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# Scales of Place and Networks

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## An Ethnography of the Imperative to Connect through Information and Communications Technologies

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by Sarah Green, Penny Harvey, and Hannah Knox

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Much has been made of the space-transforming and space-defying characteristics of information and communications technologies. This focus tends to separate the spatial characteristics of these technologies from those of the Euclidean world; it also takes the spatial characteristics of the Euclidean world for granted. Yet anthropologists have shown that place making in any spatial context is a complicated process, always involving an entanglement of imagination, politics, and social relations. This paper, by focusing on the promotion of the development of information and communications technologies through the public sector in Europe, shows that these technologies have become as much a part of political place making as other transportation and communication technologies in the past. Using our ethnographic research on several European Union-funded projects based in Manchester, we argue that many of the perceived difficulties experienced in projects which envision these technologies as holding the potential for social change derive from a tension between "imagined communities" and "imagined networks" as two different forms of place making. The paper illustrates this tension by tracing the political, institutional, and social development of what we term an "imperative to connect," which constitutes a moral and social imperative as much as an economic one.

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One of the defining characteristics of new information and communications technologies is their capacity to alter the spatial conditions of existence.<sup>1</sup> In particular, they have been commonly represented as overcoming the constraints of physical location and enabling "real-time" communication and interaction at a distance (Mitchell 1995). Indeed, some have extended the notion of the space-defying characteristics of these technologies to argue that they have generated a new kind of place variously called "cyberspace," "virtual space," or just "the net"—an electronic spaceless place that exists as a digital world parallel to the physical one. Many arguing this perspective have been influenced by the science fiction work of William Gibson (1984), who coined the term "cyberspace" well before the development of the Internet (Abbate 1999, Hafner and Lyon 1998). In fact, the Euro-American ability to imagine the existence of such non-spatial places predates the Internet by several centuries (Wertheim 1999). The naming of "cyberspace" as a "real" example of such a place has generated a range of debates about the characteristics of this parallel world in social, legal, economic, political, and even architectural and sexual terms (Gaitenby 1996, Jones 1997, Jordan 1999, Loader 1997, Ogden 1996, Smith and Kollock 1999, Stone 1995, Wilbur 2000). Although few took the notion of cyberspace entirely literally in these discussions and some warned of the dangers of doing so (Slouka 1996), the metaphorical and occasionally metonymical association between information and communications technologies and a new spaceless place began to take hold in the 1990s; it well suited one dominant form of Euro-American spatial imagination.

An alternative argument is that the connections and flow of communication made possible through these technologies have generated a deterritorialized world, undermining previous forms of territoriality such as those depended upon by nation-states (e.g., Appadurai 1996). Many multinational corporations are now marked by their desire to organize offices around the world according to function (sales, finance, manufacturing, research) rather than geographically defined areas of responsibility (Kim, Park, and Prescott 2003), whilst online communities of activists, hobbyists, migrants, and trav-

1. "Information and communications technologies" (ICTs) is a broad term used since the 1980s to refer to the convergence of computing and telecommunications (Freeman 1989). It normally refers to the broad range of networked computer-based technologies including personal computers, server technologies, the Internet, mobile telephones, and digital TV. The idea of the relationship between information technologies and communications technologies is often attributed to Daniel Bell (1974). In this paper, we are using the term to refer to computer-mediated communications in the form of Internet, Intranet, and World Wide Web technologies.

elers point to the potential of information and communications technologies to render place irrelevant in the generation of community (Tsaliki 2002). From this perspective, these technologies have provided the technical means to create a new scale of existence: the global scale, which simultaneously encompasses the world and reconfigures or even erases its borders and boundaries and, like cyberspace, is a kind of separate entity floating above all our "local" heads (which is what makes it possible to imagine a local-global dichotomy [Moore 2004]). This notion is much less dependent upon science fiction than the idea of cyberspace, but it too depends upon cultural imagination—on people's ability to generate a sense of place that is different from the spatial logic of the nation-state. While an earlier information and communications technology, print capitalism, led to "imagined communities" of nations, according to Anderson (1983), these new digital technologies are apparently leading to "imagined networks" of globalization, transcending the constraints of physical location and dependence upon the territories and boundaries of the earlier period.

This points to what has been obscured in most discussions on the space-defying characteristics of these technologies: that it is not only the places they generate that are imagined but also the places from which they are apparently separated. The making of places is something that anthropologists have studied for many years, arguing that not only cultural imagination and/or phenomenological experience but also powerful interests, both political and economic, become involved in the continual process of their construction (Agar, Green, and Harvey 2002, Gupta and Ferguson 1997, Hirsch and O'Hanlon 1995, Bender 1995, Feld and Basso 1996, Clifford 1997, Green 2005).<sup>2</sup> Such work implies that if a re-configuration of spatial relations has been made possible by the spread of information and communications technologies around the world, then that is as much about the interplay between the experience, imagination, and political-economic construction of physical space as it is about "digital space"—or, rather, they are probably both part of the same thing. In that sense, and if print capitalism became entangled in generating imagined communities of nation-states, as Anderson argued, then it is likely that the new technologies will also be used in political place-making projects. In any case, given that in the past governments have repeatedly made use of most new communications and transportation technologies (roads, railways, telegraphy, ship canals, etc.) to orchestrate, organize, and control spatial relations (Harvey 2005, Otis 2001, Prakash 1999), it is highly unlikely

2. Broadly following Gupta and Ferguson (1999), we intend "place making" to refer to an ongoing and almost always politically mediated process of generating perceptions of location and relationships within and between locations using spatial metaphors or symbolism, as well as active control over and definition of territories, maps, borders, and boundaries, whether these are imagined or geophysical (and they are usually both). "Space" is being used loosely to refer to any entity that has or is imagined to have geometrical dimensions in Euclidean terms.

that information and communications technologies will *not* be used for such purposes, precisely because of their apparent space-defying capacities. Historical experience suggests that anything offering control over the way in which space and place are constituted attracts the interest of political power. This will be especially likely if the world is indeed becoming "deterritorialized" or even if there is a threat of such a thing's occurring: states and other political organizations whose authority is defined and limited by territorial boundaries cannot ignore such a possibility. As Radcliffe notes, "State territoriality is . . . not a given but rather something to be worked for, and the tools and behaviours through which it is made are constantly being rethought and remade" (2001:126).<sup>3</sup>

It is in this context that our research has focused on the role that the public sector in Europe, particularly the European Union (EU) but also national and local governments, has played in promoting the development and use of information and communications technologies. Within the EU, there is explicit and ongoing enthusiasm for investment in them as place-building technologies (Shore 2000:45). From the moment the Maastricht Treaty was signed by the member states in 1992, the EU has had an open commitment to developing a sense of European identity in the minds of the EU member states' populations and increasing connections and communications across the member states as part of the development of full European integration (see also Holmes 2000:24). The Maastricht Treaty explicitly introduced the notion that the EU ought to be concerned about "culture" and a sense of "belonging" to Europe amongst its citizens and about ensuring a sense that beyond people's own particular regional identities (EU documents avoid referring to "national" identities) EU citizens are also "Europeans" (Hansen and Williams 1999, Leonard 1998, McDonald 1996, Pahl 1991, Shore 2000). Even before the treaty was signed, EU policies reflected the idea that information and communications technologies, if promoted and used in the right way, could offer the solution to its technical, economic, social, and political integration problems (Shore 2000:44–47). In addition, it was argued that such technologies could contribute to the EU's socioeconomic aims (Bangemann 1994, European Commission 2001), which involved a broadly social democratic moral agenda of providing all EU citizens with a quality of life equal to that enjoyed in the most developed European regions (Kovach 2000, Roy 2000). This approach has led to an enormous investment of EU money, time, and effort in projects involving information and

3. This obvious possibility has been little addressed in the literature on the spatial dimensions of information and communications technologies. In a review of cyberculture studies in the 1990s, Silver (2000) suggests that after a flurry of studies of online interaction in the 1990s, in the past five years there has been a move toward discussing the Internet in the offline world and an argument for contextualizing research on it within broader social interactions (Wellman and Haythornthwaite 2002, Hine 2000). However, even in these more recent studies, a separation between an online, dislocated world juxtaposed to a greater or lesser degree with an offline, place-based existence persists. These studies take the spatial dimensions of the offline world as self-evident.

communications technologies. For example, EU structural funds, which are intended to support regions that are economically disadvantaged, are estimated to have allocated €10 billion (approximately US\$13 billion) to initiatives in the area of the “information society” between 2000 and 2006.<sup>4</sup>

At the national and local government levels, similar policies have been implemented across Europe, usually in partnership with EU development projects. For example, during the 1990s the UK government strongly encouraged the development of information and communications infrastructure and its universal use by British citizens (Green 2003), and this policy was linked to the ideals of combating “social exclusion” by making these technologies accessible to all, as well as promoting the economic potential of the United Kingdom (see United Kingdom 2001). And in the northern UK city of Manchester, which forms the focus of our ethnographic study, there was huge investment by Manchester City Council in promoting the city as an “information city” (Carter 1997). The council used EU funds, for the most part, to initiate a wide array of projects in the city, in some of which we participated from 1998 to the early 2000s. We argue that these projects constituted an exercise in spatial imagination and place making that involved attempts to reconfigure spatial “location” using the new technologies. This was not only an attempt to restructure “senses of place” (to borrow a phrase from Feld and Basso [1996]) but also an attempt to alter spatial relations in practice, using the logic of electronically mediated “networks” to achieve this transformation.

At the same time, it was regularly asserted that all this effort was simply a reflection of an inexorable transformation of the world into a “network society” (Castells 1996); the transformation was already under way, irrespective of the activities of the European public sector. From this perspective, the activities of governments, the EU, and city councils were intended to ensure that the specific regions they represented in this new world were not left behind and to gain some control over the transformation. Indeed, the work of Castells was often cited during our fieldwork as proof of the urgency of implementing and completing the development projects in which people were engaged (e.g., Carter 1997).<sup>5</sup> This sense of urgency developed into what we call “the imperative to connect” in Europe: a widespread compulsion that pervaded publicly driven development initiatives in the late 1990s and continues to characterize such initiatives.

This paper describes how this imperative to connect was experienced in Manchester and explores some of the particularities of attempting to reconfigure spatial relations using information and communications technol-

ogies as place-making technologies. One of the most important of these particularities involves the use of the idea of “network” that usually accompanies the introduction of these technologies. As Riles (2000) and Otis (2001) have argued, the concept of “network” is not simply a description of certain types of connection; it also creates the relations and connections that are described as belonging to the “network” (Riles 2000:172). This means that by describing the network or at least describing the network that is the desired outcome of one’s project, one also defines and constitutes it. We argue that the promotion of this “new” form of connection in public-sector projects in Europe is intimately tied up with political claims regarding the moral, social, and economic benefits of certain connections as opposed to others. These claims are sustained by particular institutional and social arrangements that are inevitably engaged in place-making projects.

Importantly, the types of connections that are imagined for networks are not the same as those imagined for “communities”: whereas communities are usually depicted as bounded, fairly resilient, and containing people who at least imagine that they have broadly common interests (Amit 2002, Amit and Rapport 2002, Anderson 1983, Cohen 1985), networks are more often regarded as open-ended and flexible, with no clear boundaries, no centers, and no necessary commonalities or even sustained or ongoing relations between the entities that are connected through them (Otis 2001). This conception of “networks” obscures the way they are linked, in public-sector promotion of information and communications technology networks, to specific place-making projects such as “Manchester,” “Europe,” and “Britain,” terms which come to stand for particular locations in and particular relationships with the “networked” globe. In short, these public-sector-promoted projects simultaneously endorse both a “moral community” sense of connection and a “flexible network” sense of connection.

This combination has generated practical and conceptual complications: while networked connection has come to stand for the potential ability to overcome differences and distances without requiring them to disappear (connection without similarity or moral obligation), in practice there is a difficulty in generating sufficient compatibility for such connections to be made, and conceptually there is a tension between a “community” sense of belonging that defines the spatial and moral boundaries of the different entities that are to be connected in public-sector ideals and a “network” logic of connection that is supposed to dissolve such boundaries or render them irrelevant.

These complications point to two fairly straightforward but nevertheless important conclusions. First, European public-policy-driven imperatives to connect using information and communications technologies implied a moral imperative whereby enabling connection was an axiomatic social good that would contribute to mutual, collective integration and thus improve the general welfare of the peoples of Europe, Britain, and/or

4. Information Society and Economic and Social Cohesion study. [http://europa.eu.int/comm/regional\\_policy/sources/docgener/evaluation/doc/information\\_society.pdf](http://europa.eu.int/comm/regional_policy/sources/docgener/evaluation/doc/information_society.pdf).

5. This is an example of what Hine (2000) has noted more generally: that academics’ analyses of the meaning of information and communications technologies are often used by those developing their use to construct understandings of them.

Manchester. This not only locates the development and use of these technologies firmly within the place-making projects of the public sectors involved but also implies that a failure to connect would be a social and moral failure in *this* "world," rather than a failure to "dwell" in a separate place. Digital and physical locations are not distinguished here. Second, attempts to incorporate imagined networks, the new scales of interaction and forms of connection apparently offered by the technical capacities of these technologies, in practice always involves some form of located imagined community as well, in which participation involves entanglement and constraint as well as new possibilities.

### Information and Communications Technologies and Social Development in Manchester and Europe

From the end of the 1980s, telecommunications and other information and communications technologies began to be seen as a potential solution for some of the problems facing postindustrial cities in the United Kingdom such as Manchester (Graham and Dominy 1991, Green and Teece 1998) and a way of achieving a vision of European integration (Graham 1992). Cities around Europe became the focus of discussions about the possibilities that the new technologies held for ensuring economic prosperity and social well-being in what was seen as an increasingly networked world (Dabinett 2000). In Manchester, the emergence of such an agenda within the city council was a direct response to concerns over how to ensure a regional stake in the much-discussed emerging information society. The city had experienced several decades of postindustrial decline, and the possibility of a new means of reversing this trend provided a powerful reason to explore the potential of the new technologies.

Those promoting this exploration in city councils were well aware of academic accounts suggesting that these technologies were reorganizing global structures of power and control over resources. The argument of writers such as Castells that networked connection was in the hands of a powerful transnational economic elite and was reshaping the world in its image provided them a compelling argument. The sweeping liberalization of the telecommunications industry in Europe, including the United Kingdom, in the 1980s and early 1990s<sup>6</sup> exacerbated fears of a "digital divide" that would leave cities such as Manchester out in the cold. Castells was both quoted (Carter 1997) and alluded to in general commentaries about city development in which Manchester was variously described as an "information city," a "creative city," a "digital city," and, most recently, a "networked city within a networked region."

6. In 1987, responding to broader deregulation of telecommunications in other parts of the world and in particular the United States, the European Commission published a policy paper (European Commission 1987) which culminated in the full liberalization of telecommunications in Europe in 1998.

The earliest council-led initiative in Manchester, a community information network called Manchester HOST, was set up by a left-wing group within the city council (Agar, Green, and Harvey 2002, Graham and Dominy 1996). This group was directly responding to a perceived threat that regions located far from London would be excluded from the "telecommunications revolution" once telecommunications networks and the installation of cabling shifted out of state control and into the hands of private companies. The UK government of the day was led by Margaret Thatcher, who had a world-famous faith in allowing market competition to control access to new products. The group in Manchester felt certain that this would inevitably lead to the exclusion of both economically vulnerable regions such as post-industrial Manchester and its predominantly nonwealthy residents. Public-sector intervention was essential to protect the interests of both, and the Manchester HOST was set up as a workers' cooperative organization intended to provide a means for the "excluded" to gain access to these technologies.

At the same time, the EU was developing its proactive integration efforts after member states signed the Maastricht Treaty in 1992, which introduced a raft of policies and legislation aimed at "creating an ever-closer union among the peoples of Europe" (quoted in Shore 2000:1). Apart from introducing an EU passport, flag, anthem, and plans for a European currency (which is, of course, now a reality), the treaty made it clear that the development of effective communications and interactions between member states was crucial to this aim. The intention was to develop a strong sense of Europe as a distinctive, integrated place populated by Europeans who felt that they "belonged" to Europe as much as they "belonged" to their regions and easily interacted with one another. Parenthetically, the language of "regions" crosscutting or subdividing national territories was developed as one means to minimize preexisting and in many cases very old nationalist divisions between EU member states (Harvie 1994). While connections between European regions were strongly encouraged, boundaries and borders that potentially challenged such connections were purposefully de-emphasized. The subsequent actual removal of border controls between member states was a dramatic embodied demonstration of the EU's place-making intentions and capacities.<sup>7</sup>

This was the context for the development of the EU's policy on information and communications technologies, the full details of which were published in the Ban-

7. The extent of the difficulties faced by the EU in establishing such a popular sense of European integration was graphically demonstrated in the spring of 2005. Two founding members of the EU, France and the Netherlands, held referenda on whether their respective governments should ratify a proposed new European Constitution, which was widely reported as being the next stage after Maastricht in the European integration project. On May 29 the French electorate decisively voted against ratification (55% opposed), and on June 1 the Dutch electorate voted against even more strongly (61.6% opposed). At the time of writing, the whole integration project is being seriously reassessed as a result.

gemann Report (Bangemann 1994). This policy was explicitly a crucial part of the EU's concerted place-making project, and it is easy to see why: at the time these technologies were promising precisely the kind of effortless crossing and even erasing of spatial and state boundaries that the EU sorely desired. Moreover, the metaphor of connection that was being used to describe interactions mediated by these technologies, networked connection, seemed ideal for the EU's "subsidiarity" policy—that differences between regions and peoples should be maintained (and even celebrated in "cultural heritage" terms) but that this should form no hindrance to ever-increasing flexible, open-ended, and transparent connections between regions and peoples.

It is not in the least surprising, therefore, that the EU invested massive amounts of money in the promotion of the development and use of the new technologies. Of course, the policies and criteria for providing support for these projects were carefully designed to further the EU's overall integration project—to generate more connections between EU regions and to promote the successful and central location of "Europe" in the information society. The ubiquitous use of the phrase "information society" (as opposed to "information superhighway," for example) in EU documentation is telling: the aim was to generate widespread social connection and social transformation and not simply to provide access either to a massive source of information for individuals to use as they pleased or to a potential marketplace. The EU's republican ideals in this respect contrasted quite markedly with U.S. experiences, for example.<sup>8</sup> An explicitly moral agenda was always to encourage a sense of mutual responsibility and common interest in making the "Europe" project *work* in social terms as much as economic or political ones. In that sense, subsidiarity always also incorporated the notion that, despite the diversity of the European peoples, they nevertheless had common interests based upon a common and distinctive (imagined) location, "Europe," seen in the passport, flag, erased borders, etc. The realization of this European vision of flexible and open connections for the common good could be greatly facilitated by the concerted development of information and communications technology networks first among EU regions and from there, as a united entity, between Europe and the globe. The combined ideals of imagined community and imagined networks were present from the start and have continued to guide the projects that have developed since. The EU web site lists at least 30 areas of activity which are relevant to the information society including e-government, e-skills, e-safety, and e-learning as well as several other research and development initiatives associated with the improvement of the quality of life and diversity through information and communications technologies.<sup>9</sup>

8. See Hakken (2003:225–70) and Doheny-Farina (1996) for two very different accounts of the U.S. experience of the public promotion of information and communities technologies and Fischer (1999) for a more complex U.S.-centered account of the possible implications of their implementation.

9. [http://europa.eu.int/information\\_society/activities/index\\_en.htm](http://europa.eu.int/information_society/activities/index_en.htm).

This EU agenda directly affected the publicly driven development projects in Manchester, which, from 1993 onwards, all received some financial backing from the EU. This entanglement of European and local politics provided the context in which we began our ethnographic and historical research in Manchester in the late 1990s and early 2000s.

## The Manchester Studies

As part of the wider telecommunications deregulation of the early 1990s, Manchester, along with most large cities in Europe, had witnessed the installation of a broadband telecommunications cable in and around the city center. Some organizations connected to the cable were given funding, mostly from the EU via Manchester City Council, to experiment and find "good" uses for this new capacity. At the same time, the council was building up particular historical associations between the city and these technologies as part of its place-making rhetoric: claims about their social regeneration potential were linked to Manchester's development of earlier connective technologies such as canals, railways, and roads. Referring to the development of the Manchester Ship Canal in 1894, Dave Carter (1997) of the council had this to say:

This was the largest civil engineering project ever undertaken in Britain at the time and was a civic response to the key economic challenge of ensuring that goods and people could be moved around more efficiently and effectively. The continuation of this civic role is of particular relevance to the emergence of the information society. It can be seen that the next century will require the electronic equivalent of the Ship Canal, a City Information Highway and civic commitment to back this up, to support the new industrial revolution.

This was clearly an overt effort at the "invention of tradition" (Hobsbawm and Ranger 1983), but our point is that it took the form of an explicit association between information and communications technologies, public policy, and the specificities of place. This was not, of course, the first time that such claims had been made about the potential of the introduction of new transportation and communications technologies. For example, Prakash (1997:160), in discussions about the introduction of the railroad to India, suggests that this technology "forged a link between space and state, making the newly configured India part and parcel of the institution of its technological configuration."

In any event, while Manchester City Council promoted this idea of a "special relationship" between the city and the new technologies, it was simultaneously using EU funding to pay for most of its projects, and this drew the city into the EU's place-making projects. One such EU-funded project was called Infocities. Like most EU-funded projects, it involved a small labyrinth of or-

ganizations, within Manchester and across a number of other European cities, as well as complex bureaucratic procedures and formal and informal aims and objectives. In summary, Infocities was an offshoot of a much larger European program called Telecities whose aim was to develop information and communications links among all major regional cities across Europe. This was both in line with the EU's integration policies and intended to ensure autonomous European technical competence and "competitiveness" in the global information and communications technology sector.

Infocities directly involved 7 European cities, though 17 were linked to the project in one way or another. The 7 cities (in practice, their city councils) were to coordinate the testing of networking software designed to make use of the newly installed broadband capacity across a range of urban sectors—for example, culture, education, public services, electronic commerce, and technical services. Each organization representing a sector was supposed to create links with the same sectors in the other 6 cities. Thus organizations working for Infocities in the "Culture" sector in Manchester would be expected to create links with those working on "Culture" in Nice, Helsinki, Bologna, The Hague, and so on. Beyond creating these connections the aim was to share "best practice" within sectors and, most important, to make the computing systems developed in each city compatible with others. Without this last activity, there could be no network. Each of the 7 cities' coordinators was put in charge of one of the sectors for the whole Infocities project. Manchester was assigned responsibility for coordinating "Culture."<sup>10</sup>

Our research involvement with the Infocities project brought us into contact with other, mostly voluntary organizations in Manchester that had been drawn into the city council's bids for EU money. These represented "socially excluded" groups; the EU's political ideals meant that such groups were particularly targeted, and most calls for project proposals made it a condition that applicants attempt to draw "marginal" groups into the new networks that were being created. Our ethnographic work with the Infocities and related projects involved shadowing project participants in their attempts to implement a number of projects, attending the Manchester Infocities planning meetings, and participating in EU-related meetings and project workshops, which were held in a range of European cities during the course of the project. This gave us an overall sense of a range of both city-focused and EU-focused place-making projects that used information and communications technologies.

As the Infocities project was coming to a close, some of the people who had been involved in Infocities set up a new project, the North West New Media Network. This was established to take forward the social development agenda of the earlier project by focusing on the role of information and communications technologies in

regional economic regeneration. Knox fully participated in this project, following it closely in the early 2000s and focusing particularly on the type of network that was being promoted and imagined.

In the sections that follow we provide some brief accounts of what occurred in the implementation of these projects, focusing on various elements of the place-making efforts involved. Each account draws out the complexities of attempting to generate both imagined networks and imagined communities in practical (usually technical) and conceptual terms. Tensions were often expressed between an imperative to connect that required the objects connected to be made compatible with one another by placing them on an abstracted technical scale (i.e., through removing the contexts that made them incompatible) and the responsibility to ensure that the interconnections resulted in the production of particular kinds of places—an integrated Europe, a socially responsible city, a competitive region. We will begin by tackling the issue of the need to generate compatibility, first in Manchester and then at the EU level.

### The Museum of Science and Industry in Manchester and the Middleware Conundrum

The Museum of Science and Industry in Manchester, located on seven acres of previously industrial warehousing and rail track in the city center, was one of the organizations involved in pursuing the Infocities "Culture" project for Manchester. The museum already had a range of funded projects under way to pursue possible uses of information and communications technologies for its collections, including the setting up of a new exhibition space which was to make these technologies themselves the object of attention (see Harvey 2004). As part of these various experiments, the museum was attempting to develop a database to store electronic versions of its collections of textiles, clothing, textile-manufacturing machinery, and related artifacts and documents with the intention of increasing access to those collections. It developed many ideas about the various ways in which a "virtual museum visitor" might search the database and even contribute to the information held on the artifacts or on the relationships between artifacts. This aim, which was one element in a wider set of development plans for the museum as a key cultural heritage site for Manchester (one of the city's place-making sites), was brought together with the EU's objectives through Infocities, which provided the core funding for the museum's "virtual museum" project. The museum contracted to make its new database part of the Infocities effort to develop and test European networking software. The aim there was to develop a technical means to link museum collections across Europe, making it possible to go online and call up an artifact from the museum in Manchester and then search for related artifacts held by other museums—in, for example, Helsinki, Krakow, or Barcelona.

10. For a discussion of the concept of "culture" within the EU, see Shore (2000:21–26).

Thus the museum in Manchester and the Infocities project were both engaged in place making but in significantly different ways: the museum was contributing toward Manchester's iconic status as a city with a history of a special, and specifically located, relationship with new technologies; the Infocities project was contributing to the generation of connections between artifacts across Europe that would highlight a European cultural heritage. For the museum information and communications technologies were in fact among the artifacts to be displayed (Harvey 2004); for the EU they were the technical means to generate a sense of Europe as a place cross-cutting existing borders and overcoming existing differences and distances in order to recognize elements of common heritage in the rich diversity of European regions.

In practical terms, Infocities money was given to the Museum of Science and Industry in Manchester to explore the feasibility of creating this ideal network. The museum was supposed to test the "interoperability" of systems—to work out what would be involved, technically, in connecting existing museum databases across Europe that had not been created with a view to such connections. The technology the museum chose for this eliminated the need to standardize the format of all the museums' databases. Instead, a kind of meta-standardization would be generated using software—known as "middleware"—that created a digital bridge between them.<sup>11</sup> It was somewhat ironic that this software dealt with incompatibilities within information and communications technologies themselves—the very technologies that were supposed to deal with *other* types of incompatibility in the world. The very existence of middleware indicates the obvious—that these technologies are never distanced from those who design and use them, that they are all designed with something (and someone) in mind. Using middleware involves attempting to overcome the incompatibility without erasing the diversity. In theory, nothing would be lost in the process; on the contrary, such was the flexibility of this software that it had the capacity to grow, to increase connections exponentially. In the museum context, then, middleware would enable ever richer and denser links between collections. In the end, Europe's museum databases would be fully networked in the form desired by the EU's policies, providing an enormous resource for demonstrating the interoperability of Europe and, perhaps even more important, European *culture*.

That was the theory. In practice, the databases were not successfully networked in this way because of a range of problems that kept this project from ever getting off the ground. Briefly, while the software could make different databases compatible (the form could be standardized), it could not deal with qualities that could not

be rendered informational, such as the quality and texture of a fabric, the difference between a human face and other kinds of image, the perception of hue and tone. Most important, it could make no judgments about the significance of the connection: middleware cannot distinguish connections that can be made from those that can be made meaningfully. In short, echoing Otis's (2001) study of the history of networked technologies, while middleware delivered the possibility of producing connections which could circumvent and overcome the particularities that generated previous divisions and boundaries and thus reveal Europe in its network, there was a simultaneous demand, both within the EU's own project and from the museums involved, for meaningful, located connections in this network. Middleware, by abstracting out any particularities that generated incompatibilities, delivered the flexible network needed; it could not deliver, in and of itself, the place-making capacities that were also required of this network.

### The Infocities Audit: Muddles of Abstraction and Location

The dilemma presented by middleware, of how to abstract context in order to generate compatibility between "located" museums and their particularistic collections, was mirrored at the EU level through attempts by some of the Infocities team to develop a standard model for the "socioeconomic evaluation" of the project. The challenge was to think of a way of enabling all the participating cities to provide information that reflected the particularities of their own urban, regional, and national environments in a form that enabled the varying accounts to be rendered compatible. The practical objective was to allow the production of a general account of the project to be handed to the EU. In the process, a network of European compatibility within the diversity was to appear in the documentation.

Again, the problem of how to render the diversity between the different cities compatible was officially defined as a purely technical one, even though the motivation for creating the compatibility—helping to generate an integrated Europe—was explicitly understood to be anything but technical. The existing incompatibilities might have been social and political, and the motivation of trying to transform them might equally have been social and political, but actually solving these incompatibilities in practice could, it was hoped, be mostly a technical matter.

It is worth noting here that this was not, in our view, a simple assertion of technological determinism but rather the expression of hope in the face of an otherwise fairly intractable problem: that of deep social and political differences and distances between European cities. If a technique for solving this problem could be effectively constituted as existing outside of or beyond the entanglements of this problem, then it would surely be the most desirable option. Critical studies of technolog-

11. Bridges are an extremely common metaphor used within the EU to symbolize the kinds of connections desired. Indeed, most of the new Euro banknotes have drawings of bridges on them, none of them depictions of existing bridges but all evoking the architectural styles of various European periods (Shore 2000:114–15).

ical determinism often fail to consider the *desirability* of technologies having these characteristics. In our experience of the Infocities project, we did not encounter an unthinking assumption of technological determinism: rather, we encountered a fervent hope that the technology or technique being used had certain transformative capacities independent of its context, accompanied by a quiet suspicion or fear that it might not. This led us to speculate, with the work of Žižek (1997) on fantasies and cynicism in mind, whether the technological determinism of Euro-American modernity, in which new technologies are regularly (mis-) represented as entirely autonomous of their social, historical, and political-economic contexts (Bijker 1997, Haraway 1985, Law 1991), might be at least partly generated out of a desire that this be so rather than an assumption that it is so.

The technical “solution” that was attempted in Infocities was to design complex protocols to standardize the ways in which each participating city described the technical and social contexts in which it was attempting to generate connections. In simple terms, rules were laid down for the form in which each city was to describe its activities and connections in the paperwork. This became known as the “technical reference model” and could be described as being a kind of socio-technical middleware, a template for generating a bridge of connection between the cities in terms of form while maintaining their distinct “locations” by not dictating the content. It was hoped that this reference model could be applied by any city and (provided that all the conditions were fulfilled, all the required boxes ticked) other cities would then become compatible with the ones already linked using the model and could therefore connect and become part of the network. This was represented as a means to ensure interoperability and transferability between systems, irrespective of all the differences between the cities; given compliance with the “technical reference model,” they could be added to the network as fully integrated participants, which would also, of course, contribute to the overall EU aim of European place making.

However, a combination of variations in people’s ability to align particular technical and social connections in the “correct” form and the widespread conviction that it was neither possible nor desirable to reduce social connections to a set of formal, systemic properties (once again, too much context had been abstracted from the technique) limited the perceived usefulness of the model. This did not stop people from attempting to use it, of course, because providing such accounts was a condition of funding. In Manchester we watched the Infocities team struggle with increasing frustration to squeeze accounts of their activities into the categories of the model. In particular, participants became frustrated by the fact that the model left no space for accounting for negative experience—the occasions when they learned that things simply did not work as the model suggested they should.

Here the difficulty participants faced involved directly confronting a contradiction: on the one hand, there should be no separation between the network and the

local context, but on the other hand, the existence of such a separation was the reason that a technical solution was required. The network was supposed to preserve all differences and distances, while the technical model provided the means to make the incompatibilities compatible. In practice, of course, this technique was also part of the project of EU place making. But as the model itself was represented as being free of any particular “localized” context, in the end it was participants who were expected to overcome their located differences and distances in learning how to fill in the form “properly.” The model was not, after all, free of its *own* context; rather, there was a sense that it had simply transferred the responsibility for resolving the problem of generating compatible connections to the participants, a very common feature of auditing techniques (Power 1994).<sup>12</sup>

The complaint that there was no space in the paperwork to describe experienced failures of connection could be seen as a desire by participants to render visible precisely what was to be avoided in terms of the EU’s objectives: signs of the intractability of distance and difference, of the particularities of connection. As a result, the Manchester team (along with most other Infocities teams) often expressed a strong sense of disconnection between the model and its practical experiences.

This was one element in the efforts of the Infocities project to fully integrate the introduction of information and communications technologies with the EU’s place-making ideals: there was no talk of “cyberspace” or “virtual space” here, no separation between the digital and geophysical, nor were there, particularly, any technologically determinist fantasies, but a few hopes instead, and ultimately there was no denial of the explicitly moral imperative to connect in a particular way in pursuit of the place-making project. The complications in the museum’s experience and the problem with the auditing model were based not on the inability to bring together cyberspace and located place but on the inability to bring together the ideal of a context-free network form of connection and the ideal of generating, out of that, an entirely specific imagined place: Europe.

What, then, happens in place-making projects that are not directly engaged in promoting this European integration ideal? To explore this, we will move on to two other EU-funded projects based on promoting particular constructions of place, the first explicitly invoking a concept of “imagined community” that tended to contradict the EU’s place-making ideals and the second attempting to generate a regional network of the type imagined by the EU both as part of its socioeconomic development ideals and as part of the reconfiguration of Europe into regions rather than nations.

12. Strathern (1997a, b) has made similar points about the process of academic audit.

## Imagined Communities and Imagined Networks

Perhaps unsurprisingly, the mere fact that information and communications technologies were being promoted so strongly and by such powerful public institutions (the UK government, the EU, and large corporations) in the 1990s made many people around Manchester immediately suspicious. They looked for underlying, unspoken motivations for this imperative to connect; some worried that such connections might entail disconnections or misconnections, a loss of their capacity to connect independently of powerful interests, echoing the concerns of writers such as Slouka (1996), Augé (1999), Doheny-Farina (1996), and, in a different way, Holmes (2000), to name but a few. The issue of what these technologies were *for* in social, political, and economic terms to those who were promoting them and what they might replace, ignore, or disguise was at the heart of many critical and cautious commentaries. In this there was a fairly common understanding that both the UK government and the EU were engaged in place-making projects and were adopting particular political perspectives (variously seen as republicanism, neoliberalism, federalism, “superstate-ism,” etc.) for the purpose. Here the ideals of social integration entangled with these perspectives became a direct issue.

## The Manchester Communities Information Network: Disconnections and Reconnections

From Manchester City Council’s perspective, as outlined earlier, Infocities was part of a larger postindustrial economic regeneration plan for the city. The council’s long-term commitment to the disadvantaged people of the city, combined with the introduction of large-scale EU projects to support information and communications technology developments, led the council to build on its early experience with the Manchester HOST to initiate a number of other projects whose purpose was to address “social exclusion” by providing access to these technologies for the poorest people of the city.<sup>13</sup> The Manchester Communities Information Network (MCIN), which became involved in Infocities within the “public information” strand of the project, undertook the task of making the Internet accessible to residents who had no Internet connection at home. What happened, which eventually led to a total breakdown of relations between MCIN and the Infocities team, is an example of the complications presented by diverse imaginings of place and network, connection and disconnection.

MCIN began as a community outreach project based in a fairly impoverished area of North Manchester. In 1993 the city council, which funded the project, offered

the organizers a collection of secondhand computers donated by a local company. The organizers accepted the computers and, with the guidance of the council, renamed their project the Manchester Communities Information Network (MCIN) and adopted new formal aims and objectives. These were to bring together “community information” from diverse places onto one web site, reduce duplication of this information, and make it as widely and as transparently publicly available as possible via a network of Internet public-access points, or kiosks, in places such as libraries, supermarkets, and the Manchester office of the *Big Issue* (a weekly magazine sold by homeless people in the UK, a portion of the profits of which the sellers may keep).

As outlined earlier, the council had argued for some years that it had a moral responsibility to provide widespread access to information and communications technologies for the less wealthy residents of the city, for the network society was inevitable and those without such access would be excluded.<sup>14</sup> However, the council officials involved in the project were fully aware that providing access to the Internet for the underprivileged of Manchester was unlikely to resolve many of the problems that had led to their social exclusion. At the same time as providing this access, they also invested heavily in a range of other measures, such as improving the public housing stock, providing employment advice and skills training, running alcohol and drug treatment units, and so on, to alleviate the perceived social and economic problems existing in many sectors of the city. However, the place-making rhetoric that the council was pursuing at the time—the attempt to reconfigure Manchester as an “information city”—meant that these other measures were not made particularly visible whereas all the information and communications technology projects in the city were heavily advertised and highlighted. In any case, the general view was that providing access to these technologies was an important political and moral commitment to the residents of the city and was therefore worth the effort.

The stance taken by the staff at MCIN was in marked contrast to the council’s official approach. Somewhat reminiscent of Riles’s (2000:177) account of Omomo Mellen Pacific, a network of women activists involved in the 1995 UN Beijing Conference on Women, MCIN’s “principal analytical tool . . . was critique.” Its staff took the stance that MCIN represented a distinct place-based (face-to-face) “community” and that it had a responsibility to interact with the members of this community in person. Information and communications technologies simply could not replace such face-to-face interaction. However, MCIN staff feared that this was indeed the ultimate intention of making these technologies universally accessible across the city; there were many reports both in local newspapers and from the council itself that services could be provided more cheaply if inter-

13. For a review of policies relating to “social exclusion” and the “information revolution” in the United Kingdom see Gibbs and Tanner (1997), Green (2003), Dutton (1994), and Dutton and Peltu (1996).

14. The elision between social exclusion and lack of access to information and communications technologies is explored in Green (2003).

actions with residents were carried out electronically rather than in person, by letter, or by telephone. Staff at MCIN worried that once the “socially excluded” had been provided with access to these technologies (which was MCIN’s main task), then personal interactions between city officials and the poorest and most vulnerable residents in the city would be massively reduced. They felt that the promotion of this new form of connection would involve some fairly basic disconnections, and they did not believe that this was in the best interests of the people they represented.

From the start, then, MCIN insisted on emphasizing the particularities of the group it represented, and this challenged the network view of connection. Its approach was reflected in the assertion of its director at the time, Margo, that in taking the computers and then signing the contract to develop the content of the public-access kiosks the organization was “simply” taking opportunities for resources whenever they were offered. She refused to align herself with what she perceived to be the underlying intentions of the public sector in promoting information and communications technologies. At the same time as believing that these technologies did have potential for the socially excluded, she was convinced that neither they nor the manner in which they were being promoted were designed with the socially excluded in mind. She was exasperated by the regularity with which software crashed and machines broke down, which she put down to the computer industry’s constant altering and expanding of software and hardware. Apart from making the software regularly unstable and full of bugs, this meant that people with older machines had no access to the new software or did not understand how to use it or both. This made it obvious to Margo that whatever these technologies were being designed for, they were not being designed for the people she represented. As far as she was concerned, if the new technologies were intended to connect people—that is, to generate or sustain openly accessible social connections—then they were doing a bad job of it. Her approach was to do everything she could to appropriate both the technologies and the networks on behalf of the people she believed were being marginalized. In short, she was highlighting what she regarded as the potential disconnections that resulted from this particular method of generating connection through computers and the failure to make those disconnections visible.

This stance led to difficult interactions with the rest of the Infocities team. Margo continually pointed to “incompatibilities” between the EU’s rhetoric, which strongly promoted social inclusion, and the particular manner in which connection was being implemented, which seemed to her to be indifferent to social exclusion. Although the Infocities team was far more aligned with her critical approach than she perhaps imagined (indeed, several of them had been involved in initiating the HOST project), it was her approach to location rather than her ideals that was the difficulty for the rest of the team: she rather too explicitly drew upon a construction of place (North Manchester, which stood for the socially ex-

cluded “community”) that contradicted the project’s objective of combining an imagined network of flexible, open-ended, accessible connection with an imagined community of belonging that constituted Manchester as part of Europe and, through that, linked it to the global network society. In the latter view, information and communications technologies were the means to cross existing boundaries and borders, not to reinforce them. In fact, it could be said that Margo’s separation of information-and-communications-technology-mediated connection from geophysical place making, with the former having no relation at all with place and the latter being the only location that mattered, was at the heart of the problem.

The differences between MCIN’s approach and the public rhetoric of Infocities and the council led to a serious rupture, and in the end Margo resigned her post. In her view, there was no network, at least not one that allowed the people she represented an equal place: their difference and their distance were being maintained, as far as she was concerned. Their disconnection was not a matter of lack of access to information and communications technologies per se: even when access, in practical terms, was provided, the political and moral place-making rhetoric that came with it made it impossible to incorporate *these* kinds of connections into MCIN’s vision of connection.

This raises a significant point about politically radical attempts to make use of these technologies. Political manifestos on the potential of new technologies tend to emphasize their novel logic and the new possibilities for political participation that they produce. Even proclamations that focus not on the technical apparatus but on the broader social settings in which it is situated have tended to give primacy to the new informational logic of network forms of communication and association. Terranova (2004), for example, reflecting on the politics of the information age, argues for a new kind of political subjectivity and a reinvigorated form of political action through not only the material possibilities of networked technologies but also the ideological commitments that such technologies entail. But Terranova’s imaginings of a new, bottom-up political field are far from the contingent and disquieting concerns of people like Margo, who struggled to have her concerns heard within the public-sector discourse of information-and-communications-technology-led change. Given that the implementation of the structures, infrastructures, organizations, and activities of networking in Manchester was so heavily funded by sources that had very particular and explicit political and moral objectives in mind, in which information and communications technologies were interwoven with place-making projects of a particular kind, it is difficult to see how Margo’s perspective could have been incorporated into these projects, her place-making ideals being so at variance with those of the EU.

However, the complications do not end there; our final example, which considers a place-making project that was explicitly in line with the public policies of both

Manchester City Council and the EU, also confronted difficulties in the practice of spatial imagination.

## Networking New Media

The museum and MCIN had both preexisted the intensified promotion of information and communications technologies after broadband cable was installed in Manchester. The North West New Media Network (NWNMN), in contrast, established in 2000 after the Infocities project had come to a close, was formed specifically to deal with the implications of these technologies for the economic future of the city and region by working to support the development of a local new-media industry. NWNMN was an indirect continuation of the ideals of Infocities, also funded by the EU and involving many of the same people from the city council. However, in this case, the network to be constituted was not imagined as having to be incorporated into preexisting relations; rather, the aim was to produce the region by producing a network of new-media companies that resided there. To that extent, this local project closely reflected the wider EU aim of producing Europe afresh: there was a sense of producing something “new”—a new industry in a new region<sup>15</sup>—rather than reconfiguring something “old,” as in the case of “Manchester.”

NWNMN’s official mission was to ensure the emergence and sustainability of a new-media industry in the North West of England. The rationale behind the project was to respond to the potential economic threat of being left out of the network society with the creation of a network of new-media companies. It was hoped that by encouraging such companies to establish themselves in Manchester the region would attract other prestige industries and their employees, leading to a general increase in the wealth of the city which would in turn attract tourists, business, and money to the area, ultimately improving conditions even for the “socially excluded.” Thus, although a tangential concern, the city council’s social development agenda was still present in the work of the NWNMN.

Furthermore, it was expected that, as Manchester became more prosperous, it would be better able to connect to other similarly buoyant economies across the world. The NWNMN was involved, for example, in trade fairs intended to connect companies in the area with companies in Canada, Malaysia, and China. The Commonwealth Games in 2002 were hailed as an opportunity for Manchester companies to showcase themselves to the rest of the British Commonwealth. We frequently heard rhetorical questions such as “Could Manchester be the new Barcelona?”, seminar titles like “Manchester—Global City?” and comparisons between Manchester’s “creative quarter” and New York City’s Silicon Alley

(Ross 2002, Pratt 2000). These comparisons may seem fanciful, but they reveal the importance of extension and connection not primarily to other parts of the United Kingdom but to “the world,” envisaged as an interconnection of “hub cities” (again invoking Castells). The stakes were therefore high; failure to generate a sufficiently large new-media network was perceived as threatening the city’s whole place-making project, affecting not only the elite industries but the social and economic fortunes of the whole region and its connections to the globe.

In order to ensure the generation of a new-media network that could become a source of competitive connection to the globe, the NWNMN was first required to identify and categorize “new media” as a new industry in its own right and determine the limits of this category in terms of companies in the North West of England. Only if new-media companies could be identified could they be connected with one another in a networked form that would constitute an industry cluster. Its second task was to assist the interconnections between these companies in order to generate a critical mass that could make the North West an important hub in a position to connect beyond the region. The network provided an explicit means of relating an idea of connection to the creation of new kinds of places. Far from diminishing the importance of local places, the network form was seen as the means of locating and stabilizing a potentially dispersed and dislocated industry.

Because of the convergence of technologies that high-bandwidth cables were enabling (desktop software, fast Internet connectivity, graphic design), NWNMN understood the new-media industry as requiring the collaboration of three occupational groups: technicians, creatives, and managers. However, bringing these groups together was presenting problems which staff at NWNMN believed might jeopardize the success of the emergent industry. Research conducted by NWNMN’s director had found that “creatives” and “techies” had different occupational “cultures,” evidenced by competing ideals, values, and priorities when working on collaborative projects, that managers often found difficult to reconcile (Speake and DFEE 1997). Providing ways of getting them to work together on new-media projects successfully was one of the central concerns of the NWNMN staff.

The NWNMN developed the idea of generating a “socio-technical network,” creating the conditions through which the employees and managers of these new companies could find and exchange information and anecdotes about their experiences, situate themselves in a wider “global” context, and contribute to the regeneration of the city and the creation of a new industry sector. The work of the project staff revolved around generating “networked spaces” where these interactions would occur.

Alongside a variety of activities, including providing advice for people starting up companies and organizing seminars, networking events, and focus groups, the NWNMN put together a web portal—standard practice

15. In 1998 ten regional development agencies were established in the United Kingdom which reemphasized and redrew the boundaries of regions such as the North West, but these boundaries did not tally with the demarcations of regions by the EU.

at the time for projects which were attempting to generate industry clusters for regional development. The intention of the web portal was to provide a source of information for local new-media companies, to enable them to link to other companies in the region in order to generate a regional industrial identity, and to provide tangible proof, through web usage statistics, company contributions of news stories, and registrations to the site, of the role of the NWNMN in generating this network.

Yet the NWNMN project staff members found themselves grappling with the relationship between the establishment of an information-and-communications-technology-mediated network and the broader objective of supporting the emergence of a new industry sector. Whereas the staff at MCIN had worried that information and communications technologies would not solve problems of social exclusion, members of the NWNMN staff were concerned that companies had so many other options for connection that they would not see the value of connecting to each other through the NWNMN portal. They were very aware that at the heart of the problem of the portal lay the definition of "new media." While it provided a useful shorthand for a group of new companies that were combining technical knowledge with creative capacities, most of the companies themselves did not identify with the "new media" label. First, companies tended to be much more interested in linking to their potential customers or suppliers than to other new-media companies. Secondly, the companies that NWNMN were grouping as new media tended to have other, more specialized interests, ranging from advertising to web design, network infrastructure, information-technology consultancy, architecture, and music, with which they were much more likely to identify than with a general new-media category. The categorization of companies as "new media" was necessary for the NWNMN to make them compatible both with one another (so that they could be seen to be part of an identifiable industry) and with the information that was provided on the portal. Yet the possibilities posed by information and communications technologies for enabling connections between these companies were limited by other kinds of connections and compatibilities that company managers and employees saw as more important. The response of NWNMN staff was to attempt to play with the category of new media in order to enable these differences to remain. Therefore the portal was designed to contain both technical information about new software and hardware in a variety of fields, news feeds from technology and media web sites in the United States, and news stories from a diverse range of local companies about their work. But this attempt at broadening the reach of the portal did not help, for companies were then just confused about its purpose.

The main problem that staff at NWNMN initially encountered was ensuring that local companies used the portal. This was an important indication of NWNMN's success, for it provided evidence of the existence of the new network in external audit. In practice, it did not

generate the kind of interest that the project staff had hoped for, and this threatened to undermine its objective of acting as a mediator in the creation of a "new-media network" in the city. The technology was functionally operational, so that could not be blamed for the lack of interest. Instead, the indifference was variously attributed to inappropriate content, lack of clarity about the intended audience, and lack of publicity. Furthermore, the geographical location of the audience was debated. Should the portal be "outward-facing," providing a means for those living outside the North West to find out about Manchester's emerging new-media sector, or should it be an internal resource to benefit local companies only?

Ironically, the success of companies designated as new media in networking amongst themselves and using the Internet without having to pass through the NWNMN's portal was seen as a kind of failure for the project, for it rendered the staff unable to demonstrate the existence of a new-media network and its involvement in it. The more new-media companies generated their own connections, producing the critical mass that the NWNMN had been established to assist in forming, the more difficult it was for the organization to fulfil its metrics.

All of this uncertainty and apparent failure to generate a network notwithstanding, over time some significant network effects did begin to emerge. For example, some of the staff noted that the design and production of the portal web site had provided much-needed employment for two new-media companies in the city. Their work on the portal, quite a complex project, had given them additions to a their portfolios that were now allowing them to gain other work. Though people in the NWNMN project frequently questioned the value of their work in terms of its auditable effects, they simultaneously reminded themselves of the nonauditable meetings, conversations, and interactions that they believed provided "real" benefits for many freelancers and employees of new-media companies, who were finding work, hearing about job vacancies, and negotiating the politics of the unstable industry in which they were working. At the same time they found other ways of ensuring that audited "outputs" were fulfilled—for example, emphasizing the involvement of local companies in building the web site rather than focusing on usage statistics—but these never felt like "real" evidence of the network that they had set out to support. The idea of a network as an objective web of connections required a separation between its facilitators (the NWNMN staff and the portal) and its participants (new-media companies). Separating the technical apparatus of the network from the social network made it appear that there was no "real" network at all—only a collection of figures that failed to point to effects that made the project seem worthwhile.

Even in this project, which took the network concept as a central organizing principle, the problem of making a network of companies appear in an imagined region through the use of information and communications technologies was a constant source of frustration. It was only by complicating the imagined or ideal relations be-

tween the NWNMN and the companies that it was working to support that any of the disconnections that it was experiencing could be perceived as being in the process of resolution. People had to find ways of accounting for the same relationships in different ways in order for the network to appear “real.”

## Place Making, Scale, and Information and Communications Technologies

From these collective experiences, we would argue that apart from some media (and academic) fantasies during the 1990s, connections made through information and communications technologies were never intended to lead people into dwelling in a different place. Rather, in the context of public-sector development projects strongly influenced by EU policies and ideals on information and communications technologies, we have shown how these technologies have been mobilized in order to make their effects *stick* to places. In this, both digital spaces and geophysical places and their mutual entanglement were being imagined. The idea was to generate new networks of located connection, not new virtual spaces. What was new was the fantasy of open, flexible, rapid, and implicitly “flattened” connection—connection with no centers, boundaries, hierarchies, or fixity—that would overcome diversity and incompatibility without requiring them to disappear. However, we have shown that this new imagined network also always involved some form of location—some sense of belonging, either desired or perceived—and therefore particular, usually both politically and morally marked, constructions of space and place. There were no networks free of the ties that imagined them. In that sense, the imperative to connect, however fantastic, cynical, or moral, has always overlooked the possibility of its own irrelevance.

The projects we have described worked to reproduce the sense that connection mediated by information and communications technologies was an accepted fact, but, as we have shown, there was nothing inevitable about it (a great deal of work and money went into it) or about the particular form that it took.

## Entangled Connections

The examples we have outlined describe the experiences of public-sector-led projects in Europe and draw out the complications entailed in what we have called the imperative to connect. These were place-making projects involving explicit political hopes and ambitions, so there was never any attempt to deny the entanglement of the social, the political, the spatial, and the technical. Indeed, their entanglement was taken to be central to these networking projects; that was the point of investing time and money in them in the first place.

Furthermore, it was understood that these particular networks did not yet exist, and the point of the projects

was to bring them into existence. Because of that, the ideals and assertions about what constituted a network were obviously expressions of desires, not descriptions of ontological truths, and this meant that everyone was aware that naming the network in a particular way and combining that with carefully framed accounts of activities were important parts of bringing it into existence—of generating the reality that was named. Making the network appear was always of central importance.

Yet this was also the key difficulty: the shimmering models of these networks became complicated as participants in the projects confronted a diversity of desires (some of them mutually opposing), difficulties with the interoperability of the technologies, an inability to fit accounts of activities into the auditing models laid down, and a sense that it was disconnections as much as connections that were being generated. This points to the complication of imagining new kinds of connections that are potentially independent of the preexisting and always already entangled places and peoples they are supposed to link together. In the ideals the EU expresses in funding these projects “network” is used more as a verb than as a noun; it is a moral activity, a willingness and desire to become engaged with the project of “building Europe” (to borrow a phrase from Cris Shore [2000]). In this sense, the new connections are intended to be simultaneously flexible and free of previous entanglements—of previous imagined and experienced spatial boundaries and borders—in order to allow careful steering into new place-making activity. What we witnessed is the complication of trying to do both of these things at once.

## Conclusion

We have shown that a particular notion of “network” and its apparently self-evident and rather special capacity to overcome problems of scalar differences and distances tended to generate an idealized imperative to connect that failed to recognize that connections usually involve disconnections, entanglements, and constraints. At the same time, everyone involved in the networking projects in which we participated was well aware that this idealized network did not yet exist, or not entirely. However, this did not make it potentially less “real”: it was a fantasy in Žižek’s terms, and if backed up by sufficient official and aesthetic power fantasies have a habit of making themselves felt as ontologically real. This is important, for the purpose of these publicly funded projects was explicitly to urge networks into existence, and those involved in them understood that representing the connections they generated as networks was key to their coming into existence at all. This point is similar to the one made by Riles (2000:172) in suggesting that “the effectiveness of the Network is generated by the Network’s self-description” and by Wagner in his analysis of holography as a “self-scaling model . . . the hologram does not describe the world, it creates the world” (Sykes 2003:162). In this sense, networks are shimmering mod-

els of the world that simultaneously imagine, dwell in, and make the world.

In contrast to Riles's experience, however, in which networks were assumed to exist simply through their being named, imagined, and diagrammed, even if they often failed in practice, in our ethnography there were moments when participants seriously doubted their existence beyond the paperwork. It was never entirely certain whether these projects were succeeding in their place-making aims and therefore generating networks in the ways intended, even though they always did generate connections (often in unpredictable, fragmentary, and nonauditable ways and not always mediated by information and communications technologies). In other words, people frequently had the sense that these imagined networks had not quite made it into existence, usually because of incompatibilities that could not be quite overcome.

Beyond this, there was the associated continual complication of seeking to treat technical solutions to incompatibilities as if they were independent of the contexts which brought them into existence and regularly finding (unsurprisingly) that this did not generally work. Our study showed that technological determinism of this kind might be as much a consequence of the desire to find solutions to apparently intractable problems as any simple assertion that technologies exist independently of their context. This provides an intriguing reflection on Strathern's call for us to consider "why we think technology requires special techniques of habitation and why, in effect, we distance it from us" (quoted in Sykes 2003:157).

This leads to the third way in which the imagined network did not quite live up to the expectations laid out in the EU ideals: the underlying assertion of the openness of this form of connection—the ability to connect freely while maintaining difference and distance—implied a kind of flattening of hierarchies that did not, in practice, occur. The implication of this concept of "network" was that while many differences might exist, in terms of connection they should make no difference except in terms of scale. Thus Europe was imagined to contain a nested hierarchy of smaller entities (e.g., Manchester or the North West of England) which, while all very different, could equally connect as long as they had been made compatible with one another. As we have shown, however, this image of nested entities (different but equal in some sense) tended to be inconsistent with people's experiences. The abstracting out of difference in order to generate connection led some people to feel that by leaving difference and distance untouched, other inequalities and hierarchies that needed addressing were simply being reproduced in the new forms of connection. This result was quite other from the idealized image of networked connection that was being promoted.

The focus on connection as the ultimate aim of the projects we studied continually affected approaches to these technologies. It also influenced the problems that were generated, the problems perceived and anticipated, and the questions that were not asked. The imperative

to connect contains a particular cultural, political, and moral logic that renders connection an axiomatic good and disconnection a problem for which a solution must be found. By focusing on the importance of place in these publicly driven information and communications technology development projects we have shown that the most insurmountable incompatibility was neither simply technical nor social difference but rather the struggle to bring the fantasy of pure connection together with the experience of connection's being always already entangled.

## Comments

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I am intrigued by the aspect of this study that explores rhetorics of place making: specifically, the persuasive fictions by which the apparatus of designers, programmers, operators, and funding agencies convince themselves that their "imperative to connect" has positive value across scales and contexts of the social and that the reward for connection is something like life itself.

The biological analogy is not frivolous. The notion that information, properly disciplined, can be transformed into viable "networks" on the model of viable "communities" recalls for me Marcello Barbieri's model for the emergence of life. In this model, as recounted by Richard Doyle, "DNA 'information' [think genotype] is necessary but not sufficient for the emergence of life; yet another translational actant [think ribotype] is needed to transform the immortal syntax of nucleic acids into the somatic semantics of living systems [think phenotype]" (2003:22). Doyle is discussing this operation in the context of a critical discussion of attempts to generate artificial life—all the more apt here. Green et al. speak, for example, of the "EU aim of producing 'Europe' afresh," noting how this aim is recovered in local efforts to establish a "new Manchester" located in regionally networked media companies. For me, this raises the question—which is ethnographic to the core—who precisely is doing the work of translation and creation (experts parachuted in for the purpose? local folks trained up for the task?) and how their visions and products are viewed and experienced by those whom they are meant to serve. Are they taken as virtual golems, poised to wreak havoc on face-to-face interactions and social life in its sensual dimensions? Or are these entities, "branded" as "an integrated Europe," "a socially responsible city," "a competitive region," taken as agents of corporate consumption agendas which carry the promise of economic and cultural flourishing through their publicity to the "socially excluded"?

Almost deafening by their absence are the diverse (ethnically marked and gendered) voices of Manchester's political activists, religious leaders, and agents of commerce, which for me call out to be heard on the matter of the EU-funded projects in future publications, television and radio documentaries, town-hall-style public forums, and the like. A strong case could be made for further "thick description" that includes, alongside the challenges and victories of those who are charged with implementing the EU vision in tension with local realities, the viewpoints of users not employed by these development projects.

Adumbrated as case studies, the descriptions offered here nonetheless illuminate the resourcefulness brought to bear on even failed experiments (for example, Margo's recycling of useless technologies). Motivated by an appreciation of the project on a larger scale as morally engaged networking toward a future for itself, actors are dedicated to unclogging and disentangling informatic to flow by critiques and conversations that occur off-stage and in the gaps of official channels of knowledge exchange.

This said, flow is never innocent. Considering networking connection in its relation to disconnection and flows diverted away from goals that users reject on either pragmatic or other (political, cultural) grounds has important implications for social network analysis. Following out the theme of value for connection as contingent rather than absolute, Green et al. implicitly recognize that to *honor the disconnect* is crucial to an ethics of connection. Thus we learn how Margo cannibalized and redirected the unworkable hardware and place-making program she was handed. The Manchester Museum of Science and Industry disarticulated itself (one presumes) from the weirdly configured "virtual museum" life-form defined by the capacities of "European cultural heritage" middleware—a bridge program dedicated, for some reason, to constructing compatibilities with science and technology collections in Helsinki, Krakow, and Barcelona.

Cued by the authors' observation of a "compulsion" to connect, we are reminded that not only must place making be interrogated but the unmaking of place may be a commendable social goal online and off-line and, I would add, as necessary to creative action as purposeful forgetting is to social memory. Overall I see this essay as breathing new life into audit discourse as it makes visible such relations and goes about its work of describing the enlivening challenges of networking's largely rhetorical condumdrums.

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On the day that I write this commentary, a study has been published in Brussels according to which the citi-

zens of the European Union take an ever-diminishing interest in science and technology. This trend has emerged at a time when the political organs of the EU are planning and executing the 7th EU Research Framework Programme, which places special emphasis on the advancement of science and technology. While the politically responsible leaders of the EU are propagating the transition to the "knowledge society" in order that, by means of knowledge, Europe can mutate into the most important economic zone in the world, the citizens see themselves as misinformed about science. Thus it is not surprising that the leaders lament the split between society and science and demand and promote new initiatives. Politicians and administrators ascribe the widespread scepticism about science and the prejudices of every kind against it to deficient communication. A knowledge society can function, in their view, only when citizens have been properly educated by schools, universities, and new forms of "science communication." Recipes for doing this abound. Prominent among them are those that stake the future on further projects and sponsorships: yet more money, yet more sustainable development, yet more information society, broadband connections, computer courses, and research and other networks.

By means of such recipes, political and economic visions for the future are fetched from the level of imagination and translated into reality. Visions are embedded in policies, and money is offered as a reward; one waits for candidates and makes awards for successful realization. In this way information and communications technology projects have arisen all over Europe. The political strategy is to use these technologies to activate our full potential in order to create the knowledge society and thus ensure Europe's future, sustainable economic development, and global ascendancy. Innumerable position papers relay this fantasy, administrators convert it into concrete projects, and sundry cultural producers in cities like Manchester apply to participate in an international associative project—monies flow, people act, history is made. The money is to be spent only for projects that satisfy certain requirements. In EU projects, participants are invariably compelled to come to terms with project partners in other countries. The imperative to connect applies not only to the attempt to construct networks of relationships where before nothing or something different existed; in every corner of the EU a connection is to be created between projects that can produce and administer and evaluate and others whose members first learn all this through participation. All the projects function in this way: concrete developmental aid coupled with learning aid. Through the rules governing the projects and in order to reach an agreement about their course, one becomes acquainted with partners from Lithuania, from Italy, from Hungary, for, information and communications technologies notwithstanding, projects in which regular meetings of the participants do not take place are never approved. The imperative to connect obtains not only with respect to the application of these technologies but also to the mutual visits—here, too,

entanglement, connection, disconnection, misunderstanding, stereotyping, othering, discussions about national characters (culture becomes important only when dealings with the project partners break down). Yet in addition to the imperative to connect, there is a further aspect that is at least equally important: the desire to connect—a powerful influence, in Foucault's sense: to connect so as finally to be able to take part, so as not to remain excluded, so as to be like the others, to be there, to participate in power. Information and communications technologies are objects of power and are desired. Considered from another point of view, EU projects promise to establish a connection that is immunized against national power and corruption, that eliminates them (Dracklé 2005). "Connection" is so powerful and protean a metaphor that it can preserve all aspects of a project (desire and rejection, for example) without disturbing its goals: the main thing is connection; success lies not in brief political or economic success but in contact and the contextualization of contact.

Green, Harvey, and Knox's article shows the local variants of this connecting by means of policy. It treats three subprojects of EU projects which use their funding not only for economic purposes but also to place themselves—to re-invent history, to re-interpret heritage, and so to set themselves in an international context. It would be interesting to know how the EU partners of the three projects connected to Manchester handled the difficulty of inventing networks where none hitherto existed—how they lived, realized, and brought to life a technical fantasy of the 1970s in the '90s. All three examples show how great and powerful these fantasies have become through their realization, whether or not it can be established that people feel at home in them. The interesting thing is that people succeed in completely fading the policies out; their origin in concrete administrative contexts, in think tanks, in ideas designed by scientists and advisers, in short, by cultural producers remains blacked out, as if there were, in human relations in the age of information and communications technology, only flat hierarchies and democratically acting armies of "colleagues." The article treats, not least, of a powerful anti-politics machine (Ferguson 1990), which accelerates what it fantasizes and provides desire with a safe home. The social anthropology of modernity is full of such phenomena, and we stand at the beginning of a radically changed science of human relations. They are multisited, and it is only they that can find a home for what truly belongs to each of us. This article points to an important path in the right direction.

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This article analyzes the ways in which public-sector-initiated information technology programs attempt to "generate a sense of place that is different from the pre-

vious spatial logic of the nation-state" in Europe. The authors examine city council initiatives to take advantage of the 1990s revolution in high-speed broadband connectivity to provide services for a broader spectrum of the citizenry and the city's role in coordinating the "culture" aspect of a European Union-funded project linking it to six other European urban areas. They discuss the development of a "middleware" that integrates the databases of various European museums to make their combined digitized collections accessible at each site, but they reflect on the ironies of software's inability to portray qualities of material objects the comparison of which could make the connections among those objects meaningful.

The effort to broaden access to collections and to transcend the limitations of physical space that typically allow for the display of only a fraction of their textual and material archives has spawned some of the most innovative software design and supranational collaborative networks. For instance, the open-source software "Pachyderm" project is not only producing free, user-friendly interactive multimedia technology for handling text, images, and sound in the same environment for the comparison of objects but also increasing access to collections by placing them in the virtual domain in a more informative way than the Infocities and Manchester Museum web sites (see the "Making Sense of Modern Art" project at <http://www.nmc.org/pachyderm/>).

With respect to the sociopolitical practices of "scaling" involved in the quest for a (European) compatibility that does not erase cultural differences, Green et al. and the subjects who produce and use such connections appear to experience them as failures. Hardware and software failures at publicly accessible computer terminals for the socioeconomically marginalized make the notion of increasing computer literacy more a dream than a reality. Expectations about the software's performance are regularly disappointed. Thus this ethnographic project underscores the way the fantasy of a globally networked society thinly veils the proliferation of disconnections and information asymmetries among different segments of populations in Manchester and elsewhere.

These asymmetries are often experienced in *temporal* terms. A sense of "being in the same place" (or in the same multiple places) also produces a sense of coevalness that is central to the entanglements and disentanglements envisioned by the network-creating informants in Green et al.'s project. And when failures occur, they must often be experienced as a fear of "being left behind" in a temporal as much as a spatial sense, of somehow remaining trapped in the time of confining, "older" communication media. In the case of the new-media web portal project analyzed in this article, much is at stake in being *anticipatory*—creating a new network. Instead, the portal ends up competing with existing, more immediately useful web sites.

Internet-based networks and special interest groups can mobilize thousands, even millions, in a short time—ironically, sometimes to protest against the very processes of globalization that make such mobilizations possible. This

makes it difficult to exercise conventional political and administrative control, but it also produces new forms of discipline and surveillance that hamper any straightforwardly benign notion of connected community. Thus the surplus of “intimacy” associated with some information-and-communications tools exists in tension with increased anomie. Self-censorship and mistrust of “the network” emerge from failures of security on the Internet in the context of different policies toward the legal status of computer-mediated versus other forms of exchange or toward property rights in the materials disseminated. On a different scale, while the EU and other regional and global bodies work toward standardization of policies on such issues, cultural and socioeconomic particularities erect countervailing borders within imagined national and transnational communities, among them those produced by the presence of “Third Worlds” within the boundaries of European member states.

In a postdevolution Britain, even “internal” colonial subjects from Wales to Scotland assert increasing autonomy from London—an autonomy expressed in part precisely through adherence to European values and identities over national ones. However, while Manchester enthusiastically endorses “Europe,” this imagined post-national space’s realization is in question at other levels, from the economic to the political. In all this, the scalar logic of place making is predicated, too, on the speeding up of some zones of shared identity and affect (cultural initiatives being perhaps among the least controversial, since they can valorize even economically underdeveloped areas or marginalized groups) versus the lagging behind and increasing gap among others in the multiphase process that has come to characterize the project of European integration.

The network may indeed only come into existence—as Green et al. suggest—in the auditing process, at the post-facto stage of *accounting* for the doings (and expenditures) of particular EU-funded projects. And here the *counting* out of subsidies and grants, the redistribution of economic resources from wealthier to less wealthy sectors of European economies, and the creation of EU-related jobs remain of paramount importance in shaping connectedness and disconnectedness.

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I am very sympathetic to the main claims of this article, in which Green, Harvey, and Knox offer a strong challenge to accounts of the so-called network society, particularly the way we understand the notion of “network,” what “connection” entails, and the complex relations between technology and space. As a nonanthropologist, I will make some limited comments about aspects of the argument relating to theorizing information and communications technologies. There is little to disagree with; rather, the explorations here raise ques-

tions as to whether similar processes of entanglement and constraint are occurring across organizations per se and what the implications of this might be.

The central argument concerns how a largely dominant notion of “network” (Castells 1997) generates an idealized “imperative to connect” to which actors respond in a variety of ways. In welcome contrast to much research in this field, it is argued that this “imperative to connect” is no simple techno-rhetoric; rather, it arises through the intersection of many interests, each of which appears *as reflection* as opposed to reflexive praxis. Organizational projects can be seen as efforts at transformation which articulate their relation to “reality” as a reflective rather than a reflexive one, thus providing a ground for the compulsion to act in specific ways seen here. Furthermore, the multiple forms of claims-making among practitioners are shown to be neither “network idealism” nor “naive realism” (Heim 1999) but attempts to solve specific practical “problems” generated by the idealized imperative. This is entirely consistent with work showing that actors often seek to decontextualize “technology” in pursuing their aims and the notion that such invention can be both political and “anti-political” (Barry 2001). But, interestingly, Green et al. suggest that this is as much a matter of intentional desire or almost desperate hope as it is simply part of the cultural grammar of technology as transcendence or neutral abstraction.

In my view, the observations regarding the imperative-in-practice provide key opportunities for overcoming some of the intractable problems of information and communications technology research. For example, in many recent Internet studies there has been a widespread call for abandonment of the notion of the virtual or the imaginary in relation to these technologies and an investigation of the way they are embedded in the “real” contexts of everyday life (Wellman and Haythornthwaite 1999). Green et al. demonstrate implicitly that this kind of work often takes the notion of “everyday life,” here in relation to its supposed spatial characteristics, as an unproblematic “ground” into which the technologies are appropriated or onto which they graft novel spatiotemporal dimensions (Sandywell 2004). This is most acutely evident when claims are made about relationships between information and communications technologies, space, and place, surely the most common form of speculative discourse in relation to technology. The task, as Green et al. see it, is to treat *both* contexts as imbroglios of the imaginary, the political, and the social and their interplay as the analytic focus. It is only then that we can see how such entanglements operate in practice and with what consequences.

Green et al. pursue this through fascinating cases in which multiple definitions and rhetorics, each with its own context, are circulating. They are absolutely right to stress that such public-sector reform, now indissociable from the digital grammar of “connectivity” and “networking,” implies a specific morality of “inclusion” in conjunction with more economic concerns. The notion that the power of these idealized imperatives can

simply be attributed to economic interests is shown here to be questionable. The rhetorical power of these “ethical technologies” can be seen across the UK public sector, perhaps most notably in public libraries (Hand 2005, Harris 2005). However, while we get a real sense of the (often mundane) nature of impediments, flows, and disjunctions between “fantasies” and experience, it remains unclear why *particular* fantasies have proved resilient where others have not. Green et al. talk about “sufficient official and aesthetic power,” but what does this mean in these cases, and how does it relate to the “moral” power of connection? Without some elaboration, we are left with a powerful critique of inevitability (which is not novel) but not an equally powerful account of the *dynamics* of these projects. For example, it would be worth knowing a little more about specific claims to expertise among different actors here and whether this imbues their attempts at problem solving with different registers of power and license. Secondly, the “fantasy of pure connection” that Green et al. observe here could be seen as a historical instance of what has been called the dream of “remediation,” whereby new media are initially imagined as erasing their own nature as media—providing fantastic promises of unmediated experience (Bolter and Grusin 1999). Thirdly, ironically, we get the sense of an inevitable failure here as a consequence of an idealized imperative to connect that will always conflict with experience. Nevertheless, this research and related work (Graham 2004) raise serious challenges to the portrayal of information and communications technologies in terms of either remorseless discontinuity or nothing new under the sun. In either case, what is missed is the kind of detail and complexity invoked here: continually shifting entanglements of definition, imagination, and practice that constitute what we call “technology.”

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Green, Harvey, and Knox discuss “new information and communications technologies” in general and EU’s policy specifically from a place-making perspective. This perspective’s focus on these technologies as a political means for social change contributes to counterbalancing the often uncritical view of their emancipatory potential. The EU’s policy is an interesting case for empirical study, since the EU is an example of a political association that is trying to define a new political, social, and economic place—Europe. The finding that the new technologies are being used by the EU for political place making is not surprising. More interesting is the conclusion that many of the perceived difficulties experienced in the four case studies derive from the tension between two different forms of place making: “imagined networks” and “imagined communities.” More specifically, EU’s policy

promotes information and communications technologies as a context-free form of connection at the same time as it expects them to strengthen Europe as a specific place in political, social, and economic terms. In policy evaluation terms, this conclusion indicates that there was a theory failure—that the policy was implemented as intended but failed to have the desired effect. At the same time, there are indications that the policy was not implemented as intended—for example, because of software and hardware problems.

The paper suffers from methodological flaws. The authors state that it is based on ethnographic research and that information was collected by shadowing project participants and attending meetings and project workshops. Very little is said about how the materials were collected and nothing at all about how they were analyzed. They are presented in the form of a narrative that is interwoven with the argument, and this makes it difficult or impossible for the reader to assess the authors’ conclusions. Further, the authors do not explain on what grounds the four cases were chosen. It is obvious that they represent examples of EU-funded information-and-communications-technologies projects, but their appropriateness for illustrating EU’s policy is not justified. Nor is there any discussion of what limitations the choice of cases imposed on the study. This becomes particularly problematic when the authors generalize their findings, asserting, for example, that the examples “describe the experiences of public-sector-led projects in Europe.” Another methodological question awaiting an answer is how the ethnographic approach is likely to have affected the results. The precision of the analysis could also have been improved. There is a general tendency among social scientists, as I see it, to approach computer-based technologies in a way that neglects the variety of their applications. As a result, the effects of certain applications remain unexplored.

Green et al. speak of “the new information and communications technologies” in general terms but focus on those that are computer-based. This distinction is important because, as they make clear, it is well established that traditional information and communications technologies are also used for political place making. The networking software (middleware) for connecting the collections of museums across Europe, the public-access kiosks for citizens of Manchester lacking Internet access at home, and the web portal for new-media companies in the Manchester region are all clear examples of computer-based applications, but the technical reference model for the socioeconomic evaluation of information cities is not.

Moreover, the handling of these technologies as an explanatory factor in the case studies could be improved. Given the objective of exploring these new technologies from a place-making perspective, it is of crucial importance to focus on their applications and their effects. From the case descriptions it is difficult to separate the effects of the applications used in the projects from the effects of the projects as social processes.

In sum, the paper explores an interesting subject and

presents very interesting findings, but it has significant methodological flaws.

## Reply

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Manchester, UK. 5 VIII 05

Overall, these comments provide interesting interventions, additions, and constructive questions.

Battaglia asks about agency, intriguingly evoked through her reference to golems. This goes to the heart of the imperative to connect. From the EU policy perspective, the policy makers, those who apply to carry out the projects, the employees of the projects, and the target audiences were all supposed to understand themselves as agents and participate in generating the new location(s) of place. Moreover, the imperative outlined in countless policy documents constituted people as morally obligated to participate in particular ways. The positive value of that particular form of policy-defined connection was supposed to become self-evident in its implementation (indeed, Dracklé's comments provide additional detail on this).

As we stated, we focused on the people and organizations whose task it was to attempt to implement these policies rather than on the views of the target audiences. Our main purpose was to explore the idea of "network" and its relationship with notions of location that were being promoted through the public sector—to try and understand how they were interrelated and not, as much of the literature has explored, how they are separated. The public sector was the obvious place to investigate this spatial element because local, national, and transnational governments and civil organizations must, by definition, develop their policies in terms of their territories.

Returning to the question of agency, we found that one aspect of the concept of "network" being used was the implicit assumption that in networks agency is simultaneously everywhere and nowhere, to some extent echoing an actor-network-theory approach (Law and Hassard 1999). This was combined with the assumption that the generation of "networks" mediated by information and communications technologies in some form was inevitable; the job of the public sector was to urge them into existence in a *particular* form and to encourage their generation where they were unlikely to be generated without intervention. The fear of many in the public sector was that the form these networks would take if allowed to develop without intervention would either harm or exclude certain people, places, and kinds of relationships. Using the metaphor of life suggested by Battaglia (as opposed to the architectural and engineering metaphors more often used in the information and communications technologies literature—though golems

rather neatly bridge these three), the dominant impression in the public sector in the late 1990s in the UK and within the EU was that connections mediated by these technologies were growing new networks at an exponential rate: new "forms of life" were popping up everywhere unbidden by any public organization. From that perspective, the EU's policies could be seen as attempting to intervene in this frenzy of replication (as opposed to reproduction) in particular ways and to demand of its citizens that they become active agents in the transformation. If the new "life" imagined to be generated through this process is likened to flora rather than fauna (appropriately, given our focus on place making and notions of regional belonging [Malkki 1992]), then the public policies were aimed at turning an uncontrolled explosion of weeds into domesticated and nourishing cultivation. Not ribotypes, then, but farmers.

Regarding the "deafening absence" of references to differences of ethnicity and gender, perhaps we should have drawn attention to this more explicitly, as we have elsewhere (see, e.g., Green 2002, 2003); but one of the points we tried to make was that the particular notion of "network" being constructed in the policy documents tended to have a flattening effect: difference and distance were not supposed to matter. The attempts to generate standardized protocols for making connections kept on rendering difference of no account—and actually the bureaucratic elements of attempting to achieve "generic" ways to deal with difference somewhat echo Herzfeld's conclusions in *The Social Production of Indifference* (1992). In our discussion of the ethnography, we did try to demonstrate that this was a contradictory notion that did not match people's experiences.

We appreciate Dracklé's addition of rich description of the context in which the projects we studied are embedded. We particularly note two of her points: first, that participants in the EU's myriad information-society research projects are obliged to meet each other in person regularly, which highlights again that in EU policies there was no notion of a separation between these technologies and the continued importance of geophysical distance and difference, and second, that the policy-led source of certain techniques of connection tended to be forgotten quite rapidly. This relates both to Battaglia's invisible golems and to our comments about the assumption of the inevitability of the proliferation of information-technology-mediated networks. That sense of inevitability often meant that there did not have to be any cause or any agent, and in such circumstances it is easy to see how policy-led changes could fade from view.

We also appreciate Ferme's additional information and context for the material we presented. For clarification, we did not mean to suggest that all the projects we studied and all the software involved were regarded as "failures" either in their own terms or in terms of the wider intentions of Manchester City Council and the EU or in terms of the generation of "networks"; nor did we mean to imply that these new technologies had no genuine practical use. Rather, our focus was on what the attempt to generate such networks was about and how the un-

derstanding of key concepts used in those attempts (particularly the concept "network" itself) generated complications in practice.

We find Hand's comments helpful, particularly the distinction he draws between reflective and reflexive praxis, which provides another image (adding to Battaglia's forms of life) with which to consider our material. It raises the question whether it is possible to be simultaneously reflective and reflexive and what an interplay between such conceptualizations might look like—something that we will think more about in the future.

The question why *particular* fantasies have remained resilient while others have not is obviously important, and we cannot do it justice in this brief reply. First, we would rephrase the question as one of *how* rather than *why*, which avoids having to assert what things mean to people in order to come up with an answer (see Sykes 2003 for a discussion of this point). Second, our main intention in this paper was to explore the interplay between imagination and practice and critically assess common assumptions about the separations between "places" mediated by information and communications technologies and other kinds of places; exploring the kinds of knowledge practices involved in generating and sustaining particular fantasies was beyond its scope.

The question of expertise was also beyond the scope of the paper (but see Harvey 2004). Such technologies are commonly represented as changing so quickly that no one could be an "expert" for long; in that respect, it would be well worth exploring where expertise is thought to be located in relation to the concept of "network" that we discussed.

The point about fantasies of unmediated experience is well taken, and we meant to evoke that idea in our discussion of the hope many people expressed that these new technologies might produce solutions without becoming entangled in existing relations. We also referred to the historical repetition of this kind of fantasy by invoking the work of Wertheim (1999) on the matter. And on the point, again, about the inevitability of failure: what we meant to suggest was the inevitability of complications that arise from bringing together diverse knowledge practices and ideals, which may or may not be perceived to be failures in different contexts. We briefly called attention to the fact that auditing practices define success and failure in certain ways while people involved in these projects use a range of other means to make such judgements.

Wiklund comments that in "policy evaluation" terms the EU's policies could be seen as having failed. We did not mean to suggest this, as we never intended our work to be auditable in those terms; indeed, as Battaglia notes, a central aim of the paper was to critically explore such auditing discourse. Wiklund's remarks are, however, a timely reminder that the endless anthropological debates about knowledge practices, particularly those involving the relationship between doing and writing ethnography, are not well known outside the discipline. For clarification, we would first note that we did not aim to generalize outwards from "case studies"; rather, we were

drawing the wider context *into* an attempt to understand our particular research; and second, we entirely agree, along with many analysts of new technologies, that "it is difficult to separate the effects of the applications used in the projects from the effects of the projects as social processes." We would see this not as a flaw in our paper but as an analytical approach.

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