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**LINK, SEARCH, INTERACT:
THE CO-EVOLUTION OF NGOs AND INTERACTIVE TECHNOLOGY**

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Abstract

Interactive technology is a key factor used to explain the recent growth and prominence of NGOs, who today are engaged in the transformation of national, international and transnational political space. Yet technology cannot explain NGOs' rise, for technology is but a context which afford opportunities. We ask what it is that allows NGOs to take advantage of new circumstances, and focus our discussion on the *co-evolution* of NGOs with interactive technology. Our approach is part of a growing body of social science research that seeks to overcome the artificial divide between "society" and "technology" by viewing the social as consisting of humans and non-humans (objects, things, artifacts). Viewing technology not as a tool but as part of a co-evolutionary process that shapes organizational forms and practices will help us understand why NGOs have, given the opportunities provided by the retrenchment of the welfare state and the end of the cold war, been able to assume a more powerful and controversial role as co-constituents of global transformation.

Keywords: NGOs, non-state actors, interactive technology, information technology, co-evolution, transnational politics, knowledge society, collaboration, globalization.

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1. co-evolution.

We are witnesses to an epochal transformation in the analytically distinct domains of production and communication. On one side, we see a shift from mass production to network modes of organizing, as hierarchical, bureaucratic forms coexist with heterarchical, collaborative forms. On the other, we see a shift from mass communication to interactive media, as the uni-directional channels of one-to-many coexist with the hypertextual world of increasing interactivity. The dual shifts are, in fact, a twinned transformation: from mass production/mass communication to network production/network communication. To understand the new organizational forms of our epoch we must study how their roles and practices co-evolve with the new interactive technologies.

These transformations are being exponentially accelerated by digital tools that make it possible to access text, audio, visual, and data base information in an encompassing, interactive environment. Actors now participate in complex digital ecologies consisting of the Internet, intranets, extranets, websites, virtual collaborative workplaces, and the like. Within this encompassing environment of extended connectivity and near-ubiquitous computing, the new media do not simply allow organizations to communicate faster or to perform existing functions more effectively, they also present opportunities to communicate in entirely new ways and to perform radically new functions. Especially because these are *interactive* media, their adoption becomes an occasion for innovation that restructure interdependencies, reshape interfaces, and transform relations.

The impact of such developments are as far-reaching for international order as for individual organizations. Among the many actors of this rapidly changing environment, non-governmental organizations have exploded in number and visibility as the 20th century neared its end. Today NGOs are engaged, directly or at the margins, in the transformation of national, international and transnational political space. NGOs appear in various, often conflicting, guises: as building blocks for a global civic culture, incubators for new international institutions, barefoot revolutionaries carrying out globalization from below, or new missionaries imposing Western ideals from above. Interactive technology is generally regarded as instrumental support for one or the other of these guises. Technology is appended to a constellation of factors that are used to explain the recent growth and prominence of NGOs, most notably the retrenchment of the welfare state, the end of the cold war (with its dual legacy of democratization and new civil wars) and a rise in private donations.¹

But none of these factors can explain NGOs' rise, rather they are all contexts which afford opportunities. The question is begged, therefore, why NGOs have been able to take advantage of these circumstances. This paper suggests that the answer lies in examining the *co-evolution* of NGOs with interactive technology. Our approach is part of a growing body of social science research that seeks to overcome the artificial divide between "society" and "technology" by viewing the social as consisting of humans and non-humans (objects, things, artifacts).² Viewing

¹ See for example Marc Lindenberg and Coralie Bryant, *Going Global*, Bloomfield, CT: Kumarian Press, 2001, pp. 8-12.

² This approach draws on the work of French sociologists Michel Callon and Bruno Latour, and other social scientists in the United States who have been working with similar concepts. Hutchins, for example, argues that cognition is distributed across a network of persons and instruments. Suchman's pathbreaking

technology not as a tool but as part of a co-evolutionary process that shapes organizational forms and practices will help us understand why NGOs have, given the opportunities provided by the retrenchment of the welfare state and the end of the cold war, been able to assume a more powerful and controversial role as co-constituents of global transformation.

2. knowledge spaces.

What is it about interactive technology, particularly its most widespread instantiation in the Internet, that makes it resonate deeply in so many registers across the globe? If pressed to explain the essence the Internet in three words we would choose *link*, *search* and *interact*. This is certainly not the first technology to enable each of these functions: using a telephone you can search by dialing the operator to get “information” and can then use the same phone to link you with a party with whom you interact. Now consider the popular search engine Google: when it suggests sites to match your query it is also performing a search and establishing a link. But to prioritize your answer it considers all the other sites who have linked to the potentially relevant sites that match your query and ranks them based on patterns of links (i.e. the site with the highest number of links to them is considered more relevant). In other words it searches based on the pattern of links. For the telephone the process of link, search and interact is merely additive.³ For Google they are multiplicative and recombinatory: each of these processes forms the basis for the other.

This recombinant technology allows search not only on the pattern of links, but also on the pattern of interactions. If you are even a casual user of Amazon.com the web site will suggest titles to you based on a book or CD you are looking at. This is done not by matching terms in the title or abstract of the book, which would entail a high degree of potentially humorous error, but by tracking patterns of purchase and preferences and then using an algorithm to determine that “people who bought this book also bought...”⁴ The output of Google or Amazon, of course, is web sites or books, while the output of the telephone is interaction with a person. What if you could harness the properties of the web’s recombinatory logic to suggest interaction with people?

Consider why this might be desirable: At a practical level, the glut of information available on the web is such that even if you know what you are looking for, you need a way to find the most relevant information expeditiously. Since the creators of all this content are *people*, not machines, it stands to reason that asking the right person might be the best way to find the information you are looking for. Researchers have developed such “word of mouth” software, (one is appropriately named “gab,” as in talk, but also for Group Asynchronous Browsing).⁵ But there is an even more compelling reason to prefer a recombinatory over an additive approach—when you

work on human-machine interaction similarly resonates with the work of Callon and Latour and provides the basis for further studies on distributed design. See Michel Callon, *The Laws of the markets*, Oxford: Blackwell Publishers, 1998; Bruno Latour, “Technology is Society Made Durable,” in John Law, ed., *A Sociology of Monsters: Essays on Power, Technology, and Domination*, Routledge, 1991, pp. 103-131; Edwin Hutchins, *Cognition in the wild*, Cambridge, MA: MIT Press, 1995; and Lucy Suchman, *Plans and situated actions : the problem of human-machine communication*, New York : Cambridge University Press, 1987.

³ Which is not to downplay linking by itself—after all, we do have a very real use for the one-to-one technology of the telephone.

⁴ This form of search is known as collaborative filtering. For a good general introduction see Malcom Gladwell, *The Science of the Sleeper*, The New Yorker, .

⁵ See Kent Wittenburg et al., Group Asynchronous Browsing on the World Wide Web, <http://www.w3.org/Conferences/WWW4/Papers/98/>.

don't know what you are looking for but would know it when you find it (e.g. what happens every night at a singles bar). Unlike finding a phone number from "information," this way you find things you didn't know and come into contact with people whom you don't know. Now, you probably would balk at interacting directly with other customers of Amazon, but there are communities where this would be quite an asset. For example, a doctor who wants to know who else is treating patients for similar rare diseases or, trapped in your cubicle, you would love to know whether and where there might be persons with knowledge or skills relevant to your work, or qualities that match your romantic desires. Or if you are part of an NGO community and you want to share best practices.

Using the patterns of search or interact, one can link social structures (who knows who) and knowledge networks (who knows what). Amazon.com's collaborative filtering software is a commercial variant of similar programs such as the aptly-named Yenta, Beehive, or the browser Alexa.⁶ For members of an NGO or non-profit community this could help develop and promote their respective knowledge networks. Working with a group of 285 such organizations in the Midwest, researchers at the University of Illinois at Urbana Champagne developed a software program that could help the organizations identify those in the community who shared common or complementary interests and show how they may be directly or indirectly connected.⁷ This software, based on a tool called IKNOW, is distinctive because the users can find out not only "who knows who" and "who knows what," but also "*who* knows who knows who," and "*who* knows who knows what."⁸ This works by capturing network data of both knowledge networks (based on links between actor's web sites, on common links from their web sites to third party sites, on similarity in content between different web sites, and on an inventory of skills and expertise provided by the actors) and communication networks (based on an inventory of existing task and project links between them).⁹

From social structures and knowledge networks we thus get at cognitive social structures and cognitive knowledge networks (*who* knows whom or what). The cognitive perceptions of the members of a knowledge community taken individually may be incomplete or inaccurate, but together they form a transactive memory system that shares domains of knowledge.¹⁰ This hints at a larger significance for what at first might seem at first like just a good way to sell books: communities of knowledge can not only be identified, but also created. IKNOW does not just enable dyadic relationships in the manner of personal ads, but also facilitates communities of knowledge.

⁶See, respectively, <http://foner.www.media.mit.edu/people/foner/Yenta/>; <http://info.alex.com/>; <ftp://parcftp.xerox.com/pub/dynamics/beehive.html>.

⁷ PrairieNet communityware can be seen at <http://www.tec.spcomm.uiuc.edu/nosh/prairienet>.

⁸ IKNOW stands for Inquiring Knowledge Networks On the Web. See Noshir Contractor, David Zink and Michael Chan, "IKNOW: A tool to assist and study the creation, maintenance, and dissolution of knowledge networks" In Toru Ishida (Ed.), *Community Computing and Support Systems*, Lecture Notes in Computer Science 1519(pp. 201-217). Berlin: Springer-Verlag, 1998. The IKNOW web site is: <http://www.tec.spcomm.uiuc.edu/nosh/IKNOW>.

⁹ Contractor et al., 10.

¹⁰ Contractor, *Ibid*. See also Noshir Contractor, "Social Network Formulations of Knowledge and Distributed Intelligence: Using Computational Models to Extend and Integrate Theories of Transactive Memory and Public Goods." Paper presented at Santa Fe Institute Workshop on "Heterarchies: Distributed Intelligence and the Organization of Diversity," 2000.

The development of new knowledge communities is part of the changing concept of “public.”¹¹ We have already come to expect different re-presentation because of the web: digital photos of our grandchildren, company web sites that afford certain functions, the availability of news in interactive forms, art designed for a digital environment. As we adapt to new situations we hardly notice how our expectations and practices shift, but step back a moment and consider this digital artist’s perspective: “All the strategies developed to awaken audiences from a dream-existence of bourgeois society, like constructivist design, new typography, avant-garde cinematography and film editing, as well as photo-montage, now define the basic routines of post-industrial society; that is, the interaction with a computer.”¹² That these basic routines may in fact lull audiences back into a dream-like state rather than awaken them is less the point than discerning how the use of interactive technology has created a space that is dynamic, interactive, multi-dimensional and representational.¹³

This space—let us borrow Lévy’s term “knowledge space”—is dissimilar to the established means of communication because it integrates discursive and non-discursive elements.¹⁴ This is as much a space *within* which something happens, as it is a space *for* something to happen.¹⁵ As a space within which something happens we can trace empirically the circulation and creation of knowledge communities. As a space for something to happen we can speculate that new forms of social organization, including new social bonds, will develop on the basis of a relation to knowledge (for example, by the re-locating of ties in social structures such as the family or the workplace, the valorization of programming skills and the mobility of electronic labor, and so forth).¹⁶ Such a transformation does not imply that knowledge is a function of interactive technology, any more than exchange is a function of capitalism. But just as exchange acquired specific characteristics under capitalism that became the basis for a complex system, so does knowledge acquire new characteristics in our (infelicitously but popularly titled) information age.

3. towards a new spatio-temporal order?

The knowledge space is part of the oft-described network paradigm that is displacing central-planning and strictly hierarchical thinking.¹⁷ Networks operate more fluidly and can improve on accounts of complex social interaction over the methodological individualism of positivist social science. They have the significant effect of enhancing flows and creating a shared acceleration that corresponds to the compressed space-time of our late modern era. This spatio-temporal compression is part and parcel of the function of interactive technologies, which combine real-time and many-to-many communication in ways that fundamentally re-arrange the ways firms produce, states fight wars, and peoples lives are structured. This re-arranging is, significantly, a

¹¹ This also alters the related concept of audience from one based on categories and demographics to a network conception, with far-reaching implications for marketing. See Manville 2001 and Stark (ASA paper).

¹² Interview with Lev Manovitch in *New Media Culture in Europe: Art, Research, Innovation, Participation, Public Domain, Learning, Education, Policy*. Edited by Frank Boyd, Cathy Brickwood, Andreas Broeckmann et al. Amsterdam: Uitgeverij de Balie and the Virtual Platform, 1997.

¹³ Pierre Lévy uses these characteristics to explain his notion of “cosmopedia.” See Pierre Lévy, *Collective Intelligence*, Cambridge MA: Perseus Books, 1997, p.216.

¹⁴ Ibid.

¹⁵ See Steven Johnson, *Interface Culture: How new technology transforms the way we create and communicate*, San Francisco: HarperEdge, 1997.

¹⁶ Lévy’s take on the social bond in *Collective Intelligence* can be found on pp. 10-13 and part one (“Engineering the Social Bond”).

¹⁷ See especially Manuel Castells, *The Network Society*, London: Blackwell, 1999.

form of de-territorialization, both because the electronic space in which power and action is being reconstituted is literally not located in territorial space, and because the institutions that evolved to regulate life within territorial borders are ill-suited to the tasks of regulating transborder flows.¹⁸

Deterritorialization is the process at the core of the unbundling of the nation-state. It forces a transformation of the spatial organization of politics away from the single-point perspective that Ruggie pegs as the defining doctrinal characteristic of sovereignty.¹⁹ Most of us will have little difficulty agreeing minimally that an increase in flows of money, people and commodities has challenged the ability of the nation-state to exert its social ordering functions, that global issues exist beyond the control of any one state, and that, consequently, the global political system is undergoing a significant transformation. But few will agree on what this is a transformation *to*.

We would be charlatans if we claimed to know what the new spatial organization of politics will be. We can, however, identify elements of the transformation, in particular three shifts (these are ongoing shifts, not completed processes):

- First, there is a shift among states and intergovernmental organizations from a concern about the sanctity of sovereignty to a concern about the enforcement of universal norms. This can be viewed cynically or hopefully, through the lens of empire or enlightenment. Certainly not all governments embrace such a shift (ironically the United States is foremost among the obstructionists while also one of the greatest proselytizers of universal principles), but a global agenda that prioritizes humanitarian, environmental, and even economic justice issues has established itself as a dominant discourse.
- Second, there is a shift from decentralized to distributed structures. Decentralized governing structures emerged to (over)compensate for the inability of centralized forms of government and market to efficiently provide the resources or results deemed necessary for the good life, resulting in privatization or political structures such as subsidiarity and devolution. Decentralized production enabled capital to increase its mobility. But decentralization is an effect. Distribution, on the other hand, is the capacity for a collective actor whose capacity to be strategic is an emergent effect of the patterns of association and cannot be assigned to a single person alone, or even to a network of humans.²⁰
- Third, in the analytical methodology that informs (social) scientific development we see a shift from what Latour called a diffusion model to a model of translation.²¹ The diffusion

¹⁸ Saskia Sassen elaborates the concept of electronic space in chapter 9 of Saskia Sassen, *Globalization and its Discontents: Essays on the New Mobility of People and Money*, New York: New Press, 1998. On the perforation of territorial borders see Susan Strange, *The Retreat of the State: The Diffusion of Power in the World Economy*, Cambridge: Cambridge University Press, 1996. For a mind-blowing grappling with an expanded sense of deterritorialization see Gilles Deleuze and Felix Guattari, *A Thousand Plateaus*, Minneapolis: University of Minnesota Press, 1987.

¹⁹ John Ruggie, "Territoriality and beyond: problematizing modernity in international relations," *International Organization* 47:1, Winter 1993, p.159.

²⁰ See Hutchins, *Cognition in the Wild*; Suchman, *Plans and Situated Actions*. See also John Law and John Hassard, eds., *Actor Network Theory and After*, Oxford: Blackwell Publishers, 1999; and Monique Girard and David Stark, "Distributing Intelligence and Organizing Diversity in New Media Projects" *Environment and Planning*, forthcoming.

²¹ Bruno Latour, "Powers of Association," in John Law, ed., *Power, Action, and Belief: A New Sociology of Knowledge*. Routledge:1986, pp. 264-280. The following account is drawn from pp. 266-69.

model is a model of inertia and friction, where changes are explained by theorizing about what retards or accelerates an order or object's trajectory—for example, the idea of the nation-state as a stable, given combination of traits and territory whose trajectory can be explained by a mixture of hard times that slow down its progress (perhaps covetous neighbors who invades their territory) or good times that speed it up (such as economic boom, or the nation-state's own military conquests).²² The nation is merely transmitted from one generation to the next with a rich history of (and potential for future) friction. A translation model dispenses with inertia and sees an object or order as being continuously transformed by the actors themselves who engage in continuous reinterpretation.²³ In more fashionable terms a translation model could be seen as a process akin to social construction. But we have to remember that translation is *also always* a misunderstanding. Sites of translation therefore are thus also sites of interpretation contention, and re-negotiation.

4. ngos from autarky to collaboration

These shifts are harbingers of a new space-time construct. Again, we cannot know the outcome, but we can identify the actors involved in the co-evolutionary process. One particularly intriguing actor is non-governmental organizations, since for many NGOs the concept of network is closely intertwined with their operational logic. This lead to a superficial isomorphism with the perceived properties of interactive technology: communication and networking are integral to getting information to constituents, channeling and interpreting information from varied sources, aggregating information and demands, transmitting them to diverse audiences, and mobilizing individuals and groups. As a tool for processing information, interactive technology increased NGOs communication and facilitated networking.²⁴ It thus seemed ideal for lowering transaction costs, increasing participation and impact, and streamlining operations. The democratic rhetoric that accompanied the early years of the Net was also a strong plus—social and organizational change could be seen as complementing each other.

It would be an error, however, to see NGOs as having an elective affinity with interactive technology, and then to use this *a priori* affinity to claim that NGOs plus IT equals new organizational forms capable of transforming global space if only the forces of friction are sufficiently overcome. This, however, is the undertone that pervades much popular discussion about NGOs. It is a diffusionist model that presents NGOs as moving under their own inertia.

²² See Arjun Appadurai's notion of process geographies and trait geographies in Arjun Appadurai, "Grassroots Globalization and the Research Imagination," *Public Culture* 12:1 2000. See also Stephen Toulmin's notion of Newtonian image of power exerted with a central force through sovereign agencies in Stephen Toulmin, *Cosmopolis: the Hidden Agenda of Modernity*, Chicago: University of Chicago Press, 1990.

²³ Latour uses the example of rugby players and a rugby ball: "The initial force of the first in the chain is no more important than that of the second, or the fortieth, or of the four hundredth person. Consequently, it is clear that the energy cannot be hoarded or capitalized; if you want the token to move on you have to find fresh sources of energy all the time; you can never rest on what you did before, no more than rugby players can rest for the whole game after the *first* player has given the ball its *first kick*." (original emphasis) Powers of Association, 266-67. Latour's preference for a translation model is that it allows power to be seen as a consequence and not a cause of collective action, a point we will return to later.

²⁴ Increased communication, however, is in itself not a good. Not everything works better with email. See Siobhan O'Mahoney and Stephen R Barley, O'Mahony, and. Barley, 1999, "Do Digital Telecommunications Affect Work and Organization? The State of Our Knowledge," *Research in Organizational Behavior*, 21 pp. 125-161.

This inertia is connected, often indirectly, to the quasi-mythical view of NGOs from the 1960s and 70s as an anti-state and anti-market force. Let us take the example of development NGOs.

As Bishwapriya Sanyal explains, NGOs were privileged in the 70s as “the most appropriate catalytic agent for fostering development from below because their organizational priorities and procedures are diametrically opposed to those of the institutions at ‘the top.’”²⁵ To fulfill this avant garde role NGOs valorized a form of pseudo-autarky for two negative and one positive reason: Collaboration with the state was ruled out because it was seen as leading to control or cooptation, while collaboration with the market would poison community solidarity bondings. In both cases legitimacy and effectiveness were thought to suffer. These were negative reasons for maintaining independence. A positive reason was that the principles of self-sufficiency, self-reliance and social innovation would become the motor for self-reproduction. The basic analytic unit was the isolated NGO engaged in a form of autopoiesis. There was indeed a self-generating quality to this approach, but what it generated was isolation and contradictions. NGOs competed fiercely with each other for money and avoided forming institutional linkages with government, the commercial sector or even other NGOs. The lack of institutional support doomed all but the smallest projects and precluded replication or expansion. When they began to fall apart as a result of these incapacities it only intensified competitiveness and isolation and made a mockery of the attempt to create a broad base ‘from below’.²⁶

The relative success and high growth of NGOs in the latter part of the ‘80s and especially the ‘90s can be attributed not only, or even primarily, to increased externalities, but to the NGOs shift from self-imposed isolation to collaboration. NGOs moved to collaboration as they began to recognize that success, when it happened, was because they were already engaging in semi-conscious forms of collaboration that went unacknowledged. For example, NGOs’ own leaders were drawn from an elite with informal linkages to all the types of institutions—banks, bureaucracies and parties—that form the ‘top.’ Sanyal gives the example of the founders of the Grameen Bank, Drs. Yunus and Latifee, who are mythologized as visionaries whose sole efforts resulted in this paradigmatic development from below. They doubtless possessed great vision, but, as Sanyal points out, they also had an institutional association with the top university that provided both salary and legitimacy, and Yunus’ efforts to convince the bank to make loans was not made on the strength of his grassroots organizing ability but because of his family’s long-standing relationship as a major depositor.²⁷ As the project expanded and became the famous Grameen bank, it was on the firm basis of a tripartite alliance between NGOs, government, and market institutions.²⁸

The need to be self-sustaining caused conflicts within NGOs because of the siren call of alliances with the market as a source of generating independent income, especially as foundations began to require better accountability and plans for sustainability. Over the last fifteen years, in the search for self-sustainability some NGOs have indeed turned to income generation alternatives that mimic commercial enterprises. For example the "dot-corg" dual enterprise model combines social and business ventures, separating revenue generation from the NGOs’ social mission and evaluating it according to business metrics. There is also a minority of NGOs who, from early on,

²⁵ Bishwapriya Sanyal, *Cooperative autonomy: the dialectic of State-NGOs relationship in developing countries*, Geneva: International Labor Organization, Research Series No.100, 1994, p.37. The following depiction is drawn from her excellent account.

²⁶ Ibid. See also

²⁷ Ibid., p. 45.

²⁸ Ibid., see also her similar accounts of the Bangladeshi NGO Proshika, and the Indian NGO SEWA (the Self-Employed Women’s Association).

set their long-term goal as evolution into a socially-oriented, for-profit venture, such as many Internet Service Providers in Eastern Europe who began as non-profits and grew into viable businesses.²⁹ When you consider the early resistance of NGOs to allying themselves too closely with the market it is striking (or even shocking) to watch recent partnerships emerge such as such as the CARE-Starbucks partnership or the “Libraries Online Partnership” between Microsoft Corporation and the non-profit American Library Association.³⁰

Alliances with the market certainly do open new forms of sustainability and even synergy, and cannot be dismissed out of hand. If NGOs reject cooperation with state and market forces too completely they risk slipping into an exclusively oppositional role with diminished opportunities for agenda-setting. Yet this does not mean that old problems of cooptation have disappeared—on the contrary, they may even be exacerbated by the new hybrid forms. The values of the market and of the non-profit world remain antagonistic. As NGOs spread their accountability unevenly among constituents, board members, donors, and the public they find themselves faced with a proliferation of performance criteria that catches them between the value systems of business (efficiency, solvency) and social mission (adherence to principles, ideological agenda).³¹ In the best case they may exploit these contradictions, but the danger is real that actors who are accountable according to many principles become accountable to none.³²

Most importantly, success for NGOs came less from developing innovative ideas than from basing their efforts “on relatively old ideas which may have been tried, even by the government, in another context....Successful NGOs did not pursue only a decentralized approach...their success was due to a skilful blending of centralization and decentralization of decisions, cooperation and competitiveness....”³³ In other words, successful NGOs used logics that are distributed and recombinatory.

This shift from pseudo-autarky to collaboration rather than the amassing of successes per se, made NGOs increasingly important players at a time when the dominant image of the cold war gave way to globalization. We can see how NGOs were able to embody (and thereby help define) each of the major shifts we sketched above:

²⁹ On both these points see Jonathan Peizer, "Sustainable Development in the Digital Age." <http://www.mediachannel.org/views/oped/values3.shtml>. Accessed October 15, 2000.

³⁰ Of course Microsoft and Starbucks were once upon a time anti-establishment upstarts. See Sagawa and Segal, 2000. On the CARE/Starbucks alliance see Lindenberg and Bryant, *Going Global*, especially pp. 164-165 and James Austin, *The Collaboration Challenge*, San Francisco: Jossey-Bass, 2000. On the phenomenon of voluntary-commercial cooperation and its attendant challenges see Michael Edwards and David Hulme, eds., *Too Close for Comfort: NGOs, States and Donors*, London: Earthscan Press, 1996, and Jem Bendell, *Terms of Endearment: Business, NGOs and Sustainable Development*, Sheffield UK: Greenleaf Publishing, 2000.

³¹ Michael Edwards and David Hulme, *Beyond the magic bullet : NGO performance and accountability in the post cold war world*. West Hartford, Conn.: Kumarian Press, 1996.

³² David Stark, “Ambiguous Assets for Uncertain Environments: Heterarchy in Postsocialist Firms,” in Paul DiMaggio, ed., *The Twenty-First-Century Firm: Changing Economic Organization in International Perspective*. Princeton, NJ: Princeton University Press, 2001, pp. 69-104. Because the state and market themselves are not static but are undergoing fundamental changes an even bigger problem may be distinguishing cooperation from co-optation in certain cases. See Bach and Stark, *Innovative Ambiguities: NGOs use of Interactive Technology in Eastern Europe*, *Studies in International and Comparative Development*, Spring 2002.

³³ Sanyal, *Cooperative Ambiguity*, p.43. See also Kramar 1989.

- NGOs were in the forefront in the shift from sovereign sanctity to universal norms, particularly in the realms of the environment and human rights. The stunning successes of Doctors without Borders and the Campaign to Ban Landmines, both of which won the Nobel Peace Prize, gave NGOs publicity and legitimacy that far surpassed previous efforts. From a different angle, the anti-WTO protests in Seattle and similar “anti-globalization” protests from Ottawa to Prague criticized the distributed modes of production and called attention to the new forms of connectedness under globalization. In an intriguingly isomorphic fashion the protesters, especially the more radical of them, also used a distributed logic to achieve their seeming chaotic but well-orchestrated effect: the weird coalitions of the anti-globalization movement, as Katharine Viner notes, are also wired coalitions.³⁴
- It is not only protesters, however, that use distributed logic, but this can be seen in the networks that formed in support of a variety of causes, such as humanitarian relief efforts for earthquake and war victims, preserving the Arctic wildlife reservation from oil drilling, or pressing for minority rights. This does not mean that competition between, or hierarchy within, NGOs has disappeared. But the isolation of NGOs diminishes as networks become increasingly standard operating procedure, especially when linked by Internet, as most of them are. This allows the leveraging of knowledge across multiple logics and ordering principles, creating new opportunities and conundrums, including the thorny problem of how to make *networks* accountable.³⁵
- This leveraging of knowledge through distributed cognition allows NGOs to engage in translation as one of their major functions.³⁶ However, as a site of translation is always also a misunderstanding it is where negotiations of meaning take place. NGOs occupy a particularly strategic position in this regard: they work upwards with governments and corporations (e.g. through lobbying, media campaigns, protest and participation in policy processes) and downwards with local and marginalized populations (e.g. through in-country projects, training, re-granting and consciousness-raising). They thus are in a position to embody *the tension* between diffusion and translation that has become, in various academic and popular guises, the central debate of postmodernity.

5. from knowledge—via associations—to power

The shift from pseudo-autarky to collaboration enabled the structural role of NGOs in globalization to become increasingly prominent. This expanded role itself has been enhanced through NGOs use of interactive technology within the confines of an information broker model. This model is a reasonable and conditioned reaction from the age of mass communication and mass production. Modern society is organized along lines of access to quantifiable information brokered between those who have information and those who want or need it. It has an hourglass

³⁴ Katharine Viner, "Luddites' we should not ignore: Instead of vilifying the Prague protesters, we could learn from them." *The Guardian*, Sept. 29, 2000. Thanks to Krista Hegburg for drawing my attention to this quote.

³⁵ Because authority is distributed, accountability becomes highly problematic, especially when thought of in the juridical sense of locating responsibility in a figure or specific institution of authority. See Teubner, Stark and Bruszt.

³⁶ See Ulrich Brand, "Non-governmental organizations and post-Fordist politics," paper presented at the International Studies Association Annual Meeting, Chicago, February 2001. Compare translation with Fox and Brown's "bridging individuals" in Jonathan Fox and L. David Brown, *The Struggle for Accountability: The World Bank, NGOs and Grassroots Movements*, Cambridge, MA: MIT Press, 1998.

structure, with information passing through the broker in the middle on the way from A to B, similar to Burt's bridges across structural holes or Latour's obligatory passage points.³⁷ This can take the ruthless form of a monopolistic corporation or the benevolent form of an NGO seeking to spread formerly guarded information. Structurally, however, brokers work in the same way by exploiting gaps and, accordingly, gaining rents. They have a vested interest in maintaining the gap between information producers and consumers. The affordances of interactive technology can be used to maximize this brokering role, along with the power (and perils) that comes with it.

NGOs do not mimic those who 'hold' power in principle such as states or rulers (whose claim to power can be tautological and often chimerical). But in their enhanced brokering role NGOs do gain power Latour's sense, where power accrues to "those who practically define or redefine what 'holds' everyone together."³⁸ Engaging in this practical redefinition enhances NGOs' power. Transnational NGOs are particularly important in this respect. To the extent that NGOs become obligatory passage points power can be exerted through the discursive production of the subjects they claim to represent, be they aid recipients, organizations to be included in a civil society database, or the creation of a regional identity.³⁹ As Paige West documents in her excellent study of environmental NGOs in Papua New Guinea, NGOs use their structural and rhetorical power "to discursively produce 'local peoples,' 'indigenous peoples,' 'peasants'...and have their productions taken very seriously."⁴⁰

But since translation is always also misunderstanding NGOs do not only produce identities but re-negotiate them. And since interactive technology affords the ability to shift from information as a discrete property to "knowledge" that requires a knowing subject there is more out there than the brokerage model. Here we invoke the knowledge space we spoke of earlier, wherein the emphases is not information *per se* but communication and distributed intelligence. Knowledge, unlike "information," cannot exist independently of a subject and cannot be conceived of independent of the communication network in which it is both produced and consumed (thus blurring the notion itself of producer and consumer). This does not displace or solve the practical and epistemological problems occasioned by "information" (e.g. how to process large amounts of data, how to insure data protection, how to ascribe meaning to data), but raises different questions of an ontological nature. These question the very *a priori* (diffusionist) assumptions of the institutional and organizational forms that order our world.

NGOs themselves transform when shifting their emphasis from brokering information to facilitating knowledge. This could make a difference for their potential to be genuinely transformative of social structure. As we saw with the IKNOW tool discussed earlier, facilitating knowledge is powerful for forming associations that are not just linked communities, but knowledge communities that use a recombinant and multiplicative logic of link, search, interact to sustain itself and grow. In fact, we can think of NGOs themselves as participating in a high-stakes, large-scale version of searching for something but not knowing what it is (and only possibly recognizing it when they see it!) The impetus for search here is the normative mission of NGOs to work for social justice, ameliorate economic inequalities, empower individuals, and prevent excessive suffering and death.⁴¹ Information itself is of little use here—NGOs that imitate

³⁷ Ronald Burt, Structural Holes, Latour.

³⁸ Latour, Powers of Association, p.273.

³⁹ This bears similarities to how non-profits in the US helped construct the categories and stigma of welfare recipients. See Barbara Cruikshank, *The Will to Empower*, Ithaca: Cornell University Press, 1999.

⁴⁰ Paige West, "Environmental NGO's and the Nature of Ethnographic Inquiry," *Social Analysis*, 45:2. October, 2001, p.29. See also our discussion of meta-NGOs in Bach and Stark, *Innovative Ambiguities*.

⁴¹ This is, of course, merely a sampling of missions, not a comprehensive list.

statistical offices will remain information brokers. Those looking for solutions, however, will use search to link and to interact; these NGOs become a social technology where the logic of one is refracted through the other.

When NGOs participate at international conferences or liaise with governments or corporate boards, they engender deliberative associations that involve negotiations across ordering principles and multiple logics.⁴² As Charles Sabel pointed out in his study of economic developmental associations, no state can possibly have the superior knowledge to the economic actors or coordinate restructuring better than regional developmental associations—it is the associations, not the states, that do the developing.⁴³ Likewise as NGOs become deliberative associations they can play a greater role in both *development* (in the traditional sense) and *developing* global, regional and national structures and institutions. This is because deliberative association lead to new associations, both in the literal sense of new networks and the figurative sense of a mental connection between ideas.

An example is the now-famous moment during the 1999 anti-WTO protests in Seattle, when, as William Greider recounts it, “a squad of activists dressed as sea turtles was marching alongside members of the Teamsters union. ‘Turtles love Teamsters,’ the turtles began to chant. ‘Teamsters love turtles,’ the truck drivers replied.”⁴⁴ One associative outcome was the (partial) mental morphing of labor unions’ and environmentalists’ respective ideas on the environment and economics. Another was the creation of coalitions that turned the “anti-globalization” movement that emerged from the protests in Seattle into a community of deliberative associations where the lines between environment, economic development and human rights increasingly blurred. A much smaller scale example of an associative solution is a Roma Rights organization in Hungary, which began solely by trying to link disparate organizations and individuals to each other. As a result of the subsequent interaction, the onetime clients moved from being serviced by the organization to claiming the organization as their own, eventually becoming involved in the governance of the organization. From its origins as an information broker the organization transformed into a knowledge community.⁴⁵

6. translation and transformation

The ever-increasing literature on NGOs implicitly recognizes their growing power. NGOs are most often discussed, however, as if their form were given and only their effect remains to be worked out. Thus we encounter, alternately, NGOs as an incipient global civil society, as functional equivalents of democracy, as tools of the ruling class, or as the vanguard for globalization from below.⁴⁶ In nearly all of these scenarios interactive technology appears in a

⁴² David Stark and László Bruszt, *Postsocialist Pathways: Transforming Politics and Property in East Central Europe*, Cambridge: Cambridge University Press, 1998, pp. 109-136.

⁴³ Charles Sabel, “Studied Trust: Building New Forms of Cooperation in a Volatile Economy,” in Frank Pyke and Werner Sengenberger, eds., *Industrial Districts and Local Economic Regeneration*, Geneva: International Labor Organization, 1992.

⁴⁴ William Greider, “Global Agenda: After the WTO Protest in Seattle, It’s Time to Go on the Offensive. Here’s How,” *The Nation*, Jan. 31, 2000.

⁴⁵ See Bach and Stark, “Innovative Ambiguities.”

⁴⁶ See among others, Craig Warkentin, *Reshaping World Politics: NGOs, the Internet and Global Civil Society*, New York: Rowman and Littlefield, 2001; James N. Rosenau, “Governance and Diplomacy in a Globalizing World,” in Daniele Archibugi, David Held and Martin Köhler, eds., *Re-imagining Political Community*, Stanford: Stanford University Press, 1998; Ulrich Brand, *NGOs and Post-Fordist Politics*;

diffusionist fashion as either speeding up the process, presenting obstacles, or both. Viewing technology as an external actant misses the way in which intelligence is distributed across actors and artifacts.⁴⁷ We would like to suggest that before conclusions can be drawn, scholars devote more time to studying NGOs and interactive technology as co-evolving actants embedded in an era—call it what you like—where knowledge is increasing as a resource for creating enduring associations (i.e., as a source of power). This would allow us to trace empirically what we have been describing conceptually: As NGOs co-evolve with interactive technology they appear to shift from pseudo-autarkic symptoms of an unequal world to collaborative, networked communities of deliberative association.

When we employ analytical concepts that bridge the society/technology divide, NGOs appear as a molecular technology, a large, self-organizing community of deliberative associations.⁴⁸ They translate (i.e. misunderstand, interpret and re-negotiate) between multiple logics, such as indigenous peoples and government bureaucrats. They also translate between an older spatio-temporal order (the cold war, the sovereign state system, Fordism, etc.) and what we have provisionally marked as a knowledge space.⁴⁹ It would be a mistake to assume this form predetermines any *a priori* normative outcome for NGOs—as we mentioned earlier the problems of accountability alone presents substantial challenges to future development. NGOs could quite conceivably operate nefariously as the moral instruments of a new global society of control precisely *because* they are networked, molecular structures.⁵⁰ This shift in form, however, makes NGOs axial organizations whose import extends beyond the negotiation of specific issues (e.g. carbon dioxide emissions, or landmines) to the re-negotiation of justificatory regimes upon which the global temporal-spatial order is based. This, more than any particular event, accounts for NGOs growing prominence. NGOs' use of recombinatory logics allows them to go beyond service provision and function as a global navigational tool for exploring a knowledge space full of uncertainties and unknowns. The best advice for observers of global transformation is to follow that of the old advertisements: watch this space.

Richard Falk, *Predatory Globalization: A Critique*, Malden, MA: Polity Press; Appadurai, *Grassroots Globalization*.

⁴⁷ Hutchins, *Cognition in the Wild*.

⁴⁸ See Latour, *Technology made Durable*. Lévy contrasts molecular with a “molar” technology of human groups, where the members “are organized into categories, united by leaders and institutions, managed by a bureaucracy or held together by enthusiasm.” *Collective Intelligence*, p.41.

⁴⁹ This space controls what came before, in the sense of paradigm, rather than eliminates it. Lévy gives an account of four spaces: earth, territory, commodity and knowledge. See *Collective Intelligence*.

⁵⁰ Or as Hardt and Negri, whose argument this is, put it, they function as “the capillary ends of the contemporary networks of power.” Michael Hardt and Antonio Negri, *Empire*, Cambridge, MA: Harvard University Press, 2000, p.313.

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