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A Reconsideration of Personal Boundaries in Space-Time

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What is a person? To ask this question from a geographical viewpoint is, of course, to suggest a specifically geographical answer. If geography's central questions concern place, space, and region, then, at least in human geography, these questions are important only insofar as they concern places, spaces, and regions defined by human occupation and objectives. Yet while people are addressed in some way in nearly every geographic study, the nature of *the person*, as a geographic entity distinct from *the people*, remains opaque.

The overwhelming majority of geographic research focuses on aggregates (residents of a particular territory, English speakers, coal miners, and so on), or on institutions associated with particular aggregates, or on landscapes again associated with particular aggregates. Conventional economic, political, and cultural geography are all predominantly concerned with "macro-level" phenomena in which the individual is, at best, of secondary interest. Ironically, the sensitivities of recent geographic attempts to matters of "difference" within social aggregates merely draw attention to other aggregates: women, ethnic minorities within societies, income strata, sexual preference groups, and so on. Person is fractured into a myriad of intersecting "subject positions" that correspond to these aggregates, but the mappings of these "decentered" persons onto geographic space are as unfulfilling as they are problematic.

Some geographers have invited their colleagues to consider micro-level questions concerning "the person." Cases in point are works in humanist and phenomenological geography of Tuan (1977; 1982; 1990), Rowles (1978), Lowenthal and Bowden (1976), Lowenthal (1961), Buttimer (1979), and Wright (1947); the time-geography of Hägerstrand and his colleagues (see discussion below); feminist geog-

raphies; structuration theory, particularly that of Pred (1982; 1984a; 1984b; 1990) and Thrift (1983; 1985; 1986); and certain studies of communication and transportation innovations such as those of Abler (1975; 1977), Gould (1980; 1982; 1991), and Janelle (1968; 1969; 1973). These studies point out no less than three oversimplifications of people in macro-level studies: 1) a seamless rationality which reduces people to "cognitive drones" mechanically maximizing economic benefits; 2) an absence of self-consciousness which reduces people to moral incompetence; and 3) a passive relationship to ideas which reduces people to products of ideological domination (Thrift 1986:88). Taking up Thrift's challenge, this paper seeks to understand people as "becomings" rather than "beings," as systems or processes rather than things (Thrift 1986:94), and as multidimensional rather than reified entities.

I begin by situating my argument in the context of research on the notions of extensibility and structuration. Second, drawing on the approach of time-geography, I present a conceptual and diagrammatic model of the "person." Third, through the lens of extensibility, I offer some observations on the ambiguous nature of the "person" in the context of globalization's challenges and opportunities.

Extensibility

The concept of personal extensibility (Janelle 1973) is fundamental to the definition of person that I seek. Extensibility measures the ability of a person (or group) to overcome the friction of distance through transportation or communication. It pertains to the scope of sensory access and knowledge acquisition and dispersion (Thrift 1985), and to people's horizons as social actors (Thrift 1986). Innovations in trans-

portation and communication that reduce the time required to interact with persons in distant places produce time-space convergence. Innovations that reduce the cost of interaction produce cost-space convergence. These changes in the significance of distance affect economic, political, and cultural life (Brunn and Leinbach 1991; Abler et al. 1975). As distant connections become easier to maintain, spatial patterns of social interaction change; work and home, resources and industries, management and labor assume varying spatial configurations (Webber 1964; 1968; Janelle 1968; 1969; 1973; Abler et al. 1975; Abler 1977; Harvey 1985; Hepworth 1986; Moss 1987; Nicol 1985; Smith 1993:114; Marx 1973:524, 539). Some believe that time-space and cost-space convergence have reached the point that one's location is of little or no significance for an increasing variety of interactions (Webber 1964; McLuhan and Fiore 1967; Abler 1975; 1977), and this fact may effect profound changes in settlement patterns, e.g., working at home. To be sure the city has not disappeared nor is the "electronic cottage" as prevalent as some had predicted (Toffler 1980; 1970; Martin 1978; Harkness 1976; Nilles et al. 1976; Goldmark 1972), but these realities are less a reflection of extensibility's unimportance than of a lag in the response of the built environment to new interaction geometries (Gold 1991; Hepworth 1986) and of extensibility's concentrative as well as dispersive influences (Gottmann 1977).

According to Janelle, "human extensibility is conceptually the reciprocal of time-space convergence" (1973:11). The development of communication and transportation technologies and their associated institutions implies a "shrinking world" with expanding opportunities for extensibility. Extensibility, however, varies greatly at any given time. In her critique of "time-space compression" (a marxist interpretation of time-space convergence), Massey (1993:62) points out that one person's (or group's) time-space compression may depend on another person's (or group's) persistent inability to access distant places. The variation of extensibility according to race, class, age, gender, and other socially significant categories binds micro-level biographies to certain macro-level societal processes. New media provide new forms of extensibility that in some cases perpetuate uneven distributions of social status, income, and power and in others serve to erode these structures. The concept of "ex-

tensibility" thus needs to be broadened to focus more attention on extensibility's derivation from and challenges to social power structures.

Scholarship on extensibility also needs to incorporate the ontological premise that "one's sense of individuality (one's self) [is] established not reflected, in interaction" (Brisset and Edgley 1975:2, 7; also Hare 1985:144). Regrettably geographical writings too often define communication in the narrow sense of the transfer of information (for example, Howenstine 1991; Langdale 1991). A more expansive view holds that communication is being; persons literally occupy the media they use; their existence cannot be separated from these symbolic systems. Part of this premise was popularized, of course, by Marshall McLuhan; more rigorous formulations stem from symbolic interactionists such as Erving Goffman, Rom Harré, and Kenneth Burke. These resonate in Thrift's interpretation of Shotter's "constructivist" or "discursive" model of human agents (Thrift 1986:95). A similarly enriched conception of the person motivates network analysis in which the study of social structures begins with individual communication linkages rather than with abstract social categories (Wellman 1988; Wellman and Berkowitz 1988; Knoke and Kuklinski 1983; Berkowitz 1982; Rogers and Kincaid 1981; Burt 1980). It also surfaces in Peter Gould's studies of networks (Gould 1991; 1982; 1980) and in Allan Pred's refusal to construe social categories (such as class) as objects or actors, but instead to concentrate on personal practices and utterances.

Extensibility and Structuration

Constituted in the social interactions that they simultaneously help to constitute, people are inextricable from the shifting matrix of interaction opportunities (Giddens 1984; 1985). They do not enter and leave communication networks as one enters and leaves a room; they "live contexts" (Thrift 1986:95). They are "irredeemably social" story-tellers, constituted "out of joint action in joint action" (Thrift 1986:95) who construct society as they explain themselves and others to themselves and others. People's actions externalize their values, expectations, and knowledge through particular projects (child rearing, farming, political activism, artistic creation, etc.) and these require sequences of social contacts that are internal-

ized as new values, expectations, and knowledge (Thrift 1983; Thrift and Forbes 1983; Pred 1982; 1984a, 1984b).

I depart from structurationists, however, in focusing on extensibility's transcendence of place. In structuration theory, individuals access social processes primarily through particular "locales" where they communicate in a situation of "co-presence" (Giddens 1984). Extending this thesis, Thrift's "Flies and Germs: A Geography of Knowledge" (1985) argues that where one is determines what one can know; knowledge has therefore a geography as well as a history. Thus, in comparison to working class life-spaces, those of the middle class are "more spatially extensive: a local school may be followed by a university in a different location and then a job somewhere else again" (Thrift 1985:388). This is true, but too simple since it fails to acknowledge people's ability to transcend each of these places (and others), through media links to distant places. As Thrift later (1986:134) notes: "the problem with [understanding] modern societies [compared with earlier societies] is that they consist of sets of contexts which are more diffuse and less localised within which common elements of perception are developed in more diffuse and less localised ways"; but what does this imply about personhood? Likewise, Pred seems to be moving away from the position that "all individuals are indivisible—never being able to be at more than one place at a time" (1981:31); but because his recent work (1990) focuses on a group with fairly limited extensibility, he does not confront this issue directly.

People do not simply occupy a place. Their activities constantly spill over boundaries into distant processes, both social and ecological.¹ Even without the means to record messages, people extend themselves into distant times and places through speech since language itself is a mental record. The hereness and nowness of perception depends on the threeness and thenness of linguistic organizing structures acquired in a vast array of places and times (see Tuan 1990:77–91; Vygotsky 1965; Whorf 1956). Meaning is always both in place and out of place since symbols are the product of peregrinations, perambulations, place-to-place comparisons, borrowings, and diffusions, which are distilled into abstractions that can be applied to similar or quite different phenomena (Nagel 1986).

Geography texts speak about interaction

patterns, e.g., in terms of the *personal communication field* and *social networks* (see Fellman, Getis, and Getis 1992:74–75; Ley 1983:189–204), but these concepts are subsidiary to the concepts of place, location, and region. While place is a flexible concept (Tuan 1977), implying different scales and degrees of human involvement, it has traditionally been imagined as a closed figure excluding social situations that stretch out, in the manner of a spider web or a fishing net, over communication links (Gould 1991). Some have tried to deepen this conception of place: Massey urges us to think of "places" as "articulated moments in networks of social relations and understandings" rather than as "areas with boundaries around" (1993:66); elsewhere, I have suggested that television may be thought of as a place (Adams 1992). But the privileging of place as it is commonly (and narrowly) interpreted inhibits understanding of the mesh-like layers of interaction (Webber 1964:119) through which people sense the world around them, and through which they act, are acted upon, and constitute themselves as unique persons.

Toward a New Model of the Person

People as Amoebas

I submit that something is gained by understanding "person" as a dynamic entity which combines: A) a *body* rooted in a particular place at any given time, bounded in knowledge gathering by the range of unaided sensory perception and, in action, by the range of the unaided voice and grasp; and B) any number of fluctuating, dendritic, *extensions* which actively engage with social and natural phenomena, at varying distances. This dynamic entity depends on media—tools, instruments, economic exchanges, symbolic systems, and institutional-technological compounds such as the postal system—which he/she uses both deliberately and inadvertently.

Media are "extensions of man" and woman; more specifically, they are extensions of particular sensory and cognitive faculties (McLuhan 1962; 1964). Communication technologies ranging from simple symbolic systems such as gesture and speech to complicated networks of signals, hardware, codes, and spe-

cialized maintenance personnel are therefore embedded in each individual life. To elaborate, this conceptualization of the human situation in time and space is extensive, permeating and permeable, tentacular, fibrillar, dynamic, yet constructed around a non-extensible nucleus. The amoeba is an apt metaphor; this single-cell organism moves, explores its environment, and consumes nutrients by putting out appendages and absorbing old ones into its body. The "cytoplasm" which links the nucleus to its extensions is analogous to the social construction of the individual as coextensive with (indeed the same as) his or her body (C), and to the social construction of a power hierarchy which makes the acquisition of power and extensibility easier for those with certain (e.g., male, middle-aged, Anglo-European) bodies (D).

This concept of the person prompts a re-evaluation of the concept of place. Most people think of places as containers that may be filled with a finite number of people. Consider, for example, the following:

If we talk about the population of a city, it is evident that it can fluctuate only by a whole number of people. The least the population of a city can increase or decrease is by one person. It cannot increase by .7 of a person. It can increase or decrease by fifteen people, but not by 15.27 people. (Zukav 1980:48)²

Personal extensibility invalidates this argument. When a person in city A telephones a person in city B, he or she is partly present in city A and partly present in the virtual space of the phone call. Both cities decrease by some portion of a person. There is no point in assigning a specific quantity to this transfer of a partial person from city A to a virtual space since the "transfer" is determined by the persons using the telephone, and, as it is a subjective entity, it is in constant flux. The counting of total persons, women, workers, etc. "in" a city and the mapping of distributions and densities of human populations is therefore of questionable value.

People as Point-Entities

Time-geographers have developed the best-known visual model of the human being in geographic space. While their model is constructed around part A of the model above,

viz. the body, and overlooks B, C, and D, I present it here because it offers a powerful technique for mapping people's lives that, when suitably modified, conveys a clearer visual impression of extensibility.

In the 1970s, Torsten Hägerstrand sought to reconcile the pragmatic aims of planning with a new respect for the persons affected by plans. The resulting methodology/epistemology, time-geography, broke away from the macro-level approaches of chorology and spatial analysis, but it did not escape their truncated views of the person. Chorology had overlooked the growing interconnection of people's lives even in the wake of two world wars, as demonstrated in Hartshorne's claim that "men as individuals, and as individual groups, do not in any very full sense live in the entire world, but each in a relatively restricted area of the world," so the world could therefore be studied "by areas" (1939:131). Spatial analysis assumed a bird's-eye perspective in which people were particles, moving or still, that inscribed patterns on the surface of the earth by their actions or their simple presence (Harvey 1969; Bunge 1966). As elements in a pattern, people were interchangeable, locatable, and zero-dimensional. This is the point-object (Parkes and Thrift 1980:244) or "point-entity" model of the person.

Torsten Hägerstrand hoped to address "a problem which is coming more and more to the forefront . . . among planners, politicians, and street demonstrators, namely, the fate of the individual human being in an increasingly complicated environment . . ." (Hägerstrand 1970:7). For Hägerstrand, the "individual human being" meant someone with specific needs and responsibilities, not simply a location in space and a predictable set of behaviors, cultural or economic. Time-geography concerned itself with issues of access to schools and universities, medical facilities, libraries, parks, concert-halls, and "even silence and clean air" (Hägerstrand 1970:8). Its agenda called for a new approach which ceased to treat people as "money or goods" (Hägerstrand 1970:9; see also Carlstein 1982:61), in other words, as "particles, almost freely interchangeable and divisible" (Hägerstrand 1970:9). Yet, it represented the compound activities of compound beings as linear movements of points.

At this point a problem arose. Two models were conflated: the particle (which cannot be

divided) and the compound (which is divisible). The break with the past could not be a clean one because of this ambiguity. Time-geographers seized on the idea that "one individual cannot exist in two places at one time and therefore has to allocate his path in time-space" (Carlstein 1982:41). Individuals were thought to have a "position in space-time which is exactly definable" (Lenntorp 1976:12). An important dimension of personal distinctiveness, extensibility, was overlooked, leading to other oversights.

The point-entity model of the person becomes clearer in a time-space diagram. This diagram of four-dimensional time-space flattens topography and uses the vertical axis to show time. A stationary person therefore inscribes a vertical line and a moving person inscribes a sloping line which approaches horizontal as a person's speed increases (see Figure 1). The time-space situation of a cow, a cart, or any other object can be plotted in exactly the same way (Hägerstrand 1989:4-5; 1973:79; Martensson 1979:19).

What distinguishes people from other entities must, therefore, be something other than their time-space insertion. People's involvement in *projects* fills the void. Projects are sequences of actions in particular situations undertaken in the pursuit of predetermined goals (Carlstein 1982; Hägerstrand 1982; 1970). A project, although dependent on people being bodily located at particular stations (places) for prearranged periods (Figure 2), was believed to occupy time-space in a way that is "backward rooted, side-bound and forward moving, deeply hidden and transient" (Hägerstrand 1982:324). In contrast, people's insertion in time-space was a simple, unbranching, forward-growing line, channeled by "capability constraints," "coupling constraints," and "authority constraints." These constraints take into account the limitations on actions related to human biology, power hierarchies, and the transportation technologies at people's disposal (Hägerstrand 1970; Carlstein 1982; Lenntorp 1976). Yet aside from a few early notices in Hägerstrand's work (Figure 3), communication technologies were not considered as means for forming the "bundles" required for interaction. The "project" thus absorbed all of the time-space dynamism of the person while relegating the person *per se* to the role of a body.

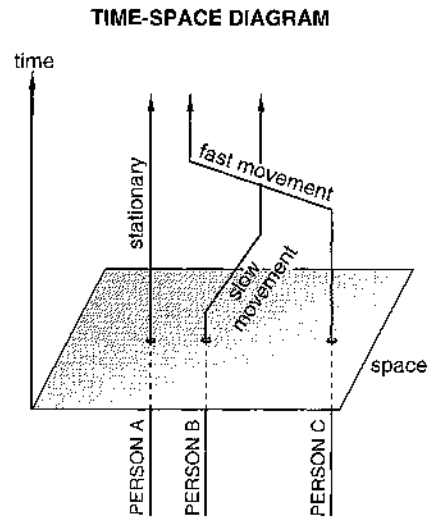


Figure 1. Three persons in time-space.

Gillian Rose (1993a) points to a related problem: whereas the point-entity model directs attention to the body as it inscribes paths through space, it simultaneously obscures the fact that bodies are not all the same. The differential spatial access afforded by society to

THREE PERSONS IN TIME-SPACE

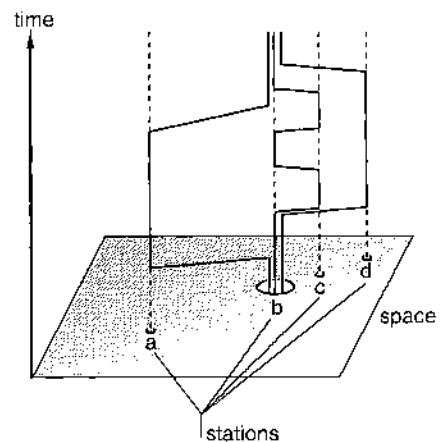


Figure 2. Three persons moving between four stations.

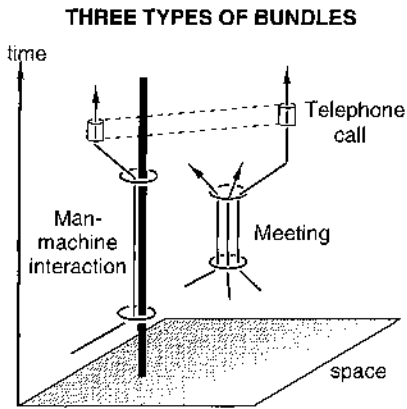


Figure 3. Three kinds of bundles (after Hågerstrand 1970:14). The heavy line indicates a machine.

people depending on their race and gender (and I would add physical abilities and disabilities, size, and age) is not simply reducible to time-space diagrams or associated models of the person. Women, for example, experience a branching of time-space paths through the process of giving birth and merging with others in traditional family roles. From a feminist perspective, the idea of discrete, unbranching paths relates more closely to the fragmented, antagonistic self of the white, male competitive career world than the worlds of women and persons of color (Rose 1993a:29–34).

Everyday English denies transcendence by merging ideas of self and body: one does not merely *have* a particular body, one *is* a black woman, a white woman, a white man. Neil Smith identifies this terrain of struggle by noting that “the scale of the body is socially constructed” (Smith 1993:102). In this terrain of struggle, the point-entity model reifies notions of an inescapable social “place,” a range of selfhood defined by bodily difference.

Extensibility Diagrams

Let us explore some of the possibilities of a personal extensibility model by following a person through her day and discerning how the point-entity existence of an object is tran-

scended in daily life by the extension of awareness, perception, actions, and interactions in time and space. The “time-space extensibility diagram” in Figure 4 depicts a single day in the life of a hypothetical person. The diagram resembles a time-space diagram in the Hågerstrandian tradition, save for its superimposition of the person’s connections across space and time on the movement of the person’s body (heavy line).

A regional manager for a franchise, Jane, starts her day at home when the alarm wakes her. After a shower and breakfast, Jane calls her mother (“A” on diagram). This is a daily routine since her mother lives alone and is in poor health. Despite the mediated nature of the communication, it is as important as any direct communication in Jane’s day because “no answer” could mean a rearrangement of Jane’s entire day. Today, however, her mother is fine, and, after another hour at home, the latter portion of which is spent on the back porch giving her dog a little “out-time” and surveying the neighborhood, Jane drives to work. As she drives, her eyes and mind survey a view which expands and contracts according to the placement of buildings and vegetation on either side of the road. She arrives at her office and works there for most of the morning. Just before noon, she sends a message by computer mail to the managers of the three shops under her administration (“B” on the diagram). The message is received immediately by the day managers at each of the shops; the night managers at two of the shops will receive the message at five o’clock that evening. The day manager at shop 3 soon calls Jane (“C” on the diagram) to inform her of a cost overrun. Jane walks to shop 3, where she has lunch and then looks over the accounts. Late in the afternoon, Jane walks back to the main office, finishes up some business, then drives home. As she retraces the familiar route she remembers seeing a traffic accident on her way to work and slows down slightly at the same intersection, remembering that the intersection is not particularly safe (“D” on the diagram). Jane arrives home just as the night managers at shops 1 and 2 are reading her computer message. She eats dinner with her partner then watches the news on television (“E” on the diagram).

The diagram of Jane’s day illustrates various spatial and temporal connections of significance for social life: telephoning, surveying,

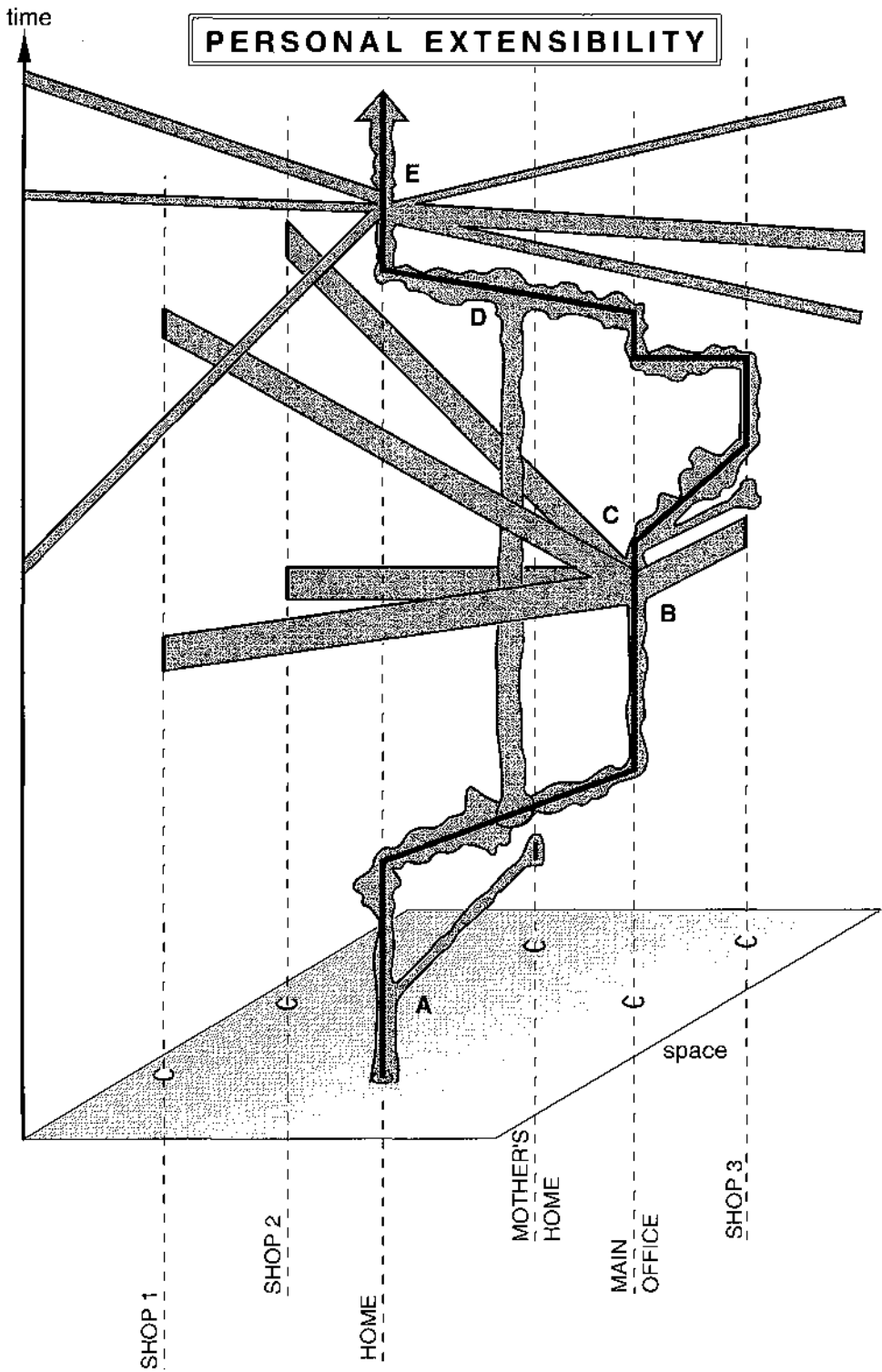


Figure 4. Time-space extensibility diagram. A simplified representation of a day in the life of a chain-store manager. The bold line indicates the location of her body. The shaded area represents her extension in space-time.

driving, scanning, computer interfacing, walking, reading, remembering, meeting face-to-face, and television viewing. Letters can be substituted for computer messages, newspapers for television, biking for driving, and so on without a significant change in the extensibility pattern. Consequently, similarly complex connections could be found in the daily lives of people who lived a hundred or more years ago. With the visual aid of an extensibility diagram, we may avoid the conflation in which "bodies become their paths" (Rose 1993b:77).

Extensibility and Personal Power

The store manager in our example may exert somewhat more control over distant phenomena than the average person. An entry-level employee in a factory, by contrast, will have less control over distant events; a chief executive officer (CEO) will have more. If we measure involvement in distant events in terms of experience rather than control, the situation becomes less predictable. Although the poor and the elderly are spatially limited in their mobility, knowledge, and social influence (Los Angeles Department of City Planning 1971; Rolinson 1991), a television report from the Middle East, for example, may extend poor or elderly audience members halfway around the world audio-visually, at least for three or four minutes. This sort of extensibility is merely experience, either audio-visual, or as McLuhan (1964:268-294) argues, tactile. Perhaps, but as the courtship of television audiences by politicians and protesters indicates, in a world of extensible agents, experience alone can be politically important. Individuals who watch large amounts of television are, in terms of experience, among the most extensible of persons.

On the other hand, consider the CEO of a transnational corporation. With a single phone message, the CEO may order the cutting of millions of trees or the mining of ore thousands of miles from the main office. His or her decision may create hundreds of jobs or force the relocation of a village by depleting local resources or by asserting a competing claim to land. In the invisible space of extensible social relations, such persons have a long reach, although if they wish, they can elect not to "see" the effects of their actions, by restricting their use of experiential forms of extensibility. More-

over, the authority vested in modern social institutions lends power to their extensibility, producing connections among the actions of persons scattered through space and continually reinforcing the abilities of certain persons (authorities) to act at a distance (Giddens 1984:260-261).

Authority is, however, an elusive quality in which turnabout is often fair play. If the authority of the CEO derives mainly from the media at his disposal, adversaries may also exploit media to resist a company's labor practices or its uses of resources and land. While the CEO may benefit from private media such as leased data networks (Langdale 1989), protesters can capture the attention of public media, extend their message to audiences dispersed widely through space, and undermine the CEO's authority.

The exploitation of popular electronic media by oppressed groups was perfected by the civil rights movement in the United States in the 1950s and 1960s (Donovan and Scherer 1992:3-22, 71-78; King 1958; Bennett 1968; Lentz 1990). Subsequently, the techniques developed by this movement were borrowed by Chinese students rallying in Tiananmen Square in 1989 (Manegold and Magida 1989) as well as by rebels in the Philippines in 1986 and in Chiapas, Mexico in 1994. In these cases, the basic strategy consists of attracting media attention while preserving an image of innocence or victimization. The strategy is designed to shape the public opinion of a media audience that is disorganized, sluggish, and fickle, but nonetheless massive, and to use that audience in staying the hand of the oppressor (Alinsky 1946; 1971; Schattschneider 1960; Lipsky 1968; 1970; Gitlin 1972; 1980). As Constance Penley and Andrew Ross observe: "Activism today is no longer a case of putting bodies on the line; increasingly, it requires and involves bodies-with-cameras" (1991:xv). In the case of the Rodney King beating in Los Angeles, a single camera and a single body turned public opinion against the Los Angeles Police Department.

Presence/Absence

Extensibility is involved in social struggles and protests, but that is not its essential nature. Its nature is communication, the forming of

connections. The dichotomy present/absent is too simple to explain the connections that bind socio-spatial processes. What is needed is a set of gradations of presence/absence reflecting the strength of a particular act of communication.

One way to understand a network with stronger and weaker connections is to define a "slicing parameter," a level of connectedness between objects which must be met or exceeded in order for a connection to be considered (Gould 1982:90). Choosing a high slicing parameter means that one considers only the strongest connections between objects. A low slicing parameter means that all but the very weakest connections are considered. By default, geographers have selected a high slicing parameter with regard to presence/absence. If we lower the slicing parameter we find an ever-increasing set of places in which a person is somehow involved.

Let us consider an apparently situated moment of labor to illustrate this point: Johann Sebastian Bach, composing his "St. John Passion." In a traditional geographical perspective he is seated in a cramped apartment in Leipzig, in 1723. Insofar as Bach's actions at this place-time reverberate in a crowded concert hall in Paris in 1871, or in a carpeted living room in a Chicago suburb in 1994, we err by assigning the person "Bach" to an unbranching, finite line in space-time. His composition has interacted and continues to interact with diverse place-times. The consequences of other actions are less easily determined but equally pervasive. As the biologist Lewis Thomas observes:

Any word you speak this afternoon will radiate out in all directions; around town before tomorrow, out and around the world before Tuesday, accelerating to the speed of light, modulating as it goes, shaping new and unexpected messages, emerging at the end as a hilariously funny Hungarian joke, a fluctuation in the money market, a poem, or simply a long pause in someone's conversation in Brazil. (1974:131-132)

Like the infinite coastlines described by fractals, close inspection of human life reveals an ever more convoluted frontier of personal extensibility in space and time. With a loose definition of presence, not only is Bach with us in the here and now, but so too are his lesser-known contemporaries. While their bodies are still and silent, their extensions continue to act and to convey thoughts. At such low slicing

levels, time-space extensibility diagrams become impossible to draw, and hence the concept must be understood in the abstract. Consequently, extensibility diagrams, like time-space diagrams (Carlstein 1982:45), are more useful as a heuristic device than as a tool for analysis.

The problematizing of presence/absence produces a social geography in which one finds "no Euclidean territorial divisions—only continuous variation, spatial discontinuity, persisting disparity, complex pluralism, and dynamic ambiguity" (Webber 1964:120). The resonance of this description with postmodern social theory suggests that developments in communication technology as unglamorous as the telephone and postal systems are as important to the postmodern condition as economic restructuring or the purported crisis of meaning.

The Role of the Body

On the extensibility diagram in Figure 4, I have indicated the path of the body in space as a bold line: a nucleus within the person's extended self. This nucleus is important (although, as I have argued, it is not coextensive with the "person"). The body is inevitably located, and, almost as inevitably, subject to categorization. The person is neither.

At this point we can summarize the differences between the body and the person. To reiterate, the body is self-contained and spatially and temporally finite, while the person is other-contained and spatially and temporally unbounded. The person frequently changes in spatial extent, while the body remains essentially the same size. The range of size variation among persons is much greater than the range of size variation among bodies, corresponding to variations in social power and media access. Other fundamental distinctions, some of which will be treated in greater depth below, relate to the topics of sexuality, suffering, survival, and death. The body is biologically determined in regard to sexuality (although medical science may intervene), whereas the person is gendered, that is, given sexual meaning in culturally variable ways. The body experiences suffering in the form of pain, whereas the person is "injured" by the alteration or severance of communication ties through ostracism, shun-

ning, exile, demotion, imprisonment, or subjugation. The body depends for survival on material flows (food, water, heat, building materials) while the person depends on communication flows. The person generally continues to grow throughout life, while the body ceases to grow at maturity. Finally (if somewhat redundantly) the body can be killed, whereas the person merely diffuses with time.

The person-body opposition I have sketched should in no way be seen as a matter of either-or. The two elements sustain and constitute each other in a dialectical fashion. A person is always constructed around a particular body, and that body is virtually unknown to "its" person outside of the meanings conveyed to and from the person in various communications (Berger 1972; Bakhtin 1984; Foucault 1975; 1978; 1979).

In addition, the location of the body affects access to communication networks. Extensibility is a function of location insofar as it depends on access to roads, wires, books, satellite dishes, and other technologies which are unevenly distributed. Income opportunities vary from place to place, and these in turn affect people's ability to afford place-transcending technologies. The power a person can exert at a distant place is partly related, as well, to the "image" of his or her bodily location at distant points; for example, a letter from an unknown sender in Washington D.C. is likely to be read more carefully than a letter from an unknown sender in Oshkosh, Wisconsin, all other things being equal.

In addition, bodies vary, and this variation—or rather the social categorization of it—affects extensibility. Certain variations reflect the life cycle, as in the changes in mobility that come with age (Rowles 1978) or the bodily changes of pregnancy or physical disability. Equally important differences arise from societal expectations and norms. In the United States, for example, most CEOs, federal government administrators, and others in positions of influence and power are white men of normal mobility and sensory capability. The extensibility of women meanwhile is restricted by patriarchal control of communication infrastructure and public space, fear of physical attack, and socialization into a domestic sphere of interaction in and near the home (Rose 1993a). The most extensible people come from socially dominant groups, and their extensibility perpetuates their dominance through their shaping of pub-

lic discourses and their reinforcement of prejudices if they so choose. Social attitudes about diverse bodily characteristics—black versus white, male versus female, weak versus strong, short versus tall, sighted versus blind, healthy versus diseased, and so on—are but the coarsest of the parameters for personal extensibility. That is because extensibility also enables people to transcend these constraints. A black insurance agent on the telephone may "sound white" to his/her clients. A woman may publish novels under a male pseudonym or acquire an education that helps her overcome gendered extensibility patterns. The spatially constricting effects of deafness can be overcome with hearing aids, video-telephones, closed-circuit television, and interactive text printers. The body need not define the person.

Acknowledgment of the hidden fissure between body and person is a radical departure. In a bold classic of postmodernist writing, Donna Haraway (1985) indicates the possibility of transcending the current arrangement of social power by refusing to be a helpless victim of technology. She suggests that women and people of color emulate instead the "cyborg" (cybernetic organism), a science-fiction invention that is part machine, part human or animal. She argues that by merging playfully and passionately with technology one may transcend the prejudicial limitations that society imposes and also discover a new way of being. In addition, "Cyborg politics is the struggle for language and the struggle against perfect communication," where the ambiguity of language provides openings for personal differences (1985:95). The communication technologies that support global capitalism and militarism can also, simultaneously, empower individuals to explore, conquer, and evade monolithic control, according to the principle that what cannot be located cannot be trapped, trivialized, co-opted, or oppressed.

Globalization

Economic Globalization

In economic geography, the spatial extensions of various institutions and organizations have received a great deal of attention. Geographers have used the term "globalization" to indicate new international economic linkages

supported by modern communication and computing technologies. The crux of this situation is simultaneous centralization and decentralization, a transcendence of borders, and a new mobility of capital and information. Changes in extensibility reflect this transformation.

"[O]rganizational networks, which rely on advanced telecommunications services" (Langdale 1989:519) are the basis of the altered geography in which corporations, banks, and governments act. The economic restructuring of the late 1970s and 1980s, for example, involves internationalization of production, trade, labor markets, financial institutions, and the communication infrastructure of business and finance (see Knox and Agnew 1989; Warf 1989; Langdale 1991; 1989). Corporations and associations with branches in several cities or countries use intra-office flows of information and command to facilitate the centralization of decisionmaking and administration at single locations (McDowell 1984). Main offices have relocated in a small number of "global cities" or "world cities" including London, New York, and Tokyo (Moss 1987; Langdale 1989). "The new urban-based telecommunications infrastructure is, in concert with the internationalization of services and the deregulation of financial markets, reinforcing the economic position of the major cities that are already the leading information hubs" (Moss 1987:539).

Decentralization is also evident, however. At the urban scale, companies have shifted routine data processing and record-keeping operations to "back offices" at the urban periphery (Moss 1987; Nelson 1986) as a means of avoiding diseconomies of congestion, high land values, crime, and aging infrastructure. At the global scale, industry decentralizes as factories are dispersed among nations where wages are low, unions are nonexistent or weak, and regulations on employers are minimal. Meanwhile in the "first world," certain types of workers are able to remain at home in the suburbs or relocate to picturesque rural areas and "commute" electronically (Patton 1993). These changes are made possible by a new infrastructure of computer networks and fax machines.

In this milieu of globalization, the buildings housing the various functions of a transnational corporation, although dispersed around the globe, are intimately connected, yet they may have little or no connection with offices or

housing that are directly adjacent. Likewise, global cities are better connected to each other than to many places in their surrounding regions (Moss 1987:536). Such conditions have led observers to conclude that "the nature of distance is changing" (Langdale 1989:519), that "the operational boundaries of a city are no longer defined by geography or law, but by the reach of phone lines and computer networks" (Moss 1987:536). Webber reminds us that this situation is not new to the 1980s, however obvious it has become in recent years: "It is likely that [the functional fusing of cities] reflects spatial linkage patterns that are as old as colonial America; in our limited view of the metropolitan system's surface, we may have failed to recognize that the patterns of intercourse have long extended far beyond the urban nodes" (1964:83; see also Innis 1951).

People are involved in globalization through their various occupations and as consumers. The isolated worker who maintains intimate, real-time, contact with business associates from a mountain top or other remote spot remains an anomaly. Most jobs still require workers to occupy particular locations, but the numbers of workers who create and sustain connections through space, as an integral part of their jobs, are increasing. The wage laborer as much as the executive increasingly works in a social context defined by electronic links, although the implications for personal power may be diametrically opposed (Hepworth 1986; Abler 1977). In many cases, job-related extensibility has become so routine that it is scarcely noticed, as is true for the cashier who sends a signal to a central computer in another state simply by scanning a product code. For others, such as insurance agents, record keepers, accountants, lawyers, programmers, researchers, executives, doctors, factory foremen, and politicians, extensibility may preoccupy their daily thoughts as it takes on a "customized" character (Abler 1977:324-328). At the very top, the extensible relations of a tiny minority in New York, London, and Tokyo serve to monitor and control vast domains of the world through international networks of information retrieval and command.

Political and Cultural Globalization

The emerging economic regime on the world scene poses a challenge to the power

and significance of local communities and individuals. As Anthony Giddens observes, "the greater the time-space distanciation of social systems—the more their institutions bite into time and space—the more resistant they are to manipulation or change by any individual agent" (Giddens 1984:171). In remediation, John Urry calls for a social science in which the place-transcending processes of "commodity relations or . . . the state" are studied alongside the "local community" (1985:40) because shared experience with one's neighbors in the latter is a source of reciprocity, mutuality, and personalization that may weaken the power of market relations to structure daily life. What now needs to be recognized is that reciprocity and mutuality may also arise in spatially extensive networks as well as in local, personal networks. That is to say that "distantiated" social interactions increasingly provide space for personalization, community-formation, and political resistance.

One suspects that geographers studying urban social movements and collective action have also attributed too much importance to place. Andrew Kirby believes, for example, that historical conditions increasingly favor the local state as the site for political struggles and resistance (Kirby 1993; 1989; 1988). Others follow Manuel Castells (1977; 1983) in identifying the city as the principal context of grass-roots movements or resistant actions which challenge the state or other sources of domination (Jackson 1988; 1989; Soja 1980; 1989; Fincher 1987; Pickvance 1985; Cox 1984a; 1984b; 1983). For these scholars, local interactions founded in community hold radical possibilities; and by implication, mediated interactions do not since communal sentiments do not spring from these politically conservative sources. This view overlooks, of course, the wealth of media at people's disposal and the fact that these media are regularly incorporated into daily struggles and personal projects involving extensibility (Fiske 1987; Massey 1993; Haraway 1985; de Certeau 1984).

The association of "politics" with the formal, male-dominated, distanciated sphere depends on a public/private dichotomy that is increasingly coming under scrutiny. Feminist geographers have drawn attention to that dichotomy's exclusion of women's struggles from geographic studies and theories and its concealment of important dimensions of political

life (Pratt 1992; McDowell 1991; Massey 1991; Marston and Saint-Germain 1991; Brownhill and Halford 1990; Rose 1990; Kofman and Peake 1990). As these works suggest, even the most local of contexts, the household, is political.

Another body of work suggests, conversely, that the non-local can be communal. In an article that deserves more attention than it has received, Melvin Webber (1964) argued that communities are based on accessibility rather than proximity. "As accessibility becomes further freed from propinquity, cohabitation of a territorial place—whether it be a neighborhood, a suburb, a metropolis, a region, or a nation—is becoming less important to the maintenance of social communities" (Webber 1964:109). In this process, people detach themselves from place-based communities and satisfy their growing array of interests through involvement in the "non-place communities" of various media. It is this process that Marshall McLuhan rhetorically characterized as the emergence of a "global village" (McLuhan and Fiore 1967:66–67).

Similar though less radical views have entered geographic discussions through studies of diffusion or independent invention. Wilbur Zelinsky points out some social groups "whose existence is predicated on specific common interests or 'sentiment structures'" rather than on closeness in space (1975:117). According to Ronald Abler, "the same advances in communications that enhance diversity also eliminate the necessity for groups to agglomerate in space to maintain cohesion and distinct identity" (1975:127). And David Ley asks, "along what dimensions is nearness itself now to be measured?" (1983:54). Rejecting a response based simply on spatial proximity, Ley begins his chapter on informal social groups by declaring that "the salient environment for purposeful action in the city is more nearly social than physical" (Ley 1983:172)—an idea that resonates with recent discussions of "virtual community" and "virtual reality" (Rheingold 1993; 1991) and with nineteenth-century discussions of collapsing space (Schivelbush 1978; Marvin 1988; Carey 1988:203).

Globalization has the capacity to support non-place communities in which people win back their individuality and personal power (Adams 1993). The internationally famous rock singer, Sting, has teamed up with Kayapo Indi-

ans to preserve the Brazilian rain forest and assert indigenous land rights (Jennings 1989). Many entertainers have participated in benefit concerts such as "Live Aid" and "We Are the World" raising millions of dollars for charities (Garofalo 1992). African school children protesting segregation have chanted lyrics by the British rock band, Pink Floyd: "We don't want no education. We don't want no thought control," and the American song "Tie a Yellow Ribbon" underwent a stranger transformation when it was adopted by anti-Marcos rebels in the Philippines in 1986 (Simons 1987:44). Despite the fact that music is an international industry, it also "has come to serve as a catalyst for raising issues and organizing masses of people" (Garofalo 1992:16-17). The discourses of popular culture are alternately impassioned, ludic, and ironic, as befits their function as a context for far-flung community, but they are no less politically effective than rational argument.

On Fear and Courage in a World of Extensible Persons

The plea that "place matters," that people create social structures through practices *in place*, has discouraged discussions of the possibility that human interactions occur both in place and out of place. Thus when Andrew Kirby wishes to illustrate the autonomy of the local state he first launches an attack on the suggestion of media theorist Joshua Meyrowitz that television and other modern media transform the traditional relationship between public and private social spheres (Kirby 1993:18-22; 1988; 1989). Such objections convey a fear that the discipline of geography is threatened by the idea of extensibility. In fact, geography can easily accommodate and refine the insights of Meyrowitz, Haraway, McLuhan, Webber, and others. This will involve enlarging our discussions of the changing relationship between social connections and spatial containers. Exploration of the idea of extensibility sharpens understanding of the individual person's insertion in space-time while in no way denying that people are "historical, geographical and social beings" (Thrift 1985:397), nor even that places may play a central role in social life in many situations.

The conceptual detachment of the "person" from a discrete physical location and the integration of the "person" with communication networks challenges, however, much of academic geography and not a little of structuration theory. In addition, extensibility threatens cherished notions of individuality. The idea that all persons are connected and not separated by space—intellectuals with philistines, executives with assembly-line workers, artists with plebeians—arouses antipathy and fear. Neither are new. Consider the attitudes of late nineteenth-century social scientists such as Ferdinand Tönnies, Emile Durkheim, and Georg Simmel who catalogued the consequences of immersion in large social contexts—consequences such as superficiality, impersonality, anomie, and overstimulation. Similarly, Friedrich Nietzsche worried that extensibility through the written word would strengthen the mob and lower aspirations: "That everyone can learn to read will ruin in the long run not only writing, but thinking too" (1969:67).

In contrast, Elizabeth Eisenstein's exhaustive study of the social changes that accompanied the introduction of the printing press persuasively shows that as access to the printed word linked people to a broader public during the sixteenth century, European culture began to stress the personal qualities of self-esteem, self-consciousness, individuality, and personal initiative. A new type of "speech," worldly and independent, reflected a new type of personality. Montaigne, for example, presented himself in his writings as a unique individual complete with idiosyncratic flaws and failures (Eisenstein 1979:229-237). Extensibility thus enabled Europeans to define themselves and to flaunt social norms.

Haraway, however, anticipates a future world in which the "norm" lacks definition, in which the "troubling dualisms" of "self/other, mind/body, culture/nature, male/female, civilized/primitive, reality/appearance, whole/part, agent/resource, maker/made, active/passive, right/wrong, truth/illusion, total/partial, God/man" disappear (1985:96). And when definitions hold no meaning, I would argue, defining oneself becomes impossible. Fear of this potentiality is not entirely without justification.

Modernization and its attendant spatial and social segmentations has fostered a steady increase in self-definition, to the point that loneliness and "prideful and nervous suffi-

ciency" are common (Tuan 1982:151). Kenneth Gergen sees signs that people are becoming "saturated" with diverse, far-flung experiences and that consequently they are losing their coherence, commitment, depth, and authenticity (1991). Diversity may, in addition, be a facade for oppressive homogeneity. McLuhan finds a "scabrous paradox" (1962:209): on the one hand, the post-Gutenberg citizen acquired a habit of solitary thought and perception, of initiative and personal expression, from his/her expanded access to diverse ideas and the newly acquired habit of solitary study. On the other hand, "the mechanical principle of visual uniformity and repeatability which is inherent in the [printing] press steadily extended itself to include many kinds of organization" (1962:209). The success of "completely standardized and interchangeable parts" (Mumford 1962:135) led to attempts to transform laborers, as well, into standardized and interchangeable parts. In addition, every mechanical reproduction of a film, book, or artwork, unlike the original, lacks a "unique existence at the place where it happens to be" (Benjamin 1986:29). Some have expressed concerns that the audiences of mass-produced works, streaming to and from their mechanical avocations and vocations, might internalize the placeless homogeneity of their surroundings and become a sheeplike mass susceptible to fascism. Others link mass communication to the penetration of daily life by the oppressive forces of capitalism (Harvey 1989).

Perhaps the deepest fears evoked by social interconnection concern confusions over responsibility and debt. As extensibility produces a world with "no sense of place" (Meyrowitz 1985), it is not clear where one should draw the boundary of "my space" for the purpose of loyalty and mutual support (Corbridge 1993). If one's neighborhood is not, in fact, where one is (as a socially-constructed and constructing agent), then what context is appropriate for neighborly support and loyalty? In the rapidly globalizing social contexts supported by the media, will everyone assume responsibility for everyone else; will people choose to live in a global village? Or will they narrow their circle of responsibility to the insular self and family?

The concept of extensibility indicates that none of these possible futures can be ruled

out. Actions taken freely, by intelligent agents, can scarcely be predicted, less so in a social context that is constantly changing. The future will be determined as it unfolds, by the choices of myriad persons, individually and collectively forging connections through space.

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Notes

1. Elsewhere I will pursue the idea that extensible persons and the societies to which they belong are situated in nature.
2. Zukav's quote (1980) is particularly ironic because it appears in an introduction to modern physics, a field which is encountering difficulties locating its subjects of study in space.

References

- Abler, R. 1977. The Telephone and the Evolution of the American Metropolitan System. In *The Social Impact of the Telephone*, ed. I. de Sola Pool, pp. 318-341. Cambridge, Massachusetts: The MIT Press.
- . 1975. Monoculture or Minculture? The Impact of Communications Media on Culture in Space. In *Human Geography in a Shrinking World*, ed. R. Abler, D. Janelle, A. Philbrick, and J. Sommer, pp. 122-148. North Scituate, Massachusetts: Duxbury Press.
- Abler, R., Janelle, D., Philbrick, A., and Sommer, J., eds. 1975. *Human Geography in a Shrinking World*. North Scituate, Massachusetts: Duxbury Press.
- Adams, P. C. 1992. Television as Gathering Place. *Annals of the Association of American Geographers* 82:117-135.
- . 1993. Theatrical Territoriality: A Geographical Enquiry into Protest Occupations and Mass Communication. Ph.D. Dissertation, Department of Geography, University of Wisconsin-Madison.

- Alinsky, S. 1946. *Reveille for Radicals*. Chicago: University of Chicago Press.
- . 1971. *Rules for Radicals: A Practical Primer for Realistic Radicals*. New York: Random House.
- Bakhtin, M. 1984. *Rabelais and His World*, trans. by Hélène Iswolsky. Bloomington: Indiana University Press.
- Benjamin, W. [1969] 1986. The Work of Art in the Age of Mechanical Reproduction. In *Video Culture: A Critical Investigation*, ed. J. Hanhardt, pp. 27–52. Layton, Utah: Peregrine Smith Books.
- Bennett, L., Jr. 1968. *What Manner of Man*. Chicago: Johnson Publishing Co.
- Berger, J. 1972. *Ways of Seeing*. London: British Broadcasting Corporation and Penguin Books.
- Berkowitz, S. D. 1982. *An Introduction to Structural Analysis*. Toronto: Butterworths.
- Brissett, D., and Edgley, C., eds. 1975. *Life as Theater: A Dramaturgical Sourcebook*. Chicago: Aldine Publishing Co.
- Brownhill, S., and Halford, S. 1990. Understanding Women's Involvement in Local Politics: How Useful is a Formal/Informal Dichotomy? *Political Geography Quarterly* 9:396–414.
- Brunn, S., and Leinbach, T., eds. 1991. *Collapsing Space and Time: Geographic Aspects of Communication and Information*. London: Harper Collins Academic.
- Bunge, W. 1966. *Theoretical Geography*, 2nd ed. Lund Studies in Geography, Series C. No. 1. Lund, Sweden: CWK Gleerup.
- Buttimer, A. 1979. Erewhon or Nowhere Land. In *Philosophy in Geography*, ed. S. Gale and G. Olsson, pp. 9–37. Dordrecht: D. Reidel.
- Burt, R. 1980. Models of Network Structure. *Annual Review of Sociology* 6:79–141.
- Carey, J. 1988. *Communication as Culture: Essays on Media and Society*. Boston: Unwin Hyman.
- Carlstein, T. 1982. *Time Resources, Society and Ecology: On the Capacity for Human Interaction in Space and Time in Preindustrial Societies*. Lund Studies in Geography, Ser. B. Human Geography No. 49. Lund, Sweden: CWK Gleerup.
- Castells, M. 1977. *The Urban Question*. London: Edward Arnold.
- . 1983. *The Grassroots and the City*. Berkeley and Los Angeles: University of California Press.
- Corbridge, S. 1993. Marxisms, Modernities, and Moralities: Development Praxis and the Claims of Distant Strangers. *Environment and Planning D: Society and Space* 11:449–472.
- Cox, K. 1983. Residential Mobility, Neighborhood Activism and Neighborhood Problems. *Political Geography Quarterly* 2:99–118.
- . 1984a. Space and the Urban Question. *Political Geography Quarterly* 3:77–84.
- . 1984b. Neighborhood Conflict and Urban Social Movements: Questions of Historicity, Class and Social Change. *Urban Geography* 5:343–355.
- de Certeau, M. 1984. *The Practice of Everyday Life*, trans. by S. Rendall. Berkeley and Los Angeles: University of California Press.
- Donovan, R., and Scherer, R. 1992. *Unslient Revolution: Television News and American Public Life, 1948–1991*. Woodrow Wilson Center Series. Cambridge, England: Cambridge University Press.
- Eisenstein, E. 1979. *The Printing Press as an Agent of Change: Communication and Cultural Transformations in Early-Modern Europe*, Vols. 1 and 2. Cambridge and New York: Cambridge University Press.
- Fellman, J., Getis, A., and Getis, J. 1992. *Human Geography: Landscapes of Human Activities*, 3rd ed. Dubuque, Iowa: Wm. C. Brown.
- Fincher, R. 1987. Defining and Explaining Urban Social Movements. *Urban Geography* 8:152–160.
- Fiske, J. 1987. *Television Culture*. London and New York: Methuen.
- Foucault, M. 1975. *The Birth of the Clinic: An Archaeology of Medical Perception*, trans. by A. Sheridan. New York: Vintage Books.
- . 1978. *The History of Sexuality*. Volume I: *An Introduction*, trans. by R. Hurley. New York: Vintage Books.
- . 1979. *Discipline and Punish: The Birth of the Prison*, trans. by A. Sheridan. New York: Vintage Books.
- Garofalo, R. 1992. Understanding Mega-Events: If We Are the World, Then How Do We Change It? In *Rockin' the Boat: Mass Music and Mass Movements*, ed. R. Garofalo, pp. 15–35. Boston, Massachusetts: South End Press.
- Gergen, K. J. 1991. *The Saturated Self: Dilemmas of Identity in Contemporary Life*. New York: Basic Books.
- Giddens, A. 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Berkeley and Los Angeles: University of California Press.
- . 1985. Time, Space and Regionalization. In *Social Relations and Spatial Structures*, ed. D. Gregory and J. Urry, pp. 265–295. New York: St. Martin's Press.
- Gitlin, T. 1972. Sixteen Notes on Television and the Movement. In *Literature in Revolution*, ed. G. A. White and C. Newman, pp. 335–366. New York: Holt, Rinehart and Winston.
- . 1980. *The Whole World is Watching: Mass Media in the Making and Unmaking of the New Left*. Berkeley and Los Angeles: University of California Press.
- Gold, J. 1991. Fishing in Muddy Waters: Communications Media, Homeworking and the Electronic Cottage. In *Collapsing Space and Time: Geographic Aspects of Communication and Informa-*

- tion, ed. S. Brunn and T. Leinbach, pp. 327-341. London: Harper Collins Academic.
- Goldmark, P. G. 1972. Tomorrow We Will Telecommute to Our Jobs. *The Futurist* 6:55-58.
- Gottmann, J. 1977. Megalopolis and Antipolis: The Telephone and the Structure of the City. In *The Social Impact of the Telephone*, ed. I. de Sola Pool, pp. 303-317. Cambridge, Massachusetts: The MIT Press.
- Gould, P. 1980. Q-Analysis, or a Language of Structure: An Introduction for Social Scientists, Geographers, and Planners. *International Journal of Man-Machine Studies* 13:169-199.
- . 1982. Is it Necessary to Choose? Some Technical, Hermeneutic, and Emancipatory Thoughts on Inquiry. In *A Search for Common Ground*, ed. P. Gould and G. Olsson, pp. 71-104. London: Pion.
- . 1991. Dynamic Structures of Geographic Space. In *Collapsing Space and Time: Geographic Aspects of Communication and Information*, ed. S. Brunn and T. Leinbach, pp. 3-30. London: Harper Collins Academic.
- Hägerstrand, T. 1970. What about People in Regional Science? *Papers of the Regional Science Association* 24:7-21.
- . 1973. The Domain of Human Geography. In *Directions in Geography*, ed. R. J. Chorley, pp. 67-87. London: Methuen and Co. Ltd.
- . 1982. Diorama, Path and Project. *Tijdschrift Voor Economische en Sociale Geographie* 73:323-339.
- . 1989. Reflections on "What about People in Regional Science." *Papers of the Regional Science Association* 66:1-6.
- Haraway, D. 1985. A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s. *Socialist Review* 15(2):65-107.
- Hare, A. P. 1985. *Social Interaction as Drama: Applications from Conflict Resolution*. Beverly Hills, California: Sage Publications.
- Harkness, R. C. 1976. Innovations in Telecommunications and their Impact on Urban Life. In *Innovations for Future Cities*, ed. G. Golany, pp. 21-53. New York: Praeger.
- Hartshorne, R. 1939. *The Nature of Geography*. Lancaster, Pennsylvania: Association of American Geographers.
- Harvey, D. 1969. *Explanation in Geography*. London: Edward Arnold.
- . 1985. The Geopolitics of Capitalism. In *Social Relations and Spatial Structures*, ed. D. Gregory and J. Urry, pp. 128-163. New York: St. Martin's Press.
- . 1989. *The Condition of Postmodernity*. Cambridge, Massachusetts: Basil Blackwell.
- Hepworth, M. 1986. The Geography of Technological Change in the Information Economy. *Regional Studies* 20(5):407-424.
- Howenstine, E. 1991. Towards a Schematic Model of Communications Media and Development in Latin America. In *Collapsing Space and Time: Geographic Aspects of Communication and Information*, ed. S. Brunn and T. Leinbach, pp. 278-301. London: Harper Collins Academic.
- Innis, H. A. 1951. *The Bias of Communication*. Toronto: University of Toronto Press.
- Jackson, P. 1988. Street Life: The Politics of Carnival. *Environment and Planning D: Society and Space* 6:213-227.
- . 1989. *Maps of Meaning*. New York: Routledge.
- Janelle, D. 1968. Central Place Development in a Time-Space Framework. *Professional Geographer* 20:5-10.
- . 1969. Spatial Reorganization: A Model and Concept. *Annals of the Association of American Geographers* 59:348-364.
- . 1973. Measuring Human Extensibility in a Shrinking World. *The Journal of Geography* 72(5):8-15.
- Jennings, N. 1989. Ecological Rock. *Maclean's* June 12, 1989:50-51.
- King, M. L. 1958. *Stride toward Freedom: The Montgomery Story*. New York: Harper and Brothers, Publishers.
- Kirby, Andrew. 1988. Context, Common Sense and the Reality of Place: A Critical Reading of Meyrowitz. *Journal for the Theory of Social Behavior* 18:239-250.
- . 1989. A Sense of Place. *Critical Studies in Mass Communication* 6:322-326.
- . 1993. *Power/Resistance*. Bloomington: Indiana University Press.
- Knoke, D., and Kuklinski, J. 1983. *Network Analysis*. Beverly Hills, California: Sage Publications.
- Knox, P., and Agnew, J. 1989. *The Geography of the World Economy*. London and New York: Edward Arnold.
- Kofman, E., and Peake, L. 1990. Into the 1990s: A Gendered Agenda for Political Geography. *Political Geography Quarterly* 9:313-336.
- Langdale, J. V. 1989. The Geography of International Business Telecommunication: The Role of Leased Networks. *Annals of the Association of American Geographers* 79:501-522.
- . 1991. Telecommunications and International Transactions in Information Services. In *Collapsing Space and Time: Geographic Aspects of Communication and Information*, ed. S. Brunn and T. Leinbach, pp. 193-214. London: Harper Collins Academic.
- Lenntorp, Bo. 1976. *Paths in Space-Time Environments: A Time-Geographic Study of Movement Possibilities of Individuals*. Lund Studies in Geography, Ser. B. Human Geography No. 44. Lund, Sweden: CWK Gleerup.
- Lentz, R. 1990. *Symbols, The News Magazines, and*

- Martin Luther King. Baton Rouge: Louisiana State University Press.
- Ley, D. 1983. *A Social Geography of the City*. New York: Harper and Row.
- Lipsky, M. 1968. Protest as a Political Resource. *American Political Science Review* 62:1144-1158.
- . 1970. *Protest in City Politics: Rent Strikes, Housing and the Power of the Poor*. Chicago: Rand McNally and Company.
- Los Angeles Department of City Planning. 1971. *The Visual Environment of Los Angeles*. Los Angeles.
- Lowenthal, D. 1961. Geography, Experience and Imagination: Towards a Geographical Epistemology. *Annals of the Association of American Geographers* 51:241-260.
- Lowenthal, D., and Bowden, M., ed. 1976. *Geographies of the Mind*. New York: Oxford University Press.
- Manegold, C. S., and Magida, L. 1989. The Roots of the Revolt. *Newsweek* 29 May:21.
- Marston, S., and Saint-Germain, M. 1991. Urban Restructuring and the Emergence of New Political Groupings: Women and Neighborhood Activism in Tucson, Arizona. *Geoforum* 22:223-236.
- Martensson, S. 1979. *On the Formation of Biographies in Space-Time Environments*. Lund Studies in Geography, Ser. B. Human Geography No. 47. Lund, Sweden: CWK Gleerup.
- Martin, J. 1978. *The Wired Society: A Challenge for Tomorrow*. Englewood Cliffs, New Jersey: Prentice-Hall.
- Marvin, C. 1988. *When Old Technologies Were New: Thinking About Electric Communication in the Late Nineteenth Century*. New York: Oxford University Press.
- Marx, Karl. 1973. *Grundrisse*. Harmondsworth, England: Penguin.
- Massey, D. 1991. Flexible Sexism. *Environment and Planning D: Society and Space* 9:31-57.
- . 1993. Power-Geometry and a Progressive Sense of Place. In *Mapping the Futures: Local Cultures, Global Change*, ed. J. Bird, B. Curtis, T. Putnam, G. Robertson, and L. Tickner, pp. 59-69. London and New York: Routledge.
- McDowell, L. 1984. *Spatial Divisions of Labour*. London: Macmillan.
- . 1991. The Baby and the Bath Water: Diversity, Deconstruction and Feminist Theory in Geography. *Geoforum* 22:123-133.
- McLuhan, M. 1964. *Understanding Media: The Extensions of Man*. New York: Mentor/McGraw Hill.
- . 1962. *The Gutenberg Galaxy: The Making of Typographic Man*. Toronto: University of Toronto Press.
- McLuhan, M., and Fiore, Q. 1967. *The Medium is the Message*. New York: Bantam Books.
- Meyrowitz, J. 1989. Media, Locality, and the Generalized Elsewhere. *Critical Studies in Mass Communication* 6:322-334.
- . 1985. *No Sense of Place*. New York: Oxford University Press.
- Moss, M. L. 1987. Telecommunication, World Cities, and Urban Policy. *Urban Studies* 24:534-546.
- Mumford, L. 1962. *Technics and Civilization*. New York: Harcourt, Brace and World.
- Nagel, T. 1986. *The View From Nowhere*. New York: Oxford University Press.
- Nelson, K. 1986. Labor Demand, Labor Supply and the Suburbanization of Low-Wage Office Work. In *Production, Work, and Territory*, ed. A. J. Scott and M. Storper, pp. 149-171. Boston: Allen and Unwin.
- Nicol, L. 1985. Communications Technology: Economic and Spatial Impacts. In *High Technology, Space, and Society*, ed. M. Castells, pp. 191-209. *Urban Affairs Annual Reviews* 28. Beverly Hills: Sage Publications.
- Nietzsche, F. W. 1969. *Thus Spoke Zarathustra*, trans. by R. J. Hollingdale. London and New York: Penguin.
- Nilles, J. M., Carlson, F. R., Gray, P., and Hanneman, G. J. 1976. *The Telecommunications-Transportation Tradeoff*. New York: Wiley.
- Parkes, D., and Thrift, N. 1980. *Times, Spaces, and Places*. New York: John Wiley and Sons.
- Patton, P. 1993. The Virtual Office Becomes Reality. *New York Times* October 28, 1993:C1, C6.
- Penley, C., and Ross, A. 1991. *Technoculture*. Cultural Politics, Vol. 3. Minneapolis: University of Minnesota Press.
- Pickvance, C. 1985. The Rise and Fall of Urban Movements and the Role of Comparative Analysis. *Environment and Planning D: Society and Space* 3:31-53.
- Pratt, G. 1992. Feminist Geography. *Urban Geography* 13:385-391.
- Pred, A. 1981. Power, Everyday Practice and the Discipline of Human Geography. In *Space and Time in Geography: Essays Dedicated to Torsten Hägerstrand*. Lund Studies in Geography, Ser. B. Human Geography No. 48, pp. 30-55. Lund, Sweden: CWK Gleerup.
- . 1982. Social Reproduction and Time Geography of Everyday Life. In *A Search for Common Ground*, ed. P. Gould and G. Olsson, pp. 157-186. London: Pion.
- . 1984a. Structuration, Biography Formation, and Knowledge: Observations on Port Growth during the Late Mercantile Period. *Environment and Planning D: Society and Space* 2:251-275.
- . 1984b. Place as Historically Contingent Process: Structuration and the Time-Geography of Becoming Places. *Annals of the Association of American Geographers* 74:279-297.
- . 1990. *Lost Words and Lost Worlds: Modernity and the Language of Everyday Life in Late*

- Nineteenth-Century Stockholm*. Cambridge: Cambridge University Press.
- Rheingold, H. 1991. *Virtual Reality*. New York: Simon and Schuster.
- . 1993. *The Virtual Community: Homesteading on the Electronic Frontier*. Reading, Massachusetts: William Patrick/Addison Wesley.
- Rogers, E., and Kincaid, D. L. 1981. *Communication Networks*. New York: Free Press.
- Rollinson, P. 1991. The Spatial Isolation of Elderly Single-Room-Occupancy Hotel Tenants. *Professional Geographer* 43:456–464.
- Rose, G. 1990. The Struggle for Political Democracy: Emancipation, Gender, and Geography. *Environment and Planning D: Society and Space* 8:395–408.
- . 1993a. *Feminism and Geography: The Limits of Geographical Knowledge*. Minneapolis: University of Minnesota Press.
- . 1993b. Some Notes towards Thinking about the Spaces of the Future. In *Mapping the Futures: Local Cultures, Global Change*, ed. J. Bird, B. Curtis, T. Putnam, G. Robertson, and L. Tickner, pp. 70–83. London and New York: Routledge.
- Rowles, G. D. 1978. *Prisoners of Space? Exploring the Geographical Experience of Older People*. Boulder, Colorado: Westview Press.
- Schattschneider, E. E. 1960. *The Semisovereign People: A Realist's View of Democracy in America*. New York: Holt, Rinehart and Winston.
- Schivelbush, W. 1978. Railroad Space and Railroad Time. *New German Critique* 14:31–40.
- Simons, L. 1987. *Worth Dying For*. New York: William Morrow and Company, Inc.
- Smith, N. 1993. Homeless/Global: Scaling Places. *Mapping the Futures: Local Cultures, Global Change*, ed. J. Bird, B. Curtis, T. Putnam, G. Robertson, and L. Tickner, pp. 87–119. London and New York: Routledge.
- Soja, E. 1980. The Socio-Spatial Dialectic. *Annals of the Association of American Geographers* 70:207–225.
- . 1989. *Postmodern Geographies: The Reassertion of Space in Critical Social Theory*. New York: Verso.
- Thomas, L. 1974. *The Lives of a Cell: Notes of a Biology Watcher*. New York: Bantam.
- Thrift, N. 1983. On the Determination of Social Action in Space and Time. *Environment and Planning D: Society and Space* 1:23–57.
- . 1985. Flies and Germs: A Geography of Knowledge. In *Social Relations and Spatial Structures*, ed. D. Gregory and J. Urry, pp. 366–403. New York: St. Martin's Press.
- . 1986. Little Games and Big Stories: Accounting for the Practice of Personality and Politics in the 1945 General Election. In *Politics, Geography and Social Stratification*, ed. K. Hoggart and E. Kofman, pp. 86–143. London and Wolfboro, New Hampshire: Croom Helm.
- Thrift, N., and Forbes, D. 1983. A Landscape with Figures: Political Geography with Human Conflict. *Political Geography Quarterly* 2:247–263.
- Toffler, A. 1970. *Future Shock*. London: Bodley Head.
- . 1980. *The Third Wave*. London: Pan.
- Tuan, Y. F. 1977. *Space and Place: The Perspective of Experience*. Minneapolis: University of Minnesota Press.
- . 1982. *Segmented Worlds and Self: Group Life and Individual Consciousness*. Minneapolis: University of Minnesota Press.
- . 1990. *Topophilia: A Study of Environmental Perception, Attitudes, and Values*, with new preface. New York: Columbia University Press.
- Urry, J. 1985. Social Relations, Space and Time. In *Social Relations and Spatial Structures*, ed. D. Gregory and J. Urry, pp. 20–48. New York: St. Martin's Press.
- Vygotsky, L. S. 1965. *Thought and Language*. Boston: MIT Press.
- Warf, B. 1989. Telecommunications and the Globalization of Financial Services. *Professional Geographer* 41:257–271.
- Webber, M. 1964. The Urban Place and the Non-place Urban Realm. In *Explorations into Urban Structure*, by M. Webber, J. Dyckman, D. Foley, A. Guttenberg, W. Wheaton, and C. Wurster, pp. 79–153. Philadelphia: University of Pennsylvania Press.
- . 1968. The Post-City Age. *Daedalus* 97:1091–1110.
- Wellman, B. 1988. The Community Question Re-evaluated. In *Power, Community and the City*, ed. M. Smith, pp. 81–107. Comparative Urban and Community Research, Vol. 1. New Brunswick, New Jersey: Transaction Books.
- Wellman, B., and Berkowitz, S. D., eds. 1988. *Social Structures*. Cambridge: Cambridge University Press.
- Whorf, B. L. 1956. *Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf*, edited and with an introduction by John Carroll. Cambridge, Massachusetts: MIT Press; New York: John Wiley and Sons, Inc.
- Wright, J. K. 1947. Terrae Incognitae: The Place of the Imagination in Geography. *Annals of the Association of American Geographers* 37:1–15.
- Zelinsky, W. 1975. Personality and Self-Discovery: The Future Social Geography of the United States. In *Human Geography in a Shrinking World*, ed. R. Abler, D. Janelle, A. Philbrick, and J. Sommer, pp. 108–121. North Scituate, Massachusetts: Duxbury Press.
- Zukav, G. 1980. *The Dancing Wu Li Masters: An Overview of the New Physics*. New York: Bantam/Doubleday.

Adams, Paul Channing. 1995. A Reconsideration of Personal Boundaries in Space-Time. *Annals of the Association of American Geographers* 85(2):267-285. *Abstract*.

An appropriate image of the person for geographers is an entity with fluctuating boundaries that reach through space and time in constantly changing patterns. Such extensions through space and time are not merely "internal" or psychological states of being in the world; they are integral to economic, political, and cultural processes. Human extensibility is fundamental to the ongoing processes of social structuration in which social practices are constitutive of social structures and social structures constrain persons and practices. Whereas the body is a point-entity located at a particular space-time, important aspects of personhood are not confined to this point entity. Authority depends on ranges of sensation, knowledge, and action through diverse communication systems. While extensibility is partly determined by the body, as categorized by society, the distinction between presence and absence can be considered as a gradation rather than a binary opposition. Extensibility transcends the body, allowing a person to overcome social and physical limitations and to participate in distant social contexts which affect his or her personal situation and shape social processes. **Key Words:** communication, extensibility, place, space, structuration, technology, time-geography.

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