TECHNOLOGY MEDIATED DISPUTE RESOLUTION (TMDR): OPPORTUNITIES AND DANGERS

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I. INTRODUCTION

TECHNOLOGY mediated dispute resolution ("TMDR") is not new. In fact, we have been engaged in TMDR throughout our careers. We use telephones, facsimile machines, e-mail messaging, and we continue to add new technologies to our dispute resolution practices. As the name suggests, TMDR simply describes dispute resolution processes that use technology to facilitate communication and information exchange.[1] To approach the matter quite literally, we have been engaged in TMDR ever since societies learned to process natural resources to help accomplish specific tasks. The paper upon which dispute resolvers have written for centuries, for instance, is the result of a production "technology."

But significant societal changes are occurring. The technologies that now are available present opportunities for dispute resolution that are restrained only by the limits of our imagination.[2] Some of the possibilities appear to border on fantasy. But currently and imminently available technologies offer possibilities that will reshape the way that we think about problem solving. One consequence is that TMDR is demanding our attention faster than we might have anticipated.

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1. The phrase "technology mediated dispute resolution," or "TMDR," includes satellite and radio frequency mediated communications as well as online communications. This phrase offers a more accurate and inclusive description of the different technologies that can be used to help resolve disputes than the term "online dispute resolution" ("ODR").

2. In an effort to encourage students and lawyers to think as creatively as possible about the Rules of Evidence, Professor Irving Younger once reminded us that we are restrained only by the limits of a "diseased imagination." Videotape: Basic Concepts in the Law of Evidence (National Institute for Trial Advocacy 1975).

Not only are traditional offline face-to-face meetings becoming more costly, but we have a generation of children that increasingly rely on technology to communicate.

We need to think broadly about how our world is changing and how our dispute resolution systems will adapt. First, we must appreciate how children are using different communication mediums and become at least minimally competent in those technologies if we hope to serve that population as it matures into adulthood. Second, we must acknowledge that as China and India's demand for oil begins to surge, the cost of transporting ourselves from one location to another is going to spike more quickly than we ever have dreamed. Regardless of whether we are moving from city to city or merely across town, the financial cost of travel will force us to reconsider whether we truly need to meet face-to-face. Third, we cannot pretend that international travel—or even domestic travel—is as safe and reliable as it was a decade ago. In addition to the increasing costs, travelers must contend with increasing safety concerns. Face-to-face meetings soon may be regarded as an impractical luxury. So, regardless of whether you are as excited as I am about the potential that TMDR offers, you will find yourself turning to it out of necessity.

This article analyzes the increasing role of technology in dispute resolution in two parts. The first part, discussed in section II immediately following, identifies the opportunities we have to communicate more effectively through the use of new and expanding technologies. Section II also examines the need to embrace these technologies to accommodate the next generation of problem solvers. The section explores one of the latest technological developments, tele-immersion, and its possible effect on TMDR processes. It also reviews recent sociological data that confirms teenagers and pre-teens increasingly are relying on technology to facilitate their communications. That age group's whole-hearted embrace of technology mediated communications assures that they will continue to depend on technology as they move into adulthood and their careers. If we are going to assist them with problem solving, then we need to understand the technologies that they use. Finally, section II addresses some of the reasons why TMDR may be the best option for the future.

The second part of the article, identified as section III, analyzes the potential dangers technology presents by addressing five questions: (1) Can we achieve the goals in a virtual environment that we value in our offline dispute resolution proceedings, or do virtual spaces produce only virtual agreements? (2) Do we lose valuable opportunities to connect with each other when we communicate in a virtual environment? (3) Will TMDR leave us less content? (4) Does technology make it easier for neutrals to manipulate the dispute resolution process? (5) What external threats are implicit in technology?

This article does not pretend to offer an exhaustive analysis of how technology can be used to facilitate dispute resolution. Nor does it explain how all the dangers inherent in those technologies can be controlled. Rather, this article attempts to continue a discussion to which others will contribute.

II. OPPORTUNITIES

A. The Potential Impact of Tele-immersion

For those of you who watched *Star Trek: The Next Generation*, you may recall that Captain Jean Luc Picard and other Enterprise crew members occasionally would go to the holodeck for relaxation and exercise. Although I never have been a "trekkie,"[3] I confess to having watched more than a few episodes of the various *Star Trek* television series. The holodeck was an amazing creation—a computer-controlled room that would transform itself convincingly into any three-dimensional environment imaginable. It was there that crew members, and Jean Luc himself, could place themselves into a sword fight with medieval knights or into a relaxing tropical paradise, forgetting, at least momentarily, that they were on a starship rocketing through the universe. The holodeck could create both the virtual environment, and the apparently living, breathing, independently acting characters that naturally occupied it.

Similarly, although not quite as impressive, a technology known as tele-immersion allows participants to feel as though they share the same space with individuals who physically are in other locations.[4] Unlike videoconferencing, tele-immersion creates three-dimensional images. As a result, participants can use verbal and nonverbal cues more effectively. For instance, tele-immersion enables participants to make virtual eye contact with the other participants.

For some individuals, these nonverbal cues are critical to the dispute resolution process. In fact, a common criticism of text-based online dispute resolution processes is that they deprive participants of nonverbal cues—a shortcoming that even a web camera or another video technology may not resolve. As Jaron Lanier stated, eye contact is a "nearly ubiquitous subconscious method of affirming trust," but eye contact with a two-dimensional video image is lifeless and devoid of meaning.[5] Thus, tele-immersion is far superior to a two-

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3. A "trekkie" is an ardent fan of *Star Trek*. More specifically,

> In the late 1960s, science fiction editor Art Saha applied the term 'trekkies' when he saw a few fans of the first season of *Star Trek* wearing pointy ears at a science fiction convention.… Today, the word is found in the *Concise Oxford Dictionary*, and aficionados of the long-run series have seen their subculture achieve stratospheric status. The series preferences of 'Trekkies' vary widely, however, with some having distinct preferences for *The Original Series*, *The Next Generation*, *Deep Space Nine*, *Voyager*, *Enterprise*, or the movies. Some are also fans of the Pocket Books tie-in novel media franchise and the comic books.

Trekkie, Wikipedia, The Free Encyclopedia, http://en.wikipedia.org/wiki/Trekkie (last visited Oct. 18, 2006).

4. *See* Tele-Immersion at Penn, http://www.cis.upenn.edu/tele-immersion/research/whatisti.html (last visited Oct. 18, 2006).

5. Jaron Lanier, *Virtually There: Three-Dimensional Tele-Immersion May Eventually Bring the World to Your Desk*, SCI. AM., Apr. 2001, at 68, *available at* http://www.cis.upenn.edu/~kostas/media-pdfs/lanier01sciam.pdf.

dimensional video environment, where there are no positional coordinates and parties have no physical guides for directing attention, approval, or disapproval.[6]

Recognizing how difficult it can be at the present time to maintain a smooth, uninterrupted two-dimensional video transfer over the Internet, however, one easily can imagine how challenging it will be to capture and transfer three-dimensional imagery from one location to another. At first glance, the amount of data that must be transferred and processed makes the notion of "tele-immersion" seem problematic at best and, at worst, a mere fantasy. But, data transfer methods are evolving in ways that may make tele-immersion an affordable option in the relatively near future. Quantum computing uses atoms, rather than transistors, for example, to store information. A quantum bit, or quibit, can present binary numbers simultaneously, which increases storage exponentially. Thus, there is potential for transferring vastly greater amounts of information.[7]

Alternatively, the combination of a faster Internet and "grid computing"—connecting separate computers to make their combined power available[8]—may make tele-immersion possible. The key, of course, is the availability of a faster Internet. It is estimated that the Internet would have to support transmission speeds one hundred times faster than current broadband speeds to allow grid computing to support tele-immersion.[9] But if the Internet can support these higher speeds, then the images will be so accurate that physicians, for example, will be able to examine and diagnose patients remotely.[10]

Tele-immersion's data transfer requirements are not an unintended and unfortunate characteristic of that technology. In fact, tele-immersion was conceived, in part, because applications did not exist that would require the anticipated level of performance that a new Internet ("Internet2") would provide. Although tele-immersion would clearly have myriad applications for science, business, and education, the initial impetus was to design a system dependent upon vast transfer capacity.[11] The capacity that tele-immersion requires made it a very desirable project. In other words, tele-immersion was proposed as an "ideal 'driver'" application for Internet2.

The ways in which tele-immersion may influence dispute resolution excites the imagination. Not only could alternative dispute resolution ("ADR") practices change, but national and international justice systems could change. Parties already understand that they contractually can establish the rules that will govern both their day-to-day relationships and their dispute resolution processes. When parties have the ability to resolve a case quickly via three-dimensional

6. *Id*.

7. John Goff, *In the Year 2025*, CFO MAG., Mar. 1, 2005, at 80, *available at* http://www.cfo.com/printable/article.cfm/3709826?f=options. The information in the remainder of this paragraph following this footnote is provided by Mr. Goff's article.

8. *See* Grid Computing Info Centre, http://www.gridcomputing.com/ (last visited Oct. 18, 2006).

9. Adam Jones, *Scientists Say Fast Internet Will Bring Wonders*, COX NEWS SERV., Jan. 28, 2004, ¶ 14.

10. *Id*.

11. *See* Lanier, *supra* note 5, at 70.

technology and a set of consensual rules, they likely will forgo the judicial system and choose to resolve their disputes through TMDR—regardless of whether court systems adopt similar technology.[12]

Although the idea of an affordable and reliable tele-immersion system may not yet be completely within our grasp, it is not mere fantasy. Faculty at the University of North Carolina at Chapel Hill and their colleagues around the world have been demonstrating the tele-immersion technology for over six years, and they continue their efforts to refine and perfect it.[13] Although not perfect, the demonstration model displayed in 2001 was described in these terms: "your sense of [the other party's] presence, your ability to make eye contact, your ability to convey your mood and respond to theirs is quite solid because they're life-size, three-dimensional stereoscopic graphics, not small, flat video images."[14]

These favorable observations, it must be noted, describe a tele-immersion technology as it existed six years ago. The technology has continued to improve. It is not unrealistic to imagine a not-too-distant future where parties can meet "in person" in a three dimensional space whenever and wherever they choose.

B. The Generational Divide ("[D]igital [N]atives in a [L]and of [D]igital [I]mmigrants"[15])

There is a generation coming of age that uses technology, without reservation, for all types of communication—including problem solving and dispute resolution. Generally, the dispute resolution training programs offered at law schools around the country maintain that it is critical to offer parties a comfortable environment to brainstorm and propose options freely. For an increasing number of teens, that environment is a virtual one. If a dispute resolver wants to be as helpful as possible, then he or she must be prepared to engage those parties in a virtual space "filled with self-authored, customized, and on-demand content, much of which is easily replicated, manipulated, and

12. *See* T.K. Viswanathan, *Ensuring Justice in a Flat World*, THE HINDU (India), May 9, 2006, *available at* http://www.hindu.com/2006/05/09/stories/2006050907171100.htm.

13. Tele-immersion was first demonstrated at Chapel Hill on May 9, 2000, when three different locations were brought together virtually. *See* Lanier, *supra* note 5, at 71. Research and demonstrations are continuing. 3DPVT 2006, the Third International Symposium on 3D Data Processing, Visualization and Transmission, was held June 14-15, 2006 at the University of North Carolina, Chapel Hill to "allow members of the research community an opportunity to demonstrate working systems" and "[e]xhibitors from the industry to demonstrate their products." Third International Symposium on 3D Data Processing, Visualization & Transmission, http://www.cs.unc.edu/Events/Conferences/3DPVT06/demos.html (last visited Oct. 18, 2006).

14. Steve Ditlea, *Tele-immersion: Tomorrow's Teleconferencing*, COMPUTER GRAPHICS WORLD, Jan. 2001, at 38, *available at* http://www.cs.unc.edu/Research/stc/inthenews/pdf/CGW_2001_jan.pdf (quoting Jaron Lanier, a computer scientist, composer, visual artist, and author credited with introducing the term "virtual reality" in the 1980s). This article provides specific details as to the hardware and software that the early researchers were using for tele-immersion in 2001.

15. Lee Rainie, *Life Online: Teens and Technology and the World to Come*, Speech to Annual Conference of Public Library Association (Boston), Mar. 23, 2006, at 3, http://www.pewinternet.org/ppt/Teens%20and%20technology.pdf.

redistributable . . . on a scale that had previously only been accessible to the professional gatekeepers of broadcast, print, and recorded media outlets."[16]

An initiative of the Pew Research Center, the Pew Internet and American Life Project (the "Pew Project"), produces academic quality reports "that explore the impact of the Internet on families, communities, work and home, daily life, education, health care, and civic and political life."[17] Its goal is "to be an authoritative source on the evolution of the Internet through collection of data and analysis of real-world developments as they affect the virtual world."[18] Although the Pew Project's research is not focused on dispute resolution, understanding how technology is changing our daily lives can enable us to understand better how technology will affect dispute resolution practices.

In late March 2006, Pew Project Director Lee Rainie made a presentation at the Public Library Association's annual conference. Taking a broad, visionary approach, Director Rainie identified the realities that define the world for our youth.[19] Citing the book *Millennials Rising* by authors Neil Howe and Bill Strauss, Rainie asserted that today's children represent a distinct cohort notably different from GenX and their Baby Boomer parents.[20] He then added his own observations and conclusion that Millennials have a unique attachment to technology and the communication power that new technology tools offer.[21]

In a wonderful phrase that captures an idea that several writers, including me,[22] have addressed, Rainie described Millennials as "digital natives in a land of digital immigrants."[23] This close attachment to technology has affected the way that Millennials collect, use, comprehend, and exchange information, which, in turn, will influence the ways in which they solve problems and resolve disputes.

This attachment is only natural given the way we surround our children with technology. According to the Pew Project's report, ninety-nine percent of eight to eighteen year olds have televisions in their homes; ninety-eight percent have compact disk or tape players; ninety-seven percent have either radios or VCR or DVD players, or both; eighty-seven percent have video game consoles; and eighty-two percent have either cable or satellite television, or Internet access, or

16. Amanda Lenhart & Mary Madden, *Teen Content Creators and Consumers*, Pew Internet and American Life Project, Nov. 2, 2005, at 1, http://www.pewinternet.org/pdfs/PIP_Teens_Content_Creation.pdf. This idea is provocative and it raises numerous issues. I later will addresses how digital media can be manipulated in a TMDR proceeding.

17. Pew Internet and American Life Project Mission Statement, http://www.pewinternet.org/about_mission.asp (last visited Nov. 5, 2006).

18. *Id*.

19. Rainie, *supra* note 15, at 2-3.

20. *Id.* at 2. Rainie stated that Millennials are: special, or at least have been taught to believe that they are special; sheltered, in a world of play dates, v-chips, and parent anxiety; confident; team-oriented, (e.g., even when they go on dates they go in groups); high achievers, they live with and believe in rules; pressured, as "trophy" children; and conventional, proud of their achievements and eager to build their resumes. *Id.* at 2-3.

21. *Id.* at 3.

22. *See* David Allen Larson, *Technology Mediated Dispute Resolution (TMDR): A New Paradigm for ADR*, 21 OHIO ST. J. ON DISP. RESOL. 629, 637-39 (2006).

23. Rainie, *supra* note 15, at 3.

both.[24] Almost three-quarters of children in this age group have three or more televisions in their homes, and television is "usually on" in slightly over half of them.[25]

The typical Millennial will have three televisions in his or her home and those televisions probably have a satellite or cable connection. In addition, our typical Millennial will have "three VCRs, three radios, three CD or tape players, two video game consoles and a personal computer [that likely has an Internet connection and an instant messaging program]."[26] Moreover, "more than two-thirds of [those surveyed] have a [television] in their room, more than half have their own VCR, and forty-nine percent report having a video game console that connects to a [television]."[27]

Furthermore, eighty-four percent of twelve to seventeen year olds surveyed state that they have at least one desktop computer, laptop computer, cell phone, or personal digital device, such as a Blackberry, that can be used to connect with the Internet, and forty-four percent reported that they had two or more of those devices.[28] As a result, teens perceive that the world in which they live relies on technology. Eighty-three percent of the twelve to seventeen year olds report that "most" of the people they know connect to the Internet.[29]

Clearly, Millennials love their media. The time that they spend with media is surprising, at least when considering the available waking hours in a day. Eight to eighteen year olds spend, on average, eight hours and thirty-three minutes per day with media: (1) three hours and fifty-one minutes watching television—current programming, videos, DVDs, and prerecorded television; (2) one hour and forty-four minutes listening to music; (3) one hour and two minutes using a computer, including online and other activities; (4) forty-nine minutes playing video games; and (5) forty-three minutes reading.[30]

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24. *Id.* at 4 (citing Donald F. Roberts et al., *Generation M, Media in the Lives of 8–18 Year Olds*, Kaiser Family Foundation Study (Mar. 2005), http://www.kff.org/entmedia/upload/Generation-M-Media-in-the-Lives-of-8-18-Year-olds-Report.pdf). But teenagers from low income families do not have the same usage rates. Only seventy-three percent of teens twelve to seventeen years old who live in households earning less than $30,000 per year use the Internet, compared to ninety percent of teens living in households earning more than $30,000 per year. Ninety-three percent of teens from households earning over $75,000 per year go online. Amanda Lenhart et al., *Teens and Technology: Youth Are Leading the Transition to a Fully Wired and Mobile Nation*, Pew Internet and American Life Project, July 27, 2005, at 2, http://www.pewinternet.org/pdfs/PIP_Teens_Tech_July2005web.pdf.

25. *See* Roberts et al., *supra* note 24, at 10, 18-19.

26. *Id.* at 10.

27. *Id.* at 14.

28. Lenhart et al., *supra* note 24, at 9.

29. *Id.* at 11. In comparing perceptions of white, Hispanic, and African-American teenagers, more white teens (87%) report that "most people that they know [use] the Internet" than Hispanics (70%) or African Americans (69%), although a significant majority of all three groups report that most of the people they know use the Internet. *Id.*

30. Rainie, *supra* note 15, at 12. African-American children watch significantly more television that their Hispanic and white peers. African-American children in the surveyed group watch one hour and twenty minutes more television than white children per day and forty-two

In addition to the time spent with media, eighty-three percent of teens surveyed claim that they participate in school-sponsored clubs, sports, and activities, or clubs and programs not affiliated with school, such as church sponsored clubs or sports teams.[31] How can they spend this much time with media and still attend to other commitments? They multitask with a vengeance.[32]

The Henry Kaiser Family Foundation (the "Foundation"), like the Pew Project, also collects data and produces insightful reports concerning Millennials and media. In March 2005, the Foundation published an extensive report involving over two thousand eight- to eighteen-year-old students attending schools randomly selected from a list of approximately eighty thousand public, private, and parochial schools in the United States.[33]

According to the Foundation study, fifty-eight percent of eight to eighteen year olds say that they media multitask while they read "most" or "some" of the time, sixty-three percent media multitask while they listen to music, and sixty-five percent use as least one other media when they are using a computer.[34] To better appreciate the exponential nature of their multitasking, note that while thirty-three percent state that they use other media while using a computer "most of the time," thirty-nine percent report that while simultaneously using the computer and other media they also engage in multiple activities involving just the computer, such as e-mailing and instant messaging ("IM"), "most of the time."[35]

As one would expect, teens are avid users of IM. Ninety percent "of the sixteen million teens who use instant messaging" rely on that service "to keep in touch with friends who [are not located] nearby or who do not [attend the same] school."[36] In addition, teens depend on this technology to organize their lives, including personal, emotional, and intimate events: (1) Eighty-percent of instant messaging teens use it to make plans; (2) seventy-eight percent discuss homework, tests, and school work; (3) twenty percent have used IM to ask someone out on a date; and (4) nineteen percent have ended a relationship with

minutes more television than Hispanic children. Roberts et al., *supra* note 24, at 24. The data, however, does not indicate "any relationship between income and screen exposure." *Id.* at 25.

31. Lenhart et al., *supra* note 24, at 12.

32. *See* Claudia Wallis, *The Multitasking Generation*, TIME MAG., Mar. 27, 2006, at 48 (examining the "myths of multitasking" and the impact multitasking has on family life, learning, and society in general).

33. *See* Roberts et al., *supra* note 24, at 5.

34. *Id.* at 36. Media devices frequently are used simultaneously. When one adds together the total hours that Millennials use media per day, counting separately the time that each device is used even if that device is used simultaneously with another device, one can see that the total number of hours that one is exposed to media will be higher than the total number of hours per day during which one actually uses media. The Foundation study estimates that the surveyed children use media for six hours and twenty-one minutes per day, which is lower than the daily media exposure of eight hours and thirty-three minutes. Although African American youths are exposed to media about two and a quarter hours more per day than Whites, African American youths use media only fifteen minutes more per day than White youths. *Id.* at tbl. 5-A.

35. *Id.* at 54, tbl. 7-F.

36. Lenhart et al., *supra* note 24, at 23.

it.[37] There can be little doubt that these individuals are capable of discussing and resolving problems online.

Teens also are adapting technology to serve their specific needs. "IM programs allow users to post an 'away' message" to alert individuals that the recipient will not be available to respond immediately. While eighty-six percent of the surveyed teens who use IM have posted away messages, sixty-two percent have gone beyond the simple away message and added information that explains why they are away.[38] And more than a quarter of these teens have provided a phone number that can be used to reach them. Teens use away messages to initiate contact, plan social events, transmit personal information, and entertain readers.[39]

Finally, Millennials are networked. They expect their friends to be available—actually or virtually—all day, every day. Away messages are one way that they have adapted technology to help them stay connected.[40] This affinity for connectedness will make the traditional offline dispute resolution model distinctly unattractive.

C. Millennials Who Use Technology to Create New Relationships and Make Intimate Disclosures Will Demand that Neutrals Also Use Technology

Millennials already are creating and sharing new content and forming communities online, which involves the same creative action and relationship building that dispute resolution often requires. Data collected by the Pew Project from October 26 through November 28, 2004 reveals that twenty-one million teens use the Internet, that about fifty percent of those teens use the Internet every day, and that more than half of those teens who go online are "content creators."[41]

"Content creators" are individuals who "create a blog [web log]; create or work on a personal webpage; create or work on a webpage for school, a friend, or an organization; share original content . . . online; or remix content found online into a new creation."[42] Forty-five percent of teen content creators have engaged in only one of the five content-creating activities, while twenty-seven percent

37. *Id.*

38. *Id.* at 20.

39. *Id.* at 20-21 (citing generally Naomi S. Baron et al., *Tethered or Mobile? Use of Away Messages in Instant Messaging by American College Students*, *in* MOBILE COMMUNICATION: RE-NEGOTIATION OF THE SOCIAL SPHERE 293 (Rich Ling & Per E. Pederson eds., 2005)).

40. *See* Larson, *supra* note 22, at 659-64 (discussing how students use away messaging to stay connected).

41. Lenhart & Madden, *supra* note 16, at 1 (citing data from the questionnaire upon which the report relies: Princeton Survey Research Assocs. Int'l, Parent and Teens 2004 Survey: Data for October 26–November 28, 2005 [hereinafter Survey], http://www.pewinternet.org/pdfs/PIP_Teens_04_Questionnaire.pdf). Telephone interviews were conducted with 1,100 twelve- to seventeen-year-old teens and their parents living in the continental United States. There also were four focus groups with thirty-eight high school and middle school students. Survey, *supra*, at 18.

42. Lenhart & Madden, *supra* note 16, at 1.

have engaged in two or more of the activities.[43] Obviously, since this study was conducted over two years ago, the numbers of teens both going online and creating content assuredly is higher today.

Teens are turning to the Internet to create because media now is digital. Text, images, video, and audio material can be collected, edited, expanded, and reshaped to create new, expressive material that allows teens to both consume and produce content easily. Even though seemingly limitless content is available online, one-third of teens who use the Internet report that they share their own personal artwork, photos, stories, and videos online.[44]

Because content creation involves personal expression, it may be surprising that many teens are not hesitating to share their personal creations online. The online sharing of creative and expressive material, often intimate by its very nature, makes the creator vulnerable in ways that far exceed private physical distribution. The fact that teens are willing to use the Internet to introduce their artistic efforts not only illustrates that they are comfortable making personal disclosures online, it also suggests that the most comfortable environment for their personal expressions may be in cyberspace.

Teens also write blogs to build and maintain relationships. Although blogging could be considered journalism by and for the people, it is unlikely that the teens who blog are all aspiring journalists. Approximately sixty-two percent of surveyed teens state that when it comes to reading blogs, the only ones they read are written by people they know.[45] Only a small percentage state that they only read the blogs authored by people they do not know.[46] In fact, community-oriented blogging sites like LiveJournal report that its users primarily are teens.[47] Rather than using blogs to communicate with the public at large, teens are using blogs to correspond with acquaintances.

As a result of their media immersion, Millennials expect to be able to collect and exchange information using multiple devices regardless of their location.[48] But "expect" is a rather polite term. It is much more likely that when working with a neutral to resolve a particular dispute or problem, Millennials will demand this flexibility. And if one neutral cannot accommodate that demand, rest assured that the parties soon will find a neutral that can.

The days of gathering together to create the feelings of closeness and connectedness deemed essential to bring parties to a common understanding may

43. *Id.* at 2.

44. *Id.* Not all teens are as inclined to post their self-authored work online. Forty percent of those urban teens who use the Internet report that they share their personal work online, compared to thirty-four percent of rural teens and twenty-eight percent of suburban teens. Thirty-six percent of broadband using teens, compared to twenty-eight percent of dial-up using teens share original work online. And, not surprisingly, those who go online most frequently, the daily users, are more likely to share personal creative work online. *Id.*

45. *Id*. at 8.

46. *Id*.

47. *Id.* (citing LiveJournal, Statistics: Age Distribution, http://www.livejournal.com/stats.bml (last visited Dec. 1, 2006)). On Dec. 1, 2006, the Statistics page indicated that users between the ages of sixteen to twenty years old represent the highest concentration of bloggers.

48. Rainie, *supra* note 15, at 6.

soon be a memory. Millennials have become accustomed to time-shifting technology, such as Tivo, and downloading, which allow them to accept information when and where they choose. And Millennials are choosing to connect and communicate virtually, as opposed to physically.

The pace at which technology continues to accelerate is described as moving in "technology J curves."[49] Moore's law states that computing power doubles every eighteen months; Gilder's law asserts that as spectrum allocation and use become more efficient, communications power will double every nine months; and history demonstrates that storage power is doubling every twelve months.[50] Even if we prefer not to immerse ourselves in technology and instead yearn for simpler times, in our hearts we know that times already have changed. If we want to continue to help parties solve problems, then we must learn to appreciate and embrace the power of technology.

Technologies soon will become more versatile and powerful. For example, Radio Frequency Identification ("RFID") chips, which rely on radio waves to identify people or objects, can be converted into a digital format and connected to the Internet as well as other networks.[51] Devices will become even more conveniently mobile, and the amount of new content being created and available in cyberspace will soar.[52] When Millennials begin to participate in the economy as business owners, professionals, and educators, they will not hesitate to use emerging technologies for dispute resolution and problem solving.

We have not quite reached the point where teens interact with each other more frequently using technology than they do face-to-face, but that moment may not be too distant in time. While twelve- to seventeen-year-old teens state that they spend 10.3 hours per week outside of school meeting with their friends for social activities, they spend approximately 7.8 hours using technology to communicate with their friends.[53]

As mentioned above, eight to eighteen year olds spend an average of eight hours and thirty-three minutes per day with media by multitasking. But multitasking may mean only that they are living in a state of "continuous partial attention" where incoming information constantly is scanned to determine which input is the most interesting or pressing.[54] If one believes that dispute resolution requires parties to focus exclusively on the problem at hand, then the next generation may find it exceedingly difficult to operate within that—in other words, "our"—paradigm.

49. *Id*. at 14.
50. *Id*.
51. *Id*.
52. *Id*. at 15.
53. Lenhart et al., *supra* note 24, at 30.
54. Rainie, *supra* note 15, at 12-13 (quoting former Microsoft executive Linda Stone).

D. Data Suggests that TMDR Might Offer a Unique Opportunity for Women

Because girls are learning to use technology differently than boys, women may prove more effective as technology mediated dispute resolvers than men as these girls and boys become adults.[55] I previously have written about empirical studies that distinguish how boys and girls communicate online, observing that girls define computers as "multi-functional tools that help with friendships, homework, research, organizational tasks, and task efficiency," and that boys use computers for "entertainment and gaming, thinking, and retrieving information," in addition to violent war-games and competitive sports games.[56] More recent data lends a bit more support to that notion.

According to the Pew Project study discussed above, thirty-eight percent of surveyed young women aged fifteen to seventeen years old shared creative content online, compared to twenty-nine percent of the young men.[57] And twenty-five percent of those young women blog, compared to only fifteen percent of the same aged young men.[58] Although by no means conclusive, the data suggests that girls are more interested in, and comfortable with, expressing themselves online than boys.

It appears that girls also are embracing other communication technologies at a higher rate than boys. Ninety-three percent of twelve- to seventeen-year-old girls surveyed state that they use e-mail as compared to only eighty-four percent of the boys.[59] Although fifty-seven percent of surveyed fifteen- to seventeen-year-old girls have sent or received text messages, only forty percent of the same aged boys have done so.[60] While slightly more than half of surveyed girls reported that they bought items online in 2004, only thirty-four percent of boys made online purchases.[61] Finally, thirty-four percent of these older teenaged females have sought sensitive health information online, while only eighteen percent of their male peers have looked for similar information.[62]

The Foundation study cited earlier found that boys and girls are equally likely to use a computer on any single day for comparable periods of time.[63] But while boys spend significantly more time than girls playing games, girls spend significantly more time e-mailing, instant messaging, and visiting web sites.[64]

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55. *See* Larson, *supra* note 22, at 640.

56. *See id.* at 639-40 (citing Alice A. Christie, *How Adolescent Boys and Girls View Today's Computer Culture*, MERIDAN: A MIDDLE SCH. COMPUTER TECH. J., Winter 2005, at 8, *available at* http://www.ncsu.edu/meridian/win2005/computer%20culture/index.html).

57. *See* Lenhart & Madden, *supra* note 16, at 3.

58. *Id*. at 4-5.

59. Lenhart et al., *supra* note 24, at 14.

60. *Id.* at 28.

61. *Id*. at 37.

62. *Id*. at 42.

63. *See* Roberts et al., *supra* note 24, at 31.

64. *Id.* When it comes to video games, boys spend approximately three times as much time playing these games than girls. *Id.* at 32. There are important differences and similarities when one looks at different racial groups. For instance, while white children are more likely to use a computer than African-American or Hispanic children on any particular day (57% compared to

Thus it seems that girls are more comfortable with, and attracted to, online interaction that is more conversational in nature. And although younger teens are less likely to have cell phones than older teens, younger girls nonetheless text message more frequently than younger boys. Thirty percent of twelve- to fourteen-year-old girls who are online have sent text messages compared to twenty-four percent of the younger boys.[65]

It would be reckless to make any definitive conclusions based on these findings, but the data should at least encourage us to ask whether girls are learning to use technology in ways that are making them more effective technology mediated communicators than their male peers. Additionally, we should try to determine whether the differences in the ways in which boys and girls use technology will persist as they grow older. Finally, if these preferences do persist, does it mean that women in general will be better positioned to act as technology mediated dispute resolvers than men?[66]

E. TMDR Can Be the Best Option Today

Although perhaps not as technology driven as Millennials, adults have demonstrated that they are ready and willing to use TMDR. In fact, studies suggest that when similar types of cases are analyzed, online dispute resolution ("ODR") settlement rates reflect those achieved by offline ADR processes.[67] Additionally, eighty percent of the surveyed customers who used SquareTrade's ODR process say they would use it again.[68]

TMDR also has proved invaluable when parties cannot meet together in person. For example, when safety and security concerns created by the Sri Lankan conflict prohibited parties from meeting face-to-face, they conducted peace talks using Info-Share.[69] Also, the Federal Court of Australia uses videoconferencing functionality to hold Native Title hearings involving remotely

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44% and 47%, respectively), there is not any reliable statistical difference in the total amount of time that children from different racial groups spend with computers. *Id.* at 31.

65. *See* Lenhart et al., *supra* note 24, at 28.

66. Should we be concerned about the boys? Is there something inherent in boys that causes them to be less forthcoming and open online? Or are boys' choices of violent and competitive online activities affecting their personalities and making them less inclined to be open and engaging in cyberspace? Or are they perfectly capable of sharing and communicating online but, at least at this age, simply more interested in the games?

67. Melissa Conley Tyler & Susan S. Raines, *The Human Face of On-line Dispute Resolution*, 23 CONFLICT RESOL. Q. 333, 335 (2006) (citing Melissa Conley Tyler & Di Bretherton, Research into Online Dispute Resolution: Exploration Report (Int'l Conflict Resol. Ctr., Univ. of Melbourne, 2003), *available at* http://www.strategicaction.com.au/ADR%20Online%20Research%20 Report.pdf.

68. *Id*.

69. *Id*. at 336 (citing Sanjana Hattotuwa, *Untying the Gordian Knot: ICT for Conflict Resolution and Peace Building*, *in* PROCEEDINGS OF THE THIRD ANNUAL FORUM ON DISPUTE RESOLUTION (M. Conley Tyler, E. Katsh, & D. Choi eds., July 2004) [hereinafter DR PROCEEDINGS], *available at* http://www.odr.info/unforum2004/Hattotuwa.pdf).

located indigenous peoples.[70] And in areas of the Philippines where computers are not readily available, text messaging provides the medium for TMDR.[71] In fact, mobile telephony and radio hold great potential for peacebuilding and conflict transformation around the world.[72] Because TMDR offers so much flexibility for the parties, it often is the best option for resolving disputes.

III. DANGERS

There is a natural and understandable resistance when it comes to embracing change. I suspect that others do not believe that dispute resolution will become as dependent upon technology as quickly as I believe it will. Understanding that I only may be adding fuel to the skeptic's fire, I nonetheless think that we must carefully consider the extent to which we want to trust the success of dispute resolution to technology mediated communications. Potential dangers must be identified and explored. Among those concerns are the sustainability of virtual agreements, the limitations inherent in a virtual environment, TMDR's ability to leave parties content, and TMDR's susceptibility to manipulation and external threats. Although each of these is a very real concern, this section demonstrates that none of them are insurmountable.

A. Can Virtual Spaces Produce Only Virtual Agreements?

There is a truly intriguing concern involving the nature of reality and the sustainability of virtual agreements. We know that we can construct environments that cannot be sustained under ordinary circumstances. For example, we can travel to other countries and exchange dollars for local currency, which we spend more freely than we ever would spend dollars. We also can travel to Las Vegas and become high rollers for a week, or go to an amusement park where the world will become a brightly lit, dazzling place. Or we might medicate ourselves with alcohol or narcotics to relieve an inescapable pain.

But eventually we have to return home from abroad, Las Vegas, or the amusement park. And if the substance abuse is not terribly severe, then we will become sober again. The environment we found where everything was fun and exciting, or the altered state where we thought we could hide from our pain, cannot be sustained on a day-to-day basis.

Technology can be used to construct a similarly unsustainable environment. When we try to resolve a dispute in a virtual space, particularly a virtual space where we can appear as an attractive avatar in a lavishly decorated virtual meeting room, everything may seem to be going well and we may be able to reach an agreement. But conflict is raw. It strips away veneers. When we return

70. *Id*. (citing Brian Tamberlin, *Online Dispute Resolution and the Courts*, *in* DR PROCEEDINGS, *supra* note 69, *available at* http://www.odr.info/unforum2004/tamberlin.htm).

71. *Id*.

72. *See generally* Sanjana Hattotuwa, *Transforming Landscapes: Forging New ODR Systems with a Human Face*, 23 CONFLICT RESOL. Q. 371 (2006).

to our daily lives (for instance, when we return to the cold streets of Minnesota in January) we may confront a reality different from the one that we experienced while we were resolving our dispute. We must make certain that TMDR is sustainable under ordinary circumstances. It may be necessary, for example, to leave the virtual environment temporarily and test the sustainability of any settlement in the offline world before we can declare the matter settled.

Does this mean that we should be less enthusiastic about using technology to help us resolve our disputes? Not necessarily. It is true that what we perceive as the "unreal" nature of a virtual environment can be problematic when it comes to the sustainability of any agreement reached in that environment, at least for those of us who are not experienced when it comes to living in a virtual environment. But it may not be a problem depending upon the nature of the specific virtual environment utilized and the particular parties involved. Much of this article has explored how Millennials are integrating technology into their lives. If parties use a familiar virtual environment to resolve their dispute, then there is no reason to fear that any agreement will not be sustainable when the parties return to their "ordinary" lives.

For an increasing number of individuals, "ordinary' or "real" life now requires one to establish and maintain a constant presence in a virtual space. Because these individuals already set aside time for living and interacting in virtual spaces as an integral part of their ordinary lives, they may not discount what happens in cyberspace. They may not perceive any great distinction or disconnect between what happens in cyberspace and what happens in the "real' world because, for them, there is only one world.

B. Do We Lose Valuable Opportunities to Connect with Each Other When We Communicate in a Virtual Environment?

Because conflict is raw some might be concerned that if we rely on technology to resolve disputes, then parties may be limited as to ways in which they express themselves. They fear that the technology will be inhibiting, rather than liberating.

Parties' options for expression, of course, are not infinite when they engage in technology mediated communication. Although technology offers new ways to communicate, it may not be possible to place a reassuring hand on another's shoulder, for instance. Even when tele-immersion technology is perfected, we only will be able to see someone touch our shoulder and we will not feel the warmth of human touch (at least not in tele-immersion's first incantation). Technology mediated communication does have inherent limitations even when parties are familiar and comfortable with a given technology and have integrated that technology into their daily lives.

But technology's limitations are not insurmountable. Dispute resolvers can address limitations inherent in a particular technology by making numerous avenues and mediums for expression available and by not limiting themselves to any single technology, or even to technology itself.

One important aspect of relationship building that might be lost in a virtual environment involves rituals, which can serve an invaluable function in a dispute

resolution process. Sharing food, music, smells and sounds can create a sense of understanding and connectedness essential to solving a particular problem. Because it does not appear that anything resembling the Star Trek Food Replicator, which can produce food to order immediately upon command, is on the horizon, it may be difficult to participate in certain rituals when engaged in TMDR.[73]

If parties are determined to share a common meal, for example, then they can have many of the same foods prepared, delivered, and eaten simultaneously wherever they are located in the world.[74] Even with a very good video connection, however, sharing a meal in a two-dimensional environment may not be a satisfying experience. When tele-immersion technology is improved and streamlined, however, it may be possible to adequately replicate a shared meal.

We also should keep in mind that rituals change and evolve over time. The rituals that may be important for the technology weaned Millennials may not involve sharing food, for instance.

Another perceived limitation of TMDR is that it may be more difficult to express empathy in a virtual environment. One fear is that the opportunity to demonstrate empathy effectively through our physical movements and reactions will be lost in a TMDR process.

But again, as we perfect three-dimensional visual technology, we will be able to capture nonverbal communication and cues. And the youths who are rabidly communicating via text, audio, and video technologies simply may not find nonverbal cues as essential as we find them.

Finally, there is a concern as to whether virtual environments will enable parties to achieve long-term process goals such as recognition and empowerment, or whether dispute resolution will come to mean only settlement. Although this particular topic—technology and long-term process goals—deserves its own article if not its own book, at least one point is worth mentioning. Authors Robert Baruch Bush and Joseph Folger maintain that mediation offers extraordinary potential for transformation[75] and that parties can grow morally by valuing their own strength and by valuing compassion for others.[76]

There is no reason why technology cannot facilitate this growth.[77] Technology certainly offers the opportunity to stay more closely connected to other individuals, which may make parties more aware of each other. This, in turn, may make it easier to feel compassion for others. Furthermore, as parties master

73. *But see* JEFFREY R. HARROW, *"Make It So," Redux*, HARROW TECH. REP. (Feb. 17, 2003), *available at* http://www.theharrowgroup.com/articles/20030217/20030217.htm#_Toc31869173 (inquiring whether a "stereolithography printer" could be capable of manipulating and then "printing" individual molecules so that we could, in fact, have a Star Trek Food Replicator).

74. This form of a shared meal may prompt, for instance, a comparison of the food preparers' relative abilities.

75. *See* ROBERT E. BARUCH BUSH & JOSEPH P. FOLGER, THE PROMISE OF MEDIATION: RESPONDING TO CONFLICT THROUGH EMPOWERMENT AND RECOGNITION 2 (1994).

76. *Id.* at 230.

77. For an article explaining how transformative mediation techniques can be transferred to the online environment, see Susan Summer Raines, *Can Online Mediation Be Transformative? Tales from the Front*, 22 CONFLICT RESOL. Q. 437 (2005).

technologies and understand how those technologies can assist them to express themselves, this achievement in and of itself certainly will empower them.

C. Will TMDR Leave Parties Less Content?

There are two potential dark sides to increased media immersion. First, the speed at which information—both helpful and destructive—can be transmitted may very well complicate the lives of dispute resolvers and problem solvers. While sometimes the lack of any delay in communications may be productive, at other times it might be quite damaging.

But this may not be as much of a problem as we suspect. It may be that Millennials, who are living much of their lives in cyberspace, have learned hard lessons already about how much time and reflection is required to communicate effectively online.

Second, increased media exposure may reduce parties' contentedness. In the Kaiser Foundation study, youths' "personal contentedness" was assessed by asking them to what degree six statements apply to their lives: (1) I have a lot of friends; (2) I get along well with my parents; (3) I am often bored; (4) I often feel sad and unhappy; (5) I have been happy at school this year; and (6) I get into trouble a lot.[78]

Although those surveyed generally were satisfied with their lives, there was a negative correlation between contentedness and media exposure.[79] Much of the difference in overall media exposure is attributable to the low-contended youths' greater exposure to music and video games, but the pattern is consistent for all but print media.[80]

The researchers do not believe, however, that it is possible to infer any causal significance from these findings.[81] Although it is impossible to determine whether sustained media use reduces contentedness, whether lower levels of contentedness push youths towards greater use of media, or whether some other factor both lowers contentedness and increases media use, there clearly is a correlation between higher media use and lower contentedness.[82]

If heavy media usage does lower contentedness, then it seems reasonable to suspect that the types of media causing that condition must be those that isolate the user to an unhealthy degree. The technologies employed to facilitate dispute resolution are those that connect individuals, however, rather than isolate them. In fact, the ability to approximate actual face-to-face contact is increasing all the time. Nonetheless, if we are going to embrace technology mediated communication ourselves, preach that technology can facilitate dispute resolution, and encourage parties to use technology, then we must make every effort to understand the correlation between low contentedness and media use.

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78. *See* Roberts et al., *supra* note 24, at 48.
79. *Id*.
80. *Id*. at 49.
81. *Id*.
82. *Id*.

We also must keep in mind that the causes for the correlation between contentedness and media use may not be as obvious as one might assume. For instance, the twenty percent of the eight to eighteen year olds surveyed in the Kaiser Foundation study identified as high media users spend more time hanging out with their parents, exercising, and participating in activities such as clubs, music, art or hobbies than the low and moderate media exposure peers.[83] At least for these individuals, their high level of media usage did not result in them being withdrawn or antisocial.

D. Does Technology Make It Easier for Neutrals To Manipulate the Process?

In recent years there has been significant discussion about how neutrals can influence and manipulate a dispute resolution process. Neutrals, who may be far more experienced and skilled using a particular technology than the disputing parties, can construct virtual environments that might facilitate agreement. Yet that agreement, which was reached in an environment familiar to the neutral but not the parties, may not be sustainable under day-to-day circumstances.

Earlier I suggested that Millennials maintaining a constant presence in a virtual environment may not have any problem reaching sustainable agreements in a virtual environment.[84] That is because Millennials, or anyone who interacts frequently in virtual environments, may not perceive a significant distinction between what happens in cyberspace and what happens in the "real" world. For those individuals there is only one world.

Even parties who are experienced technology mediated communicators, however, may not be comfortable interacting in a particular virtual environment selected by a neutral. If the environment designed or chosen by the neutral is sufficiently unfamiliar, then that unfamiliarity may negatively impact the sustainability of any agreement reached in that environment. In an effort to achieve a resolution, a neutral determined to lead the parties to settlement may leave the parties no better off, and perhaps in a worse situation, than before the neutral became involved.

As my colleague James Coben once described the situation, "[r]egardless of the paradigm [whether facilitative or evaluative] and claims of mediator purity, close examination of predominant training methodologies and some experience with actual mediator interventions in the field confirms a distinct hollowness in the rhetoric of self-determination."[85]

Even in an offline environment, mediators can pressure and persuade parties in a myriad of ways that include:

> (1) managing the negotiation process (agenda control); (2) managing communication between and within parties (active listening; reframing; use of caucus); (3) control of physical setting and negotiations (seating arrangements; table

83. *Id.* at 50.

84. *See supra* section III.A.

85. James R. Coben, *Mediation's Dirty Little Secret: Straight Talk About Mediator Manipulation and Deception*, 2 J. ALTERNATIVE DISP. RESOL. EMP., Winter 2000, at 4.

> shape; room size); (4) timing decisions (imposition or removal of deadlines for settlement; when to convey offers and responses); (5) managing the information exchange (packaging information so it will be heard); (6) engineering associational influence (choosing who is at the table with settlement in mind); (7) use of authority (the mediator's own, as an expert or respected elder, or that of outsiders); (8) managing doubt (encouraging doubt as a way to moderate a party's position); [and] (9) rewarding behavior (the offer of friendship, respect, or interest in a parties' well-being).[86]

The parties often are unaware that these intentional strategies are being used to serve the neutral's purpose. That lack of transparency and understanding is the essence of manipulation.[87]

Now imagine what a neutral can do using the power of technology. A neutral who creates and controls a virtual space for dispute resolution purposes will have an almost unprecedented ability to manage the agenda and control communications.

Coben's article suggests that neutrals can manipulate parties by controlling the physical setting, described as seating arrangements, table shape, and room size. It takes no imagination to recognize that a neutral will have even more control over a virtual environment than she or he will have over a physical setting. Although a TMDR neutral obviously can manipulate the process by engaging in the same questionable practices employed by offline neutrals, this article will focus on three concerns that are especially troubling in a virtual environment. In a TMDR process, the neutral (1) can control both the neutral's and the participants' visible form and voice; (2) can manipulate both the timing and the content of information submissions; and (3) enjoys the enhanced authority of a combined process and technology expert.

1. *The Neutrals' Power to Control Visible Form and Voice*

One way that a neutral might manipulate the environment is by controlling the visible form in which parties appear. For example, an avatar, which has been described as a "graphic representation of a real person in cyberspace,"[88] can be used to facilitate problem solving. In fact, avatars may have a very real place in dispute resolution. Avatars may allow us to present ourselves more empathetically or engagingly than we can with only a video camera or, perhaps, than we can in person.

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86. *Id.* at 5 (citing CHRISTOPHER MOORE, THE MEDIATION PROCESS: PRACTICAL STRATEGIES FOR RESOLVING CONFLICT 327-33 (2d ed. 1996)).

87. *Id.*

88. *See* Glossary of Terms (citing M.D. ROBLYER & JACK EDWARDS, INTEGRATING EDUCATION TECHNOLOGY INTO TEACHING (2d ed. 2000), *available at* http://www.calvin.edu/~dweaver/glossary.htm (last visited Nov. 30, 2006); Sandy Berger's Techionary, http://www.compukiss.com/techionary/195.html (last visited Nov. 30, 2006)).

As I discussed earlier, boys and girls communicate differently online.[89] But there is some evidence that avatars can change the way that boys and girls interact online. In fact, avatars may encourage boys and girls to act more similarly than they would ordinarily.[90]

The social experiment that demonstrated the way that avatars can influence boys' and girls' behavior had two parts. Boys and girls first were paired with a member of the same sex; then they were paired with a member of the opposite sex. In both parts, the boys and girls communicated online presenting themselves as the avatar of their choice.[91] When the boys and girls presented themselves as avatars in the same sex pairs, the girls wrote more and the boys mostly engaged in role play. When paired with members of the opposite sex, however, both the boys' and girls' behaviors changed. The boys' avatars' were less playful, and the girls were more so.[92] In other words, when they presented themselves as avatars, both girls and boys modified their behavior in order to communicate more effectively.[93]

When it comes to avatars, the options are almost limitless. I recently purchased a Logitech QuickCam For Notebooks Pro.[94] This web camera comes with a software program that allows the user to present himself or herself as many different kinds of avatars ranging from various men and women to an alien, pony, or a classic automobile.[95] Alternatively, the user can transmit his or her own face but add glasses, a moustache, a crown, a jester's cap, or even the bouffant black hair, dark sunglasses, and bushy sideburns of an aging Elvis Presley. The user's facial features are graphed and calibrated so that the avatar's expressions, including eyes, mouth, and head movements, match the user's head movements and facial expressions.

Although this form of gender and species bending can make for great fun, it also can serve a constructive purpose. For example, when parties reach an impasse and are no longer communicating productively, they may have reached the point where they simply cannot stand the sight of each other. It may help if the neutral arranges for the parties to present themselves, at least for a while, with

89. *See supra* notes 55-66 and accompanying text.

90. *See* Larson, *supra* note 22, at 668-77.

91. *See id*. at 673 (citing Sandra L. Calvert et al., *Gender Differences in Preadolescent Children's Online Interactions: Symbolic Modes of Self-Preservation and Self-Expression*, 24 J. APPLIED DEVELOPMENTAL PSYCH. 627, 641-42 (2003), available at http://cdmc.georgetown.edu/papers/gender_differences_in_preadolescent_children.pdf).

92. *Id*.

93. *Id*.

94. For more information regarding this web camera, see Logitech Business Products News (Sept. 17, 2002), http://www.logitech.com/index.cfm/products/usertype/businesstopics/US/EN,CRID=454,CONTENTID=6160.

95. For those of you who were watching television in the 1960s, the animated avatar available from Logitech does not resemble the 1928 model talking car from the forgettable television show My Mother the Car, starring Jerry Van Dyke (who had a much more successful role on the television show "Coach"). *See* My Mother the Car, http://www.tvparty.com/recmothercar.html (last visited Nov. 30, 2006).

the face of a new and different man or woman, or even the face of a gentle pony or a wise wizard.

But this technology also offers tremendous potential for manipulating a dispute resolution process. The particular software program that I am using allows me to alter my appearance, but not my voice, thus leaving at least one way to determine whether the person currently speaking is the person with whom you began your conversation. But the technology is readily available to change and disguise your voice.[96] In fact, AV Webcam Morpher 1.0 promises a "cyber 'multi-personality' life" where you can "choose your favorite 'nickface' and . . . totally hide your identity in live video chat"; "absolute anonymity" using a disguised voice to match your online nickname; and the ability to "make yourself brand new by changing 'nickfaces' and 'nickvoices' in real time suitable with your new personality."[97]

The ability to change your appearance and your voice repeatedly in real time online is both dazzling and intriguing, but sometimes such technological advancements make me exclaim "yes!" and then almost immediately afterwards whisper "yikes." Although this technology can play a critical role in dispute resolution, it clearly increases the danger of manipulation.

2. *The Power to Manipulate Timing and Alter Information*

Neutrals also can manipulate dispute resolution processes by controlling timing and by altering information submitted by the parties. A neutral might be tempted to explain an intentional delay, for instance, as a technology glitch. The neutral may understand that a delay by one party will not be tolerated by a second party and, in fact, may completely derail the process. Given the still fledgling state of technology and the frequency with which we encounter minor lapses, it will be tempting to attribute any delay under these circumstances to faulty technology.

The problems with this behavior, of course, are myriad. It may be that the first party's ability to respond quickly in this situation, and future situations, is critical not only to the immediate dispute but also to any long term relationship. Excusing one party's failure to reply promptly by blaming the technology may

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96. *See* FAQs on AV Voice Changer Software, http://www.audio4fun.com/faq_voice_changer.htm#41 (last visited Nov. 30, 2006).

> VCS is compatible with most instant messengers, such as Yahoo! Messenger, AOL Messenger, MSN Messenger, Skype, Eyeball Chat, etc. First, open VCS, choose a nickvoice or adjust the Pitch & Timbre as well as other features till getting the desired result. Activate voice chat, your original voice from microphone will be disguised immediately into a new one of your preference.

Id.

97. AV Webcam Morpher 1.0 Product Description, http://www.audio4fun.com/webcam-morpher.htm (last visited Nov. 30, 2006).

create expectations that cannot be fulfilled and a relationship that cannot be sustained.

Obviously, the information collection process must be transparent. The technology that the neutral utilizes should, in effect, "time stamp" submissions in a visible and accessible manner. The parties must be able to trust that they will be informed as to when the other party submits information.

The parties also must be assured that information will be preserved in its original form and will not be edited or altered. A transparent and immediately accessible information filing system will allow parties to confirm their initial submissions and review those submissions for accuracy at the party's convenience.

When information is transformed into digital media, the neutral (and the parties) have the ability to repackage and edit that information. Section II.C of this article discusses how Millennials are working with digital media and creating content online.[98] Those same skills can be used to manipulate critical information. A neutral can, of course, edit a particular submission and make substantive changes. Changes of this nature, however, may be relatively easy to identify and correct. The more subtle danger is that, by using technology, a neutral can "package" information in a manner that will determine whether the information is heard or ignored.

3. *The Enhanced Authority of a Combined Process and Technology Expert*

Because the neutral is creating the virtual space, she or he can almost completely control who will be at the "table."[99] In addition to the power that comes from creating the virtual space and controlling who can enter that space, a TMDR neutral likely will be granted exceptional authority and deference by the parties themselves. Like the offline neutral, a neutral in a TMDR process has the authority and is granted the deference generally accorded an expert or respected elder.[100] But the TMDR neutral also understands, and to a substantial degree controls, a technology so powerful that it has been referred to as the fourth party in a third-party facilitated dispute resolution proceeding.[101] The power that comes with being the process expert as well as the technology expert gives the TMDR neutral an extraordinary opportunity to manipulate the process.[102]

Parties often are all too eager to defer to a neutral because of the neutral's dispute resolution process experience and expertise. Rather than taking control of their dispute (and lives) and "owning" the settlement, the parties solicit and accept direction from the neutral and end up with a result that may not be

98. *See supra* notes 41-54 and accompanying text.

99. The neutral may not have complete control over who can participate in the process. Hackers have been able to access web sites once thought impenetrable. *See, e.g.*, Anonte Gonsalves, *Hackers Tap Banks' Web Sites in Unique Phishing Attack*, TECHWEB (Mar. 29, 2006), http://www.techweb.com/wire/security/184401079.

100. *See* ETHAN KATSH & JANET RIFKIN, ONLINE DISPUTE RESOLUTION 138-43 (2001).

101. *Id.* at 119.

102. *Id.* at 128.

satisfying or long lasting. The parties' willingness to defer to the neutral, the desire to have a perfect solution dictated by the neutral, will be that much stronger in TMDR where the neutral has "double" the expertise.

Not only will the temptation to defer to the neutral be greater in TMDR, but the neutral's inclination to take affirmative action also will be greater in TMDR. The parties may not be familiar with the chosen technologies and they truly may need help in order to use that technology. As soon as the neutral decides to teach the parties how the technology works, it will be a small step then to "teach" the parties how they can resolve their dispute. The goal of facilitating the parties through a process that the parties themselves control easily can be lost now that a "just do everything that I say" paradigm has been established.

Although it may appear that the possibilities for manipulation in a TMDR proceeding may be greater than what exist offline, there are some inherent limitations on the neutral's ability to manipulate the process. For example, when parties meet in person a neutral may learn that one party is intimidated by a second party. The neutral also may suspect that the first party will abandon his or her interests when confronted by that second party. The neutral might be able to "facilitate" a settlement by allowing the second party to confront or intimidate the first party physically. This result would be possible because, as noted above, the neutral controls the dispute resolution table.

While it is true that the Internet has been used to bully individuals by publicly embarrassing and humiliating them, the Internet will not be available as a public forum in a private TMDR proceeding. The parties are separated in a virtual space and thus generally feel much more protected from physical intimidation. If the neutral is counting on one party's physical presence to influence a second party, then that may be more difficult to accomplish in a virtual environment.

Finally, this subsection identifies some of the ways in which neutrals can use technology to manipulate a dispute resolution process. The discussion is, frankly, only the proverbial tip of the iceberg. But before we close this discussion, we must not forget that technology offers unique opportunities not only for neutrals to manipulate the process, it also offers numerous opportunities to the parties. Thus TMDR creates unique challenges for the neutral.

Document and evidence authentication frequently is an issue when a dispute arises. While TMDR neutrals may be tempted in rare instances to edit or alter information in order to improve settlement prospects, that temptation probably is stronger for parties. TMDR neutrals will be asked to make factual determinations concerning digital media submissions that may have been altered in ways that are difficult, if not impossible, to detect. Additionally, because parties can alter not only their appearance but also their voice, neutrals always must be vigilant to ensure that the process participants actually are the person they claim to be. Once an online avatar is selected, for instance, any person who has access to the relevant technology (either with permission or without) could appear as that avatar and the other participants may never know the difference.

TMDR neutrals may find that much of the mundane work involving collection and storage of physical evidence may be relieved in TMDR. But although TMDR offers new opportunities, it also creates new responsibilities. It would be foolish to conclude that TMDR will make a neutral's job easier.

E. What External Threats Exist?

In late 2004, The Pew Project surveyed technology experts and social analysts and published a report titled "The Future of the Internet."[103] Approximately one half of the 1,286 individuals who responded are "internet pioneers," who were online before 1993, about one third were affiliated with academic institutions, and another third were employed by a company or consulting firm.[104] When asked whether they believed "[a]t least one devastating attack will occur in the next 10 years on the networked information infrastructure of the country's power grid," a resounding two thirds answered affirmatively.[105] In fact, there was a larger consensus concerning this prediction than any of the other thirteen predictions the survey participants were asked to address.[106]

There is no guarantee that technology will be available and operative whenever we want to use it. If a dispute resolution process primarily is dependent on technology and if time is of the essence, then that process may be doomed if the technology infrastructure is interrupted or destroyed. When it comes to TMDR processes, participants always should have alternate plans in place. Backup systems must be in place for data transfer and storage as well as the communication processes themselves. In some cases, it also may be appropriate to have an offline alternative plan. With thoughtful planning, the potential harm that would be caused by a systemic technology failure can be minimized.

The prediction presented to the experts that garnered the second highest level of agreement asserted that:

> As computing devices become embedded in everything from clothes to appliances to cars to phones, these networked devices will allow greater surveillance by governments and businesses. By 2014, there will be increasing numbers of arrests based on this kind of surveillance by democratic governments as well as by authoritarian regimes.[107]

In the wake of the National Security Administration's telephone monitoring activities, we now know that our own government is collecting information and watching us in ways that we never may have anticipated.[108] Communicating online does not guarantee any greater privacy. There is no assurance that an Internet service provider will resist the government's information requests. Data that records Internet activity might be acquired as easily as telephone records. Similarly, short text messaging service records might be vulnerable to discovery.

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103. Susannah Fox et al., Pew Internet and American Life Project, The Future of the Internet (Jan. 9, 2005), http://www.pewinternet.org/pdfs/PIP_Future_of_Internet.pdf.

104. *Id.* at 1. There also were some individuals who worked for nonprofit organizations, publications, or the government.

105. *Id.* at 14.

106. *Id.* at vi.

107. *Id.* at 22.

108. *See* Leslie Cauley, *NSA Has Massive Database of American's Phone Calls: 3 Telecoms Help Government Collect Billions of Domestic Records*, USA TODAY, May 11, 2006, at 1A.

Because of technological advancements, our expectation of privacy probably does not correlate with our reality. For example, in urban areas mass transit "smart cards" record our movements,[109] cameras at busy intersections may photograph and store our digital image,[110] and Google's free e-mail service scans our messages for keywords to generate targeted advertisements.[111] Google's search engine can provide home addresses—complete with detailed maps—for anyone with a listed residential phone number.[112] We even can buy access to information that is not publicly available online, such as court documents and arrest records, from companies that manually have scanned those documents.[113]

These capabilities do affect dispute resolution processes. The personal information that can be collected, for instance, might allow a wrongdoer to steal someone's identity and use it to gain access to a "secure" site.[114] Even if a determined intruder does not have sufficient information for an identity theft, he or she still may be able to pierce firewalls that are by no means impenetrable.[115]

Do these risks mean that we should avoid technology like the plague? That course of action is unrealistic and, frankly, impossible. We do have to become aware, however, of the multiple ways in which our information is vulnerable—not simply its potential for discovery in a TMDR process. We can minimize the possibility that the security of a TMDR process will be breached if we are meticulous as to how we protect our information throughout our daily lives.

IV. CONCLUSION

TMDR presents opportunities and dangers that we cannot yet fully envision. Technologies are available or imminent, such as tele-immersion, that will dramatically change the ways we think about dispute resolution in a virtual environment. Whether or not one finds the idea of TMDR appealing, a generation of teens and preteens is integrating technology so deeply into their daily lives that they not only will expect, but will demand, that those technologies be used in a dispute resolution proceeding. Because girls communicate differently than boys using technology, it will be interesting to learn if women prove to be more effective technology mediated dispute resolvers than men.

TMDR already is proving to be the most appropriate process when great distances are involved or safety and security are paramount. Despite the fears

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109. Eric Benderoff & Jon Van, *Privacy? What Privacy? Camera, Cards, and All Sorts of Data-Gathering Techniques Can Follow Your Almost Every Move*, CHI. TRIB., May 14, 2006, at C1.

110. *Id*.

111. *Id*.

112. *Id*.

113. *Id.* (referring to the web sites www.Abika.com, www.Records-search.net, and www.Reverserecords.org).

114. *Id*.

115. *See* Adrian Peters & Michael Jones, *Clash of the Titans*, NETWORK COMPUTING, Apr. 28, 2005, at 55, *available at* http://www.networkcomputing.com/story/singlePageFormat.jhtml?articleID=160910889.

some may have, virtual spaces do not produce only virtual agreements. TMDR can enable us to achieve long-term process goals, and technology usage does not cause us to be less satisfied or content. Although the dangers of technology can be formidable, a number of protective measures are possible. We must be vigilant to ensure that neutrals are not using technology to manipulate dispute resolution processes. And finally, parties and neutrals must take care to protect confidential information from wrongdoers intent on taking advantage of technology's inherent vulnerabilities.