If, for example, the purpose of the mediation proceeding is to allocate response costs at

211. Tompkins, supra note 196, at 28.

212. See, e.g., Ferritt, NII Initiative, supra note 3, at 992 (contrasting prisons and exercise gyms, with the community in the latter involving low transaction costs of withdrawal). Of course, the online forum has one characteristic that distinguishes it from either the prison or the exercise gym: one's membership is not visible. See, e.g., Lori Tripoli, Online Chat Rooms Bring Clients Together for Multi-Party Litigation Management, OF COUNSEL, Mar. 2, 1998, at 19 (quoting the statement of attorney Ken Bass that "the real problem with chat rooms is lurkers" and "you don't know who's there").

213. Of course, this is possible only to the extent that the mediator does not attempt to correct for it by requesting that the parties make binding decisions during the course of the proceeding. Mediation, however, is not always a seriatim form of decision making. Decisions made earlier in a proceeding may be undone later.

214. See, e.g., Hodges, supra note 36, at 1089 (suggesting this as a possibility absent a binding confidentiality agreement).
a Superfund site, it will be critical to know whether that partici­
pant intends to pay its allocated share.

How should the mediator decide whether a participant has
left the proceeding? In a face-to-face conversation, the mediator
can simply trust her evaluation of the participant’s actions. In
online mediation, it will be harder to tell whether a participant
has departed from the proceeding. The PRP might be silent pre­
cisely because she believes that other parties have accurately
and adequately carried the discussion. The ability to distinguish
permanent lurkers from satisfied but relatively passive partici­
pants requires mediators to have judgment skills that they do
not currently possess. A mediator might attempt to deal with
this problem by requiring parties to check in with her from time
to time. This could be easily circumvented by a participant who
checked in and then went on to disregard the remainder of the
proceeding.

2. Regulating speech in the proceeding

A mediator is responsible for controlling the directional flow
of communication.215 The use of E-mail makes this more diffi­
cult, as experience with moderated listservs shows. Simply
knowing whether a participant has sent a message may be im­
possible if the sender made typographical errors or if there were
other network failures.216 The asynchronous nature of E-mail
gives everyone the ability to speak at once without the knowl­
dge that another party is doing so. On a listserv, it is often the
case that multiple posts are made simultaneously expressing
the same sentiment. Even if the online mediator established set
“meeting” times when participants would send E-mail messages,
she could not avoid this sort of repetition. She could request that
the parties take turns speaking, a fairly common practice in the
face-to-face setting. Once again, she would have a difficult time
balancing the countervailing goals of spontaneity and efficiency.

215. See, e.g., Ruhl, supra note 59, at 793 (noting that in mediation there is a flow
of information from the participants to the mediator and the mediator’s role is to
control that flow).

216. If the sender uses an inaccurate address (e.g., by reason of a typographical
error) in transmitting a message, most E-mail software will reject an attempt to deliver
such a message, with the result being that the mediator would not know that it had
been sent. If the sender misuses its E-mail software, the participant might even create
a “loop” on a moderated listserv in which “messages are echoed back and forth between
LISTSERV and mail software elsewhere on the network.” Kovacs et. al., supra note 179.
Perhaps a more difficult task for the mediator is the most important responsibility facing any moderator of an online discussion: keeping the conversation focused by separating relevant from irrelevant speech. The importance of this is underscored by contrasting moderated and unmoderated listservs. In the latter, the problem of “off-topic” messages can threaten the list’s existence, as discussions can become unfocused and rambling. On a moderated listserv this is less likely, as the moderator exercises influence to keep the debates focused on the list topic by declining to post speech she deems inappropriate for the list. She might also restrict the use of foul language or prohibit advertising or “spamming” (widely broadcast junk E-mail). A good moderator, says one expert, has an “active, though not dictatorial, editorial persona.” Extending this analogy to the online mediation proceeding presents some obvious problems, none of which mediators are prepared to address adequately.

a. Keeping discussions focused “on-topic.” If the mediator intends to suppress some speech in the name of keeping the discussion more focused, what standards should she apply? Analogizing to listservs, some decisions would be relatively straight-forward. Participants in lists usually find themselves in general agreement that there is a topic to which messages are supposed to pertain. Members of a list devoted to Elvis Pres-
ley would probably object to a post about plumbing unless it happened to refer to the bathrooms at Graceland.224 Similarly, the mediator in an online environmental mediation proceeding could suppress a post about family law matters without incurring much wrath from the participants.

Beyond such clear decisions, separating the wheat from the chaff is much more difficult online. Like a listserv moderator, the mediator would believe it to be her responsibility to filter out messages that would tend to derail the proceeding, such as messages expressing anger, emotion, or bias. Mediators, of course, will argue that they can do this online,225 but this is easier said than done. A mediator could misinterpret the intent of an E-mail message.226 Without the normal ability to read body language or hear the tone of speech, the mediator could misconstrue a seemingly innocuous message.227 She might also not be able to tell whether a participant was lying or distorting the truth.228

There are other problems. In the offline setting, a mediator can interrupt a party who is speaking heatedly. There is no com-

224. See, e.g., Maltz, supra note 27 ("Straying from the protocol excludes the speaker from the group; joining a Chess discussion group and writing about Go, joining a fantasy community and talking about the budget crisis, . . . will immediately generate messages that the activity is not consistent with the aims and purpose of the group.").

225. See Krivis, supra note 121 (advising mediators that "[w]hen responding to E-mail messages, filter angry or emotional replies so that the other party receives a response that doesn't create further hostility").

226. This phenomenon is perhaps best demonstrated by examining the archives of virtually any listserv. A post can be somewhat related to the subject at hand but interpreted in subsequent posts and counterposts in such a fashion that the discussion thread becomes inappropriate for the list. See, e.g., Ray, supra note 106.

227. But see Hardy, supra note 3, at 223 (claiming it is easier for a moderator to reduce interpersonal clashes in E-mail exchanges). "Even face-to-face conferences, for that matter, sometimes exhibit sharp personal commentary. There, as with electronic conferences, a good moderator removes much of that risk—and more easily so with e-mail than otherwise." Id.

228. A participant, for example, might send a message that was either innocently misleading or deliberately inaccurate. The potential for this is amply demonstrated by the spate of recent warnings that one cannot trust information on the Internet. See, e.g., Gregory Kallenberg, News on the Net Needs a Course in Ethics, Patience, AUSTIN AM.-STATESMAN, June 26, 1997, at 6 (calling the World Wide Web "a place where the integrity of information can't be trusted"); Tom Mashberg, Innocent Are Easy Prey For Groups' Web of Deceit, BOSTON HERALD, Mar. 30, 1997, at 9 (characterizing the Internet as a forum for the growth of "global information pollution"); Radio Interview by Robert Siegel with Brock Meeks, Correspondent for 'Wired' Magazine, National Public Radio (Feb. 15, 1996) (transcript available at 1996 WL 4369971) (advocating the use of individual common sense in determining trustworthiness of information on the Internet).
parable ability in the online setting, where the mediator does not have the ability to cut off discussion in real time if she anticipates that it is irrelevant or otherwise unproductive. She must make judgments about entire messages. She would be vulnerable to the E-mail bully who sends lengthy messages intended to dominate the discussion. If a lengthy E-mail message contains one small fragment the mediator believes should be suppressed, she might alter the meaning of the message by doing so. If she filtered out what she deemed irrelevant, her decisions would be unchecked by other participants except to the extent they can discern that she has crossed the line between being active and dictatorial. This is perhaps easier to do in listservs. A listserv moderator makes no pretense of neutrality or expertise in editing, so there is usually no predisposition toward validating her decisions. An online mediator, by contrast, would attempt to foreclose inquiries about her editing, even though she may be no better at it than the listserv moderator.

b. Moderating speech involving fundamental legal or value conflicts among participants. The mediator would have an especially difficult task in deciding unilaterally whether to rebroadcast a message if it discussed a subject on which there is a fundamental legal or value split among group members. Commentators agree that consensus building among parties in environmental disputes is difficult or even impossible in cases of irreconcilable conflicts on fundamental issues. The danger, of course, is that such a disagreement is discovered in the middle of the proceeding. A meeting at the outset would not cure this problem, for it is impossible to anticipate all disagreements in advance. A conflict might only become known after a participant has had a chance to articulate its position.

If participants disagree sharply over central issues, deciding whether speech about that conflict is “on-topic” would be virtu-
ally impossible. This would require the mediator to have the ability to distinguish between two types of posts: those expressing lively disagreement about subissues and those expressing positions on more fundamental issues. Suppose a participant in a CERCLA mediation proceeding involving cost allocation posted a message that proposed designating a cost share of $0 for a major polluter. Allowing this participant to escape financial responsibility altogether would contradict CERCLA’s bedrock “polluter pays” principle. Adhering to this principle is a basic goal of environmentalists, who would probably object strenuously to this proposal and would consider ending the mediation proceeding if the participant persevered. If the mediator suppressed this message, she might be unaware that she had prevented the parties from becoming aware of a fundamental value conflict.

The fact that the mediator might be the only person who would know a fundamental conflict had arisen is unique to the online setting. Again, consider the environmentalists’ objection to the message allocating a zero cost share to a major polluter. In a face-to-face conversation, a participant could make this clear to the mediator. In online mediation, this would be possible only if the mediator had not suppressed the message; otherwise, the rest of the participants would not know about it. The mediator might decide to solve this problem in a fashion common on moderated listservs, by broadcasting messages she deemed controversial with some form of request that the parties comment on them. Decision-making power on speech issues can be exercised on moderated listservs after consultation with list members through an online dialogue. Relying on this escape valve requires the mediator to know which messages present fundamental conflicts and which do not, thereby placing a substantial burden on her.

230. This refers to the orientation of CERCLA to imposing liability on those responsible for the pollution at a Superfund site. 42 U.S.C. § 9607 (1994) (imposing liability on four classes of responsible persons or entities); see Harold C. Barnett, Toxic Debts and the Superfund Dilemma 5 (1994) (“The imposition [in CERCLA] of a cleanup tax on the petrochemical industry and the acceptance of a make-polluters-pay principle demonstrate that public pressure can counter corporate power.”).
IV. CONCLUSION

My intent here has been to show that challenges such as those mentioned in this Article require us to take a much more cautious view of online mediation than do its proponents. One proponent says, "the potential for the impact of new technologies on ADR is as great as the scope of our imagination." In this view the advantages are virtually limitless and the shortcomings are obvious and easily overcome.

Online mediation, however, poses substantially different challenges from mediation in the offline setting. To raise issues such as those discussed in this Article is to acknowledge that mediators cannot yet address a number of significant impediments to resolving disputes online. Mediators will learn just how different online mediation will be by experimenting with it, and redesigning traditional processes to take advantage of new technology. However, to borrow from a proponent's metaphor, while online mediation requires a new dispute resolution architecture, today's mediators are not the right architects to design and build it. Mediators claim they can translate their skills to the online setting. I disagree, and believe that better training is needed before that claim can be substantiated. More attention must be paid to issues related to communication, asymmetry of computer resources, and the role of the mediator before mediators attempt dispute resolution online in the multiparty setting. More experimental mediations in controlled online settings must be done. Professional associations, such as SPIDR, must continue to discuss revamping training programs.

The analysis here assumes the use of technology commonly available today. However, both cyberspace's size and scope are changing rapidly, and new forms of personal interaction are

231. Johnson, supra note 3, at 119.
232. See, e.g., American University Conference, supra note 3, at 455 (remarks of Professor Ethan Katsh that designing a mediation space online is a "challenging task").
233. See Lessig, supra note 26, at 1744 ("We will discover what is new by applying, and failing to apply well, what is ordinary or old to this new space.").
234. See Flaming, supra note 2, at 178 (claiming that the Internet is doubling in size every year); Lide, supra note 3, at 217.
235. See Katsh, ADR in Cyberspace, supra note 3, at 958 ("Cyberspace is in transition, both in terms of how populated it is and in what it is used for."); Lide, supra note 3, at 217 (stating that "the number and variety of services being offered on-line, are . . . growing with astonishing rapidity" (quoting I. Trotter Hardy, The Proper Legal Regime for "Cyberspace", 55 U. Pitt. L. Rev., 993, 1025 (1994))).
This transformation makes mediation virtually certain to become popular in cyberspace. Perhaps the best place to start experimenting is in those situations where a well-developed relationship exists between a small number of parties before commencing mediation. Until technology replicating face-to-face interaction is available universally at a low cost and well understood by all those who would participate, however, the time is not right for wider use of online mediation.

236. See, e.g., Lide, supra note 3, at 220 (noting that “more ‘experiential’ media such as two-way video and audio are developing rapidly”).

237. See Katsh, ADR in Cyberspace, supra note 3, at 955 (stating that cyberspace “will lead to the development of online dispute resolution processes and institutions, thus mirroring much conflict resolving behavior of the physical world”); Lide, supra note 3, at 220 (stating that “online ADR’s ability to effectively resolve more complex disputes will likely increase as technology increases”).

238. This has been suggested by at least one mediator involved in considering online mediation. See Telephone Conversation with Professor Michael Lang, supra note 17.