The Conceptualization of Time and Space in Geographical Social Theory

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Temporal and spatial practices are expressed in experience, perception and imagination. Each of these forms is revealed in several ways. Of particular importance is the interrelationship between space consumption and space production, and between both concepts on the one hand, and space conception, spatiality and sociality on the other. Space concepts of human-geographic social theory may provide for reinterpretations of concepts and findings developed in traditional geography.

The 1980s may well be recorded in the annals of geographical thought as the decade of social theory. Following Marxism and behaviorism in the 1970s, social theory has introduced a fresh breeze into a discipline which has been typified by rapid epistemological change in the post World War II era. Like previous prominent modes of thought, the evolving accent on social theory in parts of human geography has been anchored in another social science discipline, this time in sociology.

The new theoretical perspective in human geography has involved, among other things, some ontological change in the conception of two primitive notions, namely those of time and space (see e.g., Harvey, 1989; Kellerman, 1989). The following sections attempt to contribute to discussions on time and space in social theory in two ways. First, several meanings and treatments of time and space will be elaborated on. Specifically, two points will be made. First, it will be shown that classifications used for spatial practices may be applied to temporal ones as well. Second, the neglect in social theory of space consumption (or space as a resource) and sociality (or space as a reflection of society) will be highlighted, and the terms will be incorporated into a spatial-theoretical framework. In the second part of the paper, attention will be drawn to the gap between abstract space and spatial relations in social theory, on the one hand, and the more con-

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crete and specific notions of space and spatial structure, which have been developed in geography so far, on the other.

SOCIAL THEORY AND GEOGRAPHY

Contemporary social theory has been largely typified by adopting a less 'rigid' approach to the explanation of daily life and social change. Time and space have, thus, been viewed as constituting both contexts and compositions in the social process. Also, space has been seen as an integral part of society, rather than being an entity for itself (see, for example, Soja, 1989).

Human geography was therefore redefined by several writers, one of whom suggested that its central object would be "to understand the simultaneity of time and space in structuring social process. Human geography is the study of the contemporaneity of social process in time and space" (Dear, 1988:270) (see similar definitions by Gregory, 1978:88–9; Harvey, 1984:1). Integrated studies of society, time and space have been performed from social, spatial or sociospatial perspectives (Kellerman, 1987).

TIME AND GEOGRAPHICAL SOCIAL THEORY

Various temporal aspects of social life are summarized in Table 1. This table was constructed as similarly as possible to the classification for spatial practices proposed by Harvey (1989), and presented here as Table 2. Hence, three forms are proposed for temporal practice, namely experience, perception and imagination, and four expressions are related to each of the three temporal practices (timing and time-spacing, consumption of time, domination and control of time, and production of time). The classification of spatial practices was originally proposed by Lefebvre (1974), who noted the loss of a sense of temporality in modern society. "Time is disappearing in the social space of modernity" (p. 114), and "time is killed by society" (p. 115). However, time has been assessed by others as a crucial dimension in social structure and action (e.g., Giddens, 1984; Harvey, 1989). It is thus of interest to apply Lefebvre's classification and Harvey's matrix to temporal practices.

Timing and time-spacing are the two most 'active' meanings of time, in terms of their potential applicability to individuals and societies, as well as in terms of their contribution to separations between people, events, or human activities. As such, these two expressions of time seem to be equivalent to accessibility and distanciation for space. Material temporal practices (experiences) pertaining to timing and time-spacing amount to limits posed by allocative temporal resources such as days and nights, life and death. At the level of perception these allocative

Table 1: A 'grid' of temporal practices.

	Timing & time-spacing	*Consumption of time*	*Domination & control of time*	*Production of time*
Material temporal practices (experience)	Biological time; day and night; seasons of the year; birth and death; aging; continuous and discrete production and reproduction	Time as a resource; time as a dimension; active time; work time; leisure time; social time	Monochronic and polychronic times, colonization of time; intensification of time; laws pertaining to time (night work, blue laws, etc.); prison terms	Individual and societal organization of days, nights, weeks, weekends, months, years; life duration; national time; distanciation in time
Representation of time (perception)	Clocks and calendars; schedules; plans; other social, psychological and physical measures of time; theories in social history; futuristic studies; forecasting; absolute and relative times.	Cyclical and linear times; sanctification of time; personal time; passive time	Historical periods; generations; 'cultural change'; 'social change'; time assignments for individuals and teams; deadlines	New schedules and plans; new modes of time organization
Times of representation (imagination)	Spatial and linear inner times; spatialization of time; fast/slow; long time/short time	Memories; memoirs; pleasant or unpleasant events in the past or future; national or religious commemorations	Loss of memory; times of fear; times of joy; longing for and yearning; forgetness and 'forgetness'	Messianism; dreams; hopes, expectations; science fiction, Doomsday; artistic time

Source: The framework inspired by Harvey (1989).

resources of time are manipulated through clocks, calendars, schedules, etc. In the imagination, the allocative resources of timing and time-spacing are sensed in various forms and paces (spatial and linear times; fast/slow times).

Time consumption represents the appropriation and use of time. The two remaining expressions, domination and control of time and the production of time are again directly analogous to the ones proposed by Harvey for space. Time domination and control amount to viewing time as an authoritative resource. At the experiential level, time use is controlled by institutions, norms and laws, such as the intrusion of human activities into nights and weekends (time colonization), pressures to intensify time use, etc. At the perception level time chunks are designated in human time (e.g., deadlines), or in historical time (e.g., through the determination of historical periods). In the imagination, loss or lack of time control are more dominant than in material and perceived temporal experiences. Authorization does not directly control our imagined times, though temporal 'do's' and 'don'ts' may appear in imagined times too.

The comprehensive coverage of time and space aspects in the two tables implies that several scales have been related to within one framework, such as human time (micro scale) and historical time (macro scale) in Table 1. Harvey (1989:223) noted on spatial practices, that they "derive their efficacy in social life only through the structure of social relations within which they come into play", and this might be true for temporal practices as well. The two tables amount, therefore, to a detailing of temporality and spatiality respectively, if the two concepts are defined as the conception and use of time and space respectively (Kellerman, 1989).

The several cells in both tables are interdependent (on some spatial interdependencies see Harvey, 1989). The most important interdependence for time is the one between time consumption and time production. Since this is similar to the respective interdependence for space, the spatial case will be developed in the next section. Interesting here are, for example, interdependencies along the material temporal experience of time (moving from right to left): societal and individual organizations of time in capitalist societies reflect modes of domination, such as time intensification and colonization through the need to produce (and consume) more in less time. These modes, on their part, reflect and depend on the classification of time into work time and leisure time. This classification, in turn, implies natural constraints imposed by biological time, by daily and periodical (e.g., weekly) rhythms, as well as by modes of production and reproduction. Interdependencies among temporal notions extend not only across the temporal expressions, but also along the three forms of practice. Thus, biological, daily and production times may lead to schedules and plans, which on their part yield inner perceptions and imaginations of time, such as inner linear time and spatialization of time. A detailed exposition of temporal terminology has been outlined by Parkes and Thrift (1980) and Kellerman (1989).

The study of time within human geographic social theory has frequently become less abstract and more specific (see, for example, Thrift, 1981; Dodgsohn, 1987; Gregory, 1982; Pred, 1986), though not necessarily couched within the social theoretical concepts presented in Table 1. Time studies in human geography have been traditionally assigned to historical geography, and later on also to time geography. The latter has usually focused on human time, namely on short periods of time, such as daily or weekly units, though several works treated historical time (e.g., Carlstein, 1982). Human time, *vis-à-vis* time geography, has been incorporated, or at least acknowledged, by Giddens (e.g., 1984) in his structuration theory. It seems, however, that it has rather been the *longue durée* that has attracted a renewed attention by geographers, maybe responding to Gregory's (1982:17) claim that "all geography *is* historical geography in the most profound sense."

SPACE AND GEOGRAPHICAL SOCIAL THEORY

Space and spatial units of various types and definitions (e.g., place, landscape, region) have obviously been the principal domain of geographical inquiry under all persuasions. Space and spatial entities are, however, newcomers to social theory, and it was for time to play a more important role in classical formulations. Such writings tended to assume a given spatial order, or restricted spatial barriers (Harvey, 1989). Historical time was shown to lose its importance in the ahistorical temporality typical of advanced capitalism, while human time has undergone a process of spatialization, so that time has been conceived, assessed and measured in spatial ways (Gross, 1981; 1985). The emphasis on time rather than on space, or on 'becoming' rather than 'being', in classical theory (notably by Marx, Weber, Adam Smith and Marshall), was related by Harvey (1989:205) to the theoretical accent on progress, which meant among other things 'the conquest of space', and the 'annihilation of space through time'. It is intriguing to note that the recent increased awareness to space in social theory has occurred at a point in time in which the significance of space as a resource in urban (and even global) life has been diminishing, especially relative to the increasing importance attributed to time as a resource (Kellerman, 1989).

One might relate the increased interest in space in postmodernism to the more general exercise of a critical reexamination of modernist thought, which revealed, among other things, a relatively modest attention to space (with several exceptions such as Simmel, 1971). The 'resurrection of space' might also be related to the increased emphasis in postmodernism on the diversified rather than the uniform. A major pattern and source for social differences is spatial, or is expressed spatially, so that space has become more important as a *product*, rather than as a *resource*. Hence, the roles and importance of space as a resource and as a product do not necessarily have to be identical at a given period. This last point can be extended and amplified through the classification of practices.

Table 2 presents Harvey's (1989:220–221) classification of spatial practices. As such, it includes aspects developed in various branches of social theory, as well as elements or cells which have been the object of study in the more traditional branches of geography. Major examples for the latter are flows, hierarchies, agglomerations, measures of distance, and to a lesser degree mental maps and forbidden spaces. Social theory appears explicitly under 'production of space' for experiencesd practices, as 'territorial organization of social infrastructure (formal and informal)', and is also represented in various other forms (e.g., by spatial 'discourses'). However, the whole spectrum of spatial practices is socially charged, given the notion that spatial practices take different forms under varying social circumstances. It seems that the levels of current geographical conceptualization and knowledge diminish as one moves from flows and hierarchies to utopian plans and to poetics of space. Also, while one may assume that various forms of spatial practices are interdependent, we do not yet know too much on these dependencies; for example on the interrelationships between social infrastructures on the one hand, and flows of goods, on the other.

There are three central social elements which may be associated with material space, the form which constitutes the visual and dominant mode of social activity in space. These are space production, space consumption (the appropriation and use of space), and space conception (perception and imagination of space at all four expressions of spatial practices) (Figure 1). The importance of space as a visual-social dimension was stressed already by Lefebvre (1974). Later on he further noted that "the production of space can be likened to the production of any given particular type of merchandise" (Lefebvre, 1974:341). As such, it is in place to examine space not merely as a product and as a 'social output', but also as a resource or as an input in the social process.

Out of these three major social elements and processes, attention in social theory has been explicitly directed to the production of space, and to a lesser degree also to the conception of space. The consumption of space *per se* was mentioned only in passing by Gregory (1989), labeling Hagerstrand's time-geography as treating this dimension. The consumption of space does not merely relate to physical-natural 'raw' space or to distances and pieces of land. It rather refers to the consumption of socially and economically organized space which was socially produced before and even at times of its consumption. The consumption of space, like its production, is therefore dependent on modes of space domination and control, as well as on accessibility and distanciation. Thus, the use of the urban built environment or the functioning of urban social networks depend on controls of space, such as land ownerships, zoning laws and movement and entrance privileges. They furthermore reflect accessibility in the form of flows of people, commodities and information. The production of space differs form its consumption in this last regard, in that the production of space may involve also *changes* in accessibility and distanciation.

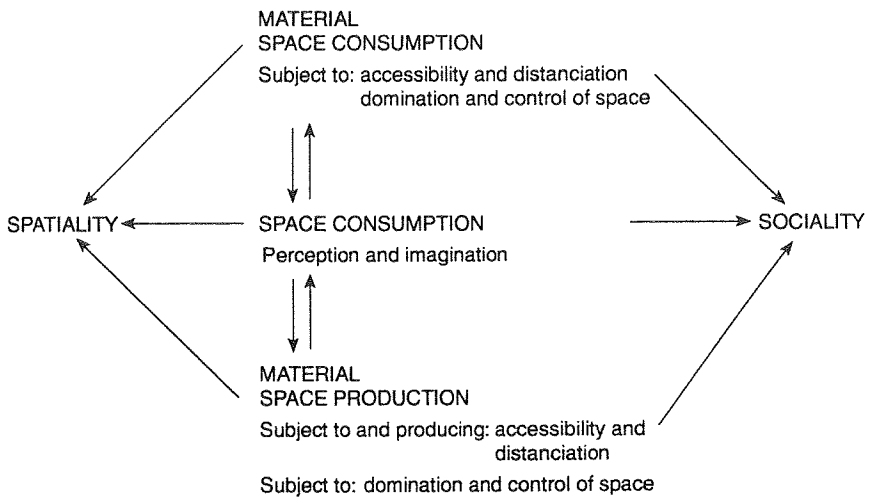
Table 2: A 'grid' of spatial practices.

	Accessibility & distanciation	*Appropriation and use of space*	*Domination and control of space*	*Production of space*
Material spatial practices (experience)	Flows of goods, money, people, labor, power, information, etc.; transport and communications systems; market and urban hierarchies; agglomeration	Land uses and built environments; social spaces and other 'turf' designations; social networks of communication and mutual aid	Private property in land; state and administrative divisions of space; exclusive communities and neighborhoods; exclusionary zoning and other forms of social control (policing and surveillance)	Production of physical infrastructures (transport and communication; built environments; land clearance, etc.); territorial, organization of social infrastructures (formal and informal)
Representations of space (perception)	Social, psychological and physical measures of distance; mapmaking; theories of the 'friction of distance' (principle of least effort, social physics, range of a good, central place and other forms of location theory)	Personal space; mental maps of occupied space; spatial hierarchies; symbolic representation of spaces; spatial 'discourses'	Forbidden spaces; 'territorial imperatives'; community; regional culture; nationalism; geopolitics; hierarchies	New systems of mapping, visual representation, communication, etc.; new artistic and architectural 'discourses'; semiotics
Spaces of representation (imagination)	Attraction/repulsion; distance/desire; access/denial; transcendence 'medium is the message'	Familiarity; hearth and home; open places; places of popular spectacle (streets, squares, markets); iconography and graffiti; advertising	Unfamiliarity; spaces of fear; property and possession; monumentality and constructed spaces of ritual; symbolic barriers and symbolic capital; construction of 'tradition'; spaces of repression	Utopian plans; imaginary landscapes; science fiction ontologies and space; artists' sketches; mythologies of space and place; poetics of space; spaces of desire

Source: Harvey (1989:220–221).

Space consumption and production are mediated by conceptions of space. They participate in the process of turning specific modes and patterns of space consumption into a newly produced space and *vice versa*. The daily uses of urban space for commuting, residence, work, etc. contribute to conceptions of specific urban locations as favorite, usable or forbidden ones. Such mental maps serve as inputs in the territorial organization of informal social networks. Existing social networks, on their part, may serve as 'triggers' for space consumption, since they may dominate the emergence of mental maps of the city, and thus bring about specific modes of space consumption. The three elements of space consumption, conception and production are, therefore, strongly linked, though more for economic space, rather than for symbolic and institutional ones (see Castells, 1977; Basset and Short, 1989).

Figure 1: Society and space.



These three social elements comprise spatiality when defined as the social conception and use of space. Spatiality is a social term despite its spatial connotation, since it refers to *social* thought and deed regarding space. A complementary *spatial* term would thus be sociality, referring to spatial patterns which reflect social structures and human agency. Such are, for example, nationally-specific architectural styles and urban patterns. In a slightly different sense this term was proposed by Hillier and Hanson (1984:26).

Space has long been conceived by geographers as consisting, both abstractly and concretely, of regions, points (e.g., buildings, malls, places), and lines (e.g., roads). These components have been studied through several basic concepts, such as location and distance, in both absolute and relative scales. However, of all these basic differentiations among spatial entities and structures, just one seems to be repeatedly referred to in social theory, namely the more general term 'space'.

This term has usually carried an abstract connotation, and when more concretely related to, its connotation was mostly in the form of a 'region', either within a city or as a national-regional unit. Even 'locales' and 'places' seem to have received a spatial-regional connotation rather than locational or punctiform ones (e.g., Giddens, 1984). 'Place' and 'space' have been explicitly separated from each other, so that the first "refers to the physical settings of social activity as situated geographically", and the latter is fostered by "relations between 'absent' others, locationally distant from any given situation of face-to-face interaction" (Giddens, 1990:18). However, a recent summary of social theory in geography (Soja, 1989), includes in its index numerous mentions of 'space', and in various contexts, but not even a single reference to 'distance' or 'location'.

One may think of several reasons for the almost obsessive treatment of 'space' in geographical social theory, on the one hand, and the ignoring of the other basic geographical entities and dimensions, on the other. The evolving relationship with sociological thought required the treatment of space on a more general and abstract level, rather than the more concrete language used by the positivistic tradition in geography, which leaned more towards economics. While the more abstract and general reference to space has enriched the social content and context of the discipline, it has perhaps tended to deny the experience gained over the years in the more detailed analysis of space in geography. The emergence of post-industrial societies, based on footloose industries, telecommunications and information, may have potentially loosened the need for a more locational concretization of space. However, as it has turned out, the information economy has its own locational contexts, at both the intra-city, regional and even international levels (see, for example, Hepworth, 1990).

IMPLICATIONS

It might well be that in line with the general tendency in postmodernism to reflect back on terms and ideas developed in the past, time has come to use abstract notions of space in order to reexamine more concrete and specific concepts and findings developed in human geography in the past. This would permit both a reinterpretation of existing knowledge and a continuum in the development of geographical inquiry. Such examinations would amount by their very nature to expositions of interrelationships among cells in Harvey's table (Table 2). Of special interest might be examinations focusing on the relationships between space production and space consumption. Several examples may illustrate this point. The first example will demonstrate consumption of space as a dominant process, the second one will emphasize production of space relative to its consumption, and the third will relate to conditions of equally important space consumption and production.

In an intriguing footnote, Soja (1989:148) defined central place theory as describing "an idealized geometry of the spatial matrix under conditions in which

market relations and distance minimizing behavior with regard to the provisioning of social services are assumed to dominate the social production of space." The first part of this definition is a classical one, but the second one relates to the social production of space through the mechanisms offered by central place theory. In other words, the social production of space is dominated by accessibility and by the consumption of space. However, the strict spatial assumptions of central place theory (e.g., homogeneity of population and land distribution) which regulate space consumption and accessibility, reflect social controls of space as well as prior social production of the isotropic space.

The second example relates to the geography of capital, on which Harvey (1989:295–96) noted: "The less important the spatial barriers, the greater the sensitivity of capital to the variations of place within space, and the greater the incentive for places to be differentiated in ways attractive to capital. The result has been the production of fragmentation, insecurity, the ephemeral uneven development within a highly unified global space economy of capital flows." Here the reduced importance of space as a barrier leads to an accent on space production and regional differentiation. However, any such regional fragmentation would eventually lead to differentiated patterns of space consumption. If not dominated by accessibility and by the role of space as a resource, then powers of space control and domination may play a more central role in both the production and consumption of space, by a society in which capital becomes ever more crucial. Actual and perceived contemporary lower spatial barriers for capital movements may give place to new regional uniqueness, concentration, economic location and more, could receive completely new and socially-charged meanings.

The third example relates to historical geography. Notions concerning the constant dialogue between society and space could shed some new light on the study of periods of nation-building such as the American frontier, when new regions were settled simultaneously with the emergence of national-social values. This is an example of historical periods during which both space consumption and space production took place dominantly: space consumption in the form of a heavy emphasis on space as an agricultural resource, and space production in the form of construction of built environments and social institutions.

CONCLUSION

A social theory may consist of four phases of emergence and formulation. In the first phase emphasis may be given to the development of a new terminology, based, on its part, on new ideas or on innovative modes of thought. At a second stage these terms may be used for the drawing of processes, whether new or reinterpreted old ones. At a later stage a theory may be operationalized by proposing research methods and tools. In the final stage a theory may be applied to new as well as to old case-studies. These applications yield, in turn, reexaminations and refinements of the theory.

Looking upon geographical social theory from this perspective one may notice that this theory is probably now at the end of phase two, with early explorations of phase three. The terminology is rich and wide-ranging and various processes have been described and analyzed. However, the application of social theory concepts to more concrete geographical analyses of locations and distances has been limited as of yet. Thus, the development of the social theory of space has so far reflected only little on the richness and complexities of the human organization of space. Making space speak (Hall, 1966) might still constitute a real challenge.

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