IS THERE A RIGHT TO SHAPE TECHNOLOGY?
(¿EXISTE EL DERECHO A MODELAR LA TECNOLOGÍA?)

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Abstract: The creation of modern, democratic institutions during the past two centuries is accompanied by expanding claims about human rights, claims that include an ever wider set of people and conditions. A parallel development is a growing recognition of the role technology plays in controversies about human rights and the boundaries of citizenship. Beginning in the 1960s, the worldwide movement of people with disabilities reveals the close connection between human rights claims and specific technological patterns. Lessons from this movement point to new ways of thinking about human rights and their practical realization in modern society.
Keywords: human rights, modern society, right to shape technology

Resumen: La creación de las instituciones democráticas modernas durante los últimos dos siglos ha venido acompañada de reivindicaciones de derechos humanos, incluyendo un conjunto mayor de beneficiarios y de condiciones. Un desarrollo paralelo es el reconocimiento cada vez mayor del papel que la tecnología juega en las controversias sobre los derechos humanos y las fronteras de la ciudadanía. Un movimiento global de personas discapacitadas que comienza en los años 60 revela la fuerte conexión entre las reivindicaciones de derechos humanos y modelos tecnológicos específicos. Este movimiento ofrece lecciones que apuntan a nuevas formas de pensar los derechos humanos y su puesta en práctica en la sociedad moderna.
Palabras clave: derechos humanos, sociedad moderna, derecho a modelar las tecnologías

In the fall of 1962 at about the time I arrived on the University of California Berkeley campus as a freshman, a Bay Area newspaper contained the headline: "Hopeless Cripple Attends UC Classes." The news report concerned a new student, Ed Roberts, a young man from the Bay Area who had been stricken with polio in his youth, a disease that left him quadriplegic and in need of a respirator. Earlier the university had admitted Ed's dossier but not his person. As one campus administrator observed, "We've tried cripples before and it didn't

work."[1] But Roberts and his family persisted, overcoming the resistance of the university officials and state bureaucrats who recognized that he was qualified, but maintained that the campus was simply not equipped to educate someone confined to a wheel chair.

Roberts studied as an undergraduate and later graduate student in political science, living at Cowell Hospital on campus in special facilities that eventually included several other disabled students. Ed was in some of my classes and I knew him in passing. Emboldened by the civil rights movement, the Free Speech Movement and the climate of campus activism, Roberts and his colleagues at Cowell began to hatch strategies for change. In the late 1960s they emerged as the Rolling Quads, a group of radical quadriplegic activists demanding the recognition of the rights of people with disabilities. They made demands on the university, the City of Berkeley, the State of California and, eventually, the federal government of the United States.

By the early 1970s they had established the Center for Independent Living, where they set out to demonstrate that disabled people were perfectly ready to take care of themselves and become full members of society with important contributions to make.[2]

This movement soon cropped up in other parts of the country. Eventually it became a worldwide civil rights campaign, bringing sweeping reforms in public understanding and public policy, along with thorough revision of the language, judgment and practices that in retrospect seem not only unjust but perfectly absurd. It is, I would argue, one of the most effective and overwhelmingly positive democratic movements of recent history. For public policy in the United States, the crowning moment came in 1990 with the passage of the Americans with Disabilities Act.[3]

Ed Roberts went on to become the Director of the California Department of Rehabilitation, a MacArthur Fellow, and co-founder of a number of organizations for rights of the disabled. He died of natural causes in 1996. The Ed Roberts Campus in Berkeley California is being built to honor his legacy. His wheel chair is included in the Smithsonian Institution's "Shrine to the Famous."[4] In his own way, Ed was a political leader equivalent to Martin Luther

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[1] Quoted in Joseph P. Shapiro, *No Pity: People with Disabilities Forging a New Civil Rights Movement* (New York: Times Books, 1993), p. 45

[2] Shapiro, op cit, chapter 2.

[3] Americans with Disabilities Act of 1990: http://www.usdoj.gov/crt/ada/pubs/ada.txt

[4] Smithsonian Institution, "Ed Robert's wheel chair about 1978." The description observes, "Outfitted with the type of seat used in Porsche automobiles and a large headlight for traveling at night, this motorized wheelchair captures the unique personality of a man who dedicated his life to

King, a rare individual who helped modern societies recognize and address long standing patterns of injustice.

The story about the movement of people with disabilities sheds light on two important political developments. First, with the creation of modern, democratic institutions during the past two centuries one sees a continuing expansion of claims about human rights, claims that include an ever wider set of people and conditions. Second, along with this expansion in the understanding of human rights one notices a growing importance of technology in controversies about human rights and the boundaries of democratic citizenship.

In world political history, one can locate numerous ideas that we can, roughly speaking, translate formulations about rights as we would use that term today. For example, in ancient Greek City states, men and women, citizens and slaves were allotted different roles, freedoms and possibilities for action – different "rights" we might say -- although the Greeks did not employ language of that kind to describe their judgments and practices. In the West, the historical moment in which explicit, continuing attention to political and moral issues focused upon conceptions of "rights" arrived in the 17th and 18th centuries when a series of upheavals tried to modify or overthrow monarchical forms of political and social life. Under the old system, what a person could do or who a person could be was defined by one's superior, one's patron. If one wanted to marry, to travel, to start a business of some kind, one had to receive permission from one's patrons and, indeed, permission from an elaborate system of patronage that exercised oversight upon life's key choices.[5]

In a very practical way, claims about "rights" offer an alternative to this subservient, hierarchical way of life. Claims about "rights" often come up when someone or some group confronts oppression or the presence of obnoxious barriers and seeks to remove them. People begin to say, "We don't have to ask permission and we don't have to put up with the conditions someone else imposes. We have a right to speak freely, publish a newspaper, buy and sell property, go to the church of our choosing…." At that point the question

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securing rights, freedoms, and improved quality of life for people with disabilities. Ed Roberts, who was paralyzed by polio at a young age, began his activist career in 1962 when he fought for the right to attend the University of California at Berkeley. He went on to help establish the first independent-living centers for disabled people in the United States and traveled the world campaigning for disability rights." http://www.smithsonianlegacies.si.edu/objectdescription.cfm?ID=127

[5] An excellent description of how the broader influence of monarchy affected everyday life is presented in Gordon Wood. *The Radicalism of the American Revolution* (New York: Alfred A. Knopf, 1993).

becomes: Upon what basis are such claims justified? Who finds the claims compelling and begins to act upon them?

A person says, "I have a justified claim –a right -- to something" and then names what that something is. That claim is supported by moral and political arguments that the advocate believes to be decisive. Discourse about rights is one among many possible ways to describe the moral and political landscape undergoing change. There are alternative descriptions, alternative kinds of reasons used to argue for particular decisions and policies. One could, for example, begin with arguments about distributive justice or a theory about the greatest good for the greatest number. What characterizes discussions about rights is that the key claims are often embattled.

One reason for stiff resistance to assertions about rights is that, if one's claim is accepted, then someone, some person or institution, must recognize *an obligation* to recognize and act upon the right you demand. Any social movement that carries the label "rights" could just as well be labeled an "obligations movement." Thus, Ed Roberts and his colleagues might have called their initiative, "The movement demanding recognition of society's obligations to people with disabilities." Obviously, language of that stripe does not have quite the same appealing ring. Professionals in advertising would say, "We'll need something a bit more positive and catchy." For the title of his revolutionary manifesto, Tom Paine chose *The Rights of Man* not *The Obligations of Man.*

It is not my purpose here to explore the foundational justification for rights that have been proposed over the years – foundations in nature, reason, the will of the God, the consensus of nations, social contract, and so forth, although they are certainly interesting and urgent matters. For the moment I want to observe that during the past two centuries one can track the expansion of claims about rights to include ever wider categories of claimants and conditions. At the time of the revolutions in the United States, France, and other countries in the eighteenth and nineteenth centuries, it seemed good enough to refer to how it was that "all men are created equal, that they are endowed by their Creator with certain unalienable rights," that governments must recognize the basic "rights of man and citizen" and similar declarations. These sweeping and hopeful assertions seemed to encompass literally everybody, every member of the human community. From that standpoint one might conclude that the work of identifying and affirming rights was nearly complete.

Alas, if one looked more closely, the bold universalism of eighteenth and nineteenth century revolutionary declarations was not reflected even in post-revolutionary practice. At the founding of the United States, for example, women were generally not included in many of the rights indicated in the Constitution.

Persons of African descent who were owned and used as slaves had no rights at all. Native Americans were stripped of most rights, including the right to live on lands they had occupied for millennia. At the time of the adoption of the Constitution, only white, male, property owning citizens had the right to vote.

Looking at conditions in the middle of the 19th century Karl Marx pointed out that the claims of bourgeois revolutionaries to have brought about an era of universal rights of man was belied by the property relationships involved in capitalism. Thus, working class people had few rights of any practical value in their everyday lives. Throughout the nineteenth and twentieth centuries, there arose a growing set of social movements that challenged barriers to the exercise of a wide range of human rights. Conditions that confronted working people were again and again identified as violations of workers rights. Throughout the 19th and early 20th century a wide range of heated issues about rights arose in the context of working conditions, child labor, demands for shorter hours, education, social security, and the like.

Within another setting during the late nineteenth and early twentieth century one sees the rise and expanding influence of the civil rights movement focused upon racial injustice. Eventually a growing groundswell sparked a political crisis in the U.S., one that challenged (and vexed) the country from the late 1940s through the 1960s.

In the aftermath of World War II, in response to the Holocaust and the creation of the United Nations as well as worldwide movements for decolonization, there arose a growing sense of urgency to recognize and affirm human rights in general. Many began to ask: Isn't it time to get serious about the rights people may claim simply by virtue of being human? The result was the Universal Declaration of Human Rights adopted by the General Assembly of the United Nations in 1948.[6]

Another important chapter in the story of expanding claims about rights is that of movement for women's rights. Beginning with a series of strong articulations in the nineteenth century and continuing throughout the twentieth century it finally blossomed in the 1960s and 1970s in many parts of the world, demanding full, equal rights for women.

In 1969 yet another movement that had been brewing quietly for many decades surfaced loudly in the demands of those seeking equal rights for gay people.

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[6] Universal Declaration of Human Rights, Adopted and proclaimed by General Assembly resolution 217 A (III) of 10 December 1948. http://www.un.org/Overview/rights.html

Less prominent, but no less significant, were movements from the same period of history, movements demanding recognition of the rights of indigenous people, the rights of prisoners, the rights of children and the elderly. One can also mention the philosophical and social movement that articulated claims having to do with the rights of animals, relevant because it is more than anything else an "obligations movement," calling attention to the obligations human have to other species.

Today, of course, there are still political movements that advance rights claims and are resisted, as always, by opponents who deny that any such rights exist at all. The right of marriage of same sex couples is a controversial subject of that kind. While some see this practice as a logical development covered by principles of "equal justice under law," others denounce same sex marriage (or civil union) as contrary to nature and the divinely prescribed order of the world. In many ways the debate resembles disputes about the right of people of different races to marry, a question finally settled in the U.S. as recently as 1967 in the Supreme Court decision in Loving v. Virginia.[7]

Characteristic of rights movements from the nineteenth century to our own time has been the emergence of distinct groups, comprising much of our population, who have decided to make strong claims, defying both overt and subtle limits that had been imposed upon them by traditional society. It is not surprising that these claims often meet fierce resistance. Opponents say, "No, you have no such right. What you're saying is absurd. What you're asking violates the natural order, overturns rightful institutions in society, threatens the proper relationships among people." Or opponents sometimes say, "Your claims have some validity, but it would be just too costly to provide remedies." (Of course, our own established, "normal" lifestyles are well worth subsidizing, thank you.)

A serviceable, operational definition of the political term "conservatism" is that it identifies the collection of social responses that have staunchly resisted the rights claims of one group after another – workers, African Americans, women, gays and lesbians, people under detention, and so forth in modern history. Some of my students say that they are conservative. I reply, "Oh, that's interesting. What exactly is it that you want to conserve?" Often that question is greeted with stunned silence. I am usually too polite to ask the

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[7] RICHARD PERRY LOVING et ux., Appellants, v. VIRGINIA, Decided June 12, 1967. http://www.ameasite.org/loving.asp

obvious follow-up question: "Is it white, male, heterosexist, propertied privilege that you seek to conserve?

In summary, the history of modern politics and modern democracy includes a proliferation of rights claims and rights movements that have become the focus of much political creativity and enormous conflicts. Have we reached the end of this astonishing proliferation of rights claims, or are we just getting started?

A second, closely related issue has to do with the presence of technology in many controversies about rights. Ed Roberts and the movement of people with disabilities successfully argued that the limitations they encountered were far less a matter of their own physical make up, than of properties in the built environment and the technologies that confronted them every day. Once they got rolling, the Rolling Quads demanded technical innovations like cut away curbs on sidewalks, ramps and elevators for buildings, lifts in public transportation, adaptations in computer hardware and software, new communications devices, and countless other material improvements, arguing that equal rights and equal protection of the law required (among other things) a thoroughly reengineered world. This was a highly productive strategy for the movement of people with disabilities to follow. It pointed to their inherent equality and dignity as persons while calling for specific, sensible, achievable reforms. The principles, problems and remedies in question were fairly easy for the public, lawmakers, architects and engineers to understand.

While this movement advances the cause of particular groups in society, their approach also contains what I believe is a profound, general insight. For all of us, not just people with disabilities, the possibilities for action and fulfillment we experience are deeply involved with the technologies that surround us – the way they are structured, how they operate, what conditions and requirements they impose. Together with our own bodies and our social ties, these technical things play themselves out in a variety of rules, roles, relationships, and institutions. This is the thrust of my argument that technology is legislation.

Taken as separate entities and as a whole collective ensemble, technologies constitute a world that either sustains us physically and spiritually, or imposes conditions that vex us and endanger our freedom and wellbeing. At a period of history in which many of our practices, relationships and institutions are heavily infused with technologies of one sort or another, democratic political thought must find ways to understand agents and situations in this light. Posing issues of this kind as questions about human rights seems to me an especially promising avenue to pursue. At issue are specific configurations within

technologies that confront us everyday and whether or not we have an effective voice in shaping their design, operation and broader effects.

Here again it is worth considering the "world," the techno-social world that confronted people with disabilities in earlier times. My own experience of this world did not begin with my acquaintance with Ed Roberts. I had seen it already as a child growing up in California. There was a facility for so-called "crippled children" right across the playground from the elementary school I attended in central coastal California. On occasion we so-called "normal children" would visit the school and watch the "crippled children" through the two way mirrors, learning to feel sorry for them. It was a nicely self-contained world, a human creation filled with lots of science, medicine, technical professionalism, social care, and many elaborate, costly technological devices. But it eventually became obvious that this world was defective to its very core because it was quietly, covertly predicated on harsh judgments of inequality, inferiority and pity.

In the 1960s this nicely maintained world began to seem offensive to those who were its subjects. Many people began to object to being called "crippled" or "retarded" with all the moral baggage that carried. They began to feel offended by the sensibilities upon which the categories, practices and institutions that surrounded them were based. Some of them set out to bring the whole system down and to replace it with a different socio-technical world, one more favorable to the millions of people with disabilities around the globe.

Ed Roberts was one of those who took on both the language and techno-social conditions of "cripples." His writings and interviews are filled with passionate, sometimes amusing, deconstructions of the terms and underlying beliefs that had depicted people with disabilities as second class citizens. In 1970 he wrote, "I'm tired of well meaning noncripples with their stereotypes of what I can and cannot do directing my life and my future. I want cripples to direct their own programs and to be able to train other cripples to direct new programs. This is the start of something big -- cripple power."[8]

Of course, Roberts was using the offensive term "cripple" for its shock value. One of the reforms he proposed was a sweeping change in the way people with disabilities described themselves and how others talked about them as well.

At a time in which I was beginning to think about politics and technology, I also watched the movement of people with disabilities taking shape

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[8]   Quoted   in,   "Ed   Roberts: 'Father   of   Independent   Living'": http://www.ilusa.com/links/022301ed_roberts.htm

in Berkeley. I visited the Center for Independent Living and spoke with some of the activists there.   But it took a while for me to recognize the connection between what they were saying and political issues emerging in the field of science and technology studies.[9]   Ed Roberts and his colleagues openly *demanded the right* to participate in the shaping and reform of specific technologies and institutions that had constituted them as disabled and inferior. They demanded participation of this kind as expression of human rights within democratic society.

Demands of this kind raise an important question for every human being.   The well being of us all depends, to a great extent, upon the sociotechnical configurations that surround us. Perhaps we too should demand a right to influence the design of technologies and architectures -- new ones and older ones – that condition our ways of living. Looking back on progressive, justice seeking social movements of the past two centuries it becomes clear the extent to which technological settings and technology related boundaries were sometimes deeply involved in the dynamics of rights struggles. Rights were expressed as claims about the workings of the technologies and social relationships in various industries.   Working people would often say: The machines are physically dangerous.   We have a right to a safe workplace. Factory processes involving chemicals threaten our health. We have a right to work under healthy conditions.

Sometimes the remedies had to do with changing work rules, measures that sought more favorable sociotechnical conditions for workers without physically altering the instruments. On other occasions the remedies did entail material modifications to hardware, both simple and complex, of the tools workers were required to use. A classic example of the politics of technological design in the fields of California where there occurred decades long struggles over "el cortito," the short handled hoe. Farm workers objected to its shape and its enforced use because the hoe was hard on their bodies and imposed onerous conditions of discipline. The bosses could always see who was working *because* they were bending over; those who were standing upright were subject to

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[9] This was before the arrival of the carefully crafted, apolitical methodologies and "theories" favored among academics in "S.T.S." today. The growing irrelevance of the field is indicated by how few social activists or policy makers find any use for its sterile, uncritical perspectives on real technological choices and their significance. As the twenty-first century unfolds, the best writing on social issues about technology comes from good investigative journalists and from writers actually involved – on one side or another – in day to day struggles over which technological forms will be realized and which ones rejected.

reprimand. After many years of struggle, el cortito was eventually outlawed by the State of California. At the funeral of Ceasar Chavez, leader of the fight for the rights of farm workers, el cortito was placed on the altar as a symbol of struggle and victory.[10]

Over the years there have been numerous labor disputes about the introduction of new technologies. Unfortunately, in the U.S. (by and large) demands about the right to shape new workplace systems have typically been negotiated away by labor unions in favor of demands about wages, hours and benefits. In general, unions have yielded to pressure from business firms, giving up the right to configure new hardware and software. To my way of thinking, this preference of union leaders has been a major factor in the demise of unions in the U.S. during a period in which automation and other technologically embodied changes have decimated the industrial workforce.

In European and Scandinavian social democracies, the rights of technology shaping in the workplace have been emphasized more forcefully. Labor unions have secured co-determination agreements that recognize the rights of labor to cooperate with management in deciding which new sociotechnical arrangements will be created. In some notable cases, especially in Denmark, these habits of technology shaping have spilled over into other spheres, involving local communities whose rights to influence changes in technologies of communication, computing, transit, and others have frequently been recognized. The thinking of many Scandinavians on the matter goes something like this: "The new technologies are going to change our way of life. Don't we have a right to influence the form of these things, matching them to desirable patterns of individual and community life?" [11]

It is possible that this expanded sense of rights – the right to shape technology – could become an even more important part of political debate in the future. The UN Universal Declaration of Human Rights, for example, probably the most ambitious, widely recognized statement of the depth and breath of rights claims, does not mention any such right. However, many of the specific rights it does identify clearly have strong implications for the kinds of technological circumstances that confront all humans on the planet, including:

"life, liberty and security of person,"

"privacy…[of] family, home or correspondence,"

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[10] See Maurice Jourdane, *Struggle for Farm Workers' Health and Legal Protection: El Cortito* (Huston: Arte Public Press, 1994).
[11] The best study of the possibilities here remains Dick Sclove, *Democracy and Technology* (New York: Guilford Press, 1995).

" freedom of thought, conscience and religion,"
"freedom of opinion and expression,"
"freedom … to seek, receive and impart information and ideas through any media,"
"freedom of peaceful assembly and association,"
"right to take part in the government of his country,"
"right of equal access to public service,"
"the economic, social and cultural rights indispensable for his dignity and the free development of his personality,"
"the right to work…[and] just and favourable conditions of work,"
"a standard of living adequate for the health and well-being of himself and of his family"
"the right to education,"
"the full development of the human personality,"
"the right freely to participate in the cultural life of the community,"
and numerous other rights as well.

Given the conditions of life in world increasingly infused with technologies of many kinds, it is clear that many of the articles of the Universal Declaration have clear technological dimensions. As a practical matter, in such a world, any attempt to realize particular rights would require an ability to influence the form and operation of technologies that condition the exercise of those rights. It is a general recognition this right – the right to shape technology – that now seems poised to have a major role in moral discourse and the political discourse about the future of democracy.

There is, of course, a significant shadow that falls over this possibility. In many political societies the belief that people have the right to influence technologies that affect their well-being is strongly limited by what is taken to be a stronger, deeper, more basic set of rights claims, namely those having to do with ownership of property. As regards decisions about proposed changes of all kinds -- innovations in the workplace, installation of energy producing facilities, creation of information networks, the making and marketing of pharmaceuticals, commercial land development and the like, property rights are often regarded as supreme. And because when we talk about property, we are often discussing investments in technologies of various kinds, that is where the discussion about technology choice often begins and ends.

One can trace the strength of this prejudice to ideas about rights, liberties and the origins of government that emerge in John Locke's *Second Treatise of Government* and similar discussions that defined the basic terms of

liberal democracy three centuries ago. Locke argues that we mix our labor with things in nature and thereby make them our property over which we have undeniable rights. In his view it is the insecurity of life and property that eventually brings people together to form civil society and government. Property becomes a kind of primal, undeniable right upon which everything else builds. So strong is this judgment in modern political thought that other claims about rights are bound to seem weak, even frivolous. A consequence has been to favor the claims of major property owners – the corporations and their shareholders – over the claims of people who have much at stake in decisions about what will be built and applied. For example, insofar as technology includes what is called "development" -- building of facilities on pieces of private property, the techno-social-architectural matrices of development – citizens who might wish to claim rights to shape the artificial environs of their communities find themselves struggling against an ideology that holds property rights supreme and univocal.

Under certain circumstances it is possible to counter this deeply seated prejudice in our political and legal system, to uphold citizen rights predicated on concerns other than those of property. In some parts of the U.S. the laws and regulations governing public health and environmental quality provide openings for contesting what would otherwise be the unfettered development of property. In recent years I have participated in groups that organized grassroots opposition to a proposal to build an enormous $350 million cement plant on the banks of the Hudson River. Last April the New York Department of State refused to issue permits needed to build the factory. Shortly thereafter the St. Lawrence Cement Company withdrew its proposal. In this case, rights for citizens to participate in the decision-making process had been provided within state environmental laws passed decades earlier -- public hearings and opportunities for "public comment" are required for projects likely to have significant effects upon environment. Citizens of the State of New York have a legal right to comment and state agencies have an obligation to listen to these comments as part of the decision-making process. At the decisive moment in the St. Lawrence deliberations, some 14,000 letters were sent to the Department of State, 87% of which opposed the cement plant. The rights to participate here were by no means lavish. But the definition of democracy had been widened to include the rights of citizens to have some voice, even in a situation in which hundreds of millions in property were at stake. In this case, the very small wedge of citizen influence about technology choice seems to have been decisive.

Unfortunately, within the neoliberal logic of international trade agreements, The North American Free Trade Agreement (NAFTA), for example, the rights of citizens to petition their governments on disputes of this kind are

now being undermined. What the trade agreements strongly favor are the rights claims of corporate investors. Thus, the basic Lockean arguments about property and its primacy in the most fundamental matters of government are extended to the global economic and political sphere. For example, in many decisions about how technologies will be configured for widespread use, considerations about the rights involved in "intellectual property" are the ones that carry the most force.   Students in engineering, law and, regrettably, even philosophy are regularly instructed in elaborate ways to honor "intellectual property" even when these measures conflict with the most basic considerations of human rights in the countries affected.

At the same time, if one looks carefully, one finds a good number of political movements at that reflect a desire to shape technologies that affect the quality of life. In many parts of the world, for example, there is strong resistance to the institutions that control media of mass communication. A great many people have concluded that the current mix of corporations and communications technologies is oppressive.   In the community media movement there is a continuing resistance to the form and management of today's communications technology and an energetic search for alternatives.[12]

Another technological and institutional device, a particular kind of computing and communications system, has also become a focus of protest in the U.S.A. and elsewhere. Its name is Wal-Mart.

"But that's not a technology," you say.   Look again. The backbone of Wal-Mart, the mechanism that gives it tremendous power is a worldwide, computer-centered system of supply chain management.   The hundreds of communities that now resist the economic, environmental and damage brought by Wal-Mart have decided to confront what amounts to a new, formidable variety of sociotechnical institution.   Many have realized that in its fully articulated form, this technology centered mode of product distribution and marketing will determine the quality of life, undermining the autonomy of towns and whole regions for decades to come. Is there a right to intervene to prevent or modify the spread of the sociotechnical form called "Wal-Mart"? Many people these days are seeking creative ways to do just that.[13]

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[12] A good overview of the issues involved is offered in Robert W. McChesney, *Rich Media, Poor Democracy*
Communication Politics in Dubious Times (Champaign, IL: University of Illinois Press, 1999).

[13] For an even-handed discussion of Wal-Mart's mode of operation, see Charles Fishman, *The Wal-Mart Effect : How the World's Most Powerful Company Really Works--and How It's Transforming the American Economy* (New York: Penguin Press, 2005). For an overview of issues stressed by those who resist the store's coming, see Bill Quinn, *How Wal-Mart Is Destroying America and the*

In that light, a concept that comes up in discussions about technology and rights is not only that of "property owner," but also "stakeholder." One does not have to be the owner of property to have a legitimate stake in how a particular technological application will be deployed and what its effects will be. To have a substantial claim in this respect, one does not have to be a corporation, a government agency or member of any of the organized interests that have influenced important technological choices in the past. As a citizen who will experience the consequences of technological change, one can claim to have a stake in the results.

In spring of 2003 I testified to a committee of the U.S. Congress on this point, suggesting that a bill to provide funding for the emerging field of nanotechnology contain a provision for citizen oversight of nanotech research and development. I argued that because they are both tax payers and ultimate stakeholders in the results, citizens had a right to participate in decisions about the paths that nanotechnology might take. Much to my surprise, some members of Congress liked the idea and the eventual law included a provision for the creation of citizen's panels to evaluate major initiatives in government sponsored nanotech research. Unfortunately, the funds allocated under this provision so far have gone to the usual suspects, to university research centers in the social sciences. Evidently, creating a new institution -- citizen's panels -- to evaluate new technology is not something the American political system knows how to do at present.

Conclusion

No one can reliably predict how changes in the recognition of important rights claims will expand or contract. Indeed, some promising initiatives to expand the horizons of rights have been rebuffed, derailed by reactionary opponents. For example, in the U.S.A., the Equal Rights Amendment, recognizing equal rights for people regardless of sex, first proposed in 1921 and long considered a natural step in the evolution of constitutional rights, has never been adopted and probably die of neglect. In a similar way, the recent push for the right of gay marriage and even the right of civil union has encountered fierce backlash, outlawed in elections and pieces of legislation around the country.

Will the *right to shape technology rise or fall* on the list of rights claims that will engage attention of democratic societies around the globe in years to come? Only time will tell. Despite the backwards-looking, terror obsessed tendencies evident in many world societies today, it is still possible to hope for a turn towards more enlightened policies.

Looking at the noble but, alas, widely ignored document, the Universal Declaration of Human Rights, one finds twenty-nine articles that specify which human rights must be recognized. Article thirty is added for clarification. "Nothing in this Declaration may be interpreted as implying for any State, group or person any right to engage in any activity or to perform any act aimed at the destruction of any of the rights and freedoms set forth herein."

I would make that "Section 1" of that last article and then add another key provision. It would read: "Because the practical realization of many of the rights identified in this Declaration involve the presence, structure and use of technologies of many kinds, every person on Earth has the right to a role in shaping the technical instruments, processes and institutions that affect their well-being."