The Sociology of Space

Materiality,
Social Structures,
and Action

Martina Löw

Cultural Sociology

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Translated from the German by Donald Goodwin

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Series Editors' Preface

In her strikingly original intervention *The Sociology of Space*, Martina Löw rejects objectivist understandings of space as material and external, the "absolute idea of space" as a "container." It may have "become normal to conceive space as a configuration of things," but Löw forcefully objects to "the problematic idea that spaces seem to come to an end within the realm of the material." Instead, she proposes to understand space as a meaningful horizon, as an "atmosphere" constituted by the subjective experience of material things. Even as an atmosphere seems outside us, it is not part of a "visible world of things" but, rather, an "external effect" of the spatial arrangement of social goods and people "as realized in perception." Spacing arranges social goods and people, creating the distribution of materiality in a potential scene. Perception drives a complementary but distinctive process Löw calls synthesis, the interpretive act of imagining that, by linking together people and goods, creates a space: it is the "symbolic components of an action situation that make it possible for institutional arrangements to condense into patterns of space."

With these signal arguments, Löw brings the sociology of space into the scene of cultural sociology, particularly into the midst of recent investigations into iconic consciousness and the materiality of meaning. She opens up a new perceptual space for cultural sociology to think with. This catalyzing connection will surely create new theoretical and empirical syntheses in the years ahead.

Preface to the English Edition

In the past few decades, it has become customary in Anglo-American and in Francophone geography to refer to space and spatiality as social products. This has, at least since the turn of the millennium, been evident in sociology and many neighboring disciplines as well. Henri Lefebvre, Manuel Castells, David Harvey, Doreen Massey, Claude Raffestin, and many others have done pioneering work in this area. Many have gained the impression that by virtue of the spatial turn the humanities and social sciences were able to abandon one-sided material or territorial ideas of space at the turn of the millennium. Briefly stated, the spatial turn stands for the insight that all spaces (architectural spaces, urban spaces, regions, nation-states, bedrooms, recreation parks, river landscapes, etc.) are always also results of social production: not only in the sense that there are professions that plan and design these spaces, but also in terms of the challenging insight that spaces only become spaces for people inasmuch as they are—again and again and again—produced socially. In other words: the constitution of space is a performative act. At the moment of placement, we establish relations between elements (and classes of elements) with the result that we join these elements (the table, the door, the church, the lines on the map of a region) to yield a space. In sociological terms that is neither a purely cognitive act nor a pure phenomenon of perception, but is socially pre-structured and takes place by way of institutions, conventions, discourses. How we perform the synthesis between objects, how we span the space between things and people is a highly conventionalized, objectified practice, one that is pre-structured by professions such as planning and architecture.

Even in the 1990s, and despite the work of Lefebvre, the claim that spaces are social could cause provocation at sociology conferences. I myself have experienced numerous debates in which it was argued that, as materialities, spaces were not an object of sociology, but rather of planning or geography. Such argumentation is hardly imaginable today. On the one hand, geography has become more social and more cultural; on the other hand, sociology accepts space as a field of study. Moreover, the disciplines planning and architecture emphasize the fact that they quite naturally work on the basis of relational spaces.

Nonetheless, more than twenty years after the "spatial turn" (Soja 1989), the outcome gives less cause to be euphoric than was at first to be expected. Ulrike Jureit (2012) justly criticizes the fact that a relational concept of space is simply prefaced to many studies, but that this conceptual commitment often has little influence on the course of the study. In the journal *Environment and Planning*, Jeff Malpas (2012) argued that a standpoint based on a relational theory of space has become dominant, but that this has wrongly given rise to the impression that we now know how we should understand space. Unfortunately, he continues, many academics are not much interested in understanding space, but rather use a rhetoric and imagination of space to establish political argumentation. It is easy to find examples as documentation for this argumentation: fortunately, insights into the multiplicitous and heterogeneous nature of space and spatiality compel us to challenge linear logics of cultural development. However, this does not at all mean that at the same time the complex processes of the constitution of spaces in late modern society are being analyzed. Perhaps we are too quick to assume that any form of space appropriation by socially marginalized groups is a success, while failing to take the complex spatial structure assumed by social phenomena as a systematic object of study.

Just as urban sociology rarely actually studies cities, but rather analyzes phenomena in cities (Löw 2013, 2012), space often remains vague in space research. Malpas criticizes, among others, Doreen Massey, Ash Amin, and Nigel Thrift because the idea of moving relational spaces obscures the difference between space and place and because space itself as a concept becomes increasingly unclear. Space becomes a vortex of paths and streams. If boundaries are in focus at all, they are always flexible and in motion. It is then of little help when Bob Jessop, Neil Brenner, and Martin Jones (2008) suggest that every analysis of space must be structured around the categories "territory, place, scale, and networks" because

while they formalize what is already in use for heuristic purposes, they do not provide a theoretical framework for these elements. Hence, it is not very surprising that even Doreen Massey, as well as Rob Shields, Phil Hubbard, and Rob Kitchin now speak of space as a theoretically under-developed concept (Massey 2005; Hubbard and Kitchin 2011, 7; Shields 2013, 1).

Sociology is not a casual bystander of this deficient conceptual clarity and theorizing. Space is still a rarely invoked concept in social theory (Frehse 2013; Löw and Steets 2014). It seems that the predominant impression is that specialists are supposed to attend to spatial phenomena (e.g. sociology of architecture or urban sociology) but that society, or, to put it in terms less charged with presuppositions, the social can be largely understood without a theory of space. That is, it is accepted that spaces are social, but the social seems not to be spatial. Despite the works of Georg Simmel, Norbert Elias, Anthony Giddens, and others, it is rare to find articles in sociological journals reflecting the spatial structuredness of the object of study. But even research on methods shows that many methodological problems cannot be solved without further elaboration of the theory of space (Baur et al. 2014). Let me repeat: of course there are many empirical studies of specific spatial phenomena, many of them excellent. These studies often apply the methods of qualitative social research (especially ethnography, but also biography research and visual procedures); and there are also some publications in quantitative sociology that systematically examine the spatial dimension of objects of study that are central for sociology such as social inequality (Lobao, Hooks, and Tickamyer 2007b). Overall, however, it has to be acknowledged that sociology finds it difficult to analyze the spatial dimension of the social and that after a promising first phase of the "turn" and the desubstantialization of the concept of space, theories of space—from an interdisciplinary perspective—are beginning anew to enable us to understand space more precisely.

Hence, I am very pleased that my proposal for a conceptualization of space as a basic sociological concept, first published in German in 2001, is now available in English. By identifying space as a relational arrangement of living beings and social goods, I develop a theoretical concept with which such diverse formations as networks, scales, and territories can be understood as specific arrangements of objects and people. They can be distinguished according to symbolic dimensions and a material dimension, they require different placements, and they are based on varying operations of synthesis, but they are all spatial formations that can be socially contex-

tualized. Places, for their part, are a presupposition and result of space-related action. From the way in which spaces are spanned and take form, inferences about the organization of the social can be made, whether on the level of individual biographies or on the level of the nation-state's territorial development, global financial markets, or media networking. Only when it is understood that such diverse spatial formations as diaspora, colony, territory, zone, dump, storage, network, cloud, and stratification are variations of relational arrangements can the social order that is supposed to be (and often is) generated by virtue of these arrangements be understood specifically and in reciprocal relatedness. None of these spaces can be conceived apart from power, but at the same time, this concept of space does away with the idea of space as subject to the unimpeded play of forces, whether of capitalism or the modern era; it is only in resistance that appropriation can be successful here and there. There is no social phenomenon free of space. By developing a shared understanding of space, this book raises the question as to how various dimensions of the social are structured by means of which spaces (including overlapping spaces) and how these spaces are reproduced, whether intentionally or routinely, in everyday action.

The Spatial Turn as a Marker of a Social Transformation

With more temporal distance to the "spatial turn," not only can the continuing conceptual fuzziness be more clearly recognized, but also the social changes that motivated the transformation of the conception of space. It has been amply demonstrated that in the modern era the social organization of space has fundamentally changed. In recent years, research on the early modern era has worked intensively on territory as the central form of organization of space and shown that between the sixteenth and eighteenth century essentially three practices of territorial marking have changed (Landwehr 2007; Gugerli and Speich 2002). These are topographic surveying, statistical and cartographic record keeping, and the idea that territoriality can be generated by means of the state, an idea that is closely aligned with Enlightenment thinking (Jureit 2012, 22; Raffestin 1980; Osterhammel 2000; Balibar and Wallerstein 1990). The European model of the space of the territorial state defined by clear-cut boundaries, or more specifically the nation-state variation of this model, prevailed and

was transported to the global South in the course of colonial conquests, especially in the nineteenth century. Cartography developed to become the dominant medium of spatial representation. Accordingly, the historian Charles S. Maier identifies territoriality as the key concept for dividing the last century into periods (Maier 2000). This refers to the obsessive idea that people and things can be controlled by controlling spaces (an idea that guides not only conceptions of the nation-state and urban surveillance, but also, for example, the planning of playgrounds, which are also an invention of the twentieth century).

The construction of state territorial spaces, conceived as exclusive spaces, is paradigmatic. It is here that the tendency of the modern era to order the world as delineated, inwardly homogeneous spatial units becomes clearest. Homogeneous space can become a commodity. Homogeneous space can be subjected to uniform control strategies. Homogeneous space can be subjected to a master plan (cf. Harvey 1982). This construction is first ruptured by, above all, the metropolis. The metropolis assumes the role of the heterogeneous, socially inclusive entity with unclear boundaries, becoming a spatial counterpart of the territorial state (Held 2005). In the course of increasing economic complexity at the end of the nineteenth century and the beginning of the twentieth, the enhancement of global networking in many nation-states goes hand in hand with the constitution of national territory (Conrad 2006). Accordingly, Sebastian Conrad speaks of "regimes of territoriality," that is, of "changing relationships between nation and state, population and infrastructure, territory and global order" (p. 324).

Although container space as a description of modern society became prevalent in the nineteenth and twentieth centuries in everyday life as well as in many sciences, especially the human and social sciences—a point that in this book I shall document in detail for sociology—counter-movements can always be identified. In the twentieth century, opposition arose to the idea that space could be adequately described as container, surface, or territory, unsettling knowledge of space in waves coming at different times for each discipline. In mathematics, the demonstration of non-Euclidean geometries in the middle of the nineteenth century initiated a process that rendered space relational; striking evidence was found for it in the theory of relativity at the beginning of the twentieth century. In Cubism and Expressionism, in Theater of the Absurd and Dada Literature, relational figures of space are articulated. Together with art, architecture underwent its first spatial turn. It is not necessarily safe to imagine that

architects assume that they build or design spaces. Though architecture was already termed the "art of space" (Raumkunst) in Schelling's lectures on the philosophy of art in the middle of the nineteenth century (Schelling 1859), it was only at the end of the nineteenth century that August Schmarsow (1894) prevailed with the position that architecture is a designing of space. "What," he asks, "is there in this university hall in which we are assembled just as well as in the retreat of the scholar pursuing his thought in solitude? What does the seat of the Supreme Court of the German Reich over there have in common with the concert hall or the library next to it, with the Pantheon in Rome and with Cologne Cathedral, with the Eskimo's igloo and the nomad's tent? … they are one and all spatial structures" (Schmarsow 2011, 41f.). The provocation rests in the fact that the idea of an architect creating space no longer admits of a distinction between base and superior building forms. By contrast, one decade previously Gottfried Semper had objected to comparing the Carib hut with architecture as art (Semper 1884, 294). But the provocation continues. Schmarsow has hardly defined "the essence of architectural creation" as constitution of space when he curtails the effect of creation with a Kantian gesture, emphasizing that space only emerges where the subject sets it up around itself and imagines it of necessity (Schmarsow 2011, 43). Sigfried Giedion develops this point in 1941 in his book *Space, Time and Architecture*—now regarded as his major work—in which he challenges the idea that architectural space can in some way be devised as a container for social actions. He argues instead for the inclusion of perception in the analysis of the constitution of space. Spaces can only be described relative to one's own standpoint. The variety of spatial phenomena cannot simply be derived from the building form; rather, it forces us to recognize that the emergence of space is not only bound to the materiality of the objects built, but also to the movement of bodies.

The new knowledge of space in art and architecture, mathematics, and physics took effect, but it was not sufficient to change everyday consciousness or even to stimulate other sciences to undertake systematic reflection on space. For Charles Maier (2000) the period of territorialization therefore only ended about 1970 with the triumph of globalization. The enhanced transnationalization of capitalist markets, acceleration of cash flow, and the concomitant global trade of cultural goods and objects result practically and theoretically in a refiguration of space. These dynamics are linked with the emergence of the "information age" (Castells 1996, 1997, 1998) in which communication structures fundamentally change, result-

ing in an enormous increase in the complexity of social relationships. The years from 1965 to 1975 marked the height of the Vietnam War, which became the symbolic center of the period of transformation that is also identified with the year 1968, during which in many societies totalitarian action patterns and linear historical narratives lost legitimacy. In social movements, new spatial figurations become established as if they were self-evident when, for example, front yards are declared to be nuclear-free zones in the course of the peace movement, thus linking global threats with local action in a way unheard of until then (Schregel 2011). At the same time, the women's movement as well as the gay and lesbian movements fundamentally challenge notions of unity and order such as the concept of identity; this has an effect on the model of container space and its claim that its elements are internally homogeneous and that difference is external (Mol and Law 1994). The 1970s also represent a crisis of modern urban development, posing the question as to how much multiplicity and specificity urban space needs in order to be experienced as attractive.

When we today—in all disciplines—turn our attention anew to the theory of space, the events around 1970 prove to be a more decisive turning point than we realized at the time of the "spatial turn" in the nineties and the first decade of the new millennium. We suspected that we would have to change our understanding of space in order to continue to understand the world, to retain our relatedness to space, to construct spaces that are experienced as desirable. Inasmuch as we have begun to think more in terms of relationality, to develop relational concepts of space, and have ceased to regard space as something at rest, "a kind of stasis," while time marches on (Massey 1994, 253; cf. Massey 1993, 118), we have gained a new perspective on the social and material world. What is now becoming clear is that the insight into the necessity of a relational understanding of space is only the beginning of theorizing, not the result. We now know that in the past decades both the spatial organization of the social and the social organization of spaces has again changed fundamentally; but we also recognize that we have only very vague descriptions of what new forms these refigurations have assumed (network society: Castells 1996; fluid spaces: Mol and Law 1994; stratification, placement, and interlacing: Deleuze and Guattari 1997; Foucault 1986a). This lack of understanding of new spatial orders can only be remedied by systematic empirical research. The presupposition is a more precise definition and articulation of the concept of space in sociology as proposed in this book.

Space as a Form of Relationship

In the following discussion, it is my proposal that space be understood initially as a relational arrangement of social goods and living beings at places. For me, talk of a duality of space expresses the view that spaces do not simply exist, but rather are created in action and as spatial structures are embodied in institutions that pre-structure action. Container space or territory is one possible, though comparatively rare form of spatial constitution. Proceeding from this relational definition, the question arises for theorizing as to what consequences are to be drawn from this definition. Doreen Massey ends her book *For Space* with the words: "If time presents us with the opportunities of change and (as some would see it) the terror of death, then space presents us with the social in the widest sense: the challenge of our constitutive interrelatedness" (Massey 2005, 195).

Space makes us realize that things can hardly be experienced in isolation, but only exist in arrangements, that is, that they can be synthesized to spaces, calling upon us to make connections between them. An empty bowl on a table may look dismal, but if a bouquet of roses is placed next to it, the same bowl suddenly shines splendidly, almost full of promise. In the Shanghai Museum, a Chinese jar from the Sung dynasty looks more magnificent than a comparable vase in the Museum for Applied Art in Frankfurt am Main, not because it is in China where it belongs, but rather because in Shanghai the vase is positioned so that its spatial arrangement in the cabinet displays it to better effect. That is, things are dependent on the spatial arrangement in which we place them; and the other way round, in their spatial arrangement they have a specific effect on us.

In sociology, the constitutive force of being in a relationship is a part of our culture of theoretical reflection, but is usually limited to human existence as a question of identity and as a possibility of solidarity. For Émile Durkheim, in modern, increasingly individualized and structurally differentiated society solidarity emerges from the awareness of being mutually dependent on each other. In a society based on the division of labor, solidarity is based on the necessary insight into fundamental interdependence (see, among others, Durkheim 1893). Norbert Elias (2012) articulated this in the concept of figuration: dependency on the specific historical situation and on one's own position vis-à-vis other people. With Judith Butler (2012) we think of the experience of alterity as constitutive of identity. With Jacques Lacan (1949) we realize that at the beginning of any life there is not the experience of being alone, but rather the bond

with the mother. Before we can conceive "one," we realize that there are two, perhaps even three or four.

Although these figurations can indeed be constitutive of space (it is not by chance that Sloterdijk chose the term "bubble" for the mother–child figuration in 2011), the theory of space forces us to focus on the role of things in interrelationships just as well as other people, such as Lacan's famous mirror. According to Lacan, it is only by looking in the mirror (or in the glint of a smooth water surface) that we understand the limits of our own selves. In the mirror we recognize ourselves, but the point is that we recognize ourselves mirror inverted, distorted, and at another place. To put it in other terms: just as the bowl looks more splendid next to the roses, figurations do not only emerge between people, but also between people and things. Up to now, we have tended to call arrangements of human beings figurations, and arrangements of things spaces. The examples show how artificial this division is: not only the empty bowl, everybody and everything looks more splendid next to a bouquet of roses! And nobody looks into the mirror without becoming a part of a complex spatial figuration. That is, what we are and who we are and how we appear to others depends on the space in which we are integrated and which we at the same time form with our placement. The question that every analysis of space poses to us is how parts of space make it possible for other parts of space to take effect in relation to each other. This applies to networks, territories, classes, and so on and for their association with each other.

The crux of the matter is this: today we have to assume that spatial overlapping and intermixing will increase even more. Whereas toward the end of the nineteenth century Durkheim was still able to derive solidarity from mutual dependency in French society constituted as a nation-state, today we must presuppose intensified, spatially structured dependencies accompanied simultaneously by global interrelationships and transformations of the world of media. Against the intuition that means of rapid transportation and new media make space become insignificant, we can—as, for example, AbdouMaliq Simone (2011, 363) put it—discern a "spacing out," a process of generation, development, and extension of spaces in which mapping is always behind, always attempting to grasp the current constellation.

It is complicated: the bouquet of roses and the bowl form a space, at the same time almost every object is integrated in worldwide generation of spaces. It is not a rare thing for a rose to be bred in Europe, cultivated in Ecuador, and sold in Chicago. The bowl was imported from Copenhagen

through eBay. That is, the dining room may define boundaries, but the space that emerges by virtue of the flowers and the bowl is not a territorial space. It is local and global at the same time. And the fine flowers of French faience color the atmosphere of the space differently than do the patterns of Uzbek potters, which are deliberately designed to look rural and authentic.

Global–local formations of space are encountered not only in simple examples of the arrangement of goods in a domestic setting. In the political realm, new spatial units are being constituted, for example in the framework of processes of integration in the European Union; in the economic field networked spaces are emerging in the context of new processes of production and distribution, in the scientific field refiguration is encountered in the internationalization of the transfer of knowledge. To put it in more general terms: non-territorial forms of space such as place making, networking, and rescaling (Taylor 1994; Brenner 2004) are becoming more widely documented in the social field. The social does not exist in a single type of space; rather, relational thought of space is the presupposition for focusing on the fundamental dependency surrounding the individual thing or person. Spatial figurations can substantially illuminate what it means to be a social being. These figurations have dimensions that are material and symbolic.

PLACES AND BOUNDARIES

In the case of a publication dating back more than ten years, the question always arises as to how the debate has continued. For the English publication, I have made only modest alterations. In a few instances, new statistics have been adopted; in other passages Anglo-American references have been added in order to enhance the contextualization for an Anglo-American readership. A few references to very recent publications have been added. In a few passages I have deleted references that seemed to me only to make sense in the context of the debate in Germany. Overall, however, it will be and should be noticeable that the book was written in a specific cultural context; in my view, this determines not so much the contents as the authors with whom we debate, and makes certain systems of reference (e.g. Europe) more prevalent than others.

Of the numerous debates and adaptations in German-speaking sociology that have emerged around this publication, I would here like to mention only a few aspects that seem to me to be particularly important

for further theoretical development: the relation between space and place, the concept of boundary, which is hardly considered in this book, the question as to whether spaces can have effects of their own, and the aspect of time.

In the present book I define places as the goal and result of placements. They are indissolubly intermeshed with spaces inasmuch as they are generated by spaces (sense of place develops with placement) and inasmuch as in terms of location they are a presupposition for the constitution of space. In contrast to spaces, places are always markable, nameable, and unique. This differentiation has effects on the way in which cities are conceived. A debate has been going on for some years on the possibilities of understanding intrinsic logics of cities in which structural similarities and differences between cities can be identified and even limited prognoses on development can be made (see Berking and Löw 2008; Frank et al. 2013; Löw 2013; Berking et al. 2014; Baur et al. 2014). This perspective is based on the differentiation of space and place. Karl-Siegbert Rehberg (2006) wrote of our research on the intrinsic logic of cities: "Löw also considers distinctions between a differential logic of spaces and an intrinsic logic of places" (Rehberg 2006, 46). It does indeed seem to me to be reasonable to deploy space and place as two perspectives on the theory of space. If we look from a sociological point of view at a formation as a place, which is often endowed with the unifying force of a name, strategies and structures (whether individual or collective) that are oriented on identity come into focus: traditions, memories, shared experiences, and so on. Space, by contrast, directs attention to the linking of entities that are alien to each other together with their own specific localizations. This means that an extended space can receive different meanings or that at one place different spaces can be spanned; nonetheless, it is characteristic of places (whatever spaces are connected with them) that they endure in time either as individual realms or, with more sociological relevance, as collective realms of meaning. This becomes especially clear in the case of cities when people identify themselves with reference to the place from which they come. Greg Myers (2006), for example, examined the minutes of forty focus groups convened in England between 1994 and 2003 as to how people introduced themselves at the beginning. As a rule, the moderator suggests that they do a round in which everybody says their name. The participants generally respond with two items of information at the same time: "I'm Nick from Kirkham," or "Mike Hannah, and I'm from Preston." Mentioning the town as the place from which one comes is regarded as a basic item

of information in addition to one's name when introducing oneself and initiating communication. People thus invoke knowledge of the intrinsic logic of the place and position themselves in a spatial structure that sets towns in relation to each other.

This distinction between the constitution of space and the constitution of place also makes it possible to rethink boundaries. On the basis of the sociology of space proposed here, Gunter Weidenhaus (2015) has developed the thought-provoking argumentation that boundaries are a special case of space constitution inasmuch as they cannot be understood solely in terms of the arrangement of social goods to yield spaces because they always involve the constitution of two spaces and several places, even when the second space is conceived merely as "outside" or "surroundings." Even when the boundary is drawn in order to create an interior, the second space is by virtue of the drawing of the boundary constitutive for the first (on this point see also Schroer 2006, e.g. p. 165). Accordingly, the boundary is never only at one place and it is never one space, but always already two. It is itself processual and constitutive of space. What we now see is a debordering, an increasing permeability of territorial boundaries and a reduction of the capacity for sealing off (Albert and Brock 2000, 20). At the same time, we can also see a rebordering, the establishment of new boundaries and enhancement of border controls, which also involves attempts at reterritorialization of space (ibid. 39–40). In this context, the boundary can territorialize a space, at the same time opening the other space or spaces. Rebordering can be understood as "social phenomena within the framework of an overall debordering of the world of states … as a specific reaction to the debordering processes that are actually taking their course within the framework of globalization" (ibid. 42f.).

Spaces, places, and boundaries are enduring precisely because they are socially constructed. "Actions constitute spaces and places, but spaces and places are themselves also 'objectified mind' (to use Max Weber's apt wording about bureaucracy)" (Rehberg 2006, 47). As objectified mind, they are not simply a mirror of society, but they can also have effects. With reference to examples such as high-rise housing, the point is often made that it is not the space of the high-rise building that provokes deviant behavior, but rather social factors such as unemployment, stigmatization, and the like; in cultural comparison between European cities with their different appreciation of high-rise housing, this has been shown to be plausible. It is true that social action cannot be planned in spatial terms. Nonetheless, it is not only Pierre Bourdieu who has shown with his stud-

ies of the Kabyle people (1977) that spatial structures shape communities in the long run and suggest manners of acting in a canonized manner as a matter of course, but also Andreas Dafinger (2001) for African villages, Tovi Fenster (1999) for the Bedouin in Israel, and Hillier and Hanson (1989) for cities such as London. Let us take for example Tovi Fenster's analysis of the Bedouin tent. In everyday life, the tent is the family's shared space. When a stranger comes to visit, curtains are used flexibly to create a visitors' area that is out of bounds for the women of the family until the guest leaves the tent. Such a practice could only be developed in mobile living constructions and is today embodied in routines to such an extent that the organization of gender relations is no longer even conceivable without this supporting spatial structure. The Israeli practice of supporting house building for the nomadic population results in almost insurmountable difficulties in reconciling respect for the guest with acceptable spaces for women. Accordingly, the feelings for a house often remain ambivalent. For most Bedouin, it long seems to be quite impractical. In the long run, social practice changes due to the spatial structures of the house. To put it in other terms: the social always has a spatial mold that is never the only possible one, and which accordingly calls for explanation or at least description. Spaces or buildings are like artifacts—as Silke Steets (2015) puts it—important aspects "of the structures of subjective and intersubjective orientation in the world in several respects: As physical elements in the world within immediate reach which are susceptible to direct sense perception, they are allies of body techniques and influence our bodily sensing. As materialized witnesses of past cultures, they are—in analogy to language—objective bearers of subjective meaning contents. They thus convey to us in signs something about the history, order, and structure of the world within our potential reach" (Steets 2015, 105). As an institutionalized arrangement (e.g. in the form of the floor plan of a dwelling), space has consequences because the conscious or unconscious recognition of spatial pattern has a structuring effect. Spaces take their full effect when actors have the impression that they are not influenced in their conventions by spatial structures. Accordingly, the synthesizing of social goods to yield spaces, the drawing of boundaries, and the constitution of places take place effectively when they can rely on existing knowledge that is already established in conventions and routines. Let me come to my last point: this conventionalization also takes place in the systematic interlocking of space and time.

In the following discussion, little attention shall be devoted to time. It is regarded as a fundamental principle that space and time must be separated for analytical purposes, but as widely accepted as this is, it is by no means authenticated in sociology. It often seems that reference to Hermann Minkowski (or Albert Einstein) is enough to point out that space and time must be thought together—but this does not mean that there are many who are able to focus equally on space and time. Gunter Weidenhaus has recently published a book adducing "empirical evidence for a connection between space and time" (2015, 12). Weidenhaus speaks of "social space–time" when the constitution of space and that of time logically belong together. The simple fact that an event takes place sometime and somewhere without a systematic interrelation is no reason to assume a coherence of space and time. Consequently, a connection between space and time cannot be theoretically derived, but requires empirical research.

Weidenhaus convincingly reconstructs three types of life story: the linear type, the cyclical type, and the episodic type. He demonstrates that within the framework of biographies, people construct a historical life structure by placing past, present, and future in a specific relation to each other. This establishment of relatedness adheres to one of these three patterns. As in the case of time, he can distinguish for space three different types of constitution of life space: the network type, the concentric type, and the island type. According to the author, how a person lives their spatial being in the world is different according to how they relate life spaces to each other, where and whether they locate a home in it, whether they establish the notion of a center, and what role boundaries, control, and identity coupling assume in it.

The point is: if the constitution of life space is studied in the time sample and the constitution of life story in the space sample, Weidenhaus demonstrates that linear biographization is associated with a concentric constitution of life space, episodic with network, while cyclical people constitute their spaces as islands. That is, the way in which past, present, and future are set in relation to each other corresponds to how life spaces are structured. In other words: biographical decisions can be better understood when space and time are taken into consideration equally in the analysis.

If the suspicion can be confirmed in the long term that social space–time can be demonstrated not only on the biographic level, but also takes effect on the social level (e.g. if in Norbert Elias's terms a parallelism of socio- and psychogenesis can be conjectured), completely new perspectives will result. For example, we will have to ask whether differing constitutions of

space in political conflicts or economic practices are also associated with differing conceptions of history which can be taken into consideration to open new options for action. Overall, one of the great scientific challenges in the future seems to me to be this: understanding the typology of relational arrangements—together with their interlocking with constructions of time—systematically as spatial orders of the social. Or to speak with Marc Augé: space is (also) no longer what it used to be (Augé 1994, 34).

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Why Should Sociology Concern Itself with Space?

Every conventional space is brought about by the typical social conditions which are expressed in it without the disruptive intervention of consciousness. Everything that is denied by consciousness, everything that otherwise is diligently overlooked, is involved in its constitution. The images of space are the dreams of society. Wherever the hieroglyph of any image whatever of space is deciphered, the ground of social reality becomes manifest. (Siegfried Kracauer: "Über Arbeitsnachweise" [On employment certificates], 1929)

As if it is the most natural thing in the world, most sociologists assume that there is no human existence outside of space and time. There is not much to be said against this as long as space and time are understood as something that must be constituted instead of viewing them in essentialist terms. But it is astounding that with the same certitude with which time is interpreted as a social construction by means of which people organize the difference between past and future, space is conceived as a material substrate, territory, or place. Such noteworthy sociologists as Peter L. Berger and Thomas Luckmann (1966), Talcott Parsons (1977), and Anthony Giddens (1984) proceed in this way. The result of this understanding of space as a primarily material object is that in many sociological projects space is regarded as not worthy of any particular attention, at best as an "environmental condition" to be excluded from study. When Elisabeth Konau published her book *Raum und soziales Handeln* [Space and social action] in 1977, she spoke of "a neglected dimension of sociological theorizing." Fourteen years later, in 1991, Dieter Läpple still comes to the

conclusion in his much quoted "Essay über den Raum" [Essay on space] that the dominant social sciences are characterized by an obvious "space blindness" (Läpple 1991, 163).

This is slowly changing. Though it is still the case that the category of time is much more systematically discussed as a resource for the construction of social reality than is space—biography research is being established as a genuine science of time[1]—in recent years, numerous sociological papers on the topic of space have been published (e.g. Urry 1985, 2010; Gieryn 2000; Lobao, Hooks, and Tickamyer 2007a). In her book *Kindheit, Geschlecht und Raum* [*Childhood, gender, and space*], Ursula Nissen (1998) comes to the conclusion "that after a long period of neglect of the category 'space' in social scientific theorizing, in the past ten to fifteen years increased efforts have been made to overcome this situation" (Nissen 1998, 136). But the criticism remains that space as an analytic category is still under-theorized (Massey 2005; Malpas 2012).

This newly developed interest is a sign that our certitudes about space are in a severe crisis. Due to rapid transportation technologies, instant transmission of information all over the world, and finally, the new possibility of moving in virtual spaces, space in the sense of a material substrate seems to have become completely meaningless.[2] Accordingly, in the mass media, there is much talk of the dissolution of space. The German weekly newspaper *Die ZEIT*, for example, regularly publishes articles with the tenor that the human being is the "being that has fallen out of its spatial dimension" (Guggenberger 1994, 43). The author and director Heiner Müller explains to Alexander Kluge in a TV production and in the subsequent publication that the worst thing is "that there is now only time or speed or the passing of time, but no longer space" (Kluge and Müller 1995, 80). The French architect and philosopher Paul Virilio advocates the often quoted proposition that "the populating of time supplant[s] the populating of space" by the human being (Virilio 2012, 159).

In fact, it is not that space is "disappearing," but rather that the organization of proximity is fundamentally different when a letter takes weeks to get from Europe to the USA or an e-mail is conveyed in seconds. And although the development that allows for information to be transferred in progressively shorter time spans is not new, it now seems to be penetrating deeper into our consciousness thanks to newest technological achievements. Other social processes, too, such as the reorganization of urban spaces, the increasingly complex and individuated experiences of socialization—experiences that we could call "insularized"—and changing ideas

of the body all contribute to the development that space is again being perceived as a problem.

In the German context, the temporal distance to the territorially based expansionist policy of the German National Socialists is making a gradual rapprochement to the category of space possible. In the post-War period, all reference to space was initially tabooed so as to repudiate any possible suspicion of argumentation in terms of politics for a "people without space" (Volk ohne Raum). Even in the nineteen-seventies, it was often held to be reactionary to concern oneself with space. Thus, for example, Michel Foucault, who throughout his scholarly work was concerned with space phenomena, depicts a typical dispute in conversation with Jean-Pierre Barou and Michelle Perrot:

> I remember ten years or so ago discussing these problems of the politics of space, and being told that it was reactionary to go on so much about space, and that time and the 'project' were what life and progress are about. (Foucault 1980b, 150)

Moving time is deemed to be the topic of the future. Space is not only encumbered by the idea of rigidity, it is also reminiscent of geopolitical argumentation in the Second World War. In sociology, the negative connotations of the term "space"—far beyond the borders of Germany—result in a renunciation of theoretical analysis of the concept of space. Today, some authors logically demand that a renewed exploration of phenomena of space be coupled with a theoretical discussion of the concept of space (e.g. Läpple 1991; Gieryn 2000).

Because it was tabooed, the concept of space has hardly been elaborated upon in recent decades. Today, it can be observed on the one hand that spatial restructuring can be empirically studied as a social process, but on the other hand that the concept used in analysis leads to the conclusion that space is merely becoming abstract. Now we cannot help but pose the question as to whether the concept used still comprehends the social phenomena and the presumable conditions of its development.

Space is indeed sporadically listed as a basic sociological concept, for example in reference works such as Bernhard Schäfer's *Grundbegriffe der Soziologie* [Basic concepts of sociology] (1995), but for the most part, the category of space is lacking in synoptic works such as *Key Concepts in Sociology* (for a very recent example see Braham 2013). It is here that the present work takes its point of departure. The underlying question of this

book is how space can be specified as a basic concept of sociology in order to formulate a sociology of space on the basis of this conceptualization. The following discussion is intended to clarify the point that sociology cannot do without the concept of space since it is used to describe the organization of proximity. Microsociology needs the concept of space in order to describe those configurations that arise from the connection of various social goods and people with each other and, as such, structure action. Macrosociology, for instance, can use the concept of space to grasp relational links that arise as a result of technological networking or urban restructuring and as such influence living conditions.

To this end, it is not straightforwardly possible to take recourse to an already developed concept of space. Starting points could be the use to date of the concept of space in sociology or in neighboring disciplines. It will become clear that the use of the concept of space for territories or in the sense of a localization at places only grasps aspects of constitution. This also applies to the sporadic use of the concept of space in Kant's sense as an a priori ordering principle.

Up to now, theoretical approaches to reconceptualizing space have rarely sought to systematically derive a set of analytic concepts, but rather have attempted to propose new perspectives on space. Since these works are mostly articles or short essays in books on another topic, the discussion, which cannot help but be brief, will usually remain unclear to the reader who lacks training in the theory of space.

Empirical social research has generated a number of studies on the social organization of spaces, but up to now, a theoretically consistent idea of the links between individual case studies is lacking. Thus, there are numerous empirical studies on, for example, possibilities for the use of built-up space, structural exclusions from public space, symbolic effects of spaces, and so on, but hardly any ideas on the interactions of the various factors: spatial structures, action, symbolism, and so on. Without a theoretical idea of how spaces develop and are reproduced—a process that is supposed to be made communicable by means of the concept of space—many empirical findings cannot be sufficiently explained, as shown in Chap. 6.

In particular, the conceptualization of space as place or territory cannot make the link among the various aspects of constitution since it does not grasp the process of constitution, but rather presupposes the result of the process—the emergence of places, limited territories, and so on. The individual aspects of the complex social process as a result of which spaces are developed or reproduced (and sometimes modified) go undetected since

space as territory or place is presupposed as something already known. The image of space as territory is a temptation to use the concept of space metaphorically, or it results in the assumption that space is a geographical, but not a sociological object.

In order to be able to analyze processes of constitution and changes to them, I shall in the course of the book derive space from the order of people and social goods, that is, I shall no longer presuppose two different realities—on the one hand, space, and on the other hand, people and social goods. Thus, space will be integrated into the course of action, and thus interpreted as a dynamic structure.

This way, sociology shall gain a concept that enables it to study the relational intermeshing of social goods and people, which have their own immanent potentiality. By virtue of studying the spatial distributions of people and goods, it becomes possible to analyze processes and situations of inclusion and exclusion in new ways. Changes in the organization of proximity will become comprehensible as a social transformation in the constitution of space, and no longer appear to be phenomena of dissolution.

Hermann L. Gukenbiehl (1995) gives a two-fold determination of the function of a basic sociological concept:

> On the one hand, they are related to 'social reality,' which they designate and about which they are intended and supposed to inform… On the other hand, these concepts are related to theoretical models, to sociology's general notions of social reality. (Gukenbiehl 1995, 13)

Accordingly, basic sociological concepts serve as means of communication and as means for the analysis of social reality, which is at the same time constituted by the choice of concept. This results in two sets of problems for the elaboration of a sociological concept of space:

1. What theoretical models are behind different concepts of space?
2. How does a concept of space have to be devised in order to grasp the changes to structures of arrangement detected in empirical studies?

In order to answer the question as to how space can be determined as a basic sociological concept, it is necessary to analyze the ideas of space that have influenced social scientific research on space up to now (Chap. 2). Furthermore, empirical studies must be examined with a view to what

concept of space will help to explain the object of analysis; conversely, only with empirical knowledge of the constitution of space can a sociological concept of space be developed (Chap. 3). On this basis, Chap. 4 will portray my own approach to space. New social scientific ideas of space shall be evaluated and on this basis my own perspective on space will be specified (Chap. 4). Then, having become conversant with these theoretical preliminaries and with the conceptualization of space as well as the empirically studied forms of constitution of space, it is possible for my approach to derive space as a sociological concept. The point shall not be to devise *one* category that will then be imposed on a *multifarious* reality. Rather, the goal is to develop a processual concept that describes the process of constitution such that various forms of articulation—for example, according to gender, class, ethnic group, age, sexual identity, and so on—can be understood without being rendered uniform (Chap. 5). Finally, the utility of the newly developed concept of space shall be demonstrated in exemplary analyses and at the same time tested (Chap. 6). The book concludes with a systematic summary of the fundamentals of a sociology of space (Chap. 7).

Thus, the goal of this book is to formulate a sociology of space based on a processual concept of space that grasps the manner in which spaces develop. Various concepts of space suggest different operationalizations of problems. Depending on the social conditions, one concept of space or another will display greater or lesser explanatory value. Concepts are thus not wrong or right; rather, the criteria of judgment must be the explanatory utility for empirically observable phenomena and the theoretical consistency of the conception.

To this end, I assume *one* space with various components. This means that I oppose the division customary in sociology between a social and a material space which imputes that a space could emerge beyond the material world (social space) or that space could be perceived by human beings without a social pre-structuring of this perception (material space). Hence, in analysis I hypothesize a social space that is characterized by material and symbolic components.

A distinction is made between the idea of space and the concept of space. The concept of space is a technical term. It serves communication within an academic discipline. By using it, essential interrelationships can be formulated as intelligible unities. An idea of space, by contrast, is a notion of space in the sense of a symbolic action making use of knowledge about space accepted in academic disciplines and/or transformed to everyday life.

The point of departure of my thought is Giddens's theory of structuration, since the dualism of (objective) structures versus (subjective) action is transformed into a duality. However, the application of Giddens's theory to space shows that neither his concept of space nor his concept of system can be adopted. Instead, with Pierre Bourdieu, I shall place stronger emphasis on the body as intermediary between structures and action. With reference to Reinhard Kreckel's works, a link can be made between matter and symbolism.

Furthermore, the topic "space" with its multifarious facets sometimes forces us to take leave of the comforts of a framework that exclusively relies on action theory, first of all because there are aspects of the constitution of space that it does not discuss, and secondly because there are other contexts of argumentation, for example Luhmann's system theory, in which enlightening ideas are formulated that should not be neglected for the sake of strict conformity to traditions of thought. Thus, the sociology of space presented here emerged from the theory of structuration, but goes beyond it, modifies the premises, and through the development of a sociology of space makes proposals for a revision of the theory of structuration.

Notes

1. Cf. on biography research the *Magdeburger Bibliographie zur Biographieforschung* [Magdeburg bibliography on biography research] published by the Educational Biography Research Team of the Deutsche Gesellschaft für Erziehungswissenschaften [German Association for Education Sciences]: it includes "time" as a headword, but ignores "space." Cf. on sociology of time also Parsons 1967; Elias 1994; Adam 1990; Luhmann 1990, 1993; Mollenhauer 1981; Rabe-Kleberg and Zeiher 1984; Kohli 1986; Loiskandl 1997; as well as others.
2. On changes to the space–time structure, cf. e.g.: Sassen 1991b; Siepmann 1991; Augé 1994; Castells 1994; Modelmog 1994, 1996; Großklaus [1995] 1997; Grosz 1995; Morley and Robins 1995; Franck 1997; Keim 1997; Schmals 1997; Hofmann, 1998; Noller 1999; etc.

Notions of Space in Context

Earth and Heaven exist no more…. The earth no more, because it is a star in Heaven; and Heaven no more, because it is made up of earths. There is no longer any difference between the Upper and the Lower. Between the Eternal and the Temporal. That we pass away, we know. That Heaven too passes away, they now inform us. There are sun, moon and stars, and we live on the earth; so it was said, and so it is written. But now the earth, too, is a star according to them. There is nothing but stars! (Bertolt Brecht: *The Life of Galileo*, 1967, 64)

Normally when we undertake to determine the theoretical models behind a basic sociological concept, we encounter the usual differences between schools of thought: action theory versus system theory, Marxism versus structuralism, and so on. In the case of space, these discussions only become relevant when we take a second step in our reflections; in the first place, there is a deep division in the academic literature along a historical controversy between "absolutistic" and "relativistic" (von Weizsäcker 1986, 38ff.) standpoints. Carl Friedrich von Weizsäcker reckons, for example, Ptolemy, Copernicus, Kepler, Galileo, and Newton, among others, to be part of the absolutist tradition, while classifying Nicholas of Cusa, Bellarmine, Leibniz, Mach, and others with the relativist tradition. These traditions differ above all in the assessment of the relationship between matter and space. Whereas absolutists assume a dualism, that is, according to them both space *and* bodies exist, relativist traditions are of the view that space results from the structure of the relative positions of bodies.

In the following discussion, I shall show that almost all sociological studies on space, with the exception of phenomenological studies, are based on one or the other basic assumption: either a dualistic division is made between space and bodies, or there is a penchant for monism and space is derived from the relationships between bodies. The absolutist distinction between space and bodies (action) involves the assumption that space exists independently of action. As an idea, the absolutist perspective is consolidated in the view that there is a space *in* which there are bodies. In relativist theory of space, by contrast, space is derived from the arrangement of bodies. Since these bodies (actions) are always in motion, spaces are always involved in a permanent process of change. Accordingly, spaces do not exist independently of bodies. Whereas in absolutist thought, spaces are the unmoved basis of action and as such uniformly existent for all (hence homogeneous), in relativist thought the activity of action goes directly hand in hand with the production of spaces.

This means in concrete terms that sociologists who argue from an absolutist standpoint assume in their thought *one continuous space existing for itself*. Generally a space is assumed that is subdivided into social processes and is appropriated in the form of localizations at places and in the form of delimited territories. The argument is that there are dynamic actions in a space that itself is unmoved. One variation of absolutist thought is the assumption that action always occurs in relation to three-dimensional Euclidean space, which guides thought and orientation.

Authors who argue relativistically, by contrast, define space on the basis of relative positions (cf. on this point in detail Chap. 4). Thus, Hartmut J. Zeiher and Helga Zeiher precede their study of children's places and times with a sociological definition of space according to which space is understood "relationally … simply as relative positions of 'things' with respect to each other disregarding their special substantive determination" (Zeiher and Zeiher 1994, 46); for Norbert Elias, space refers to "positional relationships of moving events" (Elias 2007, 83 [1994, 75]); for Bourdieu, at least social space is explicitly determined by way of relations; finally, according to Michel Foucault (1986a) space is presented in the form of relations among sites. From a relativist perspective, space in its sociological relevance is thus always the result of a process of arrangement.

The everyday notion that people live "in space" goes hand in hand with absolutist thought. This has the result that theorists of space who argue from a relativist perspective are more or less forced to legitimate their conception of space by relying on references to figures such as Einstein

in the case of Elias, or Leibniz in the case of Bourdieu. However, neither Bourdieu nor Elias derives the epistemological basis of their notions of space from these authors. The quotations show to what extent the socio-logical attempts to redefine space are based on presuppositions derived not from sociological, but from philosophical and physical contexts. Here the question arises as to how to deal with this phenomenon. One pos-sibility would be to turn straightforwardly to phenomenology, that is, to the only school of thought which does not take recourse to abstract con-cepts of space to explain action. In their attempt to describe what is given without theoretical bias, which means in the present theoretical context, for example, to depict the relationship of the human being to space as it exists before all reflection, phenomenologists take care to observe the constitution of space apart from Newton's, Kant's, and Einstein's theories. The point then is not only to name the individual things and the things in their arrangements; rather, the phenomenological analysis studies *how* things are taken in by the observer in action or in dreams and fantasies (on this point see Meyer-Drawe 1991). A master of this technique is Gaston Bachelard, who in *The Poetics of Space* (1964) describes living in all its details, from the cellar to the attic via drawers, corners, and curves. O. F. Bollnow ([1963] 1989), Hermann Schmitz (1965, 1967, 1969), and Lenelis Kruse (1974) also provide useful descriptions for the understand-ing of everyday action, for example the description of "attuned space," that is, space as it is emotionally and affectively experienced, or of "ori-ented space," accessed by action coming from the body.

Many details of the constitution of space can be learned from phe-nomenologists such as Bachelard, Bollnow, Schmitz, and Kruse. The pre-reflexive experiences of everyday life emerge as something that can be discussed, that can be systematically portrayed and enunciated. But struc-tures that elude everyday experience often go unnoticed. Thus, it is not a matter of chance that none of the authors named covers dimensions of social inequality in their analyses. Though space is described as already having been constituted (for example Merleau-Ponty 1962, 251–252 [1945, 291; 1966, 294]), the conditions of constitution are not analyzed because they cannot be derived from observation.

Many of the studies thus often remain unhistorical. Hence, if we want to grasp not only lived space, but also structured and structuring space, different theoretical approaches are required. In developing a sociologi-cal concept of space, phenomenological studies can serve to bring spatial

phenomena to the forefront and explore certain questions, but they do not obviate the need to develop a conceptualization of space.

That means that a sociological concept of space also cannot be developed outside of philosophical and physical traditions of thought. It must examine the premises of these traditions and systematically seek to enhance explanatory power, fill in explanatory gaps regarding social phenomena, and use these approaches as tools for conceptualizing a sociological concept of space. To establish the present state of the discussion and to take a point of departure for further reflection, it is necessary to outline philosophical and physical knowledge and debates. But how can philosophical and physical traditions be presented adequately and understandably in a sociological work?

In the case of philosophy, this is not overly difficult since historically sociology developed from, among other sources, philosophy so that there are numerous overlaps in, for example, conceptualization. For physics, the problem is more complex. But as Michel Foucault (1980b, 149) emphasizes, starting at the end of the eighteenth century, space was displaced from philosophy by findings in theoretical and experimental physics. In the wake of Albert Einstein's theory of relativity, a new discourse on space emerges. This only brings physics up to the "philosophical stage which mathematics had already reached in the nineteenth century, from Gauß to Riemann" (von Weizsäcker 2006, 46), but it is also able to corroborate the findings empirically. Accordingly, the physicist Stephen Hawking writes:

> Before 1915, space and time were thought of as a fixed arena in which events took place, but which was not affected by what happened in it.… The situation, however, is quite different in the general theory of relativity. Space and time are now dynamic quantities. (Hawking 1988, 33)

It is therefore necessary to include a portrayal of the findings of physics in establishing a sociology of space. However, if we choose to communicate the concepts of physics in the language of physics, but for our specific purposes to keep the explanation brief, it would be unintelligible to most readers; and if the concepts are transformed into a sociological language, they would undergo a shift in meaning. For example, space is often conceived as the universe in physics, but in sociology it becomes "social space," that is, it is only phenomena taking place on earth that are treated.

This leads to a dilemma. Let me illustrate it with an example. Newton's physics is sufficient to explain all physical events in the realm of the earth; nonetheless, Einstein, who amended Newton's concept of space with respect to the universe, is taken as the reference point for sociological studies. From the point of view of physics, this is a foreshortened approach, but for the generation of new ideas it is nonetheless inspiring. Thus, for example, Jean Piaget (1967), Norbert Elias (2007 [1994]), Luc Ciompi (1988), Dieter Läpple (1991), Richard Sennett (1990), and Elisabeth Grosz (1995) all explicitly refer to Einstein. The idea that space is curved, that it moves, and that it is no longer conceptualized as homogeneous is stimulating, and for many social phenomena it is also more amenable to analysis than is Newton's rigid space. New findings of empirical studies in sociology, which regularly point out the fragmentation and mobility of spatial structures, can be better understood when we draw on Einstein's concepts, that is, when we assume a mobile, non-homogeneous space. However, in so doing, we are taking recourse to a theoretical model that was developed for another object.

To appreciate this procedure, it is necessary to bear in mind that the conceptual alternative is another physical–philosophical notion of space, namely the ancient idea of a "container space"; this notion has continued force in everyday consciousness, due in part to Newton's influence. Aside from these two models, there is no other concept of space in Western culture (for more detail on this point, cf. von Weizsäcker 2006, 1952; Läpple 1991; Sturm 2000; Harvey 2009, 13f.). Hence, Dieter Läpple sums up "that the everyday notions of space that most people have in our civilization are more or less strongly 'colonized' by the physical idea of space of classical physics in the form of a three-dimensional Euclidean space" (Läpple 1991, 164). The one group of authors refers to absolutist physics, the other group—those who attempt to break new trails—takes relativist physics as their point of departure.

In this point, the boundaries between philosophy and physics are often fluid. Newton's model, as we shall see, consists in part of metaphysical deliberations. Einstein himself made a considerable contribution to the fact that his concept of space is understood not only as a physical, but also as a philosophical concept. Likewise, he positioned himself vis-à-vis the global public as a philosopher. He regarded his discoveries not only as a contribution to a new physical, but also to a philosophical view of space and of the world (Einstein and Infeld 1961, 187). In various places, Einstein made an effort to convey his theory to a broader public in gener-

ally understandable language, without formulae. However, this has to be qualified inasmuch as Einstein only felt this need in later life, and in the case of the book that he wrote together with Leopold Infeld, the publication was motivated by Infeld's financially straitened situation. Nonetheless, in presenting these physical ideas in writing with illustrative examples, these scientists position themselves outside of their own discipline and make an effort to connect with the world of their readers' experience. They clothe their deliberations in the parlance of their time and participate in a specific social discourse. With the translation of the physical formula into language, the physicist offers explanations for the surrounding world that depart from the cognitive interest of physics. Hence, von Weizsäcker says that it is an "empirical fact" (von Weizsäcker 1990, 201)[1] that most theoretical physicists philosophize.

At the same time, scientific ideas develop within specific historical contexts. Einstein is said to have told Infeld that "No scientist thinks in formulae" (Infeld 1969, 81)[2]. Thus, Einstein's theory, too, is closely connected with the circumstances of his time (cf. von Weizsäcker 2006, 42; 1990, 205; Simonyi 2012). We should call to mind that in the same period as Einstein disintegrated absolute space, Sigmund Freud dissected human identity, the Cubists destroyed the uniform shape, and Ferdinand de Saussure developed his structuralist approach (cf. Ciompi 1988). Common to these approaches is that they move conceptually from monolithic to differentiated structuredness. Unity, closedness, and continuity are challenged. In Einstein, space becomes contextual. For him, space is a conceptual construction for understanding the world. Comparing his own concept of space with Newton's, he writes:

> Both space concepts are free creations of the human imagination, means devised for easier comprehension of our sense experience. (Einstein 1960, xiii)

Physicists such as Niels Bohr and Werner Heisenberg therefore interpret Einstein's works as the beginning of a discussion about the meaning of physical concepts (Heisenberg [1969] 1991; von Weizsäcker 2006, 43). When social scientists then adopt Einstein as the creator of a new concept of space, the point is not his actual physical formulae, but rather homologous conceptual models. In physics and the social sciences, similar theoretical models develop due to similar social perceptions and forms of thought.

Hence, when I present the absolutist and relativist standpoint in the following discussion, the point is to derive a way in which sociologists today can reach a notion of space and find *starting points* for the further development of a sociological concept of space. For the sake of intelligibility, I shall also do without formulae and only present those ideas that have a direct relationship to sociological conceptualization up to now, or to notions in the everyday world. For this reason I shall also not address more recent developments in physics such as discussions of strings or black holes. Rather, the intention is that the two standpoints, the absolutist and the relativist, should be made clear in their differentiation and their historical dimension.

2.1   Absolutist and Relativist Notions of Space

Space as a box or container that encloses things, living beings, and spheres is an image that stems from the ancient world. Thus, for example, the Aristotelian idea is one of a finite space delimited by fixed stars. This space is densely filled everywhere. Its center is the unmoved spherical earth. Found in the space between the earth and the moon are the elements water, air, and fire, ordered in concentric circles. Beyond the moon, the other planets move in finite space (cf. Sturm 2000). Einstein visualized this notion of space with the brief formula "container" (Einstein 1960, xiii), adopted in German as "Behälterraum," that is, "container space."

At the latest in the seventeenth century, it becomes clear that the relationship between the heavens and earth is much more complicated than was envisioned by the still-dominant Aristotelian view with its geocentricism. The heavens and earth can no longer be brought together until Newton proves that the natural laws for the earth are also valid for the heavens, thus dealing not only with problems of physics, but also with questions and fears of religious theory.

Isaac Newton lived from 1643 until 1727, through a time of great social upheaval. The Thirty Years' War came to an end in 1648. People were starving. Pre-industrial capitalism gradually emerged, and with it many technological innovations. The bourgeoisie started to rise. Surgery developed into a science and played a decisive part in the establishment of constructions of the spatial body; mythical views of the body were slowly shifted into the background.

In this period, Isaac Newton developed the idea of a homogeneous infinite world. In his *Cultural History of Physics*, Károly Simonyi analyzes

Newton's replacement of the finite and closed view of the world and space with the idea of an infinite space.

> But the Newtonian cosmology goes beyond the solar system and attempts to describe a homogeneous and infinite universe through the connection of the laws of force and motion. By homogeneous we should understand universe that is everywhere composed of the same matter and that is subject to the same laws, whether the matter is on Earth's surface, even is a planet, or is the Sun itself. (Simonyi 2012, 272)

According to the sociologist and methodologist Gabriele Sturm (2000), Newton's great merit is to have unified the fragmented findings of physics existent at the time in a uniform model. Newton develops the foundations of mechanics which are only modified at the beginning of the twentieth century by Albert Einstein's theory of relativity. One of his fundamental definitions, by virtue of which the idea of space as a container is given new support even though Newton's model actually provides for infinity, is that of "absolute space":

> Absolute space, in its own nature, without relation to anything external, remains always similar and immoveable. (Newton [1687] 1802, 12)

Newton conceives of space as a reality independent of bodies. As Carl Friedrich von Weizsäcker emphasizes, this was by no means a matter of course, but rather the result of an abstraction that Newton was the first to perform in this precision (von Weizsäcker 2006, 25). This absolutization, which Newton supplements in his writings with a "relative space," does not really challenge the notion of a container. Space remains a container that can be filled with various elements, but still remains existent as "empty space." This gives new import to the notion of rigid, immobile space, which to this day dominates thought, and on the other hand the idea of emptiness gives rise to the notion that there are innumerable possible ways to arrange space.

One essential point in this connection is that Newton's mechanics does not need this positing of absolute space. In present-day scientific interpretation, there remains debate as to why he nonetheless took recourse to this construction, as well as the assumption of "absolute time." It may be that in his theory, as Max Jammer (1969) and Gabriele Sturm (2000) conjecture, Newton postulated the existence of "absolute time" and "absolute

space" in order to be able to determine a point of rest from which motion can be measured in the world that is now conceived as infinite. At any rate, his postulate serves as a self-defense against the accusation of atheism. Newton's writings on the theory of religion show that theological arguments played a decisive role in the definition of "absolute space." According to Gideon Freudenthal (1986), Newton was working under pressures deriving from ideas about the history of creation in which God created the world in empty space. He says that Newton emphasizes "God's freedom to create worlds at will, i.e., with perfect freedom" (Freudenthal 1986, 178). In Newton's view, space is a natural given that can only be dissolved by God. The philosopher Alexander Gosztonyi (1976, 342) and the physicist Stephen W. Hawking (1988, 17–18) also emphasize that for Newton's mechanics the model of relative space would have been adequate; for metaphysical reasons he devised absolute space as a fixed anchor and as a confirmation of the absolute God. Hence, it is not correct that, as is often suggested (for example by Piaget 1954 or Ciompi 1988), Newton denies all relativity. Rather, he distinguishes between an "absolute space" and a "relative space." For him, *relative space is the measure of absolute space* or "some moveable dimension" of it (Newton [1687] 1802, 12) and is perceived through the relationships between bodies, that is, their positions. Carl Friedrich von Weizsäcker explains this:

> "In my room" or "on top of the Mt. Blanc" are relative places; "my room," bound by its walls in my house, or "the Alps," localized relative to our planet, the Earth, are relative spaces in the sense of Newton. (von Weizsäcker 2006, 25)[3]

Newton distinguishes between the all-inclusive container space and the numerous partial spaces that develop out of relations and consist of relations between bodies in this container. As Gosztonyi (1976) summarizes, Newton's discussions of relative space are pioneering for physics, but in the worldview of our culture, the notion of absolute space continues, buttressed by the Judeo-Christian account of the history of creation.

With his concept, Newton postulates a dualism between space and matter, something that was already a matter of fierce debate among his contemporaries. Under the influence of Newton's physics, the impression that there are two separate realities, space and matter, was reinforced. In accordance with this fundamental assumption, space retains its existence even without matter. Space becomes analyzable and describable by virtue

of Euclidean geometry, more precisely, by virtue of Descartes's analytical geometry, which links geometry with arithmetic.

The idea of container space is, as shall be shown in detail, to this day a dominant notion in the everyday understanding of space. However, as Gabriele Sturm (2000, 160) points out, this is already a foreshortened variation of Newton's conception since in his model Newton conceives absolute space as infinite. Since most people are not able to conceive infinity, space is reified as a container. The container model is accordingly itself a social transformation of the initial physical–philosophical idea.

Newton's idea of absolute space did not go unchallenged in his own day. Above all, in correspondence with Samuel Clark, who rose as an advocate of Newton's ideas, Gottfried Wilhelm Leibniz (1646–1716) opposed the notion that there is an independent object "space," and emphasized instead the spatiality of bodies. In his third letter, Leibniz writes:

> I have said more than once, that I hold *Space* to be something *merely relative*, as *Time* is; that I hold it to be an *Order of Coexistences*, as Time is an *Order of Successions*. (Leibniz [1715–1716] 1966, 134)

For Leibniz, space is the quintessence of possible positions in general. According to the Euclidean definition, the point is the indivisible par excellence; Leibniz supplements this definition with the *position*, that is, one point exists in a position relative to others. According to Leibniz, the coexistence of positions alone does not encompass a principle, it is only by *order* that they are linked. Leibniz rejects thought in coordinate systems. According to him, space is, as Gosztonyi summarizes, the "ordering principle of relative position" (Gosztonyi 1976, 363). It can also be called a virtual, but concretely graspable order. Thus, space embraces not only the real, but also the possible order. Von Weizsäcker draws the consequences of Leibniz's notion of space:

> Strictly speaking we could then not say: "this body is located at this place,' but only, 'seen from that other body, it is located at this place." (von Weizsäcker 1952, 159)

Logically, Leibniz already discusses the problem of multiple perspectives resulting from a relativist concept of space. In his *Monadology*, section 57 reads as follows:

And as the same town, looked at from various sides, appears quite different and becomes as it were numerous in aspects [perspectivement]; even so, as a result of the infinite number of simple substances, it is as if there were so many different universes, which, nevertheless, are nothing but aspects [perspectives] of a single universe, according to the special point of view of each Monad. (Leibniz 1994, 26)

What later leads to multiple perspectives in the depiction of spaces in Cubist pictures (cf. Güldenpfennig 1994) is described by Leibniz in this section such that according to the viewpoint space looks different to the viewer.

Immanuel Kant (1724–1804) also addresses both Newton's and Leibniz's concepts of space in detail. In his early works, Kant is undecided as to the position he should take. At first, he wants to reconcile Leibniz's theses with Newton's doctrine, then he tilts progressively more strongly to Leibniz's relativist position, finally reaching his own position under the influence of the Swiss mathematician Leonhard Euler (1707–1783); this position is closer to the doctrine of absolute space than to Leibniz's relative positions (cf. also Ströker 1987 [1977]; Stieb 1985, 21).

In his *Dissertatio* ([1770] 1958), which has a rather preliminary character since it was written under time pressure in a few months and is held to be a preparatory work for his *Critique of Pure Reason* ([1781] 1996), Kant juxtaposes the two concepts of space.

Those who advocate the reality of space either imagine it as the *absolute* and infinite *container* of all possible things … or they claim that it is the relation of existing things itself that would completely cease to be when they are annihilated, and is only conceivable in real things. (Kant 1958, 53, italics in the original)

He demolishes both ideas with a few words. Newton's variation belongs to a "fairyland" (*pertinet ad mundum fabulosum*, Kant 1958, 52), but Leibniz's works fall prey to a much more severe error because they "chase geometry away from the peak of certainty and throw it back to the class of those sciences whose principles are empirical" (Kant 1958, 53). Kant opposes the view that space has a reality of its own. Adhering to the principles of Euclidean geometry, he already comes to the conclusion in his dissertation that space is an "*absolutely primary formal principle of the sensory world*" (*principium formale mundi sensibilis absolute primum*, Kant

1958, 56f.; italics in the original) (on Kant cf. Enskat 1978 for greater detail). He thus transforms Newton's absolute space from a concept of physics to an epistemological interpretation. In his *Critiques*, especially in his discussion of the transcendental aesthetics in the *Critique of Pure Reason*, he further develops this concept of space. Space now becomes an ordering principle prior to all experience:

> Space is a necessary representation, a priori, which is the ground of all outer intuitions. (Kant 1998, 158)

Space, according to Kant, is something that people create in their perception. What is perceived by the senses becomes an "intuition" by being brought in consciousness into an order or form that is given the name space. Spatiality, both the spatiality of things and the spatiality between things, as it is created in perception, is not a random construction. It adheres to fixed principles already established before all experience: the principles of Euclidean geometry, the only conceivable geometry at the time. For Kant, space fulfills the function of ordering what is perceived as if with a template. In this sense it is ideal, but in the end it is also real.

> Space is merely the form of outer intuition, but not a real object that can be externally intuited, and it is not a correlate of appearances, but rather the form of appearances themselves. Thus space taken absolutely (simply by itself) alone cannot occur as something. (Kant 1996, 417)

Newton's mechanics as well as Kant's philosophy are based on the fundamental assumption that space can be determined by way of Euclidean mathematics. Around 1830, three mathematicians, Carl Friedrich Gauß, Nikolai Ivanovich Lobachevsky, and János Bolyai, working independently of each other, pointed out the possibility of non-Euclidean geometry. Though Gauß (1777–1855) realized that the parallel postulate set forth by Euclid, according to which there is for every straight line exactly one parallel through any one point, is indeed an axiom, he develops a non-contradictory non-Euclidean geometry in which the parallel axiom does not hold. G. F. Bernhard Riemann (1826–1866) formulated a condensed theory of geometry in 1854. With the realization that there cannot be only one logical geometry, the attitude toward space also changes. The Kantian a priori according to which space is a principle prior to experience, producing order in keeping with Euclidean theorems, can accordingly no

longer apply. As Gabriele Sturm shows in her methodological habilitation treatise *Wege zum Raum* [Paths to space] (2000), non-Euclidean geometry initially meets with incomprehension, but then gains great plausibility thanks to the realization that the curved surface of the earth cannot be Euclidean. As to the universe, Albert Einstein (1879–1955) demonstrates shortly thereafter that its geometry is not Euclidean. In his discussion, Einstein provided a concise statement of an understanding of space that to this day has significant influence on social scientists in their approaches to the concept of space. Due to its influence, the fundamental arguments shall be briefly summarized here, even though they refer to the universe and not to the earth.

On the basis of diverse new findings in physics, such as the discovery of the electron, x-rays, and radioactivity, together with the development of non-Euclidean geometries (in particular the works of G. F. Bernhard Riemann), Albert Einstein and his colleagues approached the ideas behind the theory of relativity.

> Since non-Euclidean geometry has shown that different structures of space are conceptually possible, it seems plausible to assume with the General Theory of Relativity that space is not a finished "lodging house" into which matter has moved, but that it is matter itself which determines the structure of space. (von Weizsäcker 1952, 172)

In philosophy, too, notions of space again become the object of debate. Toward the end of the nineteenth century, the physicist, historian of science and philosopher Ernst Mach opposes with reference to Leibniz the metaphysical notion of a superordinate container. For him as a positivist, space is nothing more than the totality of spatial relations (Mach 1960; see also Flor 1996).

Albert Einstein and his colleagues, especially his wife Mileva Einstein-Marić,[4] who performed the essential mathematical calculations, succeeded in amending the concept of space in physics with the special theory of relativity in 1905, with the basis for quantum theory in 1907, and with the general theory of relativity in 1916. Einstein introduces the *field* as a new fundamental concept and thus develops the possibility of conceiving of physical space as "positional quality of the world of bodies" or as the "arrangement of things." By way of the category of the field he attempts to infer a unity of space and matter. Einstein and his colleagues are able

to found their notion of space empirically—but they are not developing a completely new notion of space.

One of the core propositions of the theory of relativity is that two events that take place simultaneously in one system need not take place simultaneously in another system. Classical physics assumes that a rod that in one system is one meter long must also be one meter long in another system and that in all systems clocks run at the same speed. These assumptions, which seem to be matters of course for everyday consciousness, are refuted by the theory of relativity. According to it, a moving rod contracts with increasing speed, and clocks always go more slowly when they are moved more quickly until they stand still when they reach the speed of light. Einstein and Infeld comment on these findings as follows:

> Time is determined by clocks, space co-ordinates by rods, and the result of their determination may depend on the behavior of these clocks and rods when in motion. There is no reason to believe that they will behave in the way we should like them to. Observation shows, indirectly, through the phenomena of electromagnetic field, that a moving clock changes its rhythm, a rod its length, whereas on the basis of mechanical phenomena we did not think this happened. (Einstein and Infeld 1961, 186)

Speed is no longer determined with respect to an absolute space conceived as at rest, but rather can only be determined in relation to other bodies. The speeds that can be reached mechanically are so slow in comparison with the speed of light that changes in length and speed of, for example, cars or ships are immeasurable—the methods of classical mechanics are still adequate here—but nonetheless the basic physical model of space is changed. Classical mechanics thus becomes a special case of relativist physics.

Einstein refutes the notion of absolute space and absolute time. Since Galileo, it was thought to be known that at any point in time the distance from the earth of a stone falling from a tower of a certain height could be calculated. According to the rules of classical physics, this was held to be the same for all observers, but not according to the theory of relativity.

> The time co-ordinate and the space co-ordinate will be different in two CS [co-ordinate systems], and the change in the time co-ordinate will be quite distinct if the relative velocity is close to that of light. (Einstein and Infeld 1961, 207)

This means that depending on the observers' frame of reference, the stone will fall to the earth at a different time. It follows from this that space and time are not "absolute," but rather "relative" to the observers' frame of reference. Following the physicist Hermann Minkowski, Einstein speaks of a "space–time continuum." He attributes four dimensions to this continuum: physical space has three dimensions, the fourth dimension serves the temporal determination of an event. A continuum is a geometric structure generated by the connection of many points.

In these deliberations, which are called the "special theory of relativity," Einstein assumes frames of reference that move linearly and uniformly, that is, at constant speeds. Accordingly, he is not yet able to integrate acceleration into his physical concept. A system with constant speeds is, however, only conceivable by abstracting from all external influences. With this deficit in mind, Einstein and Infeld write:

> We have laws, but do not know what frame to refer them to, and our whole physical structure seems to be built on sand. (Einstein and Infeld 1961, 210)

It is only in the "general theory of relativity" that Einstein and his collaborators succeed in formulating their arguments so that they apply to all systems, that is, also for systems moving opposite to each other. As a mathematical instrument, he makes use of Riemann's non-Euclidean geometry. By way of the introduction of a gravity field, Einstein, as opposed to Newton, attempts to conceive a unity of space, time, and matter. For the universe, this means in concrete terms that the curvature of space can be calculated and that the universe cannot be static. The universe is in motion, but the direction of motion remains indeterminate: it is uncertain whether it is expanding or shrinking. But by no means is the universe a three-dimensional container of a fixed extension (cf. Sturm 2000).

For the theory of space, the theory of relativity means that the metaphysical construction of absolute space is completely divested of its scientific basis. This does not pertain to the Newtonian theory in general inasmuch as it can be plausibly stated without positing absolute space, but only to the absolutization of space. In physics, Einstein's model of space as the "positional quality of the world of material objects" (Einstein 1960, xiii) gains acceptance as the generally valid model, integrating Newtonian mechanics as a special case. Einstein analyzes the positional relationships that form space as in constant motion. Space is the relational structure between bodies that are constantly in *motion*. That means that space is

also constituted in *time*. Accordingly, space is no longer the rigid container existing independently of material conditions, but rather *space and the world of material bodies are interwoven* with each other. Space, that is, the *arrangement of material bodies*, is dependent on the *observer's frame of reference*.

Motion is always spatial and temporal in like measure. If a rigid concept of space is assumed, it can be hypothesized that this rigidity endures over time; if, however, a moving space is assumed, then time becomes an immanent category. One cannot take a step to the side such that time does not pass and one does not change spatially, or, as Norbert Elias explains with an illustrative example, it is not possible to let time pass without spatial change.

> Do not be misled by the assumption that you can sit still in "space" while "time" is passing: it is you who are growing older. Your heart is beating, you are breathing, you are digesting; your cells are growing and decaying. The change may be slow, but you are continuously changing in "space" and "time"—on your own, while growing and growing older, as part of your changing society, as inhabitant of the ceaselessly moving earth. (Elias [1992, 100] 2007, 82 [1994, 75])

Time and space form a "continuum," as the mathematician Hermann Minkowski put it in a famous lecture on "Space and Time" held on September 21, 1908. Inasmuch as space is viewed in the process of time, it, too, is in constant motion. This is readily intelligible with concrete examples: imagine Alexander Square in Berlin. Although this space is objectively determinable in size, structure, and the like, a young person will experience it in a completely different way from an old person. Moreover, this public space was differently structured in 1950 than in 1990; it changes depending on whether you go there on a Sunday or a Monday, in the morning or in the evening. As soon as people constitute spaces, the time point becomes immanent to the actions.

2.2   Sociology of Space

The debates and findings of philosophy and physics have, as already indicated, also had an influence on sociology in its approach to space. Thus, in sociology, too, the dividing line distinguishing the concepts of space is the question of whether an independent significance is attributed to space in

the form of places, territories or as a structure ontologically surrounding people that is to be configured by people—thus dualistically dividing space from action and physical bodies—or whether space is the (preliminary) result of the arrangement of physical bodies (on the basis of action).

In the following discussion, I shall initially disregard the relativist position with respect to space (cf. on this point Chap. 4) and analyze the much more prevalent approaches to space in the context of the absolutist tradition with a view to their implicit assumptions and the cognitive gain that they provide. These are by no means homogeneous positions. I propose to distinguish between three different conceptualizations of space.

The first variation can be called the "place-related concept of space." Either is space equated with the concrete place (e.g. Berger and Luckmann 1966, 26) or, as in Anthony Giddens's conceptualization, which I shall address in detail (cf. Chap. 2.2.1), it is conceived as ontologically given and only in its local context as sociologically relevant.

The second variation is construed as a "territorial concept of space." This is a reification of spaces as territories, which was long common in urban and regional sociology (cf. Chap. 2.2.2) with the result that at the same time space was rejected as an object of sociology. This sort of argumentation can also be found in some of Niklas Luhmann's works (e.g. 2012; cf. also Chap. 4 of this book) when he opposes territorial notions of society by insisting that system theory does not need "to set the boundaries of systems in space and time" (Luhmann 2012, 362, note 24 [1997, 30]). Instead, he wants to state his objections to territorial concepts and formulate systems theory such that in determining the boundaries of a society it is not dependent on space and time. Because Luhmann understands space as a limited territory, he wants to free society from the concept of space.

The third variation is the sociological application of the Kantian concept of space. For example, in *The Structure of Social Action* ([1937] 1949, e.g. p. 45) the young Talcott Parsons refers to the capacity for localization in space in Kant's sense, and Georg Simmel (cf. Chap. 2.2.3) derives his concept of form from Kantian philosophy. The Kantian concept of space is not absolutist in the same way as the reification of space as a place or territory since Kant does not attribute to space a reality of its own. Still, he is also working within the absolutist tradition since he assumes the principles of Euclidean geometry as an ordering principle prior to all experience. In the following presentation, the cognitive possibilities and limitations of the three variations shall be discussed citing as examples individual authors or urban and regional sociology as a sub-discipline of sociology.

2.2.1   *Giddens, Hägerstrand, and the Power Container*

The English sociologist Anthony Giddens bases his theory of structuration on the categories of space and time. He thus opposes the practice of many social scientists, who understand space and time as mere boundary conditions of action. In his opinion, space and time should be conceptualized as central ordering dimensions. Space and time cannot be neglected or given perfunctory treatment; the two categories are "the very heart of social theory" (Giddens 1984, 110).

Giddens has an explicit and an implicit theoretical context for his reflections on space. Explicitly he bases his theses on the works of the Swedish geographer Törsten Hägerstrand, supplemented by Erving Goffman's research. Implicitly, clearly indicated only by Hans Joas's foreword, his exposition is influenced by the theses of the philosopher Martin Heidegger. Heidegger discusses what the concept of space means by way of reconstructing the history of the German word for space, "Raum." "Rum" meant a place that has been freed or cleared. Hence, space is for him "in essence that for which room has been made, that which is let into its bounds" (Heidegger 1975, 154 [1985, 155]). The world is not "in space" as usage suggests; rather, the essence of space emerges from the locations joining what is cleared and granted. Accordingly, space is at the same time always the concrete location (in detail in Heidegger 1984; on local context in Giddens cf. also Pieper 1989). Giddens adheres to this basic idea and treats space with a naturalness as if it simply exists. Hence, he also speaks of an "ontology of time–space" (Giddens 1984, 3) that is fundamental for the theory of structuration.

Giddens distinguishes between structures and systems. He conceptualizes structures as rules and resources outlasting space and time. The concept of system designates for him the mesh of spatio-temporal, routine, or institutionalized actions. It is to this that he devotes his attention with respect to time (cf. Giddens 1984, 111). In order to analyze systems more exactly, he resorts to Hägerstrand's time geography. Giddens relates the concept of action itself only in one dimension to space: it seems a matter of course that actions are localized. For example, he does not ask whether actions can produce space. For its part, he defines the concept of structure by way of exclusion from space.

> Structure, as recursively organized sets of rules and resources, is out of time and space, save in its instantiations and co-ordination as memory traces, and is marked by an "absence of the subject." (Giddens 1984, 25)

This statement, that structures are rules and resources outlasting space and time, only makes sense if space is interpreted as "concrete location." The idea that space could be an element of the structure is far from Giddens's mind. John Urry (1991, 160) rightly objects that though Giddens calls for the inclusion of geographical findings in sociological theory construction, he himself takes a philosophical, essentialist concept as his basis (on the criticism of Giddens cf. also Soja 1989). Giddens ignores geographical debates according to which space is understood—generally with reference to sociological theories—as produced and producing (cf. e.g. Duncan 1996; Massey 1996; McDowell 1996).

For Giddens, space is the place at or in which something happens; beyond its existence, structures can be abstracted. According to him, spaces are, for example, the spatial givens of institutions and the spatial aspects of the body. Giddens gives us a very precise picture of how he conceives space. Using the school as an illustrative example, he explains his notion of space:

> A school is a "container," generating disciplinary power. (Giddens 1984, 135)

School as a power container links the notion of space as a limited place with a sociological understanding of power. Giddens's decisive extension to time geography is that he addresses power situations.

The geographer Törsten Hägerstrand and his colleagues, referred to as the Lund School (cf. Carlstein 1980; Parkes and Thrift 1980), developed what may well be the most comprehensive approach to an application-oriented connection of space, time, and human action. Hägerstrand et al. propose a three-dimensional model in which space is represented in two dimensions, as in a coordinate system. The time axis is introduced as the third dimension. The model registers people's daily paths and the course of their lives in the spatial and temporal dimension, thus providing the possibility of a standardized study. With this method, the differences in the use of places and paths according to gender, for example, can be readily mapped. It can also be shown that even an object at rest nonetheless moves in time.

Hägerstrand is interested only in the application. He prefers to leave the discussion of concepts of space up to others:

> It may well be that ideas derived from both relativity theory and quantum theory are applicable also to everyday events at the human mesoscale. This

possibility is left to others to think about.… I am interested in the prob-
lem of how concomitant treatment of place and time of events can help us
to map behavioural spaces in ways useful for urban research and planning.
(Hägerstrand 1975, 6)

He traces spatial paths on the basis of use of places. Everyday life is
registered in its routine character. For Hägerstrand this is limited above all
by the human being's bodily nature. His list of such limitations of action
includes the indivisibility of the human body, the finitude of human exis-
tence, the impossibility of performing several activities at the same time,
and the fact that two human bodies cannot occupy the same place at the
same time. According to Hägerstrand, these factors constitute the lim-
its within which people can move in space and time. If an individual's
movements are mapped on Hägerstrand's coordinate systems, it becomes
apparent how limitations, for example the need for sleep, influence the
activities of the individual groups that are related to each other. According
to Hägerstrand, individuals attempt in pragmatic "designs" to make use
of space and time and to integrate the limitations in their concept of life.

Anthony Giddens rightly objects that Hägerstrand only takes limi-
tations due to the bodily nature of the human being into account. He
responds that "[a]ll types of constraint … are also types of opportunity,
media for the enablement of action" (Giddens 1984, 117). Moreover,
he is critical of the fact that in time geography the theory of power is
only poorly developed. The various stations in the course of daily life,
the home, school, workplace, and so on, are treated as "black boxes"
(Giddens 1984, 135). The activities taking place within them together
with their embedded power structures cannot be grasped. As a comple-
ment to Giddens's criticism, it should not go unmentioned that beyond
this—as Gillian Rose (1993) objects—Hägerstrand explains limitations on
the freedom of movement only by means of bodily impairments. Rose
emphasizes that possibilities of movement are also limited by sexist, racist,
or homophobic attacks or by threats of the same.

Sexual attacks warn women every day that their bodies are not meant to be
in certain spaces, and racist and homophobic violence delimits the spaces of
black, lesbian and gay communities. (Rose 1993, 34)

According to this, Hägerstrand neglects not only the power structure
in the "positions," but also the limitations in the possibility of going to

certain places due to inequality of power and to violence. Giddens shares with Hägerstrand the assumption that as a matter of course, there is a surrounding space that becomes sociologically relevant by way of local use. In his concept of regionalization, however, he extends Hägerstrand's discussion by adding an analysis of the power structures in the spaces of the institutions, for example schools.

According to his argumentation, space and time are divided into zones in relationship to repetitive social practices. He calls this process regionalization. Buildings are regionalized in rooms, corridors, floors. Night and day provide zones for the distinction of periods of sleep and work. In addition to the geographical regions, north and south are also "distinctive social traits" (Giddens 1984, 122). Giddens emphasizes the link between geographical region and social classification or orientation.

One major aspect of the characterization of regionalization is the "extent of availability for presence," which means: regions are defined by way of the possibilities of social gathering. According to Giddens, social phenomena have a space–time extension in regions. However, people can keep their distance by means of their consciousness. The model of presence versus absence is also the basis when a distinction is made between front and back regions. At all social levels, he claims, there is a division into zones according to the pattern "front region" and "back region," on which the opposition between displaying and concealing is based. This can take the form of the segregation of certain individuals in prisons or psychiatric institutions with the goal of hiding them from society, at the same time imposing compulsory exposure on them by means of permanent control; or it can also be the division of cities into front regions that are shown to visitors and back regions for poorer people, who are hidden—a phenomenon with which the Chicago School was already concerned (cf. for example Park, Burgess, and McKenzie [1925] 1974, which shall be addressed in greater detail in the following discussion). This conception can also be found in the allocation of rooms in the home, and it is also visible in the arrangement of bodies. According to Giddens, the regionalization of the body in front (face) and back has its spatial counterpart in interaction contexts. In this connection, the front, the face, is associated with "façade." The suggestion is that the front side on display is not authentic.

> Goffman's discussion of the front and back regions also tends to have the same implication: that whatever is "hidden away" expresses the real feelings of those who enact role performances "up front." (Giddens 1984, 124f.)

At the same time, this association, it is claimed, would have to be ambivalent since the individuals would have to presume truth occasionally in order to maintain a situated feeling of certainty. Giddens comes to the conclusion:

> All social life occurs in, and is constituted by, intersections of presence and absence in the "fading away" of time and the "shading off" of space. (Giddens 1984, 132)

In critical summary this means: Giddens conceives space as that which surrounds people as a matter of course and that which is let into locations. For Giddens, space becomes sociologically relevant in the social regionalization of specific places. He thus misses the possibility of using space and place as sociological concepts designating different things. The difference between a unique place and institutionalized space, for example, can no longer be expressed. The argumentation is reminiscent of sociological phenomenology as developed by Alfred Schütz (cf. e.g. Schütz and Luckmann 1973 [1988]), in which he examines Edmund Husserl's phenomenology and Max Weber's sociology. Schütz studies the structures of the life-world, especially under the aspect of forms of interpretation. Schütz adopts the term life-world from Edmund Husserl and uses it to mean everything that surrounds people unquestionably, regularly, and unavoidably. In Husserl's definition, the life-world "is the spatiotemporal world of things as we experience them in our pre- and extrascientific life and as we know them to be experienceable beyond what is [actually] experienced" (Husserl 1970, 138 [1962, 141]). In other words, the life-world is the reality that is accepted by people as a matter of course in the sense of intersubjective constructions.

For Schütz there are various forms of reality, for example that of the dream, of theater, that of the "everyday life-world"; this everyday life-world is regarded as the one that most strongly structures human action. It is Schütz's strength to establish how people draw on stores of knowledge in action. Unfortunately, in so doing he treats the rules of the constitution of space—as does Giddens—not as a field of knowledge, but as a background of action. As Schütz states, the life-world is subdivided into a world of "actual," "potential," and "attainable" range (Schütz and Luckmann 1973, 36–40 [1988, 62ff.]). Whether these ranges are proximate or distant is relevant to and influences everyday action differently. For Schütz, space is given without question and as such is of differing rele-

vance for the everyday world, depending on the position of the body. This peripheral, local significance that Schütz attributes to space is also reflected in the work of his students Peter L. Berger and Thomas Luckmann, and corresponds to the basic ideas of Giddens's conception of space.

Giddens studies the localization of action. That is, spaces form the contextuality of action and structure action by virtue of division into zones (Giddens 1984). John B. Thompson (1989, 64) points out that though Giddens defines structures by way of rules and resources, in his further argumentation he focuses on rules much more clearly than on (predominantly material) resources. Rob Stones (2005) picks up these arguments and calls for a more intensive consideration of external conditions of action in structuration theory. In addition to virtual structures such as memory traces, perceptual activity, synthesis, and so on, whose duality of structure can be readily explained due to the fact that they are immanent to the individual, a theoretical place is needed for structuring phenomena, which are also produced in action but are externally stored (cf. in the following discussion the argument that things can produce atmospheres). With respect to space, this indicates that it is necessary to extend Giddens's theory by adding the materiality of space at the structural level.

Giddens is working here with two fundamentally distinct premises, namely that there are processual actions and spatial conditions which have to be correlated with each other—and this conclusion is by no means a matter of course in sociology. He decides to produce this correlation in the construction of his theory of action at the level that he calls "system," that is, by merging the two premises in a mesh of localized actions. By means of this step, he is able to grasp the interaction between regionalization and action.

The relatedness of action to space under non-routinized and non-institutionalized conditions as well as the development of spatial structures are disregarded. Hence, he cannot pursue the question as to how in action itself spaces are created whose match with institutionalized structures can be a question for research—for Giddens it is presupposed. In his conceptualization, moreover, it is inconceivable that several spaces could develop at one place. Since he does not distinguish between place and space and does not interpret spaces as the result of action, social struggles about spatial constructions at one place are inconceivable for him (on the blind spots in Giddens's conceptualization of space, cf. also Chap. 6.1). Giddens assumes a duality of action and structures. If he did not oppose space and action, but instead interpreted space relativistically as the result of a

process of arrangement, then he could explain the development of spatial structures in addition to the constitution of space. Instead, due to the opposition, he is constrained to define social structures as outlasting space and time (that is, as taking effect beyond their localization). All in all, his basic absolutist assumption has the result that in his theory of structuration he can only conceive space on one level, namely as system. It is therefore not possible to integrate regionalization into deliberations on a complex process of constitution that also comprises space producing action and spatial structures.

2.2.2   *Urban Sociology Without Space*

Urban and regional sociology is regarded as a particularly pertinent discipline for questions of space. The obvious thing to do is to examine studies in urban and regional sociology with respect to the understanding of space on which they are based. A large portion of the publications treats spatial arrangements, use of space, and sometimes perception of space. Therefore, it is worth inquiring about the theoretical reflection on space in urban and regional sociology. To what extent is space a central category of theory construction? To what extent do empirical studies include reflection on what is categorized as space?

Urban sociology has long been faced with a dilemma. The attempt to delimit urban analysis from other "specialized sociologies" by way of the city as its object creates problems inasmuch as in the twentieth-century society as a whole was urbanized, so that the distinction between urban and rural is now only possible in terms of "more or less of the same" (Häußermann and Siebel 1978, 486).

> Society as a whole was "urbanized".… However, [urban sociology] cannot regain its central position in the construction of sociological theory since in this perspective locally specific differentiations only amount to phenomena of cultural lag or more or less resistant hues of local color. (Häußermann and Siebel 1994, 383)

As Häußermann and Siebel already argued in 1978 in their paper "Thesen zur Soziologie der Stadt" ["Propositions on urban sociology"], the city as an independent object of the social sciences, that is, as a mesh of social relationships typical of a certain locality, is now only plausible as a specific focus of social integration as the basis for "urban planning sociology," that

is, that field of urban and regional sociology that directly aims at the utility of social scientific findings in public administration. Power, class, gender, and the like are of the same or similar effect in the city and in rural areas. Integration into the national justice system, the dissolution of differences in the conditions of production in urban and rural areas and the dissolution of ideological differences mean that it is no longer possible (or rather, that it has long been impossible) to refer to the city as an independent object.

Urban and regional sociology still has the possibility of viewing the city as a reduced image of society. Since, however, this is a *method* of empirical social research and not a special field of sociology, urban and regional sociology cannot be determined in this way. Hence, at first sight it may seem obvious to seek what is specific to urban and regional sociology in the theoretical and empirical study of space. This holds all the more inasmuch as the question of the object of urban and regional sociology also involves addressing the problem that it yields no more than some smaller, some more extensive empirical studies characterized by lack of theory and political indifference (Häußermann and Siebel 1978, 485; Saunders 1981). And indeed, the search for the difficulties in theory development and for the reasons for political indifference leads us again to reflect on space. But contrary to expectation, the problem is not first and foremost the understanding of space or the discussion of the sub-discipline's own categorizations. The discussion of space as a sociological concept was conducted in the 1980s and 1990s in the form of rejections, particularly in Germany in the highly influential work of Häußermann and Siebel. For many authors, the focus on space as a *cause* of lack of theory and political indifference did not seem to be an opportunity to overcome these deficits. According to Häußermann and Siebel, urban and regional sociology produce results in terms of utility for urban planning. Since urban planning can only influence urban development in its spatial dimension, they continue, only localized research results are relevant for practice; for this reason, urban and regional sociology resorts to the results of social ecology. Following a conservative criticism of urbanity, urban and regional sociology ranks spatial factors above social and economic factors, and regards isolated spatial structures as independent causes of social processes. Louis Wirth's concept of the city is said to have dominated research:

> For sociological purposes a city may be defined as a relatively large, dense, and permanent settlement of socially heterogeneous individuals. (Wirth 1938, 8)

According to Häußermann and Siebel, Wirth defines the city in the first place according to spatial features. But size and density, they say, are not social categories, and therefore irrelevant for the explanation of research topics in urban sociology. If space is indeed interpreted with Häußermann and Siebel merely as the geographical conditions defined through size and density, then the explanatory value of space for the sociological view of the city is really at a minimum. We have to agree with them when they argue that neither space nor the metropolis is responsible for social problems such as criminality, but rather that they can only be explained on the basis of the structures of society as a whole. However, they do not ask how social structures find expression in spatial structures nor how spatial structures affect social action. They also do not ask whether size and density are an adequate definition of space. Instead, in their understanding of space they refer to Wirth, who for his part, as the quotation shows, speaks not of space, but rather of more or less large, settled areas.

Although they recognize that urbanization must be analyzed "as the unity of the permanent revolution of economic, social and spatial structures" (Häußermann and Siebel 1978, 487), Häußermann and Siebel clearly set themselves apart from a spatial definition of their object:

> Sociology defines its object according to social features, urban planning according to spatial–physical features. (Häußermann and Siebel 1978, 493)

According to Häußermann and Siebel, space is not an object of sociology, but rather of economy. In his work *Social Theory and the Urban Question*, Peter Saunders (1987), too, comes to the conclusion that urban and regional sociology fails in its attempt to define the city sociologically since it seeks to connect social processes with spatial categories. He also calls for a clear division between the spatial and the social.

> If our theoretical concern is with a specific social process … divorced from the question of space, then we certainly have the basis for a sociology, but to term it "urban" can be no more than a convenient convention. If, on the other hand, our concern is with the significance of spatial arrangements for the maintenance of capital accumulation, then our problem may indeed be designated as "urban" (meaning spatial), but our approach to it can hardly be termed "sociological" (it is, rather, the application of theories of political economy to a geographical object). (Saunders 1981, 256–257)

For Saunders, space and the city are necessarily not sociological unless one attempts to establish a non-spatial urban sociology that treats questions of social consumption, competition, and local politics. For Saunders, space is a geographical object. However, he does not ask how space is actually defined in geography, and therefore does not realize that it does not by any means treat space as a patch in the countryside defined by size and density of settlement, but rather that its social constitution is indeed the subject of discussion (for example Werlen 1987, 1995a, 1997).

In his contribution to a 1991 anthology that was conceived as a fundamental work of German urban sociology, *Stadt und Raum* [City and space] (Häußermann et al. (eds.) 1991), Thomas Krämer-Badoni grapples with the question of the object of urban and regional sociology. He also claims that the city cannot be defined spatially or socially, nor delimited from society. Since the developmental dynamism of urban life cannot be derived from its spatial character alone, he rejects a foundation of urban and regional sociology by way of spatial processes. Instead, he accepts that it is the function of urban and regional sociology to analyze concrete urban living conditions to provide empirical material for social analyses.

> Social analysis is able to delimit the frame within which conditions of life vary. Urban sociology, by contrast, is able to depict the concrete living circumstances and their specific conditions. Hence, social theory needs urban sociology just as well as the other way round: they are in an indissoluble dialectical relationship to each other. (Krämer-Badoni 1991, 27f.)

Krämer-Badoni shifts the problem. Though he does indeed make it clear that the analysis of space and the analysis of the city do not merge, he nonetheless recognizes space as an essential dimension of urban processes. For him, it is a matter of course that the concrete living circumstances to be studied by urban sociology are spatially structured. However, in his attempt to define the city sociologically, he does not address space any further.

Urban and regional sociology as it is presented in fundamental works and manuals approximately up to the turn of the millennium disassociates itself more or less explicitly from a spatial determination of this object.[5] According to its self-image, space is initially not decisive as a category, although built-up spaces are studied. This is attributable first and foremost to its concept of space. Space is understood as territory, which is determined by size and density. Thus, here, too, the authors argue under

the premises of absolute space. The concept of space is used to designate a limited area in which something happens (as in a container); it is thus juxtaposed to action. Space remains the concrete, describable object that was previously delimited; it is understandable that it is then declared to be sociologically irrelevant.

The problematic point is that what was previously categorized as space is then rejected because it is space. It applies to most empirical studies in urban sociology that space is used as the designation for the spatial delimitation of a research field, for example for a city quarter, a region, and the like, but their own categorization remains unanalyzed, and space is ignored as an object of theoretical inquiry. This conceptualization of space is drawn from the social ecology of the Chicago School.

Robert E. Park and Ernest W. Burgess are among the most famous representatives of urban sociology as it was developed in the 1920s. Louis Wirth and the social ecologist Roderick D. McKenzie are regarded as students of Park and Burgess. In 1925, Park, Burgess, and McKenzie wrote the book *The City*, in which they gave a theoretical foundation for social ecological urban research and presented research findings. In this and in other publications, they developed their idea that arguments from animal and plant ecology can be transferred to human society. The basic idea, which has been often and rightly criticized, is that human beings adapt to their environment. In this perspective, various city quarters seem to be human beings' forms of adaptation to their environment (natural areas). By means of specific forms of selection, various groups attempt to establish communities homogeneous in themselves based on ethnicity or social class just as "different species of plants tend to form permanent groups" (Park 1967, 55). According to Park, social ecology, which he calls human ecology, places less emphasis on geographical structure than on space. By this he means the following:

> Human ecology, as sociologists conceive it, seeks to emphasize not so much geography as space. In society we do not only live together, but at the same time we live apart.… Local communities may be compared with reference to the areas which they occupy and with reference to the relative density of population distribution within these areas. (Park 1967, 56)

Thus, when Park establishes social ecology on the basis of the significance of space, he opposes taking only the structure of distribution (geographical structure) into consideration, and emphasizes uniformity in the

quarter and difference in the city. For Park, the introduction of the con-
cept of space is an attempt to dissociate himself from a limited perspective
of only geographical boundaries and physical distances, and instead to
pay attention to the overall structure, which repeatedly changes due to
waves of immigration. Just as Louis Wirth determines the city with respect
to size and density, and beyond that with respect to heterogeneity, Park
defines the various communities with regard to size and density, and at
the same time the overall complex city with regard to heterogeneity and
equality. For Park as for other representatives of urban sociology, space is
of significance to the extent that he wants to use it to determine equality
and difference for areas of various sizes that are delimited from each other
using the concept of space.

Thus, for example, Ernest Burgess assumes the "physiological facts"
size and density when he studies the extension of the city and the con-
comitant spatial structurations. Burgess develops the ideal typical model
of concentric circles, according to which the city is divided into various
zones proceeding from the center. Since then, the model has been modi-
fied, refined, and refuted. It has proven not to be a universal pattern of
urban development, but only to be applicable to North American cites of
the 1920s (on the model, cf. Park, Burgess, and McKenzie 1974; for criti-
cism: Hamm 1982).

It has often been pointed out that "despite" its basis in the theory of
evolution, the Chicago School's social ecology has provided essential basic
concepts for urban sociology (Friedrichs 1977; Krämer-Badoni 1991;
Häußermann and Siebel 1994). These include above all:

> Segregation as the concentration of certain groups in specific city quarters;
> invasion as the influx of groups into an area in which other groups were pre-
> viously segregated; and succession for the description of a complete trans-
> formation of use in certain city quarters. (Krämer-Badoni 1991, 20)

The majority of the social ecologists of the Chicago School, however,
treat space as naturally given areas that are divided into containers of vari-
ous sizes. Given this definition, it is not very surprising that among sub-
sequent generations of American urban sociologists there was controversy
about the contents of the containers. Thus, in their studies of Chicago,
sociologists such as Gerald Suttles and William Kornblum found that the
boundaries of city quarters and the identity as a quarter remained even
when the homogeneous population had long dissipated and multicultural

or cross-class mixtures had developed. They conclude that socially heterogeneous groups within a common space develop collective identifications (Suttles 1972; Kornblum 1974; cf. also Hunter 1974). Gisela Welz (1991) objects that in the multi-ethnic slum that she studied in Brooklyn, the common territory was not sufficient to develop a common identity. Barry Wellman and Barry Leighton (1979) present an argumentation similar to Welz's. They show that the formation of a community can take place independently of space by way of ethnic, vocational, religious, and other ties. They criticize that neighborhoods are understood as "containers" and equate this with spatial determinism in which space has the power of structuring social relationships.

> First, the identification of a neighborhood as a container for communal ties assumes the a priori organizing power of space. This is spatial determinism. (Wellman and Leighton 1979, 366)

Here, too, a closed territory is categorized as "space," and then the own categorization rejected as invalid. Why is a community's network across various city quarters not a space? For a long time, such questions were neither posed nor answered in American urban sociology following the Chicago School, nor in German urban and regional sociology.

The few attempts to address space as an object of theoretical inquiry often also address social ecological research. They do so either critically or inconsistently (see for example Castells 1977). For Ulfert Herlyn this is only a "small step."

> Thus, the examination of the interrelations between extension over the surface and the distribution or arrangement of social groups and phenomena was predominant [in urban ecology]; however, it is only a small step from this argumentation about two-dimensional space to deliberation on three-dimensional space. (Herlyn 1970, 56)

For Herlyn, as he states in his 1970 study *Wohnen im Hochhaus* [Living in a high-rise building], the third dimension is subjectively experienced space. He later (Herlyn 1990a) specifies that experienced space is composed of space as the place of action and space as the place of orientation. So as not to make use of the concept of perception, which for him has a connotation of passivity, he understands experienced space as appropriated. In other words, Herlyn accepts the Chicago School's idea of space as

naturally given areas that are divided into containers of various sizes, and extends it with the notion that space has to be accessed in action. Thus, space remains a container, but one that is in a direct relationship to action.

Summarizing the studies of space in urban and regional sociology up to this point, it is apparent that in most cases the equation of spaces with limited territories has the result that space is excluded from the logic of argumentation. Due to the aspiration to avoid geopolitical argumentation so that social processes or political conclusions are not derived from the size and structure of a territory, space is declared to be sociologically irrelevant.[6] This led to desiderata for research. The concept of space, from which the aforementioned studies cannot completely abstain, is used unsystematically and associatively. Inasmuch as a theoretical idea of the constitution of spaces is lacking, opportunities for the correlation of various data, for example on perception, urban ways of life, and spatial structures in cities, go unused (for examples see Chaps. 6.2 and 6.3).

However, individual studies, for example Herlyn's, demonstrate that thought in terms of territory does not necessarily lead to avoidance of the concept of space. Then, however, problems similar to those in the equation of space and place are encountered (Chap. 2.2.1). The term "territory" is used to designate a contiguous piece of ground in its surface extension. Territories are thus reified structures. The aspect of constitution of space by virtue of symbolic processes of linking is then overlooked. Groups of people can, for example, constitute a space that is not bound to the surface on which they stand. Various social sub-groups can generate different spaces on the same ground. None of this can be explained through a purely territorial concept of space.

In urban and regional sociology, it is implicitly alleged that on the one hand spaces are describable and on the other hand social process analyzable. The two can then be correlated to study the "appropriation" of space. Thus, space–territory and action are systematically divided and then correlated. The consequence is that the space that takes effect in the social process seems to be open to the researcher's investigation, independently of the actors. Thus, for a certain field of research, it is ascertained in which territories, for example, more criminality occurs. And the researcher determines the size and the boundaries of the territory. The question of which spaces are constitutive for those who perform the criminal acts is not investigated.

In order to counter the theory-deficit of urban and regional sociology raised here, a well-founded concept of space is required which does

not only grasp spaces that can be descriptively investigated, but also the material and symbolic aspects of the production of spaces by various actors as well as institutionalized constructions of space (including institutionalized territories). However, this presupposes a change of perspective such that two different realities (space and action) are no longer assumed, but rather space is derived from the interaction of structure and action.

An approach to a relativistic perspective of this kind was undertaken by Bernd Hamm for the first time at the beginning of the 1980s in an attempt to solve the problem of the object. Instead of taking city or country as the object of research, he studied the settlement of space in general; this did not gain acceptance in urban and regional sociology. Initially he founded settlement sociology together with Peter Atteslander; later, with Ingo Neumann and colleagues, it was elaborated to settlement, environmental, and planning sociology (Atteslander and Hamm 1974; Hamm 1982; Hamm and Neumann 1996), and now directs its cognitive interest at the spatiality of society.

> The city becomes a universal form of life, *all* social phenomena are also urban phenomena. Consequently, the object of settlement sociology has to be reconceptualized: It is concerned with the interrelationships between the spatial and social organization of a population. (Hamm 1982, 21; italics in original)

Their project is "to explain the various kinds of appropriation of space, use of space, and configuration of space in interaction with the social behavior of individuals and groups and the function of institutions" (Atteslander and Hamm 1974, 16). For Hamm, space is a structuring factor for all kinds of social interaction. His aim is to renovate sociology from the standpoint of spatiality (for example Hamm 1982, 24). Hamm connects with social ecological argumentation, but does not adopt its concept of space. Rather, he writes:

> If space were nothing but a mere *container* in which social relationships take place that are completely independent of it, then space is interesting at the most on a descriptive level, but completely infertile for research into what is important in that kind of sociology: social organization. (Hamm 1982, 24; italics in original)

Hamm opposes the notion that there is a "space in itself"; rather, he emphasizes that meanings are ascribed to spaces. Spaces are produced through social processes, perception of spaces is learned in social processes.

> By producing spaces in processes that are often highly complicated and involve division of labor, we produce at the same time their social significance, and every child who learns to cope with space, learns at the same time the rules by means of which it can decipher the symbolism inherent to spaces. (Hamm 1982, 25; italics in original)

However, these produced spaces also affect people's social behavior. They influence and canalize behavior and remind people of learned interpretations. This results in a constant interaction. According to Hamm, space exists only in cultural configurations. There is no natural space that can be appropriated, but rather every reference to space is already influenced by social experience. The material substrate of spaces is composed of people and things. Typical combinations of things compose spaces that take on meaning through people's interpretative perception. Spaces are the "goal-oriented arrangement of things" (Hamm and Neumann 1996, 55). Thus, space only exists in people's interpretation.

> That is precisely the ground of the sociological meaning of space: that it does not exist except in our perception and that in action this perception is always and inevitably preformed and mediated by social relationships. (Hamm 1982, 26)

For empirical work, the consequence is that analyses of space must always explain the material substrate, the institutionalized behavior patterns, and finally the semiotics, that is, the sign character of the situations. With reference to Durkheim ([1912] 1981), Hamm defines the material substrate as the group of people who together constitute a society, and beyond that the distribution and size of the land, its constitution (mountains or level country, rivers and so on), and the configuration of the things that influence everyday life. By institutionalized behavior he means both the behavior that configures space, for example the construction of a railway or financing systems in home construction, and the influence on behavior through social differentiations, for example gender, class, ethnicity, and age. Finally, with the semiotics of space, he describes space as a bearer of information. With reference to Ferdinand de Saussure, he distinguishes

between the signifier (*signifiant*), that is, the readable sign, and the signi-
fied (*signifié*), that is, its meaning. Since there is no natural connection
between these two, the perception and interpretation of signs has to take
place in a social context. This also means that there are differences in the
perception and interpretation of signs represented in space according to
culture, gender, class, and so on, and that the possibilities of access to the
"interpretation key" (Hamm 1982, 119) are different.

Dieter Läpple picks up this approach to space in 1991 in his "Essay
über den Raum" [Essay on space], thus initiating a tentative debate on
the concept of space in urban and regional sociology running parallel
to the recent attention to the topic of space in sociology in general (see
Dangschat 1996; Breckner and Sturm 1997; Keim 1997; Ipsen 1997).[7]
However, Läpple makes two decisive modifications (for more detail cf.
Chap. 4). In his conception of the human being, he no longer assumes one
who behaves passively, which is Hamm's premise. His key category is the
human capacity for action. Furthermore, he complements and connects
the three components for the constitution of space that Hamm advances,
namely material substrate, behavior, and semiotics, adducing arguments
on an institutionalized and normative regulation system as a connector
between material substrate and social action.

While Hamm advocates the prospect that urban and regional sociology
should devote its attention to the systematic study of the link between
spatial and social organization and that it should change its name accord-
ingly, Läpple only wishes to stimulate reflection of concepts of space. It
is certain that attention to space cannot answer the dilemma of urban
and regional sociology completely. It remains a fact that the distinction
between urban and rural only consists of negligible differences in modern
society, and that the (male) city dweller is no longer distinguished from
the rural man, as Georg Simmel ([1901] 1984) in his time could rightly
claim, by the fact that he has an intellectualistic character as a reaction to
the multitude of impressions, whereas his rural counterpart tends to senti-
ment and emotion.

But the idea should be entertained that a link between the spatial and
the social would serve to give a precise determination for research in urban
and regional sociology. The object of study would then be the spatial
construction of the social and social construction of the spatial. The city
itself could be studied as a specific link between the spatial and the social,
comparable with other links in rural or small-town regions.

Against the background of my argumentation up to now I would like … to advocate that an urban and regional sociology that is ready for the future should retain the various forms of settlement, mobility structures, spatial division of labor, and nature–culture relationships as *fields of research* with a view to social processes that are becoming more spatialized, but that the *construction of a theory* covering this spectrum should connect with the concept of space.… Therefore, in the future I would even prefer to speak of a 'sociology of spatial development,' since the realms of research and analysis have long ceased to be restricted to the classical fields of the city and region. (Sturm 2000, 142; italics in the original)

Kerstin Dörhöfer and Ulla Terlinden, who systematically analyze the various approaches to the interaction of gender relationships and spatial structure under the title *Verortungen* [Placements] (1998), also come to the conclusion that feminist urban research and planning should more insistently shift the basic category "space" into the focus of theoretical deliberations (Dörhöfer and Terlinden 1998, 20; see also Rose 1993). I therefore propose that "sociology of space" be considered as a specialization of sociology. As a subdiscipline of sociology, it can study the constitution of spaces on all scales, whether cities, regions, or small communities. In contrast to the specialist designation proposed by Sturm, "sociology of spatial development," the term "sociology of space" avoids the idea of linearity involved in the concept of development. However, this presupposes that the territorial concept of space be abandoned, and instead the complexity of the constitution of space be taken into consideration.

2.2.3   *Simmel and Form*

In the article mentioned above, "Essay über den Raum" [Essay on space], Dieter Läpple (1991) shows that Georg Simmel, too, conceives space as a container in his papers "Soziologie des Raumes" [Sociology of space] ([1903] 1992) and "Der Raum und die räumliche Ordnung der Gesellschaft" [Space and the spatial order of society] ([1908] 1995a).

"Space remains a 'form with no effect in itself', it is merely a container for social and 'mental contents'" (Läpple 1991, 166).

Simmel argues that space is a matter of course, a "conditio sine qua non" (Simmel 1995a, 687). People's interest is directed at the particular configuration of things, not at space in general. Space is, as Läpple correctly summarizes, a form that in itself lacks effect, for it is not space that

creates particular social phenomena; rather, human division and gathering have social meaning. Simmel accordingly proposes "contents" as sociologically relevant. Where Giddens brings his concept of regionalization to bear, Simmel emphasizes the basic qualities of space as created by human action, for example, its exclusiveness as well as its divisibility and fixability. Simmel distinguishes this from "spatial structures," for example a church or a city, as products of social processes.

In spite of this unambiguously dualistic conception of space, the question of Simmel's understanding of "form" is essential to the interpretation of his argumentation. In the interpretation of Simmel's concept of space, it has up to now gone completely unnoticed that his paper "Der Raum und die räumliche Vergesellschaftung" [Space and spatial sociation] is collected with other essays under the title "*Formen* der Vergesellschaftung" [*Forms* of sociation]. Simmel already points out in the preface that the various texts can only be understood in the context of the problem developed in the first chapter. That is precisely where he clarifies his concept of form. Up to now, no attention has been paid to the Kant lectures that Simmel held in 1905 at the University of Berlin; they took place before the publication of the above-mentioned paper, but after he wrote the first version of it in 1903 under the title "Soziologie des Raumes" [Sociology of space], from which it follows that as far as he is concerned it obviously is not in conflict with his lectures. Here, Simmel writes on the concept of space as follows:

> What does this infinite container around us mean, the container in which we float as lost dots, but which we *imagine* together with its contents, which is therefore in us just as we are in it? (Simmel 1905, 52; italics in original)

It is not without irony that he begins his sixth lecture with the image of the world as a container for lost dots, then to criticize this idea severely.

> In view of the habituation of imagining ourselves and things within an existing space that above all is unique, it is a difficult thought that—to put it somewhat paradoxically and briefly—space is itself not something spatial; nor is the perception of red itself something red. (Simmel 1905, 55)

In this lecture, Simmel presents his interpretation of Kant's idea of space. His affirmation of many ideas is made clear by the insistence with which he emphasizes Kant's originality. He says that infinite, empty space,

the idea of a container is merely an abstraction. Spatiality only emerges in that people generate it in their perception, he continues. Outside of human sensations, space has no reality; however, this does not mean that it is only subjective or unreal, since human sensations form the world:

> .... space derives all of the reality that can be spoken of at all in our cognition from the fact that it is the form and condition of our empirical perception. Spatial things are thus real inasmuch as they form our experience. (Simmel 1905, 57)

Accordingly, space is for Simmel a form lacking effect in itself, comparable to the form by which wood becomes a cabinet, a form that has no independent existence outside of the material (cf. Simmel 1905, 55). By "space" Simmel means both the scientific abstraction of an infinite empty space and the form that people give things in actual perception; and this latter is in his opinion the essential aspect. Simmel believes that in Kant he has found the distinction between the spatiality of things and the spatiality of absolute space. Whereas he emphasizes that the former, the spatiality of things brought about through perception and imagination, is the essential insight, he views the all-encompassing space in accordance with his interpretation of Kant "only" as a pure intellectual construct and hence negligible.

In his sociological discussions he also distinguishes between two meanings of space.

> When aesthetic theory declares that it is the essential task of the visual arts to make space palpable for us, it overlooks the fact that our interest is directed only at the special configuration of things, but not at space in general or spatiality, which is only the conditio sine qua non of the former, but not its particular essence nor the factor producing it. (Simmel 1995a, 687)

This makes it understandable that he regards the configuration of things as the essential point for social processes. These are the things whose spatiality is generated in the process of perception and which, according to Simmel the sociologist, are arranged by people in their actions and emotionally charged. However, he also continues to emphasize that "space in general" is uninteresting, but nonetheless an indispensable presupposition. It remains in need of an explanation why space in the Newtonian sense, which is said to be a mere abstraction, is declared to be an irreducible

presupposition of human existence although at the same time its social relevance is disputed.

The Russian sociologist Alexander Filippov (1997) attempts to resolve this contradiction by inferring that "the actual piece of space, the ground, or the territory can play the same part in social impressions as the abstract, mathematical–philosophical idea of space in the argumentation of an enlightened theorist" (Filippov 1997, 23). According to this, the analysis of absolute space is Simmel's philosophical interest as a scholar, but territorial space is what is relevant for sociation. This interpretation is indeed possible, but it fails to explain *why* the scholar Simmel regards absolute space as an abstraction to be an indispensable presupposition.

This only becomes plausible when Simmel presents absolute space not only as a metaphysical construction, but assumes it as the central presupposition for Euclidean geometry, which Kant also declares to be the presupposition of everyday spatial perception as a natural cognitive horizon. The rules of Euclidean geometry are then valid as imperative presuppositions; for sociation, however, space as that which gives form is of significance.

In this connection, the concept of form is for Simmel not only relevant with respect to space. Simmel gathers under the topic "forms of sociation" not only space, but also social groups, poverty, conflict, and so on. Simmel determines society through the distinction between form and content. As Simmel explains in the introductory chapter of the book *Das Problem der Soziologie* [The problem of sociology] (Simmel 1995b), society emerges when coexistence in isolation is shaped to definite forms. Sociation is, according to Simmel, the form by means of which individuals are grouped into unities.

> Sociation is thus the form realized in innumerable various species in which individuals coalesce to a unity due to interests—whether sensory or ideal, momentary or enduring, conscious or unconscious, causally driving or teleologically drawing—and within which these interests are fulfilled. (Simmel 1995b, 19)

In this context, content and form are understood as a unitary reality. Sociation can no more exist without individuals than spatial form without matter. But, he argues, in contrast to space a priori, which is generated by the observing subject and hence does not proceed from the things, society proceeds from the individuals, who analytically are comparable with the things. It is not society that constitutes the unity of individuals, rather the

individuals produce society. In the case of space, it is the other way round. Here, the connections between things are constituted in the human being (cf. Simmel 1995b, 43).

> The fact that space as such is only an activity of the mind, only the human way of linking the sensory impressions which in themselves are isolated to yield unitary perceptions, is reflected in the need for specific mental functions for the various historical configurations of space. (Simmel 1995a, 688f.)

On the question of the forms of sociation, Simmel also deals with the meaning of spatial forms for sociation. In this context, in accordance with his basic Euclidean assumptions, he presupposes a unitary space that is structured "from the mind." On the basis of the fundamental absolutist assumption, he defines exclusivity, divisibility, fixedness, contiguity, and the possibility of moving from place to place as the fundamental qualities of space.

Motivated by Elisabeth Konau's reading (1977), Simmel is often mentioned as one of the first sociologists to come to the conclusion that with the expansion of the monetized economy, space increasingly loses significance. However, for Simmel it is not space that loses significance, but rather certain forms of connection, for example proximity–distance relationships, which, according to Simmel, lose their decisive social significance.

In summary, this means that with respect to Kant, Simmel also argues within the absolutist intellectual tradition, but in a completely different manner than in terms of the concentration of space in localizations at places or territories as discussed above. For him, space is a form that unfolds its effects when human beings apply it to the world of things. Turning to the second meaning of space for Simmel, this a priori ordering principle is only conceivable for him within an all-encompassing absolute space corresponding to Euclidean principles.

Simmel's analysis of the human activity by which things are brought into space-form touches an essential aspect of the constitution of space. Just as spaces can be determined as territories, rooms, or regions, that is, as materially existing objects, this materialization requires an individual and collective operation of linking to produce socially pre-structured forms. Following Kant, Simmel demonstrates this with great clarity.

However, Euclidean geometry, in Kant's day the only conceivable geometry, receives too much emphasis in this context. The significance

that Simmel attributes to Euclidean geometry has to be qualified in keeping with today's state of knowledge. The development of non-Euclidean geometries and the insight that Euclidean geometry is an idealization of perception makes it clear that these principles are not the only ones by means of which the surroundings can be given order (see Chap. 3.1 for more detail).

Euclidean thought, which is imparted in processes of socialization and education, is doubtlessly a culturally necessary achievement by means of which we can localize ourselves or others on a grid. This ordering activity is presupposed and enhances the sense of "living in space." Today, however, it can no longer be assumed as the only ordering principle. In order to give the concept of space enhanced precision as a sociological concept, the synthesizing activity in the constitution of space that Simmel emphasizes has to be determined more accurately in accordance with today's state of knowledge and in view of the changing conditions of socialization; secondly, it has to be related to the constitution of primarily symbolic and primarily material spaces in socially pre-structured action. In this connection, it cannot be assumed that localization in a three-dimensional Euclidean space, which is often helpful for everyday organization, is also a reasonable sociological conceptualization. Rather, I suggest that this ordering principle should be understood as one aspect in the constitution of space.

2.3   First Interim Conclusion

A concept of space is said to be absolutist when an immanent reality beyond action, material bodies, or human beings is attributed to space, or when three-dimensional Euclidean space is assumed as the indispensable presupposition of all constitution of space. In particular, in case of a systematic distinction between space and matter, echoed in sociology in the division between space and social processes, the absolutist concept of space is also referred to in research as the concept of container space. This is meant to express figuratively that space seems to enclose the social process as a container.

My analysis shows that absolutist concepts of space are formed in three variations: the local concept of space, the territorial concept of space, and the Kantian concept of space.

It applies to both the local and the territorial concept of space that space is viewed as an existing basis that is structured in action or that structures

action. The initial assumption of two completely separate realities, namely "space" and "material body/human being/action," has the result that either only one side is defined as a sociological object (as in urban sociology) or that only one point of contact is defined between the two sides (such as Giddens's concept of system). There is no sociological theory that is based on these presuppositions and at the same time takes account of space on all levels of the theoretical project. The consequence is that the constitution of space is rarely studied, but rather only action. That can be most clearly seen in the fact that it is not asked whether the action of different social sub-groups (for example in a city quarter) is structured by different spaces. Instead, a space is assumed that pre-structures the action of all groups equally. In empirical studies, this has the additional consequence that, for example, a city quarter is conceptualized as a space or territory, and the research team does not know whether the group under study constitutes its urban space in the same boundaries. Such a restriction can naturally be reasonable for a study, when, in order to reduce complexity, one aspect of constitution is picked out. However, this presupposes knowledge of the various levels of production and reproduction of space.

One central criticism of this conceptualization of spaces as reification in places and territories is thus that this model rules out the possibility that through the activity of various social sub-groups, several spaces can emerge at one place or on one territory. Furthermore, the significance of symbolic connections is not considered.

Moreover, with respect to the territorial concept of space, which conceptualizes space by way of the size and population density or the possibilities of using a territory, there is the further point that this definition implies that it is sociologically irrelevant. Then we are faced with the dilemma that although space seems not to be a sociological concept, as sociologists we always have to do with spatial phenomena.

The absolutist idea of a (structured or structuring) space that exists in itself and to which constantly moving actions are related also results in problems on the level of *conceptualization*—if it is supposed to be used as sociological concept. As, for example, Michel Foucault criticizes, spaces are regarded as dead, fixed, and immobile structures. "Space" is linked with "being," and "time" with "becoming." One can often have the impression, in the words of the geographer Doreen Massey, that "Time marches on but space is a kind of stasis" (Massey 1994: 253; cf. 1993, 118). In the absolutist model, there are *movements in space*, but no *moved spaces*. This means that changing structures and conflicting constructions

of space at one place, which, due to the processes of negotiation on which they are based, are always fluid, are systematically ruled out.

Norbert Elias (1978, 112ff. [1993, 119ff.]) criticizes that traditional structures of thought and language are formed on the basis of a state of rest and that motion is added afterwards by the verb:

> For example, standing by a river we see the perpetual flowing of the water. But to grasp it conceptually, and to communicate it to others, we do not think and say, "Look at the perpetual flowing of the water"; we say, "Look how fast the river is flowing." We say, "The wind is blowing," as if the wind were actually a thing at rest which, at a given point in time, begins to move and blow. (Elias 1978, 112 [1993, 119])

This critique of basic frameworks of conceptualization applies especially to space as it is conceived in the absolutist context. Inasmuch as motion exclusively takes place in it (or with reference to it), space is the prototype of rigidity. It is only when the concept of space itself and not only action is understood as moved that changes to spaces can also be understood.

But it is not only in the determination of being and becoming that a problem in the juxtaposition of time and space becomes apparent. It is illogical to conceive time and space as fundamental factors of human existence and to understand the one concept as a social construction, but to reify the other, for example as a territorial concept. This creates an *imbalance of structurally like concepts*. It is logical to juxtapose the organization of succession to the organization of contiguity.

Simmel avoids this imbalance when with reference to Kant he defines space as a form-giving principle. According to him, spaces as such only take effect when they are given a form through processes of construction. Simmel thus emphasizes one essential aspect of the constitution of space, namely that the emergence of spaces presupposes a human operation of construction. However, he restricts the range of his proposition inasmuch as he can only conceive this constructive operation within the framework of Euclidean geometry, thus taking recourse to Newton and relying on absolutist argumentation. The development of non-Euclidean geometries and the discrepancy between the geometrical model and the world are disregarded. Thus, for example, Elisabeth Ströker (1987 [1977]) shows that people are oriented to three-dimensional Euclidean space in goal-directed action and in imagination, but that this is not the full extent of the emergence of spaces. For example, sensory-bodily perception is also constitu-

tive. The sociological relevance of three-dimensional Euclidean space lies in my opinion in the significance that it has for people in their action and thought. Therefore, it shall be elaborated in detail citing empirical studies in the next chapter (Chap. 3). Three-dimensional space does not form the basis of a sociological concept of space, but rather only one dimension of the everyday operation of synthesis that has to be taken into consideration in the sociological concept of space.

Overall, this means that the organization of contiguity has to be derived in consideration of its social construction and its materialization. The works of the various authors discussed in this chapter make it clear how many aspects have an effect on the constitution of space. Simmel elaborates the significance of form-giving and the constructive operation, Giddens emphasizes the significance of places and the formation of zones, Herlyn stresses the appropriation of territories.

The critical analysis of these works, however, also shows that the constitution of space itself has to be understood as a social process. This means that what previously was the point of departure or the reference point of a study now itself becomes a sociological object: the constitution of space. In order to be able to take this into consideration at all levels of an action-theoretical conception, action itself has to be understood as constitutive of space. Therefore, I shall not attribute a reality of its own to space (as in many absolutist conceptions), but rather advance as the point of departure the relativist assumption that spaces emerge from the arrangement of "bodies." Since "bodies" are in motion, the coming-to-be of space comes into the focus of study; by the same token it also draws attention to the fact that the arranging of the bodies is an action. This process can, of course, be related to the constructions and perceptions of the "observers."

This does not mean that the insights of the authors classified as absolutist shall no longer be taken into consideration. Rather, this work is structured such that its point of departure is the distinction between absolutist and relativist. As in the case of all differentiations, this is an asymmetrical distinction since due to the above-mentioned arguments the relativist understanding of space is emphasized as the point of departure. In the course of the argumentation, however, the central aspects of the absolutist concepts of space (the constitution of places and territories, the constructive operation) shall be picked up and integrated into a processual concept of space. The result will not be a new relativist concept of space, but rather a concept of space that I shall call "relational."

But before I turn to the detailed elaboration of this concept of space, the theory shall be related to empirical findings. Empirical research is particularly useful for two reasons. Firstly, we can attempt to determine whether changes in the social organization of contiguity can be detected that also seem to make it necessary to revise the sociological concept of space. Secondly, the empirical studies provide considerable insight into the constitution of space that will be integrated into the theory of relational space. Thus, by placing the various empirical studies in relation to each other for the first time, I intend to comprehend the changes in the organization of the spatial, thereby identifying phenomena to which a sociological concept of space can be applied and for which it can be illuminating. Accordingly, in the following chapter, the results of empirical studies on the constitution of space shall be discussed and analyzed with reference to three selected sociological fields: "socialization and education with particular reference to new media," the "city," and the "body."

NOTES

1. [Translator's note: The fourth edition (1949) of this work, *The World View of Physics*, was translated into English. Since then, the book has been substantially augmented; Löw quotes from the thirteenth edition. This quotation is not in the translation.]
2. [Translator's note: The book from which this quotation is taken, Leopold Infeld's *Leben mit Einstein* (Life with Einstein) is identified on the verso of the title leaf as the German translation of an English original *Sketches from the Past*. Despite extensive efforts, no such book could be found. The quotation is therefore translated from the German.]
3. Cf. on this definition Gosztonyi 1976, 333.
4. Mileva Einstein-Marić (1875–1947) was a mathematician. After their divorce and the award of the Nobel Prize, Einstein no longer felt obliged to disclose her collaboration (cf. Trbuhović-Gjurić 1983; Troemel-Ploetz 1990; Schmerl 1997).
5. In his earlier works, the urban sociologist Manuel Castells (1976, 1977) also reduces space to a material product or something really objective. It was only in later years that he called for a "social theory of space" (Castells 1994, 126; on this point cf. e.g. Chap. 3.3).
6. The Swede Kjellén (1917a, b) is regarded as the founder of geopolitics. He defines space as land, territory, area, or Reich. On the basis of previously marked areas, power-political and strategic arguments are derived. The National Socialists used such argumentation to justify their policy of

expansion. Karl Haushofer is regarded as the central representative of German geopolitics; he became Hitler's advisor and conceptual trailblazer after the seizure of power. What Hans Grimm treated in a literary mode in his novel *Volk ohne Raum* [People without space], which was published in 1926 by the respected publishing house Albert Langen and Georg Müller, is stated by Haushofer in a seemingly academic manner: the necessity of spatial expansion and the basic idea of a "closed German national soil" (Rössler 1991, 157). In his book *Mein Kampf*, Hitler, too, emphasizes that only a sufficiently large space can make a life in freedom possible for the Germans.

Even though the National Socialists did not use space as a defined term, but rather integrated it into political speeches as an emotionally charged word, in the post-War period the negative connotation resulted in a disinterest in the research object "space." Even today, a concept of space with an exclusively territorial foundation is a reminder that in their justifications, the geo-politicians of the 1930s and 1940s could also appeal to argumentation provided by sociologists. In his book *Volk, Raum und Sozialstruktur* [People, Space, and Social Structure], Jörg Gutberger (1996) intensively analyses the multifarious ties between sociology, geography, and politics in many European countries. He shows for example that socio-geography, which was initially understood by Ferdinand Tönnies and Theodor Geiger as a descriptive method of sociology, was adopted by the National Socialists as argumentation from a territorial perspective.

7. In Anglo-American literature, space is the subject of discussion above all in geography. Though David Harvey's *Social Justice and the City* (1973) and Manuel Castells's *The Urban Question* (1977) laid a foundation for a theory of space in social science, it was only with the translation of Lefebvre into English and with fundamental works such as Shields (1999), Soja (1989 and 1997), Thrift (1996), and Massey (2005) that an intensive debate on concepts of space and their range began.

CHAPTER 3

Changes in Spatial Phenomena

In his book *Tristes tropiques*, or, *A World on the Wane*, Claude Lévi-Strauss (1961 [French 1955; German 1996]) describes how science perpetually addresses social phenomena when social practices have already long since changed. If Lévi-Strauss's claim is true, the numerous publications on space in recent years indicate that a fundamental transformation has taken place. Observing changes in spatial phenomena, however, does not mean turning one's attention to completely new phenomena. As we know from Heinrich Heine's accounts written in response to the opening of two new railway lines in 1843, he observed the ways elementary concepts of time and space were already under threat. The relationship between proximity and distance has changed decisively in the last two hundred years due to technical achievements such as the construction of the railways, the invention of the automobile, and the invention of the airplane. The following account shows how the awareness of very different spaces has changed in the last few generations.

Taking, for example, the distance from the east to the west coast of the USA as a measure, two years are needed to cover the distance by foot. By horse, eight months are required, by stagecoach four months, with the railway four days in 1910, by car two and a half days today, with an airliner five hours, with the fastest jet plane a little more than two hours, with the space shuttle a few minutes (cf. e.g. Carlstein et al. 1978).

Due to the invention and spread of the television, later due to the transmission of pictures in real time, very different spaces become visible not only for the traveler, but also for those who stay at home. Thanks to

new technologies ranging from the landline to mobile telephones, from fax to the Internet, communication within seconds is possible. According to the French ethnologist Marc Augé (1995), space is therefore constituted in a contradiction. On the one hand there is an "overabundance" of space, that is, multifarious possibilities to reach innumerable places or to communicate with people all over the world, and on the other hand there is a constriction of space due to the density of the population in cities. According to Augé, in the "supermodern" era, spatial relations change due to the constant change of orders of magnitude (sometimes space seems constricted, sometimes expansive), due to the acceleration of the means of transportation, and due to the "proliferation of imagined and imaginary references" (Augé 1995, 34).

Even earlier than this, abstract painting demonstrates a change in visual presentation, in which seemingly uniform space is subdivided, making several views of one object in one picture possible. In Cubism and Expressionism, in Theater of the Absurd and in Dada Literature, absolutist notions of space are being unsettled. El Lissitzky's *Cabinet of Abstraction* in the Sprengel Museum in Hanover (1927) forces the viewer to move in order to take in the room, which, precisely because various points of view have to be taken, always reveals itself only partially. Alexander Dorner, who initiated El Lissitzky's work, writes:

> The traditional view of space is the perspectival view, which originated half a millennium ago; in it, space is looked at … from a fixed, absolute standpoint as an infinite, homogeneous, three-dimensional extension. The decisive novelty of Cubism is the displacement of the absolute standpoint by the relational standpoint. (Dorner 1931; quoted from Weibel 1995, 215f.)

In contemporary art, the deconstruction of space reaches a new quality inasmuch as the simultaneity of virtual and real presence is a central theme. The deconstruction of uniform space becomes especially clear, for example, in Jordan Crandall's hybrid rooms, in which manifold simultaneities at one place are produced with video cameras, video editors and projectors, scanners, digital image processors and image converters. In modern dance, too, the illusion of a concrete, unitary space is fractured. The figures often seem disintegrated, and different scenes often take place on the stage at the same time. There is no longer one perspective on the stage; rather modern theatre, especially dance-theatre, works with "space paths," as Gabriele Brandstetter (1995) points out, that is, with the simul-

taneity of space constitution and movement. What is called deconstructive architecture also dissolves the constructed unity of space in favor of disordered, fragmented, and alienated manners of construction (Kähler 1990; Dörhöfer and Terlinden 1998, 140ff.). Houses such as those designed by Peter Eisenman in which a stairway ends in nothing, holes puncture the floor and a column in the bedroom prevents the set-up of any standard double bed are prototypical examples.

Cubist and Expressionist pictures have become mass-produced commodities in the form of posters. Therefore, it can be assumed that on the level of visual presentations, the depiction of non-homogeneous spaces is habitual. However, the fact that it is only now that the "dissolution of space" is becoming a topos of discussion in the media and in science indicates changes in the constitution of the spatial going beyond these aspects.

The following discussions are designed so that changes in the organization of spaces are placed in the foreground of observation. I have already explained (cf. Chap. 2) that the epistemological assumption of one unmoved space existing equally for all corresponds with the everyday notion of "living in space." If it should turn out that this notion of space is changed or supplemented by other notions, this development could help us find ways to integrate the relevant aspects into a sociological concept of space. Moreover, the acceptance of the conceptualization as a means of communication will depend on whether there is a collective experience that our practical encounter with the world and our conscious images of space do not perfectly match each other. However, the discussion of the everyday notion of "living in space" with reference to experiences of socialization constitutes only one aspect of the question of changing spatial phenomena. In the second half of this chapter, the changes to spatial organization through processes of globalization and technologization shall be looked at more closely, also with respect to the question as to what insights can be gained for a more precise specification of a sociological concept of space.

Asking about changes to spatial phenomena does not mean looking for a completely new and different organization of contiguity. Rather, it means asking about a new transformation in the context of modernization resulting from a changed spatial socialization since the post-War period or from profound changes of a kind like economic globalization in the last thirty years. By focusing on the changes I do not mean to claim that the old modes of socialization and principles of organization are losing their meaning; for example, processes of globalization do not annul the

value of places and meeting points. Fundamentally, however, change can only be discussed in light of what can be called "the status quo." Insofar as changing ideas can be traced, it is possible to gain general knowledge about the principles of spatial constitution. The relationship between theory and empirical work is not a one-sided process in either direction. Therefore, while the results of empirical social research shall be used as a basis for theory, the theoretical focus that has already been attained in the analysis of concepts of space also has utility to deal with explanatory deficits of empirical social research. In the following discussion, studies from very different sociological sub-disciplines shall first be brought together to establish the existing knowledge of the constitution of space; and second, by way of new interpretations of the research results, alternative perspectives on the material presented shall be proposed.

3.1   Space in Processes of Education and Socialization

The question of the genesis and changes of the notion of "living in space" directs our attention to childhood and adolescence. Kant was still in a position to assume that space is a capacity for form-giving prior to all experience. With the discovery of non-Euclidean geometries it becomes obvious that space can be conceived both in a Euclidean and a non-Euclidean manner. Hence, there cannot be *one* a priori existing notion of space; rather notions of space must be appropriated. Accordingly, they can also be subject to crisis and change.

In educational processes, space is primarily taken into consideration in the acquisition of spatial visualization ability. Proceeding from the sense perception of specific objects, spatial imagination refers to the human being's ability to process what is perceived in thought to yield visual imagination. Even without the presence of real objects, various perspectives on an object can be taken so that it is spatially imagined (cf. Maier 1994). Practice in spatial visualization ability serves to convert unordered perceptions into a *uniform* notion of space.

One of the most significant empirical studies on the development of ideas of space is that performed by Jean Piaget and Bärbel Inhelder entitled *The Child's Conception of Space* (English 1963). Piaget and Inhelder understand the construction of spatial relations as a progressive developmental-psychological process. According to their central thesis, this constructing

takes place on two different levels: the level of perception and the level of imagination. They define the difference between perception and imagination as follows:

> Perception is the knowledge of objects resulting from direct contact with them. As against this, representation or imagination involves the evocation of objects in their absence or, when it runs parallel to perception, in their presence. It completes perceptual knowledge by reference to objects not actually perceived. (Piaget and Inhelder 1963, 17 [1975, 38])

Perception thus requires sensory contact with the objects; imagination, by contrast, can supplement this perception with previously acquired knowledge or reproduce mental arrangements. They reject the assumption that notions of space are developed from the motor function and perception as falling short of the mark. Though at the beginning of life there is a "sensomotoric space" formed of the motor function and perception, it does not lead in a straight line to a corresponding notion of space. The notion of space emerges with the acquisition of language and visual imagination. Children use the "the achievements of perception and motor activity" (Piaget and Inhelder 1963, 3 [1975, 22]), but they are not able to convert the experiences they have in this context into spatial visualization ability. Instead, the account continues, they are forced to reconstruct their imaginations from the very elementary spatial perceptions. According to Piaget and Inhelder, these include above all the topological relationships of proximity, separation, order, enclosure, and continuity. Their notions of space are pre-Euclidean and pre-perspectival. According to these authors, in topological thought the child has "*no universal space operating as a frame* and enabling *objects* or figures to be located relative to one another" (Piaget and Inhelder 1963, 467 [1975, 543]; italics M.L.). Topological thought is associative and has no fixed frame of reference. On the basis of the body, heterogeneous spaces emerge, buccal, tactile, visual, auditory, and postural spaces without objective coordination (cf. Piaget and Inhelder 1969, 15 [1991, 25]). Younger children can hence view an inverted picture and write or draw a mirror image better than adults, who construct space according to the principles of the geometrical co-ordinate system (cf. Piaget and Inhelder 1963, 420 [1975, 487]).

Jean Piaget and Bärbel Inhelder contradict the notion that perceived and experienced constructions of space can be at the same time transposed into thought processes. They hypothesize that younger children perceive

a reality without being able to imagine it through thought processes. But they also state that this does not lead to the inverted argument that thought develops independently of action. Piaget and Inhelder consider action to be the point of departure of thought, which, however, must be developed over the course of years through considerable practice:

> [I]f the action itself is inadequate, intuition breaks down. (Piaget and Inhelder 1963, 452 [1975, 525])

The presupposition for learning Euclidean and perspectival constructions of space are actions oriented on topological forms. "And these have been actions like putting things next [to] one another (proximity) or in series (order), actions of enclosing, of tightening or loosening, changing viewpoints, cutting, rotating, folding or unfolding, enlarging or reducing, and so on" (Piaget and Inhelder 1963, 452–453 [1975, 525]). Spatial thought is thus acquired by way of action, starting with simple exercises, for example on "order" by "arranging things in two directions" or on "surrounding" by working with knots. Later, perspectival relations are recognized by way of sections, shadows and so on; transformations ("affine relations") are understood by way of elongation of rhombuses, until finally, plans can be independently drawn.

Adults repeat these actions virtually. Spatial imagination is accordingly an internalized action. It is not a reading of the objects' properties, but rather an acting that is directed toward the objects. This has to be distinguished from playful imagination, which is a surrogate for action. This means that up to an age of eight to nine years, children are not able to construct the constant dimensions of forms, nor are they able to reconstruct their own perspective on objects. They only slowly develop from their topological perception to a perspectival view, that is, a construction of space that coordinates perspectives, and a Euclidean construction, that is, a notion of space allowing for straight lines, parallels, and angles. It is only with the perspectival and Euclidean notion of space that the perception of space is adapted to thought.

First of all, we can gather from Piaget and Inhelder's study that the development of spatial imagination and together with it the ability to construct space as Euclidean is a learning process. Spatial thought is formed on the basis of action. Space is, as are time, state, and change, process, motion, and causality, a fundamental category of knowledge and action. Piaget and Inhelder focus on the cognitive process; growth of knowledge

is understood simultaneously both as activity and as its result. As constructivists, Piaget and Inhelder replace the categories that Kant hypothesized as a priori with this processual view (cf. von Glaserfeld 1996; Schmidt 1987; Krüger and Lersch 1993). Moreover, they show that the acquired ability to grasp space in Euclidean terms is a dimension that goes along with every action process.

However, two points are systematically disregarded in their discussions. Firstly, the influence of the traditional idea of space on the development of an idea of unique space which, as they put it, encompasses events "in the same way as containers include their contents" (Piaget and Inhelder 1969, 15 [1991, 25]), and secondly, they restrict the potential of their study when they assume that spatial thought is completely developed when children can place objects in a co-ordinate system. As a result of this assumption, the significance of perception with all the senses and of socialization processes does not receive adequate attention.

By means of a critical analysis of the results and omissions of this study, the complex process of the genesis of the idea of "living in space" as well as a possible transformation of this process through social change shall become clear. This is only possible when the acquisition of Euclidean thought is not understood as an isolated development process. However, due to the intermeshing of Euclidean thought and the idea of space, a transformation of the everyday idea cannot be discussed without taking Euclidean education into consideration.

I begin my discussion with the first critical point, that is, the lack of consideration of the idea of space passed on through lineages of cultural understanding. Piaget and Inhelder demonstrate in empirical studies that by virtue of training children move from a topological perception of space to a Euclidean idea of space. For Piaget and Inhelder, the ability to construct Euclidean space goes hand in hand with the competence to dissolve the numerous body-centered spaces of topological perception in an understanding of a unified space. In Piaget and Inhelder, the construction of a unified space is treated as a purely cognitive process; social influences are disregarded. Thus, it is not taken into consideration that not only Euclidean thought, but also the traditional notion of space take effect.

By training spatial visualization ability in terms of Euclidean geometry, a form of abstraction is intensively practiced, namely that of objective idealism of classical antiquity; in this context, the difference between ideal geometry and world is generally not addressed. The idea of a uniform space is trained in educational processes, that is, in exercises in nursery

school, in mathematics at school, and so on. Lenelis Kruse addresses the problem that space as it is taught at school in Euclidean terms may well be appropriate for use in planning and measurement, but it is an overestimation of this space to posit it as universal; moreover, perceptual processes are not adequately taken into consideration in the constitution of space.

> If, on hearing the word 'space,' we immediately think of the three-dimensional space of mathematics, then it is not only because this space was the subject of instruction at school for years … but also because a large part of our practical action is based on these objective spatial relationships, for example when we come to terms with our environment by means of measurement and calculation, when we build a house or devise a plan for furnishing a room. The predominance of this objective mathematical space in our conscious behavior and experience, however, does not mean that it is also the foundation for lived space. (Kruse 1974, 33)

Though the model is useful for measurements and calculations, the failure to address the difference between the model and the physical-material world, manifested, for example, in the fact that the world does not consist exclusively of straight lines and right angles, reinforces thought in absolute, uniform, continuous spaces. Euclidean geometry with its implicit three dimensionality is linked in everyday life with culturally learned images of space—and is taught in this way at school. The force of this link becomes manifest in the fact that—under the influence of the images of space—each of the three dimensions is conceived as an outer wall and thus becomes concrete in the form of a box.

The cultural significance of Euclidean space can accordingly be attributed both to its practical utility and to the peculiar vividness that it attains due to its points of contact with the idea of a homogeneous space. In this context, the idea of space and the Euclidean model interlock in such a manner that other aspects of constitution are disregarded. Due to the manner in which Euclidean geometry is communicated as the only possibility and thus as absolute, there is no necessity to reflect on the notion of a homogeneous, uniform space.

Thus, in the first place it can be established that the special power of the everyday notion of "living in space" is based on the practical relevance of Euclidean knowledge, on the leveling of the difference between model and perception in school education, and on the influence of the culturally

inherited conceptualization of space (mainly based on the idea of space of classical antiquity and on the Judeo-Christian creation myth).

However, to come to my second critical point, in everyday life there are also experiences that restrict the great relevance that Piaget and Inhelder attribute to Euclidean–perspectival knowledge for the construction of spaces. If their hypothesis is correct that perception cannot be equated with imagination, then it is not plausible that this perception should be totally adapted to Euclidean thought.

It is known from phenomenological studies that the perception of spaces is also affected by symbolic attribution and recognition processes (cf. e.g. Merleau-Ponty 1962 [1966]; Bachelard 1957 [1987]; Baier 1996). Franz Xaver Baier writes on this point:

> Most cultures have the ability to see facts "out there" that do not fit into the seamless formal continuum of mathematics and physics. (Baier 1996, 13)

Baier is addressing the human ability to perceive objects and processes that do not correspond to the ideal-typical theorems of mathematics and physics. The perception of colors, for example, generates ideas that cannot be seamlessly integrated into Euclidean thought. But in his argumentation, Baier remains on the level of vision as a form of perception. However, the idea of space is also, perhaps above all, disconcerted by forms of perception beyond vision in Euclidean terms. Smelling and hearing, for example, the perception of odors or hearing the sounds of vehicles are associative supplements to the perception of spaces, but by no means arbitrary. On the basis of one's own body, they make it possible to generate spaces that are linked to biographical experiences and cannot be reduced to the perspectival character of things.

In hypothesizing that topological perception is adapted to the spatial visualization ability, Piaget and Inhelder neglect forms of perception other than vision that also have an influence on ideas of space. Furthermore, they do not study those forms of seeing that are not amenable to or easily integrated into a Euclidean perspectival view, such as, for example, the perception of colors.

Accordingly, action is not only shaped by spatial visualization abilities, which are extensively trained to construct space as uniform and determined by means of straight lines and angles. Action is also shaped by perceptual processes that do not necessarily reproduce this idea of uniformity. People do not only organize the world in which they are immersed according to

learned Euclidean ideas of space, they also perceive these spaces with their senses.

The type of experimental design used by Piaget and Inhelder together with their collaborators serves to study children's progress in spatial thought. When, for example, they are asked to take a doll sitting on a modeled landscape next to a house and to place it at the same position in another landscape that has the same shape but has been rotated, then the children will attempt to demonstrate their Euclidean and perspectival abilities. No cognitive forms are recognized other than these Euclidean perspectival forms, except when they are registered as developmental deficits. Thus, Piaget and Inhelder are unable to grasp the simultaneity of various forms of imagination and perception.

In summary, this means that children learn and are trained to transform topological perception into the capacity to visualize according to a Euclidean spatial perspective. In the course of this, they also learn to understand space as a universal frame, as a container for objects that makes it possible for them to organize these objects on a grid. With the support of traditional notions of space, the image of space as continuously present, uniform, and existent for itself is developed. Perception is then adapted to thought piece by piece. As opposed to Piaget and Inhelder's hypothesis that perception and thought are harmonized, with reference to phenomenological studies it has to be conjectured that a constitutive "residue" remains, an ability to perceive that is sensory and associative and cannot be integrated into the socially acquired grid. Piaget and Inhelder cannot detect this because they limit their study to children aged nine and older whose perception is adapted to the Euclidean system and who have the ability to apply Euclidean thought to phenomena.

For this reason, their research has largely failed to recognize one aspect that has a disturbing effect on the idea of uniform space. But it has to be assumed that these disturbances have hardly taken effect up to now: not only do Euclidean education and the traditional notion of space interlock, but also, as various studies have shown, the forms of socialization strengthen the sense of living in a uniform, continuous space.

Jean Piaget and Bärbel Inhelder take only educational situations as activity providing a basis for developing spatial visualization abilities: playing with toy building blocks, stringing pearls, making knots, working with geometrical forms. Activity related to social spaces is absent in their study. They are able to show that up to the age of seven or eight years, children can perceive many spaces around them, but cannot fill gaps between them;

for this reason, no uniform space emerges. In play and assignments, parents, nursery-school teachers, and schoolteachers practice with the children imagining a uniform space in which objects and people are arranged.

According to the socialization theorist Urie Bronfenbrenner (1981), it has to be assumed that the development of an idea of space trained in Euclidean terms is not only a cognitive learning process, but also one of socialization. It is only when for children the idea of "living in one space" can be connected with everyday experience that this idea of space can assert itself as dominant.

Studies of socialization show that for long periods there was a bond between (pre-)school educational processes and socialization experiences in urban and rural settings. Studies from the thirties and sixties describe children's appropriation of the spatial environment as ring-shaped around the home area (Muchow and Muchow 1935) or as a gradual extension of the action radius in concentric circles (Pfeil 1965). Social-ecological conceptions (Bronfenbrenner 1981; Baacke 1993) also hypothesize a continuous expansion of children's realms of experience and imagination. According to Bronfenbrenner, children continuously link experiences in various spaces or indirect experiences to one overall space. The development runs from the micro- to the meso-level, then via the exo- to the macro-level. Dieter Baacke's approach with "life-world analysis" borrows from Bronfenbrenner and also distinguishes four expanding zones that children and adolescents run through in a continuous series. If this also gives rise to the impression that space expands uniformly in everyday activity, then it supports the development of a uniform idea of space in terms of absolutist thought.

In the nineteen-twenties and in the reconstruction phase after the Second World War, there was a strong bond to individual urban quarters or communities expressed, for example, in the fact that children living on one street united as "our street" and set themselves off from children in other streets (Pfeil 1965). In the sixties and early seventies, a functional organization of space asserts itself. This brings about new conditions of spatial socialization.

3.1.1   Insularized Socialization

The organization of contiguity changed in many details in the nineteen-seventies. Streets are reserved for vehicle traffic. Shopping is done on the outskirts of town, not at the "corner shop." Schools become school cen-

ters, vacant lots become monofunctional parking areas, playgrounds, and the like. Monofunctional housing developments are built to which mostly young families with small children move. In 1972, four-fifths of all children in major cities live on the outskirts of the city (Zeiher and Zeiher 1994).

Simultaneously with the housing of children in monofunctional residential areas with little stimulation, specialized facilities for children are developed: separate play areas for younger and older children, football grounds and playgrounds in the woods for boys and some "wild" girls, youth centers, and the like. Questions of education and upbringing become an important social topic; the centerpiece is always the question of the possibilities of implementing equal opportunities. Systematic promotion of children's diverse abilities becomes an essential educational goal. Attending special courses in the youth center, in the music school, in the sports club or in education centers becomes part of normal everyday life for many children.

Spatial socialization now changes to the effect that children no longer become acquainted with space as something uniformly surrounding them that they discover more and more as they grow older; rather, the children know various spaces distributed over the town which are only interconnected through the children's own biographical experience. A new type of socialization develops.

On the basis of comparative case studies with children from various city quarters, Helga Zeiher and Hartmut J. Zeiher show that space is now experienced by children as consisting "of individual separate parts that are scattered like islands in an overall space that has become larger but as a whole remains meaningless and largely unknown" (Zeiher and Zeiher 1994, 27). If these research results, which are further specified by a study by the Jugendforschungsinstitut [Youth Research Institute] in Munich (Deutsches Jugendinstitut 1992), are taken into consideration, then the changes in perception and imagination have to be allowed for with new socialization conditions. In their study of children's places and times, Helga and Hartmut J. Zeiher can convincingly show that today children grow up in children's places with specific functions that are distributed over the city (cf. also Rabe-Kleberg and Zeiher 1984; Liebau 1993; Zeiher and Zeiher 1994). Parents transport the children from one island to another. They can choose between these places, but the neighborhood remains unknown to many children. It is only at the age of nine

or ten that they begin to visit their places independently and to explore their surroundings (Ahrend 1997).

This means that while teachers and instructors use learning materials by means of which children are supposed to learn to understand the various objects as elements of a uniform space, in their everyday life these children experience space as consisting of scattered islands. This applies especially to children from rural areas and of the feminine gender (Nissen 1992). The number of institutions that are frequented is also gender-specifically different. Boys repeatedly go to the same institutionalized recreation place, most often the sports club, several times a week, whereas girls participate in various organized activities and therefore recurrently have to adjust to new social situations (Nissen 1998, 186). Due to holiday trips and visits to relatives, especially when these trips are taken by airplane, these processes are enhanced for both sexes.

Hence, if the notion of "living in space" is based on the interaction of the cultural tradition of the idea of container space and Euclidean schooling, backed by a socialization that supports this idea with the experience of a space that is continuously growing, then the question of change through transformed conditions of socialization arises. The question is to what extent children can develop the idea of space as a uniformly encompassing structure as described with reference to children of earlier generations (e.g. Muchow and Muchow 1935) when in fact space as they experience it every day does not surround them, but rather is presented as "patchwork."

The question arises all the more insistently when it is considered that topological perception is constituted by way of comparable principles; however, phenomenological research indicates that topological perception cannot be completely matched with the Euclidean construction of space. Jean Piaget and Bärbel Inhelder characterize the child's topological perception in a manner similar to how Hartmut and Helga Zeiher analyze children's everyday practice of space appropriation.

> For the child, time is at first purely local and applies separately to each movement. Only later are these separate notions fused together into a homogeneous and universal time. Similarly, there are, for the child, as many spaces as there are objects or distinct patterns, the intervals between more distant elements either belonging to the elements themselves or not being spatial at all. (Piaget and Inhelder 1963, 467 [1975, 543])

My hypothesis is that the disruption of the notion of space is intensified due to what is perceived when socialization also ceases to provide certainty beyond doubt based on one all-encompassing space. While under earlier conditions of socialization it could be assumed that the "gaps" were gradually closed by (pre-)school education *and* socialization in the quarter, spatial education processes today prove to be incoherent. Whereas through educational and mathematical practice spatial visualization ability is learned, inducing space to be experienced as homogeneous, uniform, and open to various perspectives, children also become acquainted with space in urban and regional socialization processes as heterogeneous and disjointed. Taking a topological, heterogeneous perception as the point of departure, it can be assumed for earlier generations of children that they experienced space as a uniform structure surrounding them not only in their schooling, but also in their own explorations. Growing up in an insularized childhood has the consequence that space is (also) experienced as "patchwork," as many individual, heterogeneous spaces that either cannot be linked with each other at all or can only be linked through rapid movement that is difficult to reconstruct.

If we wish to explore the potential for change amidst insularized socialization with respect to notions of space, the question arises to what extent new notions of space arise from the perception of single "pieces of space" that cannot be connected to yield a homogeneous whole. This question has not yet been researched. Zeiher and Zeiher suggest that the individual islands perceived are experienced under the influence of the Euclidean perspective as elements of an "overall space that has become larger" (Zeiher and Zeiher 1994, 27). Accordingly, they see little change in the notion of space. Wilhelm Heitmeyer interprets the results differently, inferring from the insularization thesis a "fragmentation of space" (Heitmeyer 1996, 18), that is, he assumes that the homogeneous comprehensive construct space has dissolved. Hence, whereas Zeiher and Zeiher's assumption means that islands are arranged in an absolute space quite in terms of absolutist thought so that relativity only occurs within the container "space," Heitmeyer's conclusion suggests that a dissolution of space is individually experienced. As the use of the term "fragmentation" says, Heitmeyer postulates a loss of stable notions of space and infers from this experiences of desocialization.

I propose a third interpretation. The thesis that I shall attempt to substantiate in detail in the following discussion makes the claim that in addition to the cultural tradition of the idea of "living in space," that is, being

surrounded by a uniform, homogeneous space, a new notion of space is *also* becoming established. The constitution of space is experienced in two manners: the islands themselves still appear as enclosing, uniform spaces in which one can move by virtue of acquired orientation skills, and at the same time the space extending over and beyond the islands is experienced as heterogeneous and disjointed. It seems closer to what is topologically perceived than to oriented action "in space." As I shall show in detail, the transformation is reinforced by experiences with virtual spaces.

In this context, topological perception must not be confused with a relativist notion of space; this can be encountered, for example in the argumentation of the psychoanalyst and systems theorist Luc Ciompi in his treatise on the development of space, time, and mental structures:

> After all, according to Piaget the child, who is less biased, is for a certain time much closer to the "plastic" ideas of time and space in terms of the theory of relativity than is the adult once he has learned "correct thinking!" (Ciompi 1988, 91)

Common to both is that in topological perception as well as in the relativist idea of space there is no universal space as a point of reference. In both cases, space is conceived on the basis of one's own body (or of the observer's reference system, as the case may be). In the relativist idea, as in topological perception, space exists as a multitude of spaces. Nonetheless, the equation of a relativist idea of space with childish perception obscures the fact that an idea of space is always an abstraction developed from perceptions, action, symbolic charges, and reflexivity. In the relativist idea of space, one's own point of view is decisive for the space that is constructed, but nevertheless the space that emerges is not—as it is in topological perception—restricted to one's own body. Rather, by way of establishment of relations, spaces can be constructed that are abstracted from oneself, but are still characterized by the perspective of one's own point of view.

Piaget himself is of the opinion that he unites relativist and absolutist positions in his study by defining spatial thought not in Euclidean, but also in perspectival terms. He writes on this in his book *The Child's Construction of Reality*:

> [T]he completion of the objective practical universe resembles Newton's achievements as compared to the egocentrism of Aristotelian physics, but the absolute Newtonian time and space themselves remain egocentric from

the point of view of Einstein's relativity because they envisage only one perspective on the universe among many other perspectives which are equally possible and real. (Piaget 1954, 367 [1975, 353])

Piaget compares the infant's topological thought, which takes its own body as the point of departure, with the Aristotelian geocentric understanding of space, and sets this off in the first place from adults' faculty for Euclidean geometry. In the second place, he believes that he can integrate relativistic thought, à la Einstein, into his approach by considering the possibility of assuming other people's (literal) perspectives. Thus, when Piaget writes that adults' spatial visualization ability is perspectival and Euclidean, he is attempting to unite relativity, in terms of a multiplicity of perspectives, with Euclidean thought, in terms of orientation on definite forms and angles, into one spatial conception. However, he locates both in a space that is conceived as absolute. This means that relativity is always to be understood in his work within an absolute space. This is the only possible interpretation when Piaget writes as follows on perspective:

> Hence there is objectivity and even relativity, but within the limits of a realm which is always considered absolute because nothing yet induces the subject to transcend it. (Piaget 1954, 367 [1982, 83; 1975, 353])

In his approach, Piaget remains within the absolutist tradition—as do other early attempts in the social sciences and humanities to link relative and absolute space. For example, Maurice Merleau-Ponty (1962, ix [1945, III; 1966, 5]) conceptualizes the difference between relative and absolute space as one between a unifying perception of things and an indivisible system constituted by the mind (on this point see Merleau-Ponty 1962, 244 [1945, 282; 1966, 285]). He believes he can unite the two by means of the experience of space. The perceiving and acting person perceives things in their arrangement as a spatial configuration, and a constitutive mind can organize these things in an absolute space, thus making orientation in space possible. We need, writes Merleau-Ponty, "an absolute within the sphere of the relative" (Merleau-Ponty 1962, 248 [1945, 287; 1966, 289]). Hence, the body is immanent to space, space is always constituted relationally with reference to it, but things are distributed in space.

At this point it is worth recalling that Newton himself never denied relativity within absolute space. Accordingly, what Piaget, as well as Merleau-

Ponty, fail to grasp is all the deliberations and practices that exist without the construction of a homogeneous space.

Let me summarize: a breach between the notion of space and the world already arises due to the fact that the perception of the world is adjusted to thought, but does not completely merge with it. There thus remains an associative, sensory residue that suggests we doubt the notion of uniform space. My conjecture is that this doubt becomes aggravated and gives rise to inconsistencies when the conditions of socialization no longer unequivocally convey the feeling of living in a uniform space. If space is experienced as insularized and thus as simultaneously uniform and non-uniform, then in addition to the notion of living "in space" the experience also emerges of relating to many differentiated spaces. This means that in addition to the continuity of the traditional idea of space with all the knowledge that is necessary for measurement and orientation, another idea of space starts to become established, manifesting space as non-uniform instead of uniform, as discontinuous instead of continuous, as moving instead of rigid. At this point let me already divulge that the argument that a new notion of space has developed concurrent to the old is based not merely on the insular forms of socialization, but also on the influence of new technologies which I shall discuss shortly. Entertaining this idea, however, presupposes that the possibility is not ruled out that children grow up with two (or more) "truths" at the same time. This question of several truth systems, here posed as the question of various forms of spatial thought, is intensified by the fact that children today grow up under conditions of socialization that at least in part run counter to the notion of homogeneous container space.

Though the empirical study of the emergence of a new notion of space in everyday life has only just begun with Zeiher and Zeiher's work, it has already met with considerable echo in educational science and the sociology of education so that the results of this development on children are already being discussed.

As already indicated, Wilhelm Heitmeier (1996) raises the critical point that the dissolution of homogeneous notions of space leads to desocialization. He views the experience of an insularized habitat as a cause of increasing youth crime.

> With an insularized habitat, it is not possible to 'coalesce in the same way as with a uniform habitat'…. The consequences are encountered in losses of experiences of continuity and of feelings of consistency. (Heitmeyer 1996, 18)

Against Heitmeyer it can be argued that for juvenile gangs the defense of uniform space, for example in the demand "Germany for Germans," is itself one of the motivations for brutality toward other people and thus also constitutes a form of desocialization. The social problem is not the dissolution of uniform space, but rather the insecurity that accompanies a change that goes unexplained and accordingly does not undergo reflection in society.

3.1.2   *Spatial Imagination and Gender*

Girls and women generally do not score as well as boys and men in psychological tests of spatial visualization ability. Test series are often administered in schools, and it frequently, though not always, turns out that there are gender-specific differences in solving the tasks, such as mentally rotating a three-dimensional cube. Boys are generally better able to imagine space according to fundamental Euclidean postulates (cf. Ben-Chaim, Lappan, and Houang 1988; Maier 1994; Quaiser-Pohl 1997). Since spatial visualization ability is reckoned to the intelligence factors and it is persistently assumed that there could be biological causes for this female "weakness" (z. B. Kimura 1992), let us here look at the studies more closely and at the same time highlight some of the characteristics of gender-specific spatial socialization.

In the first place, it has to be emphasized that gender-specific differences are found predominantly in what are called "speed tests," that is, in tests conducted under time pressure. Once the influence of time constraints is removed, the differences are reduced or disappear completely. Hence, the results suggest that girls are slower in Euclidean mental spatial visualization, but not incapable of it. Moreover, several studies show that with corresponding support in school, girls are able to improve their spatial visualization ability quickly (see e.g. Connor, Schackmann, and Serbin 1978; Lord 1987). These two findings clearly argue against biological causes of gender-specific spatial visualization skills. Furthermore, some studies were influenced by settings that can induce different levels of apprehension for some girls, for example tests conducted in darkened rooms with male investigators (for criticism of the test conditions, cf. Fausto-Sterling 1988).

In addition, it is conspicuous that no gender-specific differences in spatial visualization ability are found in younger children. In the great majority of the studies, the girls begin to achieve poorer results than boys approximately from the age of ten years (Harris 1978; Rost 1977) or at puberty (McGee 1979; Thiesemann 1991).

Because of the late advent of the differences, which again are only measured under time pressure, biological causes for the gender-specific differences in test results can be ruled out. Accordingly, the reasons have to be sought in socialization. In the first place, the gender-specific use of toys has to be pointed out, for example building blocks, model construction, and transport vehicles for boys, dolls and puzzles for girls. Whereas toys for boys often help to access spatial dimensions in terms of the Euclidean understanding of space, girls' toys support the acquisition of caring behavior. But even when both girls and boys play with the same toys, for example building blocks, they build different scenarios. Whereas boys design high towers, thus constructing the dimension "high–low," according to Erik Erikson (1979), girls tend to practice the modality "open–closed" with inside–outside arrangements. Erikson explains this behavior by referring to the parallelism of action and genitals.

> It is now clear that the spatial tendencies dominant in these constructions are reminiscent of the *genital modes*, … and that they largely correspond to the morphology of the sexual organs: on the male side, *external* organs with an *erectile* and *penetrating* character that transport highly *mobile* sperm cells; on the female side *inner organs* with a vestibule-like *entrance* leading to the statically awaiting ovum. (Erikson 1979, 1289; italics in the original)

This explanation is based on gender-specific clichés. Neither do the ova wait statically in the female body nor do the girls in the experimental group construct passive scenarios. The mere fact that building block towers come tumbling down faster than the rooms that the girls build does not imply that they are more active scenes of play. It is also implausible why according to Erikson's logic boys, who have phalluses characterized as penetrating, do not develop a desire to reconstruct inside–outside or penetration–exclusion. Hence, as the philosopher Iris Marion Young writes in her essay "Throwing like a Girl" (1990b), it is more plausible that the play scenes display reflections on the social division of labor and on gender-specific attributions of the public and private (on this point, cf. also Rodenstein 1990; Morris 2011).

In fact, studies of the allocation of public places show that for recreational activities that for the greater part match boys' interests, more large, public recreational locations such as football pitches or playing fields are available than for girls' fields of interest such as roller skating or horse riding (Massey 1994, 185); adventure playgrounds, which train manual skills and physical risk-taking, are also oriented toward boys' interests (Flade 1993). Whereas

boys do not sufficiently learn to protect themselves from injury and to look after their own body, girls learn that their body is permanently potentially threatened. For fear of violent attacks, girls are more often accompanied to their recreational location by their parents (Quaiser-Pohl 1997; Nissen 1998); if they go alone, then they tend not to linger on the way, but rather are goal- and destination-oriented on the street (Spitthöver 1989; Rendell, Penner, and Bordain 1999). Gabriele Geiger accordingly discerns the causes of women's fear in public places in the "educational practices according to which little girls are always warned about the 'nasty man' and the space allotted to them is as a matter of principle more restricted, more regulated, and more controlled than is boys' space" (Geiger 1989, 397).

By way of processes of socialization, the majority of girls learn spatial action disposed to reduction, boys learn action tending to expansion. These processes are enhanced in girls' and boys' sport socialization (cf. Kröner and Pfister 1992; Rose 1992a,b; Pfister and Valentin 1993; Löw 1994; Nissen 1998). Boys generally participate in more hobbies based on sports activities in their free time, whereas girls engage in more artistic–aesthetic and cultural activities. In contrast to the omnipresent football field, the public places available for expansive sports more commonly engaged in by girls, such as horse riding or roller skating, are much more limited. In the sports that girls choose, location-bound sports are predominant in which the aesthetic modeling of their own body is the focus rather than expansive action such as in, for example, running. Palzkill (1990) detailed the conflicts in which girls become involved when they nonetheless engage in sports associated with masculinity beyond puberty. She documents the ways they are regarded as "half-boys," or may reject femininity understood in the sense of space reduction, and in some cases, experience a very late onset of menstruation.

The psychologist Claudia Quaiser-Pohl (1997) therefore conjectures that the cause for girls' less pronounced competence in quickly performing complicated spatial thought experiments is located in spatial socialization. A plausible thesis is that an enhanced risk-taking and exploratory behavior results in a quicker grasp of spatial visualization. But there remains need for an explanation of the reasons why in childhood girls score just as well in tests as do boys, and differences only become apparent with the onset of puberty. Perhaps most intuitively, it could be hypothesized that the consequences of gender-specific socialization only become apparent in later years with more complex tasks. Findings from research in schools suggest more than just this one possible interpretation.

Empirical studies repeatedly show that girls and boys achieve comparable school results in early education. In adolescence, the girls decline in the mathematical-technical subjects, boys in languages. Puberty is the period when it is inevitably expected of girls and boys that they behave in keeping with their gender (Hagemann-White 1984; Sobiech 1991). Accordingly, in order to be able to represent and display gender without displaying the sex of the naked body, young people take recourse to stereotypes, whether consciously or unconsciously. Girls begin to reject behavior associated with masculinity, boys refuse patterns of action socially understood to be feminine. As the subject's habitus becomes aligned with gender, the modes of performance sink into the entrenched channels of masculinity and femininity. Thus, within these patterns, girls' performance in those tests associated with the field of mathematics, such as those on spatial visualization ability, decline relative to the performance of boys (in detail Löw 1995; Rabe-Kleberg and Löw 1998).

3.2 Virtual Spaces

Up to this point, the insularized childhood and the relationship between the sexes have been closely examined as examples of socialization experiences. However, the influence of new technologies is equally relevant for reflexive ideas of space, and in the following remarks it will again be discussed in relation to children and adolescents. Contact with simulated or imaginary spaces constitutes an undeniable aspect of the educational processes of children and adolescents. Through the use of telephones, spaces with imaginary links already emerge, and in their contact with television and video, children practice the relationship between reality and simulation (Baudrillard 1982). They know that they can speak with those who do not share spatial proximity, or with someone whom they have perhaps never seen or have only seen via Skype but never smelled. They have the experience that performing an action is not equivalent with observing a result in the same place; for example, they can paint a picture on their mother's computer, click on the "print" icon and anticipate it will be printed on their father's printer in another room. Finally, it can happen that they see their own nursery school on regional television or on a video in their parents' bedroom. Can children develop a notion of a space that surrounds them uniformly in this way?

These experiences achieve a new quality through contact with virtual spaces, what has come to be called "cyberspace." Notions of space can

be disturbed in virtual space, especially when in certain video games a movement of one's own body results in a movement in habitual space, what is called "real" space, as well as a movement in virtual space. Here the boundaries between reality and simulation are blurred to an extent hitherto unknown.

"Cyberspace" is a term for various new technologies, whether already in use or still fictional, that have in common that people interact in simulated surroundings. In their book *Cyberspace*, *Cyberbodies*, *Cyberpunk*, Mike Featherstone and Roger Burrows (1995) list three different cyberspace technologies:

1. Barlovian Cyberspace: By this the authors mean all international computer networks, especially the Internet.
2. Virtual Reality (VR): This is a simulated environment in which the actors can develop a perception of real presence. VR is a computer-generated visual, auditory, and haptic experience. Virtual space seems to surround people. Movement through its spaces is brought about by body movements.
3. Gibsonian Cyberspace: This refers to fictional, future-oriented projects for a completely computer-controlled world.

Whereas the space named after William Gibson for his science-fiction novels is irrelevant in this context because of its fictional character, Virtual Reality and Barlovian Cyberspace are of significance for the socialization of children and adolescents as well as for the constitution of space by adults. According to official statistics, in 2015 more than three billion people use the Internet.

Spatial metaphors such as "information highway" and "global village" show that these data networks are perceived as spaces. The designations are an attempt to apply customary space construction to new experiences of space. However, they are misleading inasmuch as the paramount goal is not only to transport data with great speed, as the highway metaphor suggests. Rather, the network itself is a space:

> The new element of contemporary electronic networking is not so much the network technology as the growing number of users, the increasing variety of services, the extension of the spatial range of the networks, and thus a new manner of 'being connected'. From the point of view of their users, open, interactive electronic networks themselves constitute a space…. (Helmers et al. 1995, 1)

By means of video games and practice in virtual spaces, the experience of space reaches a new quality in comparison with conventional computer games inasmuch as for the first time ever mobility in virtual space, actuated by moving one's own body, becomes possible. Equipped with bodily extensions such as data gloves and helmets, high-resolution displays, loudspeakers, sensors to track three-dimensional movements, or even complete head-to-toe suits, it is possible to enter immersive spaces of illusion and move within them. Wearing a head-mounted display or glasses, computer-generated images are projected directly in front of the retina, giving the wearer the impression of being in a virtual space. The wearers can seemingly move in virtual space by means of sensors tracking their body and networked to the computer. The body movements are transformed into computer-generated movement via software microsystems and hardware bodily extensions.

It is also possible to have a digital double made that is almost indistinguishable from oneself. The virtual replica may either reproduce the movements of the human data donor as naturally as possible, or portray completely new motion sequences by way of integration of other data. Konrad Adenauer can tap-dance in the digital production, Marilyn Monroe can become a kung-fu star. The connection between virtual spaces and gravity-bound spaces is constituted not merely by technology, but by the body. Bodily engagement in virtual media is evident not only in video games, but also in medicine and psychology. Physically disabled people learn to use a wheelchair this way, physicians practice operations, people with phobias learn to cope with their fears in virtually generated surroundings (cf. van Eimeren et al. 1996).

This form of spatial action is quite similar to "surfing" in networked databases. In the one case, one walks through unending spaces, in the other virtual spaces are created when numerous children and adolescents access the space at the same time to play with each other or chat.

In Barlovian cyberspace, the link between bodily movement and interaction is limited to clicking with the mouse and typing letters. Moreover, the virtual spaces, similar to television in private homes, are "on" the screen and can thus be delimited from the spaces of everyday life. This does not apply to virtual-reality games: the gamer often plays in a game center, his or her movements are visible to all the other visitors to the place, and at the same time he or she moves in a virtual world. By virtue of the virtual-reality helmet-mounted display, the everyday world disappears with all its sounds and visible elements. Only smells penetrate into the

virtual world. The user runs through labyrinths, sprints along the highway, plays billiards or is threatened by virtual enemies. Attempting to integrate these experiences with the notion of a uniform space is difficult, inevitably leading to inconsistencies between this concept and these experiences. Instead, the heterogeneity and infinity of spaces becomes especially vivid. Simultaneous movement in two different spaces is no longer abstract, but experienced.

With respect to VR technologies, there is hardly any data about professional or private use according to gender and class. As far as game culture is concerned, it is known that girls are more frequently active in at least one social network than are boys, but that boys play action games almost twice as often (29% to 15%) (Bitkom 2011).

Most games are primarily oriented to boys' interests, often with sexist overtones or themes (cf. Spender 1995, 198ff.). A representative survey of pupils in the federal state of Saxony-Anhalt in Germany in spring 1997 showed that 64.6% of the boys interviewed stated that they played computer games several times a week, whereas only 25% of the girls play several times a week. Of the girls interviewed, 41% play less frequently than once a month or never, but only 14.1% of the boys (cf. Krüger 1998).

This lower frequency must not, however, be interpreted as lack of interest, but can be due to a game conception oriented to boys' interests. The success story of the American software company Purple Moon points in this direction. From 1993 to 1995, Brenda Laurel interviewed over one hundred girls and boys about what they understood by adventure and about their playing interests in order to find out girls' specific game profiles by way of the gender comparison. Thereafter, she established the Purple Moon company, which issued CD-ROM and Internet games for girls in the autumn of 1997. Although the games were only released in October 1997, they were among the most successful titles of the year. Mattel, the company that ultimately bought Purple Moon, released highly successful Barbie software targeting girls. In 1996 Mattel released "Barbie Fashion Designer," a game in which girls can tailor items of clothing themselves and print them on textile.

A primary finding of Laurel's study (1998) is that girls do not reject violence in games, but find it boring and too simplistic in comparison to their social experiences. Whereas boys use computer games to act out their desire for dominance and physical superiority, girls prefer games in which they can exercise power by means of social influence and exclusion strategies. According to this study, for girls adventure might mean, for example,

taking on the role of a new schoolgirl in the game and making decisions for her. Where should the new pupil sit? With whom should she make friends? Contingent upon the strategy pursued, the course of the game can change. This means that balances of power are tried out in play, and not settled by killing as in the leading boys' games. Accordingly, for girls, adventures are not bound to fantastic heroines or heroes, but modeled on everyday people. The goal of the games is to have new experiences, and not, as in the comparable boys' games, to win. They prefer complex activities in contrast to speed and activism. Whereas boys see success in victory over the opponent, girls understand the establishment of a strategically valuable friendship as success.

Since "Rockett's New School" and "Barbie's Fashion Designer," a number of games oriented to girls' interests have become available on the market, though the total number is still negligible in view of what the market offers. And still, girls' games tend to reproduce stereotypes such as the snobby blond girl or the smart Asian with glasses (Huang et al. 1998) and reinforce the orientation on popularity and body styling among young girls. Games with an overtly emancipatory expectation such as "Girl-Tech" and "Her Interactive" are the exception.

New media generate doubt in the "identity" of a person as a systematic component of action. According to the philosopher Stefan Münker, the fascination of virtual spaces is due to the fact that the simulation is so perfect that it seems to be reality.

> In proportion to the capacity of the computer that generates the simulation, our ability to perceive it as simulation at all declines. (Münker 1997, 109)

The precise changes to the constitution of space in contact with cyberspace technologies have still to be empirically studied. There are reasons to believe that with an absolutist concept of space, it will be difficult to grasp the manifold of simultaneous, overlapping spaces. Precisely because dualistic argumentation assumes one homogeneous space existing in itself and uniform for all, it is impossible to grasp the simultaneity of the various spaces that are constituted symbolically and materially. When spaces are reified as territories or concrete places, the constitution of spaces in cyberspace is systematically excluded. This is still based on localizations, but only as one dimension of space constitution.

However, with regard to the children and adolescents who grow up with new media, my conclusion is that what is already initiated in the insularized appropriation of space is systematically repeated in virtual

spaces: the reference to a non-uniform space. The traditional notion of "living in space," sustained by Euclidean thought imparted at school, is disrupted inasmuch as firstly, virtual spaces are no longer experienced as material, and secondly, the continuity of space is challenged. The simultaneous moving in non-continuous, shifting spaces of cyberspace and in the physical-material world can be understood neither against the background of space conceived as continuous nor on the basis of the Euclidean postulate that from every point to every other point a straight line can be drawn. The view of a homogeneous surrounding space and the certainty of existence in three dimensions are both disrupted. Continuous space, which can be determined by virtually produced lines, is replaced by superimposition and mobile links for which the image of networks is used as a comparison. Thus, the space of cyberspace is constituted by multifarious, non-uniform, overlapping spaces, which cannot be straightforwardly connected with the traditional notion of "living in space."

The most important result of uniting studies in sociology of education, youth culture, and psychology is hence that action is still *influenced by the notion of living in a uniform, homogeneous space, but that this can no longer be assumed to be the only idea of space*. The spatial socialization of children and adolescents involves experience in the constitution of space in which space emerges as non-uniform, overlapping, manifold, networked, and moving.

This also becomes apparent in the way in which young people constitute spaces for themselves. Birgit Richard and Heinz-Hermann Krüger (1997) examine Techno youth culture with respect to imaginary spaces and real spaces or places. Techno music appeals to a broad public, girls as well as boys, and various social classes. For the first "Love Parade" in 1989, 150 ravers came to Berlin; in the 1990s the number of youths and young adults participating increased to between 750,000 and 1,000,000. The 2008 parade broke the visitor record with approximately 1.5 million participants. The ravers do not only meet in discos and at annual parades to dance and celebrate, but also at temporary sites that are often rented only for one night for mega-raves. The locations are announced by flyers and posters. Warehouses, bunkers, vaults, old power plants, and factory buildings are especially popular for remodeling as dancehalls. Illegal meeting places such as highway bridges, underground car parks and construction sites are encountered more often in the English subculture. The Techno scene retreats to these places on the weekend, sometimes for only a few hours or for events stretching over the entire weekend. The twenty-four hour rhythm

and thus time in general is suspended by means of drugs (cf. also Etgeton 1994, 77). But at these places they also constitute a new form of space:

> To make the disappearance on the weekend perfect, the rooms have to be deeply darkened so that the storm of lights can have full effect. There are lighting effects that are restricted to a certain color spectrum, a lot of white light and stroboscope flashing. The room is transformed into an immaterial cosmos, into a parallel world similar to computer-generated virtual realities. (Richard and Krüger 1997, 152)

Richard and Krüger emphasize that the youths and young adults go to a location and constitute space there in such a manner that its borders dissolve by disappearing in the darkness. Technical effects, artificial fog, and black light generate a screen or monitor atmosphere in the real world, as if the monitor were turned inside out. The moving bodies are dissolved into isolated luminous apparitions. With strobe lights, spatial perception trained in Euclidean space is ruptured. Dancers are consciously entering states of disorientation. Space is determined by the "dissolution of opposites and objects" (Richard and Krüger 1997, 7). There is no separate dance floor, dancing is everywhere. Places are used, but not fixed; they are ethereal and momentary. Many music videos are also based on computer simulations through virtual worlds. Flying and weightlessness are popular motifs. Richard and Krüger come to the conclusion, which they also illustrate with hip-hop scenes, that youth cultures are freeing themselves of the notion of rigid, unchangeable space. In their free time, they attempt to reduce the constraints of time and to gain experience with the other, the non-closed space. Youth subcultures are not characterized by a kind of withdrawal from space, but by an incoherent, interrelated spatial activity (spacing) which is accompanied by acquired Euclidean notions of space just as well as by networked, non-uniform notions of space developed due to insularized spatial socialization and experience with virtual spaces.

The complexity of spatial socialization cannot be adequately grasped with the absolutist idea of space as something existing and to be structured in action because the constitution of space cannot be restricted to the surface of the earth and built structures. The various notions that pre-structure the constitution of space in action, the placement on various "islands" that are connected by means of quick movements, and space-generating processes must be taken into consideration. Inasmuch as movement, construction activity, or computer networks make it pos-

sible that spaces are experienced as linkable to one another in various ways, the idea of one unique space valid for all loses its explanatory value. Space itself must also be conceivable as dynamic. While everyday notions of space are multiplying, in academic communication it is necessary to develop *one* concept of space that is formulated in processual terms such that it can grasp the multiplicity both of possible everyday notions and of the constitution of primarily material or primarily symbolical spaces, and also grasp the simultaneity of various spaces at one place. This can be provided when spaces are understood as something that is constituted.

Changes due to new media go far beyond the socialization of adolescents. Computer networks generate a globally organized space that is more or less borderless, permanently changeable and no longer locally fixed. The Internet is regarded as strong evidence for a social process of globalization. It is a global medium that is used locally since all who are active on the Internet remain locally connected (on this point, cf. for example Faßler 1996; Bös and Stegbauer 1997; Berking 2006). It is precisely the difficult relationship between local and global that continuously leads to the question posed, for example, by Peter A. Berger and Thomas Krämer-Badoni at the twenty-eighth convention of the German Sociological Association in Dresden: "Are new spatial structures emerging under the dictates of globalization?" (Berger and Krämer-Badoni 1997, 780). Empirical studies on globalization and global cities are therefore the next field to be entered in order to explore the changes in the organization of the spatial and thus to prepare the way for a sociological concept of space.

3.3   Globalization and Global Cities

The catchword globalization identifies at least three different problems with respect to spatial structures: electronic networking, the dissipating significance of national organization forms, and the power monopoly of a handful of "global cities."

Saskia Sassen (1991a, 1991b, 1994a, 1994b, 1996, 1997, 2008, 2012) has presented the most extensively elaborated and empirically rich proposal for the explanation of the interrelationships of these three developments on the reorganization of space. For Sassen, the process of globalization is determined in the first place by changing financial and corporate services. On the one hand, she claims, transnational spaces have emerged, for example offshore banking centers and new global financial markets that are almost completely removed from state influence; on the other hand

these transnational spaces are within the territory of sovereign states and hence subject to the legal provisions of the state concerned.

However, Sassen moves beyond the finding that global spaces are based on local materializations by examining these localizations more closely. In so doing, she finds that the dualism of nation-state and world economy has shifted to become a triad in which the third position is occupied by "global cities." These cities fulfill control functions for global economic transactions (on this point cf. also Friedman and Wolff 1982). They become transnational marketplaces. On the one hand, they have an unequivocal national location. They are subject to national legislation and, beyond those managerial positions that are mobile, they provide numerous local jobs because of the concentration of financial and corporate services. These include, for example, the work of secretaries and cleaning squads. On the other hand, global cities are no longer only sub-units of their nation-states (Sassen 1996) since they are so closely linked to other global cities, to the extent that these cities often share more in common with each other than with other regions of their own nations. It can be concluded from Sassen's studies that from a macrosociological perspective, the constitution of space takes place on three levels: local, national, and global. On the global level, space is characterized by electronic networking. However, this space in cyberspace is based on activities on local ground. The instant transfer of money around the world, information transfer in real time, and electronic computer networking constitute only one aspect of the process of globalization, the other is local work. Sassen argues that no company and no industry is completely digitalized. Rather, the digital world is dependent on strategic locations with a high degree of concentration of infrastructure, the required human resources and buildings (Sassen 2000, 149).

Localization brings about a "new geography" of centrality (Sassen 2000, 147) since major cities become key settings for leading industries. There is hence a local shift in the constitution of space toward a centralization of innovative industries in a few cities and marginalization of large regions of the country. Within the city, the power structure also shifts, new constellations of center and periphery are formed. It is typical of this development that the inner-city center and the business center must no longer coincide. Here, too, spatial network structures emerge and undergo constant change and transformation. Manifold spaces develop due to management's connection with factories, offices, and field locations. Transport connections (roads, high-speed rail lines, and airlines) make the constitution and mobility of space possible.

Global cities unify a considerable power potential due to their spatial concentration of leading industries and by virtue of their links to other global cities so that nation-states lose significance, though without becoming inconsequential. Rather, the result is a reformation of national modes of regulation. The nation-state remains the space for socio-political alliances and consensus, but is also involved in an incoherent body of regional, national, and global manners of regulation (cf. also Hirsch 1993; Noller and Ronneberger 1995).

According to Sassen, telematics and globalization have turned out to be the fundamental forces leading to a new organization of space (Sassen 1997). Sassen shows that the constitution of spaces in macrosociological dimensions is at the same time based on relational links between individual cities, the development of places, and the reproduction of institutionalized links (such as those of the territorially organized nation-state). This means that the concentric model of progressively smaller units from the world economy via the nation-state down to the city no longer applies and that instead, overlapping spatial structures develop; this is a reorganization of the space–time dimensions (Sassen 1994b).

This reorganization of spaces is also confirmed by a number of other urban sociological studies and arguments (Soja 1991; Zukin 1991; Castells 1994; Berking 2002). According to Manuel Castells, the complex inter-mesh of new technologies, global cities, and generation of styles of life has to be understood as a "space of flows."

> [O]ur society is constructed around flows: flows of capital, flows of information, flows of technology, flows of organizational interaction, flows of images, sounds and symbols. Flows are not just one element of the social organization: they are the expression of processes *dominating* our economic, political and symbolic life. (Castells 1996, 411–412)

Space is transformed into a river of information, goods, and money flows. As distinct from Sassen, for whom the city as a quasi-actor is the smallest unit of study, Castells emphasizes that information and capital flows generate new styles of life with a specific way of dealing with space.

Proceeding from the idea that the local is not only determined by the global, but rather that local processes also engender structuring effect, Peter Noller and Klaus Ronneberger examined this formation of lifestyles. According to these two authors, urban images and urban cultures influence, for example, decisions on industrial locations. In their comparative

study of employees in the computing and advertising sectors as well as bankers, Noller and Ronneberger (1995) show how the city of Frankfurt am Main is experienced in a milieu-specific manner. For none of the groups studied is the constitution of space insignificant. However, there are great differences in how they produce Frankfurt as space. Whereas for bankers Frankfurt is the space of work and they prefer to live in the country, if possible the advertising experts want to live and work directly next to the high-rise buildings of the city center. The computer workers prefer for their part to take quarters in old buildings. Each vocational group experiences Frankfurt's space in a very different way and draws the boundaries of urban space differently. The leading executives of high technology and the financial sector are accordingly not a homogeneous elite, as Castells conjectures, but distinguish themselves according to vocational milieus. The yuppie figure is rather an exception and is biographically limited to the phase before establishing a family and/or rising to senior management positions. The new professionals accordingly are either not at all or only briefly "global players" for whom it is unimportant in what city they live. Their precise notions of living milieus influence questions of location, just as conversely, vocational cultures influence the development of taste.

Noller and Ronneberger's findings show that Manuel Castells overestimates the uniformity of senior management. However, this does not detract from his fundamental reflections on space, but rather demonstrates the complexity of the process. According to Castells, it is necessary to develop a sociological concept of space that is able to grasp three levels of spatial organization:

1. The "networks of interactions" (Castells 1994, 127; 1996, 412) that are generated by new information technologies. In these networks, the flows seem to outweigh the significance of places. Places continue to exist, but are absorbed by the logic and significance of the networks.
2. On the second level, the space of flows is based on places. For the one part, it is based on global cities, the control centers of global transactions, which Castells also calls the "nodes of the network" (Castells 1994, 127; 1996 413); for the other part, it produces peripheral places with no significance for the logic of flows.
3. Furthermore, new lifestyles are developed around which the space of flows is arranged.

According to Castells, the restructuring of space as the formation of networks and relations is articulated on various levels that have to be sustained by actors. However, he stresses that the space of flows—and the new professionals who animate it—is not the only spatial logic of society, though in his opinion it is the dominant one. Thus, one substantial consequence of the space of flows is the darkening of the "conditions of exploitation and suppression" (Castells 1991, 142). Another consequence is the change in the "images" of society (Castells 2012). At one and the same time, the idea of a globalized world is accepted in which each individual is integrated into a network of information, and the necessity of specialized networks is accepted since the information flows can only be reasonably handled by setting preferences.

3.4   Second Interim Conclusion

According to Saskia Sassen, if connections between the virtual space of global relationships, the space of nation-states, and the space of cities are made, it turns out that a model involving progressively smaller or larger containers, similar to concentric circles, does not adequately grasp the constitution of space since global cities are incorporated into both a transnational and a national setting. Castells's proposal that space is a flowing network—that at certain nodes requires control centers integrated into transnational, national, and local contexts—is a visualization of this space configuration. Furthermore, there are cities integrated into the network as places, but which exercise no significant leadership function, as well as places outside the worldwide electronic network. This configuration of space is also observable at the level of the city itself. Peter Noller and Klaus Ronneberger summarize this exemplarily:

> The concentric spatial structure of metropolises is increasingly overshadowed by a fragmented pattern of use that is characterized equally by processes of concentration and de-concentration and results in centers and peripheries of different dimensions. The figuration of center and periphery has to be conceived and depicted anew today. It is now a relational model of spatial structures. (Noller and Ronneberger 1995, 40)

Thus, it is not only on the level of socialization and education, and accordingly in action, imagination, and perception that spaces emerge through various links, but also that cities form relationally linked spaces in

themselves and with each other. It is this multidimensionality in particular that has to be grasped by means of a sociological concept of space.

However, though it is quite normal usage in specialist literature to speak of fragmentation as Noller and Ronneberger do, it is misleading. With this term they make it clear that something that was originally a whole is now only used in pieces. Fragmentation is often associated with the loss of feelings of continuity and consistency, as Heitmeyer's discussion (1996) already shows. There is often an undertone of valuation as if something holistic had been torn apart, for example when there is talk of dissection [Zergliederung] (Prigge 1991, 108) instead of a neutral term such as segmentation [Gliederung].

From Marxist theorists such as Henri Lefebvre (1977b, 1978, [1974] 1991) and following him David Harvey (1991), we can learn that fragmentation and unity are two aspects of one and the same process. According to Lefebvre, every society is characterized by the production of its own kind of space. In "neo-capitalist" society, the account continues, space is based on a separation of places which are then linked with each other (e.g. by highways). The state thus purports to administer a naturally given space, but in actuality it is creating a space. By means of control over space, the state is said to reproduce conditions of domination by establishing a hierarchy of places through spatial division and ghettoization. Thus, modern space emerges as at the same time homogeneous (state-controlled) and disconnected or hierarchically organized. Historically, fragmentation of space is said to result from the fact that space became an object of trade. Space became the privileged medium of state control. He argues that on the one hand space is homogenized since it is surveyed and assessed according to market values everywhere in the same way, while on the other hand space is fragmented by continual market exchanges and changes in ownership.

The argumentation represents a central insight into the constitution of space inasmuch as it makes it clear that the construction of a uniform space can only be achieved when the various parts are homogenized and cobbled together. Thus, the disintegration of a uniform space remains a constant threat to be warded off. *It is only when "the one" (uniformity and unity) is an inflated ideal and regarded as the normal state that its disintegration is viewed as a problem.* Talk of dismemberment or of fragmentation always presupposes a form of organization of that which is "in itself uniform," just as uniformity is produced precisely by division.

In the art of drawing, for example, the prime way to produce the entire body true to perspective is by the practice of dividing it with a grid and transferring it to paper using a viewing rod. The "entire" body, Sigrid Schade concludes, "cannot be had by nature—it has to be constructed" (Schade 1987, 249). The same applies to space. As long as social scientific analysis is concerned with the dismemberment or fragmentation of space, it will at the same time reproduce the idea of space that is in itself uniform.

The essential point in Noller and Ronneberger's thesis is, in my view, not that the spatial relations are fragmentary, but that relationships between the "fragments" are produced. This is a process in which by way of relationships elements with manifold ties to each other constantly constitute new spaces that overlap each other. "Space" is the manifold of spaces interlaced with each other. This interlacing is, as Castells emphasizes, organized by means of movement (flows). These flows do not annul the relationships to actual places, rather they produce three different forms of place: volatile places in the network, privileged places, and peripheral places. They can also be produced, as, for example, Augé (1995) and Sennett (1994) point out, by means of transportation routes.

Lefebvre's and Harvey's argumentation makes it clear that a fragmentation of space is not a new process. What is new is rather the reference to space in the sense of progressively quicker links between various spaces so that the notion of living in a uniform, homogeneous space is no longer adequately meaningful. Moreover, the conditions of an insularized socialization are also new. Finally, it is new that simple models of concentric units that become progressively larger or smaller no longer work because several levels have to be viewed simultaneously. It has become more obvious that a reduction of space to the earth's ground no longer comprehends the manifold spatial relationships. These changes do not only show that it is necessary to deal with the constitution of spaces as a sociological topic, they also demonstrate the significance of the fact that the constitution of space also contains a dimension of action, which is not sufficiently taken into consideration in sociology. The availability of data on the conditions of and changes to the constitution of space is still inadequate. Space seems to be given too naturally to become the topic of empirical sociological studies.

However, the thesis is corroborated that people are still influenced by the traditional notion of "living in space," that is, of being surrounded by a uniform, homogeneous space. This notion is also supported by the

knowledge of Euclidean geometry necessary for measurements and calculations. In addition to this, however, the idea of space as a flowing network also develops due to multimedia-based, insularized socialization.

The notion of "living in space" is based upon acquired Euclidean competence, the conflation of difference between model and world, a socialization that makes space experienceable as uniform and continuous, and traditional ideas of space. Disruptions of this idea can initially only be brought about by bodily–sensory perception of the physical world going beyond Euclidean thought. Due to insularization and contact with new media, space is no longer experienced as that which uniformly surrounds us, but as volatile, networked, and immaterial. My conclusion is that in addition to the idea of surrounding space, the idea of relational space emerges.

For the specification of the sociological concept of space, it follows that both absolutist and relativist ideas of space that derive space from the linking of objects are reasonable. Hence, the question arises as to whether in accordance with the everyday notion two concepts of space should be used to explain social phenomena. The analysis shows that a purely absolutist argumentation cannot grasp the generation of various spaces at one place, the mobility of spatial arrangements, and the derivation of space from action. In the following discussion, I shall attempt to show that a relativist assumption, by contrast, which derives space from the arrangement of objects, can be formulated in such a manner that not only the new formation of the organization of space can be grasped, but also the generation of territories and places as well as those social constructions on which spaces are based. However, this presupposes that not only the relationships, but also the objects that are linked are taken into consideration—and it is here that a relational perspective moves beyond the presuppositions of many relativist conceptions.

It is precisely when space is not conceived as the background or substrate of action, but rather is shifted into the course of action that a capacity for linking has to be ascribed to human beings by means of which the various "bodies" are connected to yield an arrangement. The various notions of space in everyday life can be viewed as aspects of this constructive operation. The various "islands," the people at other places, faraway cities, and so on only seem not to be fragmentary and disjointed when the synthetic operation of linking objects and people to spaces is attributed to actors. The spaces that emerge through synthesis can then be subjected to sociological study with respect to institutions and structures. In the

macrosociological view, international interrelationships become apparent that cannot be grasped by a homogeneous model. Irrespective of what sector of social reality is selected, whether international, national, urban, or everyday worldly constitutions of space, multidimensional spatial structures are always encountered that can only be explained when the constitution of space is explained by way of (institutionalized) linking that takes place in action processes and when spaces are not conceived as prior to action.

A concept of space as outlined here in a very preliminary and rudimentary form accordingly draws its incentive from relativistic concepts that have already been formulated, but also from new developments on the constitution of spatial contiguity as portrayed in empirical studies. The treatment of cyberspace technologies as reflected in the terms used, for example "Internet," gives the impression of a spatial net. Virtual spaces develop through one's own movements online. A space that has just been evoked can be linked with any other space simply by virtue of the bodily activity of clicking with the "mouse," and this other space only becomes space by virtue of the fact that it appears on the screen. Despite all the differences between Barlovian cyberspace and virtual reality, both are characterized by the idea of space that emerges from linking. Even in insularized socialization, the children are very clearly faced with the task of linking the various islands to a space of their own.

Today, people travel through the world at high speeds and at a frequency that would have been inconceivable two generations ago. The speed of an airplane or of a car on the highway makes adults, too, experience space as insularized. There are numerous places that are connected by a net of roads and airplane routes. Not only in traveling, in everyday organization space is constituted in this way. People commute to work, hurry in the evening to the shopping center on the periphery of town in order not to be late getting to a large cinema center a few blocks away. Tracks such as this and similar ones have often been reconstructed with Hägerstrand's space–time geography (cf. Giddens 1984). As a pedestrian or bicyclist it may well be possible to experience the distance covered as homogeneous space, but in a car, bus, or metro train the various places are only connected by the prosthesis "means of transport." The point is not simply overcoming space, rather space is constituted in the process by the production of links. It will become apparent that this transformation in spatial organization expresses with particular clarity the demands made on people with respect to linking, but also that all

phenomena of the constitution of spaces that have been treated up to now can be explained by way of, among other factors, acts of production and reproduction.

However, up to this point I have disregarded an important sociological dimension of space constitution: the space of the body. This is the smallest scale of sociologically relevant space. Is the conclusion admissible that even this space should no longer be conceived as an including and excluding container? Might it even be the case that people's self-perception is also changing in regard to the body? If both empirical and theoretical studies are correct in asserting that space can be conceived as a relational link, then this would also have to apply to the space of the body. Thus, in the final section of this chapter I analyze the body as space, as a further test of the scope of a concept of space that takes its point of departure in the assumption that spaces are the result of relational arrangements. In particular, the fact that adequate data are unavailable suggests that a further step in validation should be taken. The decisive question is whether body (spaces), that is, the smallest sociologically relevant dimension of space, can be understood as relational structures.

3.5   The Test Case: Body Spaces

New York artist Cindy Sherman's first feature film, *Office Killer*, shows a woman who kills her opponents and arranges the parts of their bodies carefully in her home. It is not the killing that interests her, said Sherman in an interview in the magazine supplement of the German weekly newspaper DIE ZEIT (cf. Sager 1997), but rather what the woman does with the bodies. The "dismemberment" of the human body is Sherman's topic, one that she also deals with in her photographs, on view in the collections of the most prestigious museums of modern and contemporary art. Using prostheses, she constructs and re-enacts body images and identities (on this point cf. Rose 1995). In her works, she discusses the problematical nature of any kind of uniformity or holism, emphasizing instead the fractures in experienced and perceived corporality.

Artists, film-makers, and pop stars have long been confronting their viewers and listeners with the dissolution of body limits. David Cronenberg's film *Crash* features prostheses for bodily movement such as cars and airplanes, as well as prostheses that keep the body together when acceleration results in accidents. "The actors in the film can only achieve bodily self-affirmation by way of the sensations of the injured, dismem-

bered body and pain," writes Silvia Bovenschen (1997) about the film. The feeling of sensing the body arises for the protagonists as the feeling of sensing singular parts. In addition, the Hollywood blockbuster *Face/Off* plays with the possibility of exchanging faces and continuing to live with the same identity in the other body. The French performance artist Orlan makes an object of art of her own body. In numerous operations, some already performed, some planned for the future, she copies famous examples of Western history onto her face. According to the art historian Sigrid Schade (1987), it is above all women who in experimental procedures "are fascinated with the fragmentation of feminine and masculine figures and enter into the opposition between 'whole' and dissolved body images" (Schade 1987, 239).

The question is now whether these artistic representations indicate a changing relationship to body spaces and thus to spaces in general. As Richard Sennett (1994) elaborates in his socio-historical book *Flesh and Stone*, ideas of the body influence mutual perception, especially among those whose bodies are different from one another. However, ideas of the body also guide the perception of one's own body. Thus, for example, it is today a matter of course for everybody to "have" a body, consequently to regard the body as property: an idea of the body that would have been completely alien to people as recently as the beginning of the eighteenth century (cf. Duden 1991a). This does not mean that the perception of the body and the idea of the body are the same; rather, it means that the perception of the own body is filtered by ideas of the body. It can also be said that the experience of the body is influenced by ideas of the body that are discursively generated.

The culture-specific ideas that are devised about the body accordingly influence one's own perception and mutual perception. Furthermore, according to the anthropologist Mary Douglas (1973), the culturally processed ideas of the body correspond closely to the categories in which society is perceived.

> The social body constrains the way the physical body is perceived. The physical experience of the body, always modified by the social categories through which it is known, sustains a particular view of society. (Douglas 1973, 93)

Richard Sennett can also provide support for this finding that ideas of the body and ideas of society are related to each other. He argues that "urban spaces take form largely from the ways people experience their

own bodies" (Sennett 1994, 370). The image of the body has to change, he says, so that people can focus on each other in multicultural cities. The idea of the body, he argues, has to integrate multiplicity; perhaps the multiplicity that Cindy Sherman documents?

In her book *The Woman Beneath the Skin*, Barbara Duden, a historian of the body, portrays the transformation of ideas of the body since the seventeenth century. In the middle of the seventeenth century, the body was still perceived as the source of power. According to this thought, the exposed buttocks of an old woman could invoke a storm, a "bleeding vulva" could influence the weather. The basic idea was one of a flowing exchange between inside and out. The skin does not isolate the internal from the external, the body is not closed (Duden 1991b).

It was only when surgery began to assert itself as a scientific discipline that the body lost its mythological power. Between the sixteenth and eighteenth centuries, the body was increasingly viewed as having an economic value. An awareness of health emerges. The body becomes property, something that one *has*, and no longer *is*. This body requires care, which also means, it has to be disciplined. Norbert Elias (2000 [1978a]) portrays the process of self-regulation of affects and bodily needs which are sustained by the wish to keep the body closed at all times. The notion of a closed body goes hand in hand with the separation of an inside of the body from an outside. Due to the forceful assertion of scientific thought (cf. Foucault 1998 [1976]) the open, flowing body in constant exchange is transformed into a closed body. Whereas for extended periods various ideas of the body co-exist with each other, the discourse on the body as a closed container ultimately becomes dominant. The metaphor of the vessel or container recurs continually over the centuries in the notion of women as beings who receive semen and carry children (Duden 1991b; Honegger 1991), but the idea never seizes the entire body, it never penetrates the experience of the body.

The idea that there is an interior body as a closed container distinguished from an exterior of the body becomes a matter of course from the seventeenth and eighteenth centuries to the present day. Duden, for example, characterizes her own body perception: "I have an outside and also an inside, and the latter is not accessible to everybody. I have a face that I show, and also inwardness. There are things that I see in myself, and other things which I sometimes think I sense" (Duden 1993, 29).

In academic literature, there is considerable evidence that bodies are perceived along the axis inside–outside, and that the inside is clearly dis-

tinguished from the outside (see Helfferich 1994; see also Brennan 1996; Weber 1997). Marc Augé, for example, writes:

> At least on the level of the imagination … the body is a composite and hierarchized space which can be invaded from the outside. (Augé 1995, 60–61)

This body closed unto itself is interpreted as passive in accordance with the idea of space. Corresponding to the dualisms typical of Western thought, the mind appears to be active, but bodies have the association of passivity. Norbert Elias persistently and eagerly fought against this idea of the closed body throughout his life. He criticizes (together with John L. Scotson) Sigmund Freud for writing from an orientation that produces the notion that the human being is a closed unit (Elias and Scotson [1965] 1994 [1993]). He objects to the fact that many philosophers address their problem in epistemological terms "with its nightmarish imagery of an invisible gulf, of a quasi-spatial divide, between individuals perceived as closed containers holding within them knowledge" (Elias 2007, 101 [1994, 102]). In an introduction to sociology, he insists that the image of humanity in terms of the closed person should finally be replaced by the open human being (Elias 1978a, 135 [1993, 147]). Elias attempts to rupture the myth of the body as a container by arguing against the idea that the body is a space.

> The relation of instinct controls to instinctive impulses, to mention only one example, is not a spatial relationship. The former do not have the form of a vessel containing the latter within them. (Elias 2000, 479–80 [1976, LXIII])

If at the time he published this he had already understood an idea that he points out later in his life (cf. Elias 2007 [1994]), namely that space as container is only one possible notion of space, then a relativist interpretation of space would have provided him with further arguments for the open idea of the body. However, he was limited in his options for questioning the spatiality of the body.

The change of the idea of the body from a fluid transition between inside and outside to a closed body is not isolated from other social processes. It takes place at the same time as those changes in the mathematical and physical interpretation of space discussed above. It also goes hand in hand with a change in the relationship between men and women.

While spaces are conceived of as containers and bodies as spaces, at the same time the human being makes an appearance on the "platforms in modern culture, politics, and science on which topics for discussion are addressed" (Honegger 1991, 1), and with this appearance comes the idea of an autonomous identity consistent in itself. An idea, however, that has a fundamental contradiction within itself, as Claudia Honegger substantiates in detail. The self-reference of the modern person goes hand in hand with the "schematization of a clear-cut dualism of gender" (ibid.). Equality and difference become social reference points as an indissoluble unity. Honegger writes that it is "precisely a philosophical-holistic medicine that played a decisive part in the coding of gender and established the meaning and goal-constitutive character of 'bodily spatiality'" (Honegger 1991, 9). These body spaces are distinguished into female and male bodies.

Other disciplines also had an effect on the establishment of the new relationship between the sexes. For example, in his 1865 work *Die Anthropologie*, the anthropologist Karl Schmidt endeavored to account for the difference between man and woman, female body and male body in detail:

> The man appears as incarnated time, and becoming that has become flesh; the woman as space, as being. Activity and passivity, mind and body, brain and heart, head and belly, individual and species, positive and negative pole: man and woman. (Schmidt 1865, 420)

To demonstrate man and woman as contraries, but dependent on each other, Schmidt assigns dichotomous opposites. On the one side man is encountered, time, activity, mind, brain, head, on the other side woman, space, body, heart, belly. The man is body only by virtue of the head. He is portrayed as moving and active, and is hence regarded as an expression of time. The woman, by contrast, symbolizes space. Like space, she is deemed to be passive and bodily.

"The woman is belly," considers Schmidt (1865, 421); in other works, as Barbara Duden (1991a, 1991b) analyzes, the woman's body appears as a "bundle of organs"; the womb is then stylized to the decisive organ and the organ distinguishing woman from man (cf. also Honegger 1991). The woman's body becomes a species body. The male body, subject to techniques of disciplining such as military, factory, and school, becomes a machine (cf. Foucault 1998; Sobiech 1994). To both bodies applies

the notion of a body that ideally should be kept closed, while the container body is projected differently according to sex. Whereas women are defined with reference to the ability to give birth and their body is projected as a vessel for the potential or real child, the man's body is disciplined to become like armor sealed from the outside. Control of it is the presupposition for the imagined disembodiment. Klaus Theweleit (1987 [1977/1978; 1995]) uses numerous documents, letters, and pictures, especially from the National-Socialist period, to demonstrate how the male body is imagined as steel. Any flow, whether blood, saliva, urine, or even emotions, must remain invisible. Even today, boys tend to be trained to deny pain more than girls, and figures such as HeMan, Batman, Iron Man, and Hulk populate boys' rooms (cf. Schnack and Neutzling [1990] 1994). The difference between the soldierly body image and one's own body experience, which as a rule is inadequate in comparison, underscores the constant and enduring threat of the armor's fragility.

Women keep this social fragility in a permanent state of relevance and attention by reminding us of birth and thus of death, but also inasmuch as they function as a social projection screen symbolizing weakness. These typecasts are, however, not necessarily limited to women. The image of a closed, iron-hard body that functions like a machine is an imago of the white, middle-class man. In National-Socialist ideology, Jewish men, for example, are regarded as soft, fluid, impotent. Susan Bordo (1993) argues that such stereotypes have lasted to this day in the image of the "nice Jewish boy." It is not a rare thing that in an effort to avoid these attributions they take refuge to disparagement of softness, which is also connoted as feminine, so as to achieve cultural appreciation for themselves; and in the process they reproduce the trained, closed body space.

Just as a person with white skin does not remind white Europeans or Americans that there are various ethnic groups, a man does not symbolize corporality unless his body becomes stigmatized, for example, by being disabled, homosexual, or black. The anthropologist Mary Douglas (1973) demonstrates in a study of the symbolic use of the body in various types of society that the more complex the social system is structured, the more action aims to "suggest that human intercourse is disembodied" (Douglas 1973, 101). The degree of "disembodiment" is used to mark social hierarchies. White, heterosexual, uninjured, middle-class men are regarded as normal and hence as physically inconspicuous. The geographer Robyn Longhurst summarizes this when she writes: "…white men

could transcend their embodiment by seeing it as a simple container for the pure consciousness it held inside" (Longhurst 1995, 98). The man is disembodied in social perception precisely because the male, white, heterosexual, middle-class body appears as an empty vessel for mind and reason. And although bodilessness hardly corresponds to men's perceptions of self, the woman remains the symbolization of corporeality (cf. e.g. List 1993; Brückner 1994). Occupying the role of the other, the woman becomes the body par excellence. When she comes into sight, her body is assessed, with her body cars and washing machines sell better, and so on. This way, the female body, too, becomes a prototype of a container space. This body is what becomes a problem for women; and for this reason, it is female artists who create dismembered, randomly synthesized body images. Accordingly, the opening of the woman's body became a main interest of surgeons in the eighteenth century.

> It can be claimed that since the end of the eighteenth century the female body has been used to produce a new type of society.… Since 1800 the female interior was published in medical, police, and legal terms, while at the same time—in ideological and cultural terms—a privatization of the female exterior was propagated. (Duden 1991b, 110)

Whereas men and women are portrayed as fundamentally different and work is distributed in gender-specific terms, that is, women are responsible for housework, motherhood, and the private sphere, the woman's womb becomes a public place. Woman's sexuality and pregnancy become a concern of the state, church, and husband (cf. also Steinecke 1999). The fetus in the womb becomes public. The publication of the interior of the body is done in the first place by printing engravings; later it reaches a climax in visualization by means of ultrasound.

> By force of light we visualize our interior and disintegrate our skin. (Duden 1991b)

Under the influence of ultrasound, Duden argues, the perception of the body is changing to an extent similar to how the body emerged as an object and effect of medical examinations through the physician's look at the living body. The "interior of the body" is published in enormous quantities in what is proclaimed to be a campaign for the protection of unborn life, that is, the fetus is artificially detached from the womb, the

unity of woman and fetus is dissolved and the limits of the body are dissolved by means of technology.

Barbara Duden's works are sustained by a desire to oppose this development. She writes not only against the development that the pregnant woman is transformed into a uterine supply system, she also criticizes her female students, young women, who already view the dissolution of the inside–outside idea as normality. Using the example of Judith Butler's book *Gender Trouble* (1990) and its resonance among her female students, she criticizes the thesis that bodies are discursively produced social constructions as an idea of the disembodied woman.

> Hence, I *understand* what Butler says, I observe that female students attentively read her, but what she says *says nothing to me*.… She is my contemporary but she is farther removed from my potential for experience than are the eighteenth-century women from the small town of Eisenach when they go to the physician and complain about their 'flows' and 'hardenings.' (Duden 1993, 27; italics in the original)

Barbara Duden argues that the dissolution of the limits of the body has resulted in the view that the fetus is unborn "life" and hence independent, and that women are thus deprived of rights; this convincingly substantiates the disadvantages of the development of the disembodied woman. On the other hand, this development also contains an opportunity. The dissolution of the idea of the body as a container breaks with the heterosexual idea of women as receptacles for semen as well as with the equation of women's bodies with birth-giving.

However these developments are assessed, collectively they point in the same direction: the female students' enthusiasm for constructivist concepts of the body, addressing the body as a topic of art and culture, shifts toward ideas of the body arising from visualization technologies and new medical developments such as techniques of transplantation and implantation, artificial insemination, sex changes, aesthetic surgery, and postmortem parturition.

In youth subcultures, too, for example in Techno culture, in addition to the observable changing relationships to space already discussed (cf. Chap. 3.2), there are transformed body practices. According to Richard and Krüger, experimentation with body images goes hand in hand with the search for other space–time structures. The body surface is configured in accordance with images of androgyny and childishness or in imitation of

body images of homosexual culture. Light, music, and drugs change the sensations of materiality of the body and help accelerate movements. On the basis of an analysis of current publications on the Techno scene, Sabine Thabe sums up as follows:

> Furthermore, Techno culture as a digitalized life-world in a space of simulations refers to new ideas of corporality and to a being-in-the-world that makes ideas of cyberspace and hyperspace become palpable and real. (Thabe 1997, 180)

The Techno scene plays with the possibilities of the artificial configuration of bodies. It links "narcissistic fantasies of self-creation" (Thabe 1997, 181) to synthetic drugs and the experience of virtuality.

However, transformation of ideas and experiences of the body is not only a subcultural phenomenon. On the basis of, among other things, one hundred interviews on health concepts and practices in various American city districts, Emily Martin demonstrates that a new kind of body is developing. Whereas the "Fordist body" developed according to the principles of centralist control and mass production, she argues, the contemporary idea of the body is one of an immune system. Inspired by their medical knowledge about diseases such as AIDS and cancer, which is disseminated in almost all mass media, the interviewees describe the body as a "star war." In this image, various cells struggle against each other, fighting for the victory or defeat of the immune system. In these descriptions, the idea of an ego enclosed by the body as a container no longer exists. Instead, the ego becomes a passive and impotent observer of this struggle.

> The 'I' who used to wear the body like a closely fitting set of clothes is now miniaturized, and is dwarfed by its body. The 'I' is made a passive and powerless witness to the doings of the components of the body. (Martin 1992, 125)

Barbara Duden (1993) and Donna Haraway (1991) also corroborate the finding that bodies are today mostly experienced as immune systems. The body is perceived as a global system. The descriptions of the own body as a system are similar to the images of networks as they emerge in the computer world. However, as a war scene the body does not mobilize the same fantasies of a treatment of the various parts of the total system on an equal footing as is typical of the debates on Barlovian cyberspace. Martin

analyzes the portrayals of the immune system in newspapers and finds that these illustrations are based on sexualized ascriptions. For example, B-cells are described as "housekeeping" and are fitted with long eyelashes and high-heel shoes; T-cells, by contrast, are represented as a physician with a stethoscope. They give the instructions that the B-cells receive. If a T-cell kicks a B-cell, nothing happens, but if it gives another T-cell a kick, it receives angry protest. This way, the people interviewed by Martin, who explicitly trace their knowledge back to graphic representations in the media, learn not only to understand their own body as a system, but rather something more sneaks into what they learn: they learn to understand this system, too, as sexualized. Martin draws the conclusion:

> I have sketched a transformation in embodiment, from Fordist bodies held by disciplined order in time and space and organized for efficient mass production, to late capitalist bodies learning flexible response in rapidly collapsing time and space. (Martin 1992, 134)

Accordingly, Martin, too, sees a relationship between the transformation of ideas of the body and changes with respect to space. However, she, too, interprets the transformation as a collapse of space and time, not as a changed organization of spatial and temporal dimensions. As in the discourse on space, here, in the talk of changes to the body, the contentious discussion on the interpretation of the detected changes is repeated. Whereas psychoanalytically oriented authors tend to relate the diffuseness of the body's limits to fear and shame, or discuss whether it is pathological, others, such as Richard and Krüger (1997), see diffuseness as an opportunity to redefine the order of gender.

In view of this process, Donna Haraway advises women that they should rather be a cyborg than a goddess (1984). Cyborgs do not need a uniform identity nor holistic fantasies, and therefore offer the opportunity to break out of dualistic thought. According to Haraway (1995), the cyborg is a condensed image of our times. The boundaries between organism and machine are contested, she argues, so that the areas can no longer be unequivocally assigned to production, reproduction, or imagination. And precisely here is the opportunity for women to shift the relationship between the sexes. Microelectronics provides the basis for producing copies without an original. It thus eludes the necessity of representing oneself as one original or another original as in a dualistic order and thereby provides a new generative orientation. Haraway's description of the cyborg

incorporates theoretical reflections that have been developed in the past years in the context of women's studies.

Bodies are discussed in terms of social construction. In the first place, it is about the position accepted by Duden, too, that body features such as vagina, penis, or womb, just as, for example, eye color, or the size of the ears by themselves do not suggest a classification or meaning. They take on meaning only in a specific social context. In accordance with this position, a distinction is made between "sex," the biological outfit of the body, and "gender," the social classification and identification of bodies. In more recent publications (e.g. Butler 1990, 1993), critical attention is drawn to the fact that the emphasis on "sex" still suggests that it is prior, natural, bodily and thus a substrate that it is transformed virtually after the fact. Judith Butler understands it as a long social, and above all linguistic process that people sense certain body parts "materially" as penis or vagina. For Butler, gender is produced through the repeated stylization of the body. The materials for production: make-up, dress, skirt, trousers, and suit, are no longer deemed to be the expression of an ego, but rather serve the production of an ego that is understood as contradictory in itself (cf. Graw 1997). The question is correspondingly not only how men and women become male and female, but also, how bodies are marked as male or female. Moira Gatens (1992, 1996) also argues in this sense. Bodies are understood as the goal and expression of a relational arrangement of discourses and practices.

Elizabeth Grosz (1994, 1995) is also interested in the idea of a non-uniform and non-dualistic conception of the body, but criticizes wholesale abstraction from the biological body. "The sex assigned to the body … makes a great deal of difference to the kind of social subject, and indeed the mode of corporeality assigned to the subject" (Grosz 1995, 84). In *Volatile Bodies* (1994) Grosz also argues against the idea that bodies are produced by way of redundancy. According to her, the body is subject to a constant "becoming-other," materializing in permanent exchange with each other so that corporeality is always an unstable category. Grosz understands body limits as fluid and dynamic. The "outside" is permanently drawn in, and the inside constantly ejected. As distinct from Butler, who understands the relationship between the sexually marked bodies as a rejection of the other, Grosz emphasizes the relational association of constant exchange. Just as for the understanding of the self, the other is necessary as a counterpart, bodies are materialized in friction against the other. In keeping with the correlation between ideas of space and body,

she explicitly opposes the Newtonian idea of space, and turns to Einstein and hyperbolic geometry (cf. also Grosz 1995, 97). She correspondingly defines bodies as relational structures.

> By *body* I understand a concrete, material, animate organization of flesh, organs, nerves, muscles, and skeletal structure which are given a unity, cohesiveness, and organization only through their psychical and social inscription as the surface and raw materials of an integrated and cohesive totality. (Grosz 1992, 243)

Grosz proposes that the body be regarded as a mobile organization consisting of various parts tied together by mental and social processes. The body thus becomes a relational arrangement, linked by individual and social inscriptions.

These cases show that it is not only the determination of the spatial that has been set in motion, but also the determination of the bodily. The theoretical attempts to redefine bodies display many similarities with present-day attempts to define space. Bodies (or body spaces) are no longer conceived as closed containers with an inside and outside, but rather these ideas of uniformity are being replaced by ideas of bodies in transformation, in exchange. The various elements of the body become spaces by virtue of operations of interconnecting, not by virtue of a form that adheres to them by essence. The attempts to give the body a new scientific definition have the goal that the body should no longer be considered to be the "base camp for sexual identity" (Singer 1995, 25). The natural link between body and identity is fractured.

The fact that this is not mere sociological fantasy, but that changes can also be detected in the life of the body is demonstrated by Emily Martin's study. Bodies are experienced as open systems into which dangerous viruses can penetrate at any time, but which can be protected by immunity stabilizers. This idea shows that the traditional idea of container space has been supplemented by new, open ideas of the body. The systemic body is not in the same measure unequivocally bound to a sexual identity as is a container body. However, these notions continue to operate with feminine and masculine shares in this system (e.g. various cell types) and reproduce in this way gender-specific clichés.

It can be ascertained that our human corporeality cannot be viewed apart from scientific concepts of the body. Like space, the body is always already a described and discussed body. Every action-theoretic reference

to space necessarily begins with the corporeality of the human being. This, however, can by no means be assumed to be naturally given; rather, the body is always already sectioned, described, formed in ideas and images. Neither self-perception nor the scientific gaze can reach a pre-discursive body. Rather, studies must take account of the fact that the body of scientific analyses of space is itself already space.

In conclusion, the changes in the constitution of space can be interpreted as a development toward a new type of space inasmuch as in all dimensions, that is, in the body, in active access to the environment, in neighborhoods and cities, and in national and/or global economic relations new constructions of the spatial with similar dynamics are prevailing. It is becoming clear that in social scientific theorizing a process has started by which space is no longer conceptualized as a rigid structure uniform in itself, and that in empirical research the interpretation of results in absolutist concepts of space is now only possible within strict limits. The observable processes of space constitution in modern society can only be explained when space and society are not defined as two separate realities. If space is defined as uniformly given, then change seems to involve dissolution and destruction; if space is conceived as territory, then society is lost from sight; if space is equated with the actual place, the macrosociological perspectives are inconceivable. It is only when the systematic division between space and action is overcome and space (or spaces) are recognized as social products that it will be possible to understand the various dimensions of constitution.

Toward a Sociological Concept of Space

Critical interpretation of empirical findings shows that the normal procedure in social-scientific research, the practice of regarding space and action as two separate phenomena, implicitly suggesting that the one, action, takes place in the other, space, has little explanatory value. To avoid unnecessary repetitions, only the most significant deficits of this interpretation of space shall be reconstructed here in order to move forward to the concept of space that is being pursued in this work (for further details, cf. Chaps. 2 and 3).

The problematic point about these absolutist conceptions of space is that space becomes a fixed, rigid plane on or in front of which moving action takes place. Space seems immobile and removed from the context of action. This leads to research desiderata on various levels. In the extreme case, it has the consequence that many sociologists deliberately avoid studying space because society should only be explained on the basis of social processes. In other cases, only points of contact between spatial reality and action are determined. It is not taken into consideration that the development of spaces is itself an aspect of social processes. The complexity of the constitution of spaces, which is based on space-producing action, just as well as on spatial structures, is lost from sight.

Desiderata also emerge from the fact that social developments that obviously have a spatial dimension such as the insularization of life-worlds, processes of globalization, and the results of new technologies cannot be conceptually grasped on the basis of an absolutist conception of space. In

talk of disintegration, collapse, fragmentation, and dissolution, the idea of something that is uniform in itself is reproduced and only the division is depicted as a problem. The normative construction of space as something that is supposed to be uniform and whole prevents the process of change from being seen with all its opportunities and obstacles. The initial assumption that space exists in itself and can be structured in action does not permit the notion that several spaces can be constituted at one place. The links between virtual and what is deemed to be real space are inconceivable, just as is the constitution of both institutionalized and countercultural spaces by various social sub-groups on one and the same ground.

My approach is therefore sustained by the determination to challenge normatively charged uniformity constructions. I use space as a conceptual abstraction designating the process of constitution. Space in itself can never be empirically studied, but rather only individual spaces.

So as not to conjecture two different realities, space and action, I draw upon relativist ideas of space and understand space—as a working hypothesis—as a relational arrangement of bodies that are incessantly in motion so that the arrangement itself is constantly changing. That means that space is also constituted in time. Accordingly, space cannot be the rigid container existing independently of social and material conditions, but rather space and the world of material bodies are interwoven with each other. The term "arrangement" ([An]Ordnung) emphasizes that both a dimension of order (Ordnung) referring to social structures and also a dimension of action, that is, the process of putting in place (Anordnen), are immanent to spaces.

Especially the interpretation of the empirical studies shows that the constitution of space can only be the outcome of linking. For instance, bodies become spaces by virtue of an operation of synthesis, cities become spaces through the synoptic view of various "islands" on the part of children, adolescents, and adults, networked spaces develop through information and communication technologies, even on the global level, specific spaces develop through alliances of cities. My proposal that space be conceived as an arrangement makes it possible to observe changes in the constitution instead of denouncing phenomena of dissolution.

However, the working hypothesis that space signifies a relational arrangement initially only refers to the (mobile) positional relationships, but not their social dimension. In order to be able to analyze the spatial dimension of social processes, that is, the constitution of spaces and social changes to them, I shall develop a theoretical approach in the following

discussion in which the constitution of space is immediately integrated into the process of action. Since action takes place in structured contexts and has a structuring effect, this approach implies that the structural dimension of the spatial must be placed in the center of the argumentation.

Inasmuch as I understand space firstly as a moving arrangement of bodies, the acts of construction involved in forming spaces become essential to space-theoretical deliberations. This implies the question as to the relevant criteria according to which linkages are made and what knowledge is processed in the links. The trained Euclidean eye, which in absolutist conceptions is sometimes the only frame of reference, is discussed here as an essential point of reference, but not necessarily the only one. The influence of ideas of space and the diversity of perception are taken into consideration, as is biographical knowledge. In order to be able to answer these questions of constructions systematically, two aspects of the constitution of space must be considered at the same time: the production of spaces in action and the analytic eye that not only scientists, planners, and architects cast on space, but which is also immanent to every action.

This prefigures the path that I will take to develop a new concept of space. I shall propose an action-theoretical conception of space. Among my fellow travelers are Anthony Giddens, who with his concept of the duality of structures provides a starting point for the link between action and structure (notwithstanding his concept of space), and Pierre Bourdieu, whose concept of habitus provides a connector between action and structure. They provide a set of analytical instruments to integrate space into the social process. But they can give no answers to the question as to how spaces are produced. I explain this process by drawing on derivations and conclusions from empirical and theoretical work.

While others have paved the way, it remains the case that within sociology, space is still of peripheral interest. There are only a few researchers in sociology who have been concerned with relativist concepts of space. It is often only a brief paper, a few pages in a book on another topic, or perhaps an article that is devoted to space. The discussions therefore rarely have the character of systematic analysis, but rather only demonstrate cognizance of the new view of spaces oriented toward relative positions and relations. It is rare indeed that the theory of space has significant impact on sociological research perspectives. However, for the specification of a sociological concept of space, a few points can be learned from the reflections presented above, and also from the weaknesses of the approach— that is, from the answers that this approach fails to give. This can help

us better understand what aspects have an effect on the constitution of space. Helga Zeiher and Hartmut J. Zeiher begin their sociological study of children's places and times with the remark that space is "understood relationally as mere positional relationships of 'things' among each other disregarding their particular substantive determination" (Zeiher and Zeiher 1994, 46). In this description of the situation, however, they focus one-sidedly on material states of affairs or "things" that constitute space. In this focus, people and groups of people constitute space only by placing things; they themselves are excluded from the construction of space unless they, too, are subsumed under "things," which would be imprecise since the activity inherent to human beings influences positional relationships differently than do things. Consider only the observations made by Richard and Krüger (1997) on the Techno discotheque (cf. Chap. 3.2). The space described here only emerges in the rhythmic motion of the young people dancing. It is impossible to grasp this space simply by way of the arrangement of the things.

However, if we attempt to determine space not merely on the basis of the world of things, but also with reference to the placement of people, the simple statement of the positional relationship does not do justice to the process. If people are acknowledged as a possible element of the arrangement (and, moreover, if the perspective on the arrangement is also systematically taken into consideration), then spaces are no longer only positional relationships. This means that the exclusive focus on the formation of relationships turns out to be nothing more than a point of departure for the following discussion; this sort of restricted focus is immanent to many relativist positions, and is expressed, for example, by Zeiher and Zeiher when they say that they wish to abstain from a substantive determination of the things arranged. The social dimension of the positional relationships has to be integrated into the systematic analysis, more specifically, both the relationships and who arranges what objects in what way and with what body.

If instead space itself is understood as human and material, then it is not only action, but also space itself that must be understood as established through processes, rather than as an entity unto itself. Furthermore, if space is defined not merely with reference to the world of things, then we overcome the problematic idea that spaces seem to come to an end within the realm of the material. An understanding of space developed solely with reference to substances only grasps the visible world of things, but fails

to consider other factors constituting space such as atmosphere, smells, sounds, and so on.

The relational concept of space that Norbert Elias develops, according to which space refers to "positional relationships of moving events" (Elias 2007, 83 [1994, 75]) is more remarkable, but at the same time ambiguous in formulation. The concept of event is associated with the unusual, that is, an interruption of everyday happenings. However, spaces are constituted both in everyday life and in exceptional situations. Hence, the concentration on the concept of event is misleading. But even if events are understood as actions (on this point see Elias 1978, 55–56 [1993, 58]), ambiguities remain. Then, space is deemed to be constituted by way of the positions of actions and their relations to each other. Thus, in contrast to the authors discussed above, all physical entities are excluded from the definition. Furthermore, the activity of forming relations is absent from this conceptualization.

In his book *An Essay on Time* (2007 [1994]), Elias devotes only five pages to space, but these pages are full of concentrated reflections. Since Elias did not treat the social construction of time and space until the eighties, his oeuvre is characterized largely by an absolutist understanding of space; for this reason, he treats space in empirical studies as the expression of social structures. This becomes particularly clear when in the analysis of court society he treats the "structure of dwellings as an indicator of social structure" (Elias 1983, 41 [1994, 68]). In this sense, the analysis of space becomes one of numerous methodological approaches for Elias.

> … and even if the nature of these relations [intertwining relations between people, M.L.] cannot be expressed solely by spatial categories, they are, at any rate, *also* expressible through spatial categories. (Elias 1983, 43 [1994, 70]; italics in original)

He is only concerned with questions of definition in his work about time, which he writes as a contribution to the sociology of knowledge. This is where the readers are able to see how Elias grasps space conceptually. The basic idea is that space is not a thing in itself, but rather emerges out of the positional relation between moving events which, he continues, "one tries to determine by abstracting from the fact that they are moving and changing" (Elias 2007, 83 [1994, 75]). Events and actions are, as he explicitly emphasizes, moving. This movement is determined by a "continuous sequence of change" (82 [75]) and by its integration in social pro-

cesses. According to Elias, people need space as the means of construction of social reality for orientation with respect to positions and the distances between positions.

> Positional relations 'in space' (as we call it) are those which can be determined by means of non-moving and unchanging standards—although people, in order to use them as meters, may have to move them about and to change their position 'in space' and thus 'in time'. (Elias 2007, 81 [1994, 73])

Accordingly, for Elias space is the result of the determination of distances between relative positions in which stasis is artificially conjectured by means of immutable measures such as rulers and milestones. This is the point in which space as a synthetic operation is different from the construction of time. The latter is registered by means of changing measures, for example clocks. People need the category of space to ascertain the distances between positions, and resort to this end to space as a social construction. A spatial distance is measured as if continuous change could be interrupted for a moment. The concept of space stands for "purely positional relations of observable events at a very high level of abstraction and synthesis" (Elias 2007, 81 [1994, 73]).

Elias analyzes two cultural linking operations: one moving, called time, the other rigid, called space. If this understanding of space is juxtaposed with Elias's thinking in processes, it becomes clear why he devoted so much more attention to the analysis of time than to space. His goal is to overcome the inability of sociological thought to reflect movement and processes.

> Even the concept of social change is often used as if it referred to a fixed state—one drifts, so to speak, from seeing the state of rest as normal to seeing motion as a special case. One attains a far better grasp of the raw materials with which sociology deals, if one does not abstract from their motion and their processual character, but rather uses concepts which capture the processual nature of societies in all their diverse aspects, as a frame of reference for research into any given social situation. (Elias 1978, 115 [1993, 124])

Just as the human being is always in motion due to the course of biography, society is also never in a state of rest. In contrast to Talcott Parsons, he holds the constant change of society to be "a specific kind of order"

(Elias 1978, 115 [1993, 123]). Consequently, he demands of sociology that it work with concepts that express and grasp processes. For Elias, space explicitly fails to fulfill this criterion. Though he acknowledges that a distinction is made between space and time for "practical" reasons, he holds it to be theoretically untenable. Space and time, he claims, cannot be separated from each other.

> [E]very change in 'space' is a change in 'time'; every change in 'time' a change in 'space'. Do not be misled by the assumption that you can sit still in 'space' while 'time' is passing: it is you who are growing older. Your heart is beating, you are breathing, you are digesting …. (Elias 2007, 82 [1994, 74f.])

Nonetheless, Elias writes an entire book on the question of "why do people need the determination of time?" When he says that time and space must be reunited, and in the following and in the preceding text only writes about time, the impression is then that he dissolves space in time, but it does allow him to address the idea of motion.

If the endeavor to develop a concept of space that includes motion as an element of its determination is maintained, then other theorists must be consulted. Henri Lefebvre develops his reflections on the theory of space on the basis of a theory of everyday life and criticism of capitalism. His works are sustained by the aspiration to defend everyday life from denigration by "higher" spheres such as philosophy, literature, morals, and so on. To this end he develops the argument that the spheres called higher are only seemingly divided from everyday life, but in fact operate as a negative reflection of everyday life (1977a, 63f.). However, according to Lefebvre, everyday life has been transformed to the state of everydayness under conditions of capitalism. Everyday life becomes "the social location of a highly developed exploitation and a carefully monitored passivity" (Lefebvre 1972, 149). Everydayness means the lifestyle of individualization and particularization standardized by processes of socialization. An essential feature is the colonization of space and time. He understands control of space as the means by which capitalism takes power. "Hence the space too is made up of 'boxes for living in', of identical 'plans' piled one on top of another or jammed next to one another in rows. Yet, at the same time, the body takes its revenge—or at least calls for revenge" (Lefebvre 1991, 384). Lefebvre also calls this capitalist space "abstract space" characterized by the simultaneity of fragmentation (division of

space into marketable parts) and homogenization (leveling function of the exchange value, which in capitalism dominates the utility value). This development is complemented by the predominance of the visual and by the geometrical perspective, which definitively form the character of space to an abstraction (see Lefebvre 1991, 184). Space appears as homogenized in such a manner that it is regarded as a whole as if from outside, and thus in the first place as the same everywhere. This legitimates the fact that it can in equal measure be surveyed, parceled, controlled, and sold.

Lefebvre is famous not only for his critical reflections on contemporary issues, but also for his conceptual reflections. As the point of departure for reflection on space, Lefebvre proposes a conceptual triad consisting of spatial practice/perceived space, representations of space/conceived space, and spaces of representation/lived spaces (Lefebvre 1991, 38). In the first two elements of the triad, Lefebvre adheres above all to the traditions of Marxist thought. By "spatial practice" he understands space-related manners of behavior, that is, the everyday practice supported by routines and routes by which spaces are produced and reproduced as well as the bodily experiencing of and suffering from spaces. Spatial practice is pervaded by representations of space. By "representation of space," Lefebvre understands conceptualized space, the space of planners, urbanists, scholars, scientists, and technicians. This is the ideological–cognitive aspect of space, its depictions, mathematical–physical models and plans, which more or less make space legible. Lefebvre complements his conception with a third aspect. For Lefebvre, the "spaces of representation" stand for the spaces of expression communicated by images and symbols which complement spatial practices and what is thought. It is this aspect of space that can circumvent predominant orders and discourses and imagine other spaces. It is often the refractory spaces of artists or mythical, pre-modern images of space that challenge given social circumstances.

Lefebvre searches for a way for the human and social sciences to conceive space beyond the container images and at the same time to take account of social formation and the immanent potentials of space. Above all, however, it is the exclusive, absolutized idea of capitalist compulsion that makes it difficult to see from Lefebvre's vantage the production of space apart from alienation. The only alignment seems to be the spaces of representation, that is, those imaginations, memories, or manipulations of perception that point beyond existing capitalist space and make space imaginable as "something other." As stimulating as the conceptual levels

may be that Lefebvre identifies, a theoretical idea about how the levels can be related to each other is sorely lacking.

The matrix space proposed by Dieter Läpple has similarities to Lefebvre's model and similar problems in the overall structure of the theory. Läpple refers to Einstein's concept of space, which he calls a relational ordering space, and criticizes at the same time that Einsteinian space only designates the position and location of objects. The social dimension of space, he argues, is not specified. The relational ordering space is accordingly only the *form of appearance* of human localization. The social conditions in which spatial structures and their social functions are developed are disregarded. As a further development of relational ordering space, he proposes a new concept of space which he calls "matrix space." Läpple refers the concept of matrix to its original meaning, namely "primogenitress" or "causal force." By this means, Läpple wishes to transform the Einsteinian space that he perceives as passive into a space that creates form and gives shape. According to his hypothesis, this matrix space is determined by various components (on the operationalization of these components, cf. Breckner and Sturm 1997):

1. the *material-physical substrate*, that is, the above-mentioned material form of appearance of social space;
2. the *social interaction and action structures*, meaning the social practice of production, use, and appropriation of space, taking class and power structures into account;
3. an *institutionalized and normative system of regulation*, that is, the mediating forms between the appearance of space and the practice of the subjects that must be taken into consideration (mediating elements are the forms of possession, legal regulations, aesthetic norms, and so on);
4. a *spatial system of signs*, *symbols*, *and representation*, that is, the pre-structuring of spatial behavior by configuration.

Accordingly, space is socially produced, but brings about its own effects in the context of human use. This self-unfolding of space leads to the name "matrix space." Since this unfolding is perceived differently according to culture, Läpple emphasizes that space is not something that can be immediately perceived, but rather is the "result of human operations of synthesis," "a kind of synopsis of the various 'places' through which what is separated in place is fitted into a context of simultaneity, into a

spatial reference system" (Läpple 1991, 202). He thus says on the one hand that spaces develop in operations of synthesis; on the other hand, the four components of his matrix space refer to material states of affairs. Läpple's wish to conceptually bracket the human operation of synthesis and the empirically observable constitution of space is reasonable, however, he does not offer his readers any way in which the two fundamental assumptions can be linked.

In his text, Läpple spreads out the manifold facets of space like a fan; aware of this, he ascribes to his reflections the status of "preliminary working hypotheses towards the elaboration of a concept of social spaces" (Läpple 1991, 194). Läpple makes it perfectly clear that no realm of human existence is non-spatial and that space develops from numerous facets. Action, built-up substance, symbols, norms, and law on the one side, conceptual operation of synthesis, perception on the other. Läpple fails to make use of the resultant tension that space is both material that is built up, legalized, and so on, and a social construction. The idea that synthesis is required is not integrated into his concept of matrix. We encounter only that which remains discrete: matter, action, structures, regulation, and symbolism.

The question which Läpple, too, fails to answer has long been of concern to theorists of space: do spaces involve human operations of synthesis (and nothing else), or are spaces objects with material reference (e.g. rooms and buildings)? And if spaces are both, how is the one proposition related to the other? Many theorists struggle with the problem that spaces are relational arrangements and are to this extent based on the fact that people synthesize the individual elements to yield space by way of cognitive and perceptual processes. This seems to tie the existence of spaces to human acts of social construction so that it has no materiality of its own. In addition, there is the everyday experience that spaces are materially configured. A contradiction arises between this materiality of spaces and constructed space. This can be readily observed in the works of Emile Durkheim.

Durkheim analyzes space as a "category of understanding" (Durkheim 1915, 17). For Durkheim, space is an ordering category. Historically, there was a necessity to arrange things, and from this people developed space as an analytic category.

> To dispose things spatially there must be a possibility of placing them dif-
> ferently, of putting some at the right, others at the left, these above, those

below, at the north of or at the south of, east or west of. (Durkheim 1915, 19 [1981, 30])

Durkheim derives space as an analytic category from social structure. In his discussion, he explicitly opposes the Kantian idea that space is a pure form of perception, an ordering concept independent of all experience. Durkheim contrasts this with the meaning of experience for the development of categories. Dealing with space as an analytic instrument is for Durkheim not an innate ability, but learned. The human being acquires it because of the necessity of distributing and arranging things in space.

There are serious problems with this kind of argument. Durkheim devises the category of space as a sociological one and explicitly as a category of understanding, then introduces as a matter of course a material space from which to derive it. Things are distributed "in space." According to him, space is the space of the earth or outer space *and* an analytic category. However, the two concepts of space are not related to each other in this context. For him, material space is sociologically relevant to the extent that social distribution structures are reconstructed in affective and cognitive terms and applied to other social realms. The sociological category of space, however, is relieved of the burden of matter. Such an argument is on the one hand one-sided inasmuch as it derives the analytic faculty of the human being solely from material space; but it fails to appreciate the converse, that is, to consider material space as a product of analysis. This means that Durkheim develops his category of space from a reality that he himself previously categorized as reality (cf. Parsons 1967; Konau 1977). In addition, this argument falls short of Durkheim's own stated position regarding experience. Whereas for Durkheim, states of affairs and norms are crystallized forms of social action (Durkheim 1984), space remains a purely analytic category, despite its basis in experience.

Not only does the relationship between synthesis and materiality often go unresolved in academic literature, the link between the material substrate and action or social practice is often absent. On this point, however, Dieter Läpple proposes a solution. He conceives the connection by way of the institutionalized and normative regulation system. This codifies and regulates the treatment of artifacts by means of laws, norms, power relationships, control relationships, and forms of ownership. Läpple thus emphasizes the political–economic factors of the production of space. However, by means of this reference to the regulation school (see e.g. Lipietz 1987; Hirsch 1990) he removes norms and power structures from

the context of action and portrays them as a higher-order system above action. There is, as it were, an institutional–normative network that governs the action of competing groups, classes, and individuals with respect to matter and which conversely channels the mode of operation of the material substrate along institutional paths. Symbolism provides, so to speak, the "operating manual" for pre-structuring people's action.

The separation of rules and norms from the practice of action has the result that they appear to be universally valid, whereas action is subject to "differentiation by class" (Läpple 1991, 196). It has been repeatedly demonstrated that action is not only differentiated according to class, but also according to sex, ethnic group, religion, age, and so on (on criticism of Läpple cf. also Bauhardt 1995). This also means that norms have different validities and are applied differently. For example, Bourdieu (1984) demonstrated this in detail for the differentiation of aesthetic norms according to class.

At the same time, what is called the regulation system retains its validity temporarily even without current implementation in action. But then, what distinguishes laws and norms from social structures? Läpple reserves the concept of structure for what he calls "action structures," that is, the actors organized according to class structures. Läpple does not explain how to relate structure to structure, except for the remark that the regulation system influences class-specific action. But it is not taken into consideration that action also influences the regulation system.

Just as Elias's study of space showed how important the consideration of movement is in a sociological understanding of space, Läpple's work shows that the relationship between structure and action has to be reflected more precisely, assuming at least that we wish to remain within an action-theoretical context. This also involves stating assumptions about the relationship between human operations of synthesis and the material world. In the process, it has to be taken into consideration that perception, interpretation, and action develop differently in processes of social differentiation, which means that power structures take effect in different ways in the constitution of space.

The philosopher Elisabeth Ströker (1987 [1977, 1965]) also conjectures an active space-constituting individual, at the same time taking account of the fact that this individual enters a pre-structured space. However, structure is not to be understood here in sociological terms, but rather means that things and people occupy historically established places. Ströker differentiates lived space, that is, space constituted in

action, into an attuned space, a space of action, and a space of intuition. In her perspective, this tri-partition is helpful in understanding the "variously structured ways the subject, as corporeal subject, possesses space in accordance with the various corporeal modalities" (Ströker 1987, 17 [1977, 20 f.]). Accordingly, corporeal existence is differentiated according to which aspect of the constitution of space is under consideration. The three types of space are for her not mutually exclusive forms, but rather aspects of spatial existence.

Attuned space is pre-reflexive. It designates the affective experience of space and is manifested as atmosphere. It is experienced space independent of proximity and distance or the passage of time: spaces of desires and hopes, home spaces, and spaces far away. Viewed from the vantage of object space, these are metaphors, but for Ströker spaces that intensively influence people's experiencing. In these spaces, the body is not determined by relative positions. It is not placed at a certain position from which relationships can be produced. The body is relevant as affectively concerned (cf. e.g. Ströker 1987, 44 [1977, 51]). Attuned space does not confront the sensing subject as something apart from it, rather there is a permanent reciprocity or mutual conditionality. Attuned space develops only through the experience of human beings and is at the same time its presupposition.

Lived space, however, is not only attuned space, it is also action space. Action space is distinguished from attuned space by the fact that it is determined by unequivocal orientation. In action space, the *here* of the body can be determined with reference to the *there* of things. The acting body becomes the center of space constitution. In everyday thought, this action is experienced as "occurring in space." And indeed, according to Ströker, the acting subject, drawing on its own historicity and the previously formed world of work, creates space relative to its own *here* (cf. Ströker 1987, 51 [1977, 58]). In attuned space, the sensing and expressing body is in focus, in action space the moving body of goal-directed actions.

Finally, the space of intuition designates the process of perception of the figurations of things to spaces. This conceptualization takes account of the fact that action is not only goal-directed, but also involves sense perception. According to Ströker, this perception takes place in a sensory–bodily frame, but is at the same time categorically pre-structured. Like action space, the space of intuition has its center in the body-subject. However, every subject knows that other bodies also exist and are, just as it is, the center of a perceptual space.

> My space of intuition is indeed mine by virtue of my corporeal being, but for me it is *any* space by virtue of my consciousness, and thus a space in which it is possible to have a harmonious experiential context with others. (Ströker 1987, 115 [1977, 131]; italics in original)

Thus, Ströker divides between the space of bodily experience and knowledge of the multiplicity of spaces; the generalizability of experience is derived from this knowledge grounded in the body. This knowledge of the multiplicity of spaces, like categorically pre-structured perception, has the consequence that space ceases to be constituted purely by way of the body. This forms the basis for mathematical abstraction of different geometric spaces.

Using numerous examples, Elisabeth Ströker demonstrates that the constitution of spaces is performed by people in their bodily existence. She shows that in everyday life, the notion of "living in one space" is a constructed idea upon which people rely. By virtue of the ability for orientation, an idea of acting "in space" emerges. Ströker seeks to understand the activities of producing space. But the ability for orientation is only one aspect of this process, which results from goal-directed activity proceeding from the body. In addition to this action space, Ströker adds two further aspects of space constitution: atmospheres and perception. As she herself writes, the attuned, the acting, and the sensually perceiving body are never existent for themselves, and the three spaces described are "structures of the one space" (Ströker 1987, 139 [1977, 157]) matching the corresponding bodily character.

However, Ströker does not develop any hypotheses on how these three aspects of the constitution of space are interrelated. This is partly due to her exclusively intentional concept of action that excludes the possibility of other processes of action that might not be purely goal-oriented. By action, Ströker understands the "realization of a project through the lived body and its members" (Ströker 1987, 48–49 [1977, 55]). If, however, we understand action as a process that cannot be reduced to individual intentional actions (cf. Chap. 5.2 of this book)—a view that is gaining ground in sociology—then a distinction between perceptual space and action space becomes systematically impossible. Action is then understood as the performance of action in which intentionality, emotionality, perception, and unconscious motifs or ideas become intermixed. How the various aspects of space constitution can nonetheless be theoretically conceived in relation to social structures has to be reconsidered.

Ströker's distinction between action and the perception or idea of space is helpful in analyzing the process of how children learn to reconcile space-constituting action and Euclidean ideas of space with each other (on this point, cf. Chap. 3.1 of this book). For adults, a pre-reflective access to space can no longer be hypothesized; every action is already pervaded by cultural notions and acquired knowledge. Every perception, including perception of atmospheres, is itself a constructive process. For this reason, atmospheres and attuned spaces—which without doubt go hand in hand with the constitution of space—must also be derivable from the perspective of object space and thus susceptible to being integrated into the foundation of a sociological concept of space.

Gabriele Geiger (1997) attempts to link several levels with each other within the multi-dimensionality of space by making use of the epistemological idea of space as a system. She understands space as a fundamentally open system. All limitations are artificial and temporary. As a rule, an exchange between inside and outside is possible. With reference to Walter L. Bühl, she defines space, like all social systems, as an "ill-defined system" (Geiger 1997, 84). Relying on a terminology drawn from systems theory, she argues that space is ill defined for ten reasons:

1. It is high-dimensional with several degrees of freedom.
2. It is not possible to establish what kinds of system states are possible.
3. It has an unfavorable signal-to-noise ratio.
4. Delays and hysteresis occur.
5. In the course of time new variables are added, others cease to apply, transitional probabilities change.
6. It has a considerable variance.
7. Social-geographic spaces are heterarchical systems.
8. They are plastic systems.
9. They are controlled by environmental factors, not from inside.
10. They are organized more in autopoietic than in allopoietic terms (Geiger 1997, 84).

Space is thus to a high degree indeterminable. Determinable are at best local phenomena. Geiger emphasizes that these are in equal measure action oriented and process oriented; here, she equates the concepts "process oriented" and "systemic."

> What is called the self-organization of a system is not based on magic, but rather on the reasonable energy input of individual, several, or numerous participants. (Geiger 1997, 74)

Interpreting social-geographic space, by which she understands the actual landscapes, places, and buildings as well as the people acting in and around them as a system ensures that a constructivist vantage will be taken, she argues. Present space thus becomes visible and analyzable in its ramifications and its ideological content, she continues. At the same time, she says that the future remains open without rigid presettings. From this perspective, space becomes a function of human activity.

One point in particular deserves attention in Geiger's approach: the unaccustomed perspective makes a deconstruction of habits of thought possible, provided a system is not again understood as a container because of its inside–outside structure. Moreover, her link between action theory and systems theory might generate a fruitful discussion in sociology. However, the key idea of space as an ill-defined system remains too general and unspecific. It is noteworthy that Geiger herself makes use of other theorems in her own analyses of space, for example discourse theory, because of the limited analytic efficacy of the very broad concept of system. This theoretical orientation demonstrates that spatial system states are fundamentally insusceptible to prognosis. This means that the concept of space is formed in such a manner that the multiplicity and interminability of the spatial is postulated, thus rendering the concept of space as something elusive and impossible to operationalize.

Niklas Luhmann's systems theory has a different theoretical focus. He does not systematically deal with space, but refers to space in various works. As already shown, Luhmann uses the concept of space in different accentuations. Whereas in the *Theory of Society* (2012 [1997]) he simply equates space with territory, in *Art as a Social System* (2000, e.g. 112ff. [1998, 180ff.]), which he had written shortly before, he introduces space with the distinction between medium and form. According to him, space corresponds to a medium in terms of the infinitely many positions that can be connected. Against Kant, he emphasizes that space is not a form of perception, but rather the multitude of possible places that "as such" are cognitively inaccessible (Luhmann 2000, 111ff. [1998, 179ff.]). By means of forming (and thus in the distinction between form and medium) space becomes recognizable; however, forming is not to be confused with space. Space as the multitude of loosely connected places becomes vis-

ible—according to Luhmann—by being occupied by objects. Therefore, the perceptibility of space can be elucidated by the unity of the difference of position and object. This unity of difference displays an "other side" that Luhmann calls "atmosphere." Atmosphere is the intangible aspect of form that accompanies constitution. With the development of space, an "excess effect" (Luhmann 2000, 112 [1998, 181]) called atmosphere emerges.

In this process, Luhmann does not adhere to the initial assumption typical of relativist concepts of space: that perceptible space emerges from the structure of relationships between objects, but does not comment on the fact. Instead, he introduces a new relationship, that between object and place. By this means, he engages an aspect of the process of constitution that hardly plays a part in any other concepts of space, but does not elaborate it in detail: the significance of locations. Furthermore, he introduces—as does Ströker—the concept of atmosphere, an unconventional concept in sociological theorizing.

Nonetheless, Luhmann's basic hypothesis in which space is understood as a medium remains remarkably rigid. It is only processes of formation that can be sociologically studied according to this determination, and at the same time, these increasingly lose significance. Luhmann himself writes, for example, about "spatial boundaries" (Luhmann 2000, 112–113 [1998, 182]), that they are needed for differentiation above all in segmented societies. He thus picks up in different terms the conjecture developed in his book *Theory of Society* that a transformation from the segmented to the functionally differentiated type of society has taken place that can also be interpreted as a transformation from territorial to global politics. Looked at from this vantage, the idea of infinitely many loosely connected places, that is, space as medium, ultimately turns out to be land which is molded in perceptible forms by means of form giving, that is, by drawing boundaries and the like. This means that the definition of space as territory on the one hand and as medium on the other, which initially sounded contradictory, amount to a similar conceptual model. Space is that which is given in itself in infinitely many points and which is socially manifested as territories—which for Luhmann is the decisive dimension. Since territories are losing relevance, space is losing significance.

The everyday relevance of spaces, and spatial structures between villages and in cities, in buildings or homes, which exert an influence on action, are disregarded in this conception. Since Luhmann conceives space and places together, space needs objects to become visible, but cannot

emerge from the joining of objects and is thus always territorial. Thus, all object figurations beyond territorial logic are disregarded, as are the space-forming positionings of people.

Michel Foucault's 1967 lecture "Des Espaces Autres" or "Of Other Spaces" (1986a), together with the reflections on space and place that he expressed, among other sources, in various interviews (Foucault 1980a, 1980b), has had a significant influence on the debate on space. According to him, space presents itself in the form of localizations and storage relationships. In an interview on "Questions of Geography," Foucault explains that he can analyze the relationship between power and knowledge only by examining the spatial (Foucault 1980a, 69).

He opposes the idea that time is wealth, fertility, life, and dialectics, whereas space is declared to be dead and fixed, undialectical and immobile (Foucault 1980a, 70; see also Foucault 1980b, 150). As distinct from this fixed, immobile container, Foucault understands space as an "ensemble of relations" (Foucault 1986a).

Michel Foucault takes pains with the link between space and time, however, in keeping with his historical manner of working, as a link between history and space. His works, beginning with *Madness and Civilization* (1965), via *Discipline and Punish* (1991b) with the analysis of Jeremy Bentham's panopticon as a space of surveillance and permeation, up to his late works on the *History of Sexuality* (1977–1986, see Foucault 1986b, c), are characterized by an analytic connection between space and time. The explication of his idea of space, by contrast, is found only in the lecture mentioned above in which he systematically advocates a relational space concept, without applying it stringently in his other works.

Foucault's concept of space is not so much of an analytic nature; rather, it aims at critical analysis of a historical period. According to him, space presents itself today in the form of placements and storage relationships. Consider only the storage of technical information, relationships in the neighborhood, or the accommodation of people. The focus is no longer on the question as to whether there is enough space; the point is what relationships have to be taken into consideration in placement. In contrast to the space of hierarchic places and to the space of infinite extension, in this understanding of space, movement is always implicitly considered.

For him, space is "an ensemble of relations that makes [the elements] appear as juxtaposed, set off against one another, implicated by each other" (Foucault 1986a). Accordingly, space is a configuration or a network that puts people, things or actions in order or expresses an order. The geog-

rapher David Harvey (1989, 213) interprets Foucault's concept of space as a metaphor for a power container. This reading is implausible for two reasons. On the one hand, in many of his examples, Foucault speaks about material configurations that contradict a metaphorical use of the category space; on the other hand, Foucault explicitly keeps his distance from the notion of an empty container that can be filled at will:

> In other words, we do not live in a kind of void, inside of which we could place individuals and things.… we live inside a set of relations that delineates sites which are irreducible to one another and absolutely not superimposable on one another. (Foucault 1986a)

Inasmuch as according to Foucault space is defined by way of placements and storages that are linked with each other, the process of placing and storing becomes clear at the same time. The process indicates the action context of space. Foucault conceives space as a network not only as an order or structure, but that this order or structure refers back to the action context, to the act of placing. In an analysis of Foucault's concept of space, Reinhard Hörster writes:

> Today's space engages in procedures, processes, and action contexts.… Contrary to place, contrary also to infinite extension, the space of 'localization and placement' indicates from the very beginning its constitution, the on-going process of its emergence, the operation of storing, piling, and placing. (Hörster 1997, 96)

By determining space through two processes, storage and placement, Foucault also identifies the activities of storing and placing. Space is for him a structure of arrangement which, however, refers back to action.

Foucault's depersonalized language, in which space—like, for example, power—appears as itself acting, expresses Foucault's deep skepticism with respect to concepts that are "self-evident" such as individual, subject, or existence. Under the slogan "death of the subject," Foucault has often been understood as someone who dissolved the subject completely in structures. But in fact, such activities as "placing and storing" are inconceivable without an acting individual. Placements can be attributed to the placer. Foucault indeed does challenge the purported certainties of the subject, the humanistic ideal case of the white, male subject of the Western world (on Foucault's concept of subject cf. also Seifert 1992), but the

subject does not therefore disappear, but rather becomes itself an object of discourse. As illustrated by "the art of existence" in the third volume of *The History of Sexuality* (1986c), and also in various interviews (1984a,b; 1985) it becomes clear that Foucault does not deny action, but studies the possibilities of action in socially structured processes. That is, action, including oppositional action, cannot take place outside of the symbolic order, but it can change it. Hence, when according to Foucault space presents itself in the form of storage relationships and placements, then by means of this account he points out that space is integrated into action contexts and that action that is constitutive of space moves within the presentations of space. With continually new placements, the old configurations are shifted. The new is stored, the old is used or discarded.

Foucault defines space in the first place as positional relationship, as do Zeiher and Zeiher. Elements then appear in relational contexts as placed next to, after, or toward each other. However, it is not his aspiration to derive a concept of space, but rather to make a diagnosis. Space presents itself as a pattern of placements and storages. Foucault thus corroborates empirical analyses that detect a transformation in the meaning of space (cf. Chap. 3). Foucault's attention to a theory of power focuses on the order that is created by arrangement. Like no other, he brings the fact to light that the constitution of space is execution of power. The outcome of storage and placement refers only implicitly to the acting person.

A look at a neighboring discipline, geography, is the most fruitful one for work on a specific determination of the concept of space for sociological research, perhaps even more generally for research in the social, human, and cultural sciences. David Harvey ([1973] 2009) was one of the first to emphasize the relevance of a relational perspective in research on space. He argues that there are various ways to conceptualize space. Two stand out: absolute space and the space that is regarded as the result of relationships. For him the question as to what space is is too abstract and thus too independent of actual social conceptions. For that reason he asks, "how is it that different human practices create and make use of distinctive conceptualizations of space" (Harvey 2009, 13f.). Thus, the relational arrangement of several tracts could at one and the same time bring about several absolute spaces. According to Harvey, social actions bring about spaces which in return structure action. In order to differentiate this process of space production more precisely, the author draws on Cassirer's (1953) distinction between organic space, perceptual space, and symbolic space. Spatial orientation and instinctive territoriality are thus

distinguished from perceived (including cognitively constructed) spaces and from symbolic representation (Harvey 2009, 28). Harvey emphasizes that the three levels of space production do not exist independently of each other but he too, like Lefebvre and Läpple, fails to propose a way to conceive how the various dimensions of space production engage each other. It is not Harvey's aspiration to introduce the most exact possible understanding of space into the specialist's debate. Rather, his concern is to analyze the space produced in capitalism within the theoretical perspective of a decidedly Marxist analysis of capitalist production of space. To this end, a relational understanding of space provides him with the point of departure for his thought; however, space can appear in the form of a container. It is immediately convincing to conceive container space as a special case of a practice of arrangement. But in all of Harvey's works, it remains unclear what we as academic specialists mean by space when we speak of a relational arrangement.

This point of criticism also applies to Doreen Massey, even though she wishes—with more conviction than Harvey—to conceive space exclusively as a "product of interrelations" (Massey 2005, 9). Massey states three basic hypotheses: space is constituted in interaction, whether in close social proximity or in global arrangements. Second, in contrast to time, space makes it possible to think in simultaneity and thus in multiplicity. Third, space is "always under construction" (ibid.), that is, space does not stand still while time marches on, rather space is itself processual. Like David Harvey as well as other geographers, for example Derek Gregory (1994), Nigel Thrift (1996), and Gillian Rose (1993), Massey conceives space not as a previously existing container or section of space, but rather as a context pervading social processes that must always be produced. That is, she points out that space and the social dimension must always be seen together. In her early work *Spatial Divisions of Labour* (1995) she argues that social relationships are pre-structured in a specific manner by way of spaces.

Doreen Massey displays a variety of possible ways of thinking: a thinking in spatial relationships and thus in simultaneous developments, a thinking in dependencies and power relationships structured by way of space. In order to be able to conceive alternatives to modern homogeneous space, she consciously keeps the concept of space open.

Harvey focuses on the capitalist organization of space, Massey on difference. Both have made fundamental discoveries on the production of space under the specific conditions of this social formation as well as alter-

native models. Nonetheless a question remains, one that can be better posed after reading Harvey (as well as Lefebvre and Massey): how can a discipline like sociology, which in the past has generally treated the spatial dimension of action as a marginal condition, re-situate itself with a spatial foundation and analyze the mechanisms of production and reproduction without at the same time making a diagnosis of society? Or to put it in other terms: can a general model of the constitution of space be stated that brings into focus productions of space that are sometimes not at all explicable with reference to capitalism such as, for example, that of children or of patients in a psychiatric clinic, just as well as the space production of a multinational automobile corporation? Harvey and Massey teach the readers that space is a category that can be used for the development of a theory of society (together with time, see Harvey 1996, 207ff.; Massey 2005, 177ff.) and which must be radically understood as social (e.g. 1996, 231). But the criticism of, among others, Doreen Massey that Jeff Malpas (2012) states, "what interests Massey is less the understanding of space than the social or political consequences of any such understanding" (p. 228) is difficult to dismiss. Space is the vehicle for conceiving new forms of politics. In the process, the difference between space and place often loses relevance. "Place becomes simply a moment (a meeting point) in space—a moment constituted through spatial flow and movement" (ibid., 229).

The studies of space concepts discussed here are approaches. Most authors initially argue in general terms for a change of perspective. Space is supposed to be removed from the rigid background and conceived as moving (with the exception of Elias who defines space as a relationship, but as one that due to cultural conditions is rigid, so that he turns away for lack of interest). Except for Luhmann, many authors now endeavor to see space as a relational arrangement. What is lacking, however, is the understanding that both people and things are arranged, and especially in sociology there are only few authors, for instance Läpple, who remark that this arrangement exists in a completely material form, for example as a room, and that it is at the same time a human operation of synthesis. But he, too, mentions the operation of synthesis without integrating it into his overall conception. These authors treat aspects of the constitution of space within the framework of a different topic area (Elias und Luhmann), select facets of the constitution as a work program (Läpple, Lefebvre, Ströker), define space succinctly as a category of an empirical study (Zeiher and

Zeiher) or as the basis for a diagnosis of the times and for the development of a political strategy (Foucault, Harvey, Massey). Only Geiger proposes a comprehensive approach in the definition of space as a system, but one that understands space with such an unspecific elusiveness that space as a category dissolves in never-ending discourses. However, the authors express fundamental aspects such as the development of places and atmospheres, the penetration of power structures, the relationship between symbolism and materiality, which, as they convincingly show, must always be considered in the discussion of the constitution of space.

The task that I now have is to shift the *process* of constitution into the central focus. The point is no longer merely to determine space by way of a positional relationship as a relational arrangement. The discussion shall now center on the question as to what is arranged (things, events, and so on?), who arranges (with what right, with what power?), and how spaces emerge, vanish, materialize, or change, thus structuring society. By deriving the constitution of space as a social process in the following discussion, I put forth a proposal on how space can be systematically grasped as a sociological concept.

The Constitution of Space

Josef Tal, pianist, composer, and professor at the Hebrew University in
Jerusalem, left Berlin in 1934 to emigrate to Palestine. In his autobiogra-
phy *Der Sohn des Rabbiners* [The rabbi's son] (1987) he recounts his path
from childhood in an orthodox Jewish family in Berlin at the beginning
of the twentieth century to an eminent contemporary composer in Israel.
Every self-description is full of portrayals of space, as is Tal's autobiog-
raphy. The passage quoted below stands out only because it contains a
before and after structure and is thus especially vivid in documenting the
temporal course from one constitution of space to the next. Tal recounts:

> During the British mandate, before the outbreak of the Second World War,
> I was already able to go to see the Wailing Wall in the heart of the Arab
> Old City guided by two senior government officials. We went through a
> dense network of narrow, winding alleyways, and all of a sudden we were
> standing in front of a sheer wall of huge stone blocks. High above there
> was a slender strip of blue sky between the confined walls of the alleyway.
> The narrowness made the stone blocks rise all the larger and mightier above
> the diminutive person. Faced with that, it was only possible to pray to the
> Almighty, hovering inaccessibly above the immeasurable stone. After the
> Six-Day War in 1967 the tangle of alleyways in front of the Wailing Wall
> was cleared. Today, the approach to the Wall is via a large, expansive tract
> that provides space for thousands of visitors for prayer as well as for religious
> celebrations. Naturally, these are the same stone blocks as then, but their
> language has been changed by the new surroundings. The broad space that
> has freed them from the constricted alleyways sends their wailing echo in the

breadth instead of in the height, thus giving the prayer a different sense. I will beware of blasphemously comparing the Wailing Wall with a museum object—these stones speak a language too full of life for that. But space and matter act together in the formation of meaning. (Tal 1987, 87)

Tal's concluding remark shows how common it is to conceive space separate from matter. Tal's dualist concept of space can, however, be ignored at this point. Tal describes a space and its changes in the course of time. The space initially in question is composed of narrow alleyways, the sheer wall of huge rectangular stone blocks and a slender strip of blue sky. By contrast, the modern space is constituted of the Wailing Wall and the foundation of the plaza together with the many people on it.

As my initial hypothesis, I stated that space is a relational arrangement of bodies that are in constant motion so that the arrangement itself is always changing. Now the first question arises as to how these "bodies" that are arranged or arrange themselves can be more precisely determined. The "bodies" that are posited in a philosophical–physical discourse must be more specifically determined in a sociological reflection on space.

5.1   The Bodies of the Constitution of Space

In Josef Tal's description it is the arranged "bodies" that constitute spaces, among others, alleys, stone blocks, Wailing Wall, and foundation. If we spontaneously imagine a room, we think of doors, walls, windows, shelves, tables, and so on, and spaces emerge from their arrangement. Common to all of these "bodies" is that they are "products of present and above all of past material and symbolic action" (Kreckel 1992, 77), in short, they are *social goods*. Social goods can be differentiated, as Reinhard Kreckel demonstrates, into primarily material and primarily symbolic goods. Primarily material goods are, for example, tables, chairs, and houses, primarily symbolic goods, by contrast, are, for example, songs, values, and regulations. The designation "primarily" indicates that social goods are never only material or symbolic, but rather exhibit both components, though according to the action being performed, one component will come more strongly to the fore. The activity of arranging in the sense of placing entails that primarily material goods and not primarily symbolic goods are meant. Hence, goods are arranged in accordance with their property as material goods, but these arrangements can only be understood when the symbolic properties of social goods are deciphered. In this work, I accordingly use

the concept of "social goods" in the primarily material sense, but as a rule use the more general formulation "social goods" in order to emphasize the symbolic aspect that is also implicated. This is of significance especially when symbols are placed. In vehicle traffic, to cite one example, symbols can only be arranged because they have materiality, but they are only arranged in order to have symbolic force. Social goods are an essential "building block" of spaces. Accordingly, the first conclusion to be drawn is that spaces can be determined as a relational arrangement of social goods.

But people, too, in Tal's account of the contemporary space of the Wailing Wall, the tourists and visitors are also integrated into the constitution of spaces. I have already pointed out that discotheques become spaces differently according to whether dancing people are present or they are simply empty halls. Another example for the inclusion of people in the constitution of space is the space experienced on arriving at a celebration as a newcomer. This space is also formed by the arrangements of the room, the buffet, the seating, and so on, but the arrangements of the people and groups of people seen on entering are equally formative of space.

The arrangement of two people with respect to each other is equally constitutive of space, namely as a function of their social relationship. People who are socially close to each other leave less space between each other than do social strangers. The boundaries of this space become very clear when one of the people in conversation transgresses them. People are positioned by the actions of other people, but they also actively *position themselves.* Other living beings, especially animals, are distinguished from social goods inasmuch as they do not always let people position them, but they also do not make conscious decisions as people do. Nonetheless, animals can act in ways that constitute space; simply consider the dog that guards a tract of land, or the social behavior of animals among each other.

Let me specify my starting hypothesis: *Space is a relational arrangement of living beings and social goods.* The inclusion of human beings in the understanding of space is unusual since even in relational concepts, spaces as arrangements of things are often set off from the social realm (cf. Chap. 4); moreover, it seems to impede reflection on space. But it is necessary since spaces are constituted including the people present in them, as the examples show.

In 1972, Hans Linde criticized sociology for failing to attach enough significance to socialization through the use of things and to the establishment of social relationships through things. Today, in the few relational concepts of space that sociology has developed up to now, it has become

normal to conceive space as a configuration of things. People, whether seeing or placing, then appear as opposed to things. However, it is in reality necessary to include in the processes of theory construction the fact that people do not only create spaces, but can also be elements of what is integrated in spaces.

People as components of a space construction have the special feature that they place themselves and vacate placements. Furthermore, they influence space construction with their facial expression, gestures, language, and so on. Although people are more active than social goods in their possibilities of moving and making decisions, it would fall short of the mark to assume that in contrast to people, social goods are passive objects. Social goods also have an external effectuality, for example in odors and sounds, and thus influence the possibilities of space construction.

It is especially important for the scientific analysis of space that every constitution of space is determined by social goods and people (for example stone blocks and tourists) on the one hand, and on the other through the linking of them. It is only when both aspects are known, both the "building blocks" of space and their relationship with each other, that the constitution of space can be analyzed. For understanding space as a sociological concept, statements must be made about both the various elements and the establishment of relationships between these elements.

Thus, the concept of space developed here can only be called relativist with respect to the initial hypothesis, "space is the result of an arrangement." Since relativist positions always postulate the primacy of relationships, that is, it is assumed that reality is produced exclusively or primarily by way of relationships (cf. Petzoldt 1924), the relativist view is surpassed by the simultaneous emphasis on the arranged object and the formation of relationships.

Since it is only when goods and people are linked with each other that space emerges, considerable theoretical attention must be paid to the formation of relationships. Therefore, I call the concept developed here a relational concept of space. However, this is not meant to obscure the fact that space also remains inexplicable without an understanding of social goods and people as elements of space. The following pages shall focus both on the analysis of social goods and people and on their relational connections. These are two perspectives on the process of constitution that must not be understood as hierarchically organized (on methodological aspects, cf. Sturm 2000). The point is hence not to determine on principle first the objects and then their relationship, rather the forms of

relationship can just as well be studied first and then the knowledge of the elements extended. Pierre Bourdieu, for example, favors such an approach for research on the university.

Taking a study of the *École normale* as an example, he explains that it is possible to fill a big book with facts about this educational institution and nonetheless miss the essentials. The university is no more than a point in the space of relations. By way of a network of relationships of opposition and competition, the university is connected with all other institutions of higher education and the entirety of those fields of power to which the *Grandes écoles* give access. It can happen that one thinks one knows everything about an institution although one knows nothing because it is only through relations that it is knowable.

His introduction of the concept of field is due precisely to the conviction that both perspectives of scientific work, the analysis of the structure of relationships and the determination of the objects, are equally necessary. As opposed to the normal practice of studying the objects before examining the relational structures, he calls for relational thought:

> I must … make sure that the object I have given myself is not enmeshed in a network of relations that assign its most distinctive properties. The notion of field reminds us of the first precept of method, that which requires us to resist by all means available our primary inclination to think the social world in a substantialist manner … one must *think relationally*. (Bourdieu 1992, 228 [1996, 262]; italics in the original)

Thus, the study of spaces requires that both the links and the linked elements be considered. Living beings and social goods are thus elements of the constitution of space; following construction and planning practice, I sometimes call them "building blocks." However, empirical studies (cf. Chap. 3) show that not only individual social goods or people are linked in order to form spaces, but also that ensembles of these are together perceived as one element. One city quarter, for example, which consists of various social goods and people, can be perceived as *one* element that is relationally linked with other city quarters to form the space of the city. The city quarter can also be regarded as a space for itself.

This principle that according to perspective a person or a social good is itself a space or an element of a construction of space applies to all social goods and also to human bodies. A city, a room, a cabinet can be regarded as a social good for the constitution of space, it can also be seen

itself as a space. The human being, too, can be an element of constitution by virtue of its corporeality, or just as well itself be conceived as space as Elizabeth Grosz suggests (1992) inasmuch as it is a relational arrangement of organs, muscles, flesh, and so on. At this point, the human being returns to center stage in our analysis.

5.2   The Development of Space in Interaction Between Action and Structures

If space is viewed as a relational arrangement of social goods and people, then what is arranged and how arranging occurs have to be systematically distinguished. People are involved in constitution not only as building blocks, but also in everyday action; in planning, art, and science ensembles of social goods are perceived or defined as one element and linked with other elements. Thus, spaces emerge initially only *by being actively linked by people*. In this context, people do not link only things, but also other people or groups of people (who themselves intervene in the process). Thus, placements generally go hand in hand with the emergence of spaces. In the following discussion it shall be shown step by step that this takes place under pre-structured conditions.

5.2.1   *Spacing and the Operation of Synthesis*

I therefore distinguish two fundamentally different processes of space constitution. Firstly, space is constituted through the placing of social goods and people or by the positioning of markings that are primarily symbolic to identify ensembles of goods and people as such (e.g. street signs on entering or leaving communities). In the following discussion, this process will be called *spacing*.[1] Spacing thus means erecting, deploying, or positioning. As examples we could mention how goods are displayed in the supermarket, how people position themselves toward other people, how houses are built, how national boundaries are surveyed, how computers are networked to spaces. This is a positioning in relation to other placements. In the case of moveable goods and people, spacing means both the aspect of placing and the movement to the next placement. Secondly, as Norbert Elias (2007 [1994]) and Dieter Läpple (1991) already pointed out, an *operation of synthesis* is required for the constitution of space, that

is, goods and people are amalgamated to spaces by way of processes of perception, imagination, and memory.

In the everyday act of space constitution, operations of synthesis and spacing are simultaneous because action is always processual. Building, assembling, placing—in general: spacing—is indeed impossible without the operation of synthesis, that is, without the simultaneous linking of surrounding social goods and people to form spaces. For example, buildings in the city can be linked by movement, but this linking only becomes a space through the perceptual and/or analytical synthesis of the buildings. In macrosociological dimensions, too, the constitution of space is based on these two processes. The space formed by global cities (cf. Chap. 3.3) is based both on spacing processes, in this case manifested primarily in the form of digital networking with a permanent flow of information and data transfer, and on synthesis processes on the part of the actors involved. The synthesis of the cities of New York, Tokyo, London, Paris, and Hong Kong as a global space shapes the action of the actors in the financial sector; and the other way round, spacing in the sense of placing and transporting information induces the synthesis.

However, the operation of synthesis is also possible as an operation of abstracting without associated spacings, that is, spacings directly subsequent to it; examples can be found in scientific work, but also in art, planning, and architecture. In these fields, objects are linked to spaces on the drawing board, in computer simulation, or on paper. Though these links can guide further action, they do not directly lead to resultant spacings.

This aspect of the constitution of space, the operation of synthesis, makes it possible to perceive, remember, or abstract ensembles of social goods or people as one element so that they can then be involved in the constitution of space as a "building block." My thesis is thus that *space is a relational arrangement of living beings and social goods. Space is constituted by two processes that must be analytically distinguished: spacing and the operation of synthesis. The latter makes it possible to unite ensembles of goods and people to one element.*

Spaces emerge in action through linking and placing, building, storing, and so on. This course of action—the process of spacing and the operation of synthesis—shall now be examined more closely. I focus on the constitution of space in everyday action and disregard for the time being the special case of constitution of space on the drawing board, on a white sheet of paper, or on the computer. However, in this regard let me point out that precisely in this case when, so to speak, two spaces are synthesized

simultaneously, the necessity of this conceptual differentiation becomes manifest. One plans a space, for example a one-family house, and at the same time one takes place in another space, an architecture office. And this placement itself is preceded by an operation of synthesis. One is thus involved in the constitution of two spaces, but such that the perception of the one does not correspond with the constitution of the other. This possibility of conceiving the constitution of different spaces simultaneously is the presupposition for being able to grasp cyberspace technologies.

First of all, I shall examine the everyday case of constitution of space in action. To this end let me return to the initial example. I consciously disregard the fact that it is a case of the construction of space from memory; in order to reduce complexity, I treat the passage like a working paper in a research project. On his way through the Old City of Jerusalem, Josef Tal synthesizes in the course of action narrow alleyways, steep walls, stone blocks, and a narrow strip of blue sky to a space. His steps refer to the objects linked to yield a space. Finally, he takes place in front of the Wailing Wall, the essential element of this space construction, to pray. In symbolic terms, the stone blocks of the Wailing Wall are the most concentrated element of the space construction; however, they do not function by themselves, but only in the given arrangement. Tal relates how praying changes due to the demolition. From then on, the space is constituted by way of the linking of Wailing Wall, foundation, and people.

Based on this passage, all essential dimensions of the constitution of space can be elucidated: the routine paths of action, the structural dimension of the spatial, the deployment of the body, habitus, the potentials for change, the significance of symbolism and matter, and finally the constitution of places, and the emergence of atmospheres. In the following discussion, I shall derive the various dimensions, beginning with the repetitive constitution of spaces and their potentials for change.

5.2.2   Repetitiveness of Everyday Life

Tal does not leave any doubt that other people would have constituted this space in the same way. For his descriptions, he uses the generalizing word "one." He thus expresses both the fact that he approaches the Wailing Wall in the same way every time he comes to pray or to celebrate religious feasts and his assumption that all Jews would do this in the same way.

What he describes applies to most actions. Typically, people act repetitively. That means that they do not need to ponder very long about what

route they are going to take, where they will place themselves, how they will store goods, and how they will link things and people with each other. They have developed a set of habitual actions that help them mold their everyday life. Even when everyday practice is disrupted or takes place in unfamiliar situations, it is possible to take recourse to routines. In order to understand this precisely, it is helpful to use the distinction proposed by Anthony Giddens (1984) between discursive consciousness, that is, those states of affairs that the acting person can put in words, and practical consciousness, which comprises the knowledge (including knowledge in a bodily and emotional sense) that acting people actuate in everyday life without taking recourse to conscious reflection. Both forms of consciousness are supplemented in everyday action by the unconscious, by suppressed motifs of action.

As a rule, the constitution of space takes place in *practical consciousness*; this is manifested in particular in the fact that people rarely communicate about how they create spaces. If a roadblock bars the way to the Wailing Wall or if a demonstration prevents access to it, Tal has a practical consciousness that makes a variation of action possible for him in such situations, one that differs from everyday routines, but nonetheless falls back on repetitive action. Fundamentally, he is also able to put space constructions in words and does so in his autobiography. This means that on inquiry or in reflexive contexts, a part of the knowledge of spaces that is deployed in everyday life by practical consciousness can be transformed into a discursive consciousness. Accordingly, with reference to Giddens I understand by reflexivity both the directive influence that acting people have on their lives and their ability to explain the grounds of their action. Thus, people can, as does Josef Tal, put the constitution of spaces in words, reflect on it, discuss it, and have directive influence on it. Accordingly, in the constitution of spaces, too, people are able to understand and explain how they create spaces; this point is essential, for example, for empirical research.

I shall return to reflexivity in the context of possibilities for change (cf. Chap. 5.2.5). At this point, the interesting thing is the repetitive character of space constructions (Tal's routines) and the generalizability of spaces presupposed by Tal, which shall be referred to as the institutionalization of spaces. Someone who strolls around various cities or through several city quarters repeatedly encounters the same arrangements. Train stations in all of Germany are becoming progressively more similar in the placement of colorful figures as direction markers, in the agglomeration of shops to "marketplaces," in the placement of oversized television monitors. In

pedestrian zones, too, the same arrangements are repeated. Spaces in and around churches in Europe, parliaments, the cemeteries of a country, or supermarkets are all designed with similarities that are seemingly independent of place and time. In the supermarket, for example, the arrangement of the shelves with respect to each other, the placement of goods in relation to other goods, people's paths around the shelves, the arrangement of cash registers, the shopping buggies, and the obligatory barrier at the entrance are all institutionalized.

Arrangements of people can just as well be institutionalized. At a reception for a head of state, all arrangements are stipulated. The spaces between physician and patient are established. Marianne Wex (1979) analyzes the arrangements of men and women in photographs, which display remarkable uniformity. He sits with his legs spread, his arms are far from his body; she keeps her legs tight and her arms close to the body (see also Mühlen-Achs 2000; Ayaß 2007).

These institutionalized arrangements are reproduced in action in regular social practices. Without thinking about it very long, it is known in Europe that the yard next to the church is a graveyard and can thus be synthesized together with the church and the forecourt of the church to one space. Shelves are routinely set up in the same way, and adult customers do not climb over or crawl through shelves, but walk the often long way along the assortment of goods. One does not get too close to the physician, and in an airplane a woman yields the armrest to the man.

For Anthony Giddens routines are a key category for understanding social processes.

> Routine is integral both to the continuity of the personality of the agent, as he or she moves along the paths of daily activities, and to the institutions of society, which *are* such only through their continued reproduction. (Giddens 1984, 60)

According to Giddens, social institutions are reproduced and one's own action is habitualized in routines. He understands routines as the cause of the recursive character of social life. Social structures are recursively reproduced in the habitual repetition of everyday action. Routines impart confidence and "ontological security." While the concept of routine is developed in a microsociological context and conceptually extended to problems of structuration theory, the concept of institution presupposes the reverse logic. According to Giddens, institutions are "the more endur-

ing features of social life" (Giddens 1984, 24). Institutions are structures lastingly reproduced in routines.

That Josef Tal leaves no doubt about his constitution of space can be attributed simultaneously to the security of his own routines and to the institutionalization of synthesis and spacing. *Institutionalized spaces are accordingly those in which the arrangement has effect beyond one's own action and results in conventional operations of synthesis and spacing.* As an institutionalized arrangement, space becomes an objectivation, which means that it is experienced as objective—though it is a product of human activity (on the concept of objectivation cf. Berger and Luckmann 1966). Spacing and synthesis are institutionalized, for example, in court. It is clearly stipulated how judges, lawyers, prosecutors, the accused, and the public take place, and not only for one certain court; rather the relational arrangement can be encountered in the same or similar manner for all comparable courts of a country. The various groups of persons synthesize the space of court in routines and take the accepted position.

It has to be taken into consideration that with the various placements, power structures are also negotiated. *Power* is understood in this context as a relational category immanent to every relationship. According to the power resources available in a relationship and situation, action opportunities can be fulfilled (cf. Elias 1978b [1993] and Giddens 1984, 173f.). Space is constituted differently from the position of the accused than from the position of the judge. But as a rule, both accept the institutionalized arrangement.

According to Michel Foucault (1986b; cf. also Chap. 4), the history of ideas and arrangements of space cannot be separated from practices of power.

> A whole history remains to be written of *spaces*—which would at the same time be the history of *powers* (both these terms in the plural)—from the great strategies of geopolitics to the little tactics of the habitat, institutional architecture from the classroom to the design of hospitals, passing via economic and political installations. (Foucault 1980b, 149, italics in the original)

Just as according to Foucault's analysis resistance emerges wherever power structures are negotiated and resistance is consequently never outside of power (Foucault 1998), so too are placements linked to "other" placements which Foucault calls "heterotopias." Heterotopias are placements with the special property that they mirror other placements. They

are connected with other placements and nonetheless contradict them (Foucault 1986a).

In the heterotopia, according to Foucault, one sees as in a mirror where one is not, and is thus at the same time referred to the place at which one is. Foucault distinguishes between crisis heterotopias and heterotopias of deviation. Crisis heterotopias now exist only as relicts. These are spaces for people, he continues, who are in a state of crisis in relation to society, for example adolescents or the elderly. In earlier societies, there were numerous such heterotopias, for example the honeymoon trip as a form of organization so that the deflowering of a young woman could take place "nowhere." Today, crisis heterotopias have to a considerable extent been replaced by heterotopias of deviation. According to this account, this is where people who deviate from the norm live: rest homes, psychiatric hospitals, prisons. Old people's homes are on the border between crisis heterotopias and heterotopias of deviation. Heterotopias can accumulate time as in a museum, or they can be very flexible, like a festival. Heterotopias create spaces of illusion and compensation.

The concept of heterotopia is misleading because a spatial phenomenon is referred to as a topos, so that a thoroughgoing distinction between places and spaces is not made. Aside from that, however, Foucault's discussion points out that spaces can be institutionalized as spaces of illusion or compensation. McDonald's in Beijing, for example, is not merely a fast-food restaurant belonging to an economic power with global operations, it is at the same time a heterotopia in Chinese society, an illusional space that points out where one is not, thus making it obvious where one is. A Techno discotheque that gives visitors the impression that it is a virtual world is also heterotopic, and has this character in its dependence on the spaces of everyday life.

What can be said up to now in summary about the constitution of spaces? To start with, my initial hypothesis was that space is constituted in action. I specified this action as the operation of synthesis and spacing. This was followed by the observation that everyday action, as the name itself indicates, is highly repetitive. This also applies to the constitution of space. Spaces are repeatedly produced in routines in the same way. Many routines are learned from childhood so that people have a practical consciousness of the possibilities and necessities of constitution.

Up to here, the constitution of space was conceived as proceeding from action to social structure. With the institutionalization of spatial arrangements, however, the opposite perspective has also been taken. Social insti-

tutions owe their existence to their reproduction in everyday action. But they continue to exist even if certain social sub-groups do not reproduce them. At this point it is necessary to conceive the constitution of space in action in reciprocity with social structures.

5.2.3   Spatial Structures

I return to my initial reflections. By spaces I understand relational arrangements of people (living beings) and social goods. The concept of arrangement, especially the way I write it in German, "(An)Ordnung," refers to two aspects at the same time: firstly the arrangement as order (Ordnung) that is established by spaces, and secondly the process of arranging or ordering (Anordnung), the dimension of action. Thus, a relational arrangement immanently has a structuring dimension in addition to the action dimension.

I do not understand structures the way they are often construed in sociology (for a summary cf. Sewell 1992) as rigidly determining and assuring stability. Structures cannot be viewed in abstraction from action. They make action possible and prevent it, but they remain bound to the course of action. They retain their validity over a certain period of time even without reproduction or with reproduction only through certain social sub-groups, but then they eventually lose their structuring force. In recent years, there has been increasing talk of "spatial structures," triggered, among others, by the work of Pierre Bourdieu (e.g. 1985 [1991]). However, it remains unclear what exactly is understood by spatial structures. Bourdieu's equation of structures with "principles of class society" shifts our attention away from studying spatial structures as something social. That is, space and society are set off against each other in this conceptual model such that it seems that only society shapes space but not the other way round: spaces seem not to pre-structure social processes.

If, however, it can be assumed that spaces emerge in action, then spatial structures cannot be set off against the social; rather, the reproduction of structures achieved in the constitution of space also has to be a reproduction of spatial structures. According to my thesis, the spatial must not be delimited from the social, but is rather a specific form of the social. *Spatial structures*, like temporal structures, are forms of *social structures*. This shall be explained in the following discussion.

So as not to lose sight of the motile dynamism of social processes, especially the rhythm of the constitution of space, with reference to Anthony

Giddens I propose to interpret structures as rules and resources that are recursively incorporated in institutions (cf. Chap. 2.2.1). In this process, rules refer to the constitution of sense or to the sanctioning of action. They imply procedures that can go as far as codification for negotiation processes in social relations. As a structural feature, they cannot be conceptualized without reference to resources. "Resources are media through which power is exercised, as a routine element of the instantiation of conduct in social reproduction" (Giddens 1984, 16). In this context, Giddens distinguishes between allocative resources, that is material resources derived from the control of nature, and authoritative, that is symbolic resources referring to people.

The recursive character of structures can be best explained using language as an example. Except for insignificant deviations, all members of a language community use the same rules and linguistic practices. In speech they reproduce these rules, which at the same time they need to make speech possible (cf. Giddens 1984, 16). It is the same with social structures. They make action possible, and then are reproduced anew in taking recourse in action to rules of formation. Giddens differentiates between structure and structures. Structures are an isolated set of rules and resources, for example legal, economic, political structures and so on. Structure designates the entirety of various structures.

In addition to the concept of structure, Giddens posits the concept of system. He defines system(s) as "reproduced relations between actors or collectivities, organized as regular social practices" (Giddens 1984, 25). In Giddens the concept of system is the category in which space is realized solely as localization so that the complexity of space is not very convincingly reduced; for this reason, I do without this concept (for detail, cf. Chap. 2.2.1).

My reference to Giddens's definition of structure(s) presupposes a fundamental modification. I do not understand structures as independent of time and space, as Giddens does, but rather as detached from place and point in time (in detail, cf. Chap. 2.2.1). I work with Giddens's definition of structure because it takes the enabling potential of action into consideration as well as the preventative potential, but also because the differentiation between structure and structures makes it possible to distinguish between general rule–resource complexes and isolatable sets of them that are organized through institutions. My extension of the definition is that not only legal, economic, political structures and the like are understood

as structures, but also spatial and temporal structures. The interaction of various social structures forms social structure.

The social structure of the division of public and private shall be used as an example to elucidate this. Middle-class society makes a structural division between public and private. Though this division is indeed permeable and contradictory, it is a constitutive social principle that is secured by rules and resources. This structure is manifested in various isolatable, recursively reproduced structures. Firstly, legal structures to protect privacy have to be mentioned, social structures prescribing a different behavior code in the public and in private, economic structures with unpaid housework on the one hand and gainful employment for pay on the other hand, and so on. The division between public and private is also manifested in spatial structures, in the design of houses, in the lockability of houses, in the conception of the living room as a space that with consent is publically accessible, or alternatively, in the design of cafés imitating private rooms, and so on.

These spatial structures make action possible: by considerately designing the living room for the neighbors' visit, the homeowner recursively reproduces spatial structures. However, spatial structures also limit action: it seems impossible to receive the neighbors in the bedroom. In this case, non-observance of the structures would involve negative sanctions.

Structures are entrenched in institutions. Institutions are enduring regularities of social action. They can be social structures with organizational form such as the building control authority or a dancing course as an initiation to public manners. But they can also be socially pre-arranged patterns of action such as the institutionalized links on which living rooms are based.

The department of design studies at the Academy of Arts (Hochschule der Künste) in Berlin, for example, studies the use of objects in everyday life. The authors discover differences in the constitution of space as living space according to class. Low-income people or families, for example, always arrange social goods in the same way:

> The combination of a couch set, coffee table, and a wall unit is predominant. The furniture is often bulky and ornamented or embellished with patterns. Decorative items are draped on the cabinet unit, which is often wall-to-wall. The ceiling lamps are all older models (fifties to seventies), beyond that there are generally only one or two larger objects in the room (television,

a plant, and the like). (Fächergruppe Designwissenschaft [department of design studies], n.d., 123)

The constitution of space takes place by way of the selection and placement of social goods. The authors from the department of design studies point out that the arrangements are similar to those in furniture store catalogues. The living room becomes a space through the recurrent constellation of couch set, coffee table, and wall unit. They are accordingly institutionalized and reproduced in routines. In repeated, uniform constitution of the space "living room," spatial structures and arrangement rules are implemented depending on resources. In comparing low-income to middle-class people and families, they show that for the middle class, distinct objects are less likely to be placed in wall units, but rather placed individually and thus more forcefully involved in the constitution of space. In contrast to low-income people, the middle class constitutes living space with vacant walls, large pictures, large plants, and so on.

If the assumption that spaces are constituted in action is followed, it can be further inferred that this action, which is organized in routines in everyday life, reproduces social structures, and does so in a recursive process. This means that social structures enable action constitutive of space, which then reproduces the structures that enable it (and prevent other things). This reproduction is socially organized through institutions. Social structures are entrenched in institutions.

Let us return to Josef Tal in Jerusalem. Tal, too, reproduces institutionalized arrangements in operations of synthesis and in spacing. In Israeli society, the practical consciousness of the majority of the Jews living there can reproduce his synthesis of Wailing Wall, narrow alleys, and sky as a space together with the symbolic attributes of the space. This space is institutionalized, but due to the great symbolic significance bound to the specificity of place—in contrast to other institutionalized, often repeated spatial arrangements such as those in train stations or in supermarkets. Social structures are incorporated into the institutionalized space of the Wailing Wall and can be analyzed as examples. Here, Tal writes, "it was only possible to pray to the Almighty, hovering inaccessibly above the immeasurable stone" (Tal 1987, 87). A spatial structure typical of arrangements that drive the gaze upwards is interwoven into institutionalized space. It is a spatial structure encountered not only at the Wailing Wall, but also in front of high-rise buildings, in cathedrals, palaces, and so on. Here, a power structure is constituted in spaces; through specific arrangements,

it attributes considerable power potentials to persons or personifications, which Tal, for example, experiences as a positively charged Almighty.

The demolishment of the alleyways is a change to the institutionalized space. The reproduction of the power of the one God by virtue of spatial as well as economic, social, legal structures and the like is transformed in favor of a security-oriented, secular demonstration of power in an expansive space. Josef Tal addresses such transformation as a problem. The broad space, Tal writes, conducts the echo of the wailing along the horizontal plane (i.e. to other people and away from the God symbolically seated in heaven), thus giving prayer a new meaning.

To express the reciprocal conditionality of action and structure, Anthony Giddens speaks of the "duality of structure and action," which he also calls a duality of structure. The concept of duality denotes a twosome, not an opposition such as is expressed in talk of dualism. The duality of structure and action emphasizes that "rules and resources drawn upon in the production and reproduction of social action are at the same time the means of system reproduction" (Giddens 1984, 19 = German 1988a, 70).

The above discussion of spatial structures in relation to action constitutive of space can now be brought together in the concept of duality. This way, an answer can be offered for the questions about the relationship between action and structures that have not yet been resolved in the theory of space.

Let me first summarize my reflections: *we can speak of spatial structures when the constitution of space, that is, either the arrangement of goods or people, or the synthesis of goods or people to spaces (recognition, linking, and sensing arrangements) is inscribed into rules and secured by resources that are recursively incorporated in institutions independently of place and point in time.* Accordingly, in addition to political, economic, legal structures and the like, there are also spatial (and temporal) structures. Together, they constitute social structure. Spatial structures, like every form of structure, have to be realized in action, but they also structure action. The duality of action and structure thus proves to be the *duality of space*. That means that spatial structures produce a form of action that reproduces precisely these spatial structures in the constitution of spaces.

Talk of a duality of space is a clear expression of the quite non-intuitive view that spaces do not simply exist, but rather that they are created in action (that as a rule is repetitive) and that they guide action as spatial structures incorporated in institutions. Institutionalized spaces secure the

orderly cooperation of people. They provide security in action, but also restrict the possibilities of action. Both together, the routines of everyday action and the institutionalization of social processes, guarantee the reproduction of social (and thus also spatial) structures.

However, there is a point that Giddens does not discuss: there is not only one variant of structuration realized in social action. In the constitution of spaces, for example, economic, social, and legal structures are also realized; and similarly, these latter influence the constitution of spaces. To take another example, legal structures make a form of dispensation of justice possible and, in implementation, reproduce the rules of law. However, this does not mean that only legal structures influence the dispensation of justice. Economic structures (legal expenses) and spatial structures (carefully orchestrated arrangements of courtrooms) also influence the dispensation of justice and are reproduced in action. Social structure is thus constituted as the outcome of webs of structure; but a congruence of the various structures cannot be presupposed as a matter of course. These webs of structures can also entail contradictions.

5.2.4   *Gender and Class*

Although the above-mentioned example of the division of public and private suggests an imperative to speak of the ordering principles of class and gender,[2] up to now I have abstained from this discussion, and now intend to remedy the fact (on the gender-specific aspects of this division cf., for example, Terlinden 1990; Spain 1992; Massey 1994; Hannemann 1996; Bock et al. 1997; Rendell et al. 1999; Pini and Leach 2011). Up to this point, gender- or class-specific action can be explained as differing, acquired routines through which for the one part, gender- and class-specific personality structures are developed and for the other, particular social institutions are shaped. Social structures are reproduced in action under structural constraints. This approach is not satisfactory firstly inasmuch as class and gender structures are not simply one structural variation among many others, but rather pervade all social structures; and secondly, their reproduction cannot be explained merely by way of routines. In contrast to spatial, temporal, legal, and economic structures, they penetrate the person's physicality, and are expressed not only in routines, but also in habitus.

These two deficits of the theoretical interpretation up to now cannot be resolved by reference to Giddens's theory of structuration. Giddens

works on the basis of the fundamental hypothesis that modern Western societies are class societies, but fails to position the category class with respect to his distinction between structure and structures. He remarks rather imprecisely:

> 'Society', 'culture' and a range of other forms of sociological terminology can have double usages.… Similarly, I see no particular objection to speaking of 'class structure', 'the structure of the industrialized societies' and so on, where these terms are meant to indicate in a general way relevant institutional features of a society or range of societies. (Giddens 1984, 19)

Structure as a recursively organized set of rules and resources cannot be equated with class. If we abstract from the various social structures to the structure emerging from this web, the result is not simply class structure as such, but rather complexes of rules and resources with a class-specific dimension just as every individual structure and every individual action have this dimension. However, Giddens makes no proposal as to how class can be analytically conceived in his concept. Instead, he simply states that there is nothing against a double usage of the concept of structure. But this second use of the concept of structure in terms of a class society is not further substantiated.

I propose a different path. I understand class as well as gender as *structural principles*. In sociology, class (or stratum) is a largely unexamined structural category charged with multiple meanings. The discussions about whether gender, too, is a structural category have been so numerous that I will simply outline some essential research results.

In a theoretical–empirical research project, Petra Frerichs and Margareta Steinrücke (1997) examine the interlacing of class and gender in quantitative and qualitative terms. They observe that it is still common in sociology to analyze and categorize social processes according to the husband's profession and to assign the wife to this social position, and come to the conclusion that this is correct only within limitations. Though it is true that the majority of couples find each other within the same class, the status of the woman is a little lower than that of the man. Thus, across classes, women earn a lower income than men at the same social level or in the same vocational position; as Ursula Rabe-Kleberg (1987, 1993) and Reinhard Kreckel (1992) demonstrate, this can no longer be explained by differences in qualification. With reference to Michael Mann (1986), Frerichs (1997) argues that women constitute a kind of "buffer zone"

between their husbands' and the next "lower" class. Accordingly, gender cannot be interpreted simply as a category subordinate to class, but rather must be understood as a structural principle of its own.

Moreover, independent of their class, men and women each have different gender roles that are widely shared. Thus, men are more commonly oriented toward work-related tasks and performance, whereas women are, at a general level, less one-sidedly oriented on gainful employment, but rather also tasked with maintaining social relationships. This is valid independent of social status. Housework and childcare are also still largely women's responsibility across classes. Though the significance attributed to household work varies according to class, everyday routine housework is largely done by women.

Frerichs attributes the occupational dissonances and the "willingness" to take care of the household to women's "double (contradictory) socialization" (Becker-Schmidt 1987). Thus, women are socialized for two fields of work, the private household and gainful employment, whereas men are one-sidedly socialized for gainful employment. This results in one-sidedness for men and a contradictory existence for women.[3]

Beyond this, Reinhard Kreckel (1992) also criticizes the attribution of the husband's status to the wife, arguing that a stable nuclear family can no longer be assumed in modern Western societies. Though it still exists as a norm, it can no longer be postulated in research as a general practice. Consequently, together with class-specific socialization and class-specific inequality, the institutionalized binary gender order (Hagemann-White 1984; West and Zimmermann 1987; Gildemeister 1992; West and Fenstermaker 1995) and the consequent gender-specific socialization and gender-specific inequality must also be taken into consideration.

From this it follows that both social structure and all isolatable structures are suffused with a gender- and class-specific character. Consequently, I speak of gender and class as structural principles. In terms of the duality of action and structure, I hypothesize that gender and class are recursively reproduced in action.

Structures are picked up in routines and reproduced. But as Giddens repeatedly emphasizes (e.g. 1984, 25), they do not remain "external" to the individual person, but rather are realized in the form of memory traces and social practices. This is an apt analysis for many structures. Class and gender are constituted in action and reproduced by way of routines. However, in contrast to many structures, they are bound directly to the bodily being of the person. They are not merely incorporated in bodies,

but rather structure the social treatment of bodies in such a manner that bodies come into the world as gender- and class-specific bodies.

The persistence of gender- and class-specific practices and the social inequality involved are based to a considerable extent on the embodiment of structural principles. Because of this ingraining, it is often difficult to change procedures of action, even with the knowledge of alternative practices. My thesis is that structural principles permeate all structures precisely because they are not merely based on habits, but rather are physically lived.

For Anthony Giddens, the human body is a means by virtue of which people can expressthemselves, move or position themselves. The bodily absorption of social dimensions is neglected in his theory. The spaces studied by the department of design studies at the Academy of Arts (Hochschule der Künste) in Berlin consist of the invariable arrangement of sets of sofas and chairs, coffee tables, and wall units that are institutionalized and reproduced in routines. The class-specific character of the spaces penetrates into the bodies. It is not simply by habit that the furniture is arranged in the way described, but rather because it is then physically and emotionally experienced as agreeable. Physical wellbeing, the feeling of coziness, a relaxed posture are bound to class-specific spaces. Moreover, the practice of arranging, the feeling of coziness, and posture are lived in a gender-specific manner.

Sociological theory provides the term *habitus* for this inscription of social structures in the body. Following the historian of art Erwin Panofsky, Pierre Bourdieu interprets habitus as enduring and transferable "systems of schemata of perception, appreciation, and action" as a result of which the social is absorbed in bodies (cf. Bourdieu and Wacquant 1992, 126–7 [1996, 160]). The basis of habitus is the class situation and gender; however, Bourdieu only includes gender with a certain hesitation (Bourdieu in conversation with Irene Dölling and Margareta Steinrücke 1997a).

Essential elements of Bourdieu's concept of habitus are not only the emphasis on its corporeality, but also the dimension of perception and judgment, of evaluative patterns and normative orientations. All four dimensions are structured by the principles of gender and class; thus it is not only practical consciousness, but also discursive consciousness that is permeated by class and gender association.

In the case of the Wailing Wall described by Tal, the generation of the space described is bound to Tal's habitus, which he developed in Jewish culture. It is also bound to his gender inasmuch as a Jewish woman would

walk through the narrow alleyways of the Arab Old City with a different habitus and go to the small part of the Wailing Wall that is reserved for women. And not much imagination is needed to envisage that a Palestinian, whether male or female, would have described the constitution of the two temporally consecutive spaces very differently. The alleyways of the Arab Old City would probably have been less holy for him or her, but rather described as home, and the demolition of the buildings that formed these alleyways as the destruction of a cultural treasure. In Israel, where ethnicity is just as much a structural principle as are class and gender, habitus is not only class- and gender-specific, but also ethnically different.

Let me again *summarize* the essential reflections and concepts. I propose that space be understood as a relational arrangement of living beings and social goods. The conception of space as an arrangement refers to the process of arranging, to action, and to the structures reproduced in action which generate space in institutionalized forms.

The discussion of theories of space (Chaps. 2 and 4) and of the empirical findings on processes of space constitution (Chap. 3) implies that space is construed in this double sense as a structuring arrangement and as a process of arranging. My efforts to grasp this double character of space in sociological terms lead me to Anthony Giddens's theory of structuration. This theory makes it possible to derive the duality of space as a form of the duality of structures. This means to say that spatial structures produce a form of action that recursively reproduces precisely these spatial structures in the constitution of spaces.

I follow Anthony Giddens's argumentation inasmuch as I define structure as rules and resources that are recursively incorporated in institutions. Structures are isolatable sets of these rules and resources. However, based on my discussion of Giddens in terms of theory of space (Chap. 2.2.1), I make a modification. I do not understand structures independently of space and time, but rather of place and point in time. This modification makes it possible to integrate the concept of spatial structures, which is often used in specialist literature but never defined, into the concept of structuration. Spatial structures are understood the same way as political, economic, and legal structures as variations of social structures which together constitute social structure.

They are reproduced in repetitive practices and embedded in institutions—in this point I can follow the idea on which the concept of the duality of structures is based. Hence, I speak of institutionalized spaces

when arrangements have effect beyond one's own action and lastingly form action.

The analysis of the processes of space constitution leads me to realize that action has to be more precisely differentiated as operations of synthesis and as spacing. By spacing I mean the placing of social goods and people or the positioning of primarily symbolic markings to identify ensembles of goods and people as such. Spacing thus means building, deploying, or positioning. By operation of synthesis I mean the processes of perception, imagination, or remembering in which social goods and people are integrated to yield spaces. Power is understood as an integral element of human action.

Action and structures are permeated by the structural principles of gender and class. In this context, I do not refer to Giddens's interpretation of structural principles, which construes them as institutions such as families or surveillance organizations; rather, I view the two structural categories class and gender as principles that permeate every field of life. My conclusion is that they also penetrate the body and in the formation of a habitus, permeate practical and discursive consciousness as well as every form of action.

The body thus gains an essential significance in several respects. In the first place, people are physically in the world. They move and take place with the body. In the second place, the physical expression guides both the placements and the syntheses of other people. This bodily expression and its perception are permeated by the structural principles class and gender. The body is thus at the center of many constitutions of space.

Excursus: Bourdieu and Space

In a manner similar to Henri Lefebvre, Pierre Bourdieu popularized a concept of space in the social sciences, and is also known as a theorist of the relational. It therefore has to be explained why, among the relativist concepts developed, he was only briefly mentioned with respect to his understanding of social space.

Like Giddens, Bourdieu devotes his attention to the close link between structure and action. Although he predominantly uses the concept of space metaphorically in his main works, in a few essays (Bourdieu 1991, 1991c) he presents very precise ideas of space. Bourdieu calls himself a structuralist constructivist or a constructivist structuralist (Bourdieu and Wacquant 1992, 11). As distinct from constructivists working in terms of cognitive

theory, he understands the social world of experience as an immanent aspect of social self-reproduction; but at the same time he opposes every sociological reduction to material structures.

Like many academics of his day, among them Giddens, Bourdieu was initially under the influence of Claude Levi-Strauss's structuralist theory. In his ethnographic studies of Kabyle society, Bourdieu quickly encountered contradictions in the formation of symbols that cannot be explained solely in structuralist terms. Bourdieu began to conceive symbolic constructions as social activities performed under the aspect of utility maximization (Bourdieu 1977; cf. also Honneth 1984). Accordingly, he no longer understands them as products of a cognitive process, but rather as the result of contentions and arguments that are particular to a specific group. Bourdieu develops an action-theoretical approach that takes symbolic practices as well as economic practices into consideration as strategies used in competition for positions in social space.

It is Bourdieu's goal to examine the "objectivity of social structures" in relation to the "subjectivity of mental structures" (Bourdieu 1997a, 153); for him, the objectivity of social structures is reflected scientifically in the form of statistics, for example in employment rates, income curves, divorce rates, and the like (Bourdieu 1977), which, according to him, are in a dialectic relationship to mental structures, that is, incorporated structures.

In the book written with Bourdieu, *An Invitation to Reflexive Sociology* (Bourdieu and Wacquant 1992), Loïc J. D. Wacquant describes a relational conception of the social as Bourdieu's main goal, a goal that he shares, for example, with Norbert Elias.

> Against all forms of methodological monism that purport to assert the onto-logical priority of structure *or* agent, system *or* actor, the collective *or* the individual, Bourdieu affirms the *primacy of relations*. (Wacquant 1992, 15 [1996, 34]; italics in the original)

In doing so, Bourdieu proceeds from the basic hypothesis that acting people create and maintain structures, and accordingly that structures have no existence independent of people.

In Bourdieu, structure and action (corresponding to habitus) converge in the concept of social space. Bourdieu often uses the concept of social space synonymously with the concept of field. For him, the field concept expresses the relational structure more strongly. "To think in terms of field

is to *think relationally*," (Bourdieu and Wacquant 1992, 96 [1996, 126]) he explains at a seminar in Chicago. But he cannot do without the concept of space because it is needed to be able to explain the parallels between social space and "acquired physical space."[4]

A social space or a field "consists of a set of objective, historical relations between positions anchored in certain forms of power (or capital)" (Wacquant 1996, 36 = English 1992, 16). For Bourdieu, social space is a relational arrangement of people and groups of people in a permanent struggle for shares, and thus also in permanent motion. A social space is thus a space of relations. It signifies an arrangement of groups of people with the same or different possibilities of accessing economic, social, and cultural capital manifested in a similar or different habitus. Social space is an abstraction. Using the concept of social space, it is only metaphorically possible to conceptualize society or sub-domains of society as space.

Bourdieu sets social space off from "acquired physical space," also called "reified social space." Bourdieu uses the distinction between "physical" and "acquired physical" space (reified social space), but emphasizes that it is only possible to speak of physical space when the fact that space is inhabited and acquired is deliberately disregarded, as, for example, in physical geography. Since space is socially constructed, it would be impossible to denaturalize it (Bourdieu 1991, 28). However, Bourdieu emphasizes the distinction between acquired physical space and social space.

Bourdieu determines acquired physical space by way of distribution within it:

> In this way, reified social space (that is, physically realized or objectified) appears as the distribution in physical space of different types of goods and services and also of individual agents and of physically situated groups (as units linked to a permanent site) that are endowed with greater or lesser possibilities for appropriating these goods and services (as a function of both their capital and the physical distance from these goods, which also depends on their capital). (Bourdieu 1999, 124–5; cf. 1991, 29)

Acquired physical space only becomes relational through the arrangement of goods, services and the physical localization of individual actors and groups. Bourdieu uses a relativist and an absolutist concept of space. He determines social space by way of relationships. Acquired physical space does not become space by virtue of arrangements, rather relational arrangements are realized *in* it. Thus, whereas the one space (the rela-

tional one) is only meant metaphorically, the other space (the "real" one) is not conceived relationally. Relational arrangements are only reflected on and in it.

Bourdieu accordingly sets off two spaces from each other: social space as used metaphorically, and socially acquired geographical space. Thus, whereas the concept of social space is only used as an image to elucidate social processes, the discussion of acquired physical space adheres to the logic of a rigid space in which social processes are inscribed.

This is manifested in the quotable dictum: "habitus … shapes the habitat" (Bourdieu 1999, 128; cf. 1991, 32). This statement means that according to what kinds of capital are at one's disposal, corresponding taste preferences are developed and are put into effect at different locations. Homes, houses or city quarters are chosen according to income or to cultural or social capital, and this "choice" again reproduces class structures.

When Bourdieu speaks of the habitus that molds the habitat, he wants to express the fact that social space is reflected in acquired physical space. Social space necessitates certain distributional arrangements in acquired physical space, he claims. The result, he continues, is that acquired social spaces provide information about status in social space; this means, for example, that the class position of the actor can be inferred from the home. This incorporation of social structures in physical space, the argument continues, has, among others, the outcome that social structures are slow to change. To achieve change, buildings have to be torn down, city quarters restructured, or people have to move house and part from their familiar surroundings.

Bourdieu is right to emphasize that class position (the position in "social space") influences the constitution of spaces. However, due to his absolutist concept of acquired physical space, he is compelled to set the social as a one-sidedly structuring factor off from the spatial. He thus robs himself of the possibility of studying socio-spatial interactions. Although he himself speaks of spatial structures, he is not able to take the structuring effect of spaces into account. He is also unable to grasp the constitution of spaces that are not bound to places in the long term. Although Bourdieu's reflections on the relational conception of the social are pioneering (cf. Chap. 5.1), he does not manage to consistently conceive space relativistically or relationally (except in a metaphorical sense) despite the fact that he explicitly refers to Leibniz in his deliberations.

5.2.5   *Deviation and Change*

Up to now, only the repetitive and habitualized aspects of action have been discussed. But it is by no means always possible or desirable to take recourse to routines. Therefore, the following discussion shall analyze the possibilities of constituting space in a manner deviating from everyday practice—or indeed in a manner that changes it.

Pierre Bourdieu describes the problems that Algerian families have in France, such as the disruption of routines described here:

> This applies, for example, to those Algerian families who moved from a slum area to a subsidized housing area and unexpectedly found themselves in a situation in which the home that they had so long wanted so to speak went "over their heads" since for lack of the financial resources needed to cover the new expenses they were incapable of meeting their own implicit demands (sic!) … but also because they lacked the style of life, especially as far as the women are concerned, that was implicitly inscribed into this seemingly universal space, starting with the desire and the art of hanging curtains up to the ability to live informally and freely in a social environment of unfamiliar people. (Bourdieu 1991, 31)[5]

The Algerian families cannot continue with their old routines in the new homes, but they do not know the routines on which these new spatial structures are based. It starts with the Algerian families' active desire to change their living situation. This reflexive desire, which as a rule is also a physical desire, is a motive for disrupting repetitive everyday practice. Instead of the desire for change, it quickly becomes structural constraints that lead to behavioral changes. Neither the economic structures on which the social process is based nor the spatial structures are in harmony with the practices of the Algerian families. Whether or not, and in what form these families will successfully cope with the new spatial situation, depends on the ability of the Algerian women to learn new things and on the accessibility of rules and resources.

In the constitution of spaces, the Algerian families do not only encounter financial and spatial obstacles, but also other differences in people's actions. They have not learned the positioning of strangers with respect to each other in the constitution of common spaces. Since the constitution of spaces is always also a process of negotiation whenever several people are involved, everyday routines are regularly disrupted simply through the activities of the various people. Who must deviate from their practices,

and who is not required to do so depends on the power structure in the specific situation.

This means that the factors *insight in the necessity of changes*, *physical desire*, *other peoples' manners of action*, and *being an other* can bring about deviations from accustomed routines or result in situations that cannot be coped with by means of everyday forms of action. Conditions of otherness might mean, for example, that people or social goods are encountered that are not easily rendered coherent with accustomed routines, or that symbolism attached to social goods seems unintelligible or contradictory.

Accordingly, in the analysis of space the possibility of action that does not repeat everyday habits on the basis of practical consciousness has to be entertained. In this context, a distinction must be made between *changes* to habits and *deviations* or *creative*, *formative action*. Whereas deviations or reformations vary the spectrum of action, changes involve the abandonment of old habits in favor of new routines.

Each of the factors, "insight in the necessity," "physical desire," "processes of negotiation," and "being other," can trigger deviations or creative, formative action. This is initially a deviation from rules, but does not weaken the structures that are recursively reproduced in routines. But when the deviations and new creations become regular, and when they do not take place individually, but rather collectively with appeal to relevant rules and resources, then changes to institutionalized space and subsequent structural changes are possible. And at the same time the process begins anew because regular deviations themselves become routines. That is, institutionalized spaces can be created that are not (or not yet) in harmony with social structures.

Such spaces develop, for example, from placing a bed in the living room as a milieu-specific constitution of space, positioning children in the chancel of a church in the context of a reform movement, and the opening of public spaces specifically for women by the feminist movement. Such constitutions of space can have a volatile character, or they can create institutions of their own when they are generated by the action of many people with reference to relevant rules and resources. I call this action directed against institutionalized arrangements countercultural, and the spaces constituted in this process I call *countercultural spaces* independently of whether these are one-time actions or regular deviations. Ilse Modelmog defines counterculture as an action running counter to dominant culture which can be triggered by reflexivity, but just as well by curiosity, passion, and imagination (cf. Modelmog 1994, 35). I draw on Modelmog's

understanding of counterculture because she views deviations and changes not only as the result of reflection, but also of bodily–emotional desire. Countercultural spaces are different from heterotopias inasmuch as the latter have an illusory and compensatory function immanent to structure, whereas countercultural spaces emerge from oppositional action (cf. Chap. 5.2.2).

The dualistic gender order does not only assign a particular responsibility for the private household to women, it also socializes women for enhanced attention to emotions, to corporeality, and social relationships in organizing everyday life, or women actively socialize themselves in these fields (exemplary studies are Hagemann-White 1984; Modelmog 1994; Frerichs 1997; on boys' socialization Schnack and Neutzling 1994; Theweleit 1987). Modelmog infers from this that women tend to make more use of the potentials for countercultural action, and provides evidence for this in an empirical study of farming women. However, men with a lower social status tend to have reduced affective self-control (Frerichs 1997). For this reason, it is argued that it is more frequent for working-class men to act counterculturally than do men of a higher social status.

In contrast to Modelmog, Giddens only addresses deviations from institutionalized and repetitive action under the aspect of "change." He neglects the smaller deviations that also occur in everyday life when people climb under barriers or when women occupy armrests; but these can be essential for the explanation of courses of action, for the development of new forms of action and in long term change. Giddens sees possibilities for change only on the basis of reflexivity. Whereas he traces the practical consciousness on which everyday actions are based back to bodily processes, it seems that for him change is exclusively and solely conceivable by way of reflexivity. Desires for change emerging from an unease that cannot yet be articulated are thus systematically excluded. It is precisely here that the concept of counterculture comes to bear by taking reflexivity and corporeality into consideration as complementary motives of action.

However, the more structures permeate the body and shape desires as is typical of structural principles, the more decisive conscious and intentional reflexivity becomes for changes; but in turn, these changes have to be carried over to bodies to make transformations of the habitual possible. Deviations from routines and creative–formative actions can be triggered by bodily desire, but it is different in the case of habitus. Habitus is characterized precisely by the fact that it channels bodily desire in keeping with the social situation. No laborer will spontaneously act in the manner

of the upper class without having studied and trained upper-class practices and reflected on them. For this reason, change of habitus is bound to reflexivity.

Pierre Bourdieu has often been criticized for framing his concept of habitus too deterministically so that social change seems to be almost inconceivable with this closed habitus concept (for a summary of the objection, cf. Ecarius 1996, 130ff.; Bourdieu and Wacquant 1992, 79ff. [1996, 110ff.]). Bourdieu claims that as a rule, people behave practically, which means: there is a correspondence between habitus and structures (Bourdieu and Wacquant 1992, 131 [1996, 165]). According to Bourdieu, the harmony between the constitution of being and the forms of knowledge is not merely a reproduction with opportunities and constraints, as Giddens sees it, but perfect submission. However, he does admit the possibility of acting differently from the practices suggested by the social situation. In an interview that Pierre Bourdieu gave Loïc J.D. Wacquant in 1987–1988, for example, he emphasizes:

> [W]hat depends upon us is not the first move but only the second one. It is difficult to control the first inclination of habitus, but reflexive analysis, which teaches that we are the ones who endow the situation with part of the potency it has over us, allows us to alter our perception of the situation and thereby our reaction to it. (Bourdieu and Wacquant 1992, 136 [1996, 170])

Bourdieu's argumentation, which in my opinion is convincing, is that through the conscious and intentional examination of the taste and value judgments that are prestructured by habitus, a change in actions and perceptions is possible (cf. also Krais 1989). Psychotherapy and counseling, for example, are forms of organized relearning.

Giddens, whose association of modern society with oppression is less pronounced than Bourdieu's view, more strongly emphasizes the possibility that reflexivity can lead to acceptance of society. He even points out that the continuity of practices presupposes reflexivity, and the other way round: reflexivity is made possible precisely by continuity (cf. Giddens 1984, 3). Giddens also highlights peoples' ability to understand their action more strongly than does Bourdieu, whereas Bourdieu accentuates more strongly the habitualized constraints according to which understanding takes place as a rule in a gendered, cultural, and class-specific

discourse. If a division is made, as I suggest, between structures and structural principles, then the two positions are no longer in conflict.

Class and gender are structural principles that are concomitant with social inequality and oppression. To this extent, and in this context, reflexivity is bound together with insights into oppression, and it is only by way of organized reflexivity that individual relearning is possible. It is only through protracted social processes that structural change is conceivable. It is different with changes to social structures. Structures make action possible and prevent it. They can go hand in hand with structural constraints that produce domination and suppression, but they are not in the same measure interwoven with situations of oppression as are structural principles. Since they are actualized in memory traces, but not habitualized, change is more readily conceivable and can be triggered by bodily desire just as well as by reflexivity.

However, this must not hide the fact that institutions and structures are generally long-lasting, in no small measure because they can only be changed in collective practices. As is demonstrated for example by the spatial structures of national borders, their continued existence is linked to repetitive practices, but they are not changed by the fact that a social subgroup ceases to accept them. Social change is only possible by use of the relevant rules and resources and by virtue of collective action. However, the difference from the structural principles embedded in habitus is that structures can be more readily disregarded or combatted by social subgroups than can structural principles, which permeate one's own body.

This disregard or opposition, however, never involves unstructured behavior. Since there are always various structures shaping social processes, in the struggle against particular structures, others are still reproduced. Thus, changes always take place relative to the initial situation.

This also applies to habitus. Even if the opposition to class- or gender-specific inequality is a protracted process, particular changes relative to the initial situation are always conceivable. A working-class child does not have the same opportunities as a child born to the upper class, and may never achieve the same status, but in certain circumstances, she has the opportunity to rise to a middle-class context. The condition "under certain circumstances" indicates that habitus must not be understood as one systematic practice of action and judgment that is uniform for a class or a gender. By habitus, I understand a principle in which the specificities of class and gender generate specific cultures of action, of attitudes and ascriptions; however, this culture expresses itself in different forms of femi-

ninity and masculinity as well as in diverse variations of class culture. With regard to classes, these differences are shaped by gender in the perspective of "doing gender" by way of socio-economic class. Beyond this, we can also say that age, way of life, physical and mental potential, as well as affiliation to ethnic and religious cultures are decisive in the habitus.

The strong emphasis placed on the significance of reflexivity for changing one's own action and thus as a presupposition for the conceivability of changes to structures and structural principles must not mislead us to the assumption that social phenomena can be explained directly with reference to the intentions of reflexive subjects. To infer the limitation of human consciousness it is again helpful to refer back to Anthony Giddens's remarks. He is intent to work on some "vague points" (Unschärfen) of action-theoretical argumentation and to further develop them; Niklas Luhmann (1982), for example, made detailed reference to this sort of vagueness.

These vague points involve above all the problem of unintended consequences of action and the conception of an intentionally acting subject. Human consciousness is systematically limited due to two factors. The first factor is the unintended consequences of action, the second is the unconscious.

The unintended consequences of action can, again, be explained with reference to Josef Tal. He describes the demolition in the Arab Old City as a result of the Six-Day War. This demolition is intentional. The Israelis in power want to create an open square that can be easily controlled. Moreover, as the winners of the war they may well want, perhaps intentionally, to demonstrate their power. An unintended result, one that triggers momentous alteration, is that praying at the Wailing Wall is changed. The echo is now propagated horizontally, observed by huge numbers of tourists. The former feeling of holiness dwindles.

Human action, argues Giddens, is indeed goal directed; but since action is not based on individual, clearly delimited acts, but rather takes place as a "durée," that is, as a continuous behavioral stream, social structures cannot be traced back to individual, isolated acts. This means that social structures cannot be derived from the meaning structures of intentionally acting subjects. Individual acts are constituted only when the continuous flow of biography is discursively interrupted by paying attention to individual moments. Giddens therefore suggests that action with its intended and unintended consequences be analytically separated from the motivation of the acting person.

According to Giddens, reflexive control of action is an integral part of everyday action because people both control the flow of their activities and routinely monitor the contexts in which they move. This reflexive control, however, is not identical with the substance of the activities and thus not with the consequences of action.

This can also be applied to the process of constitution of space. Spaces are created in a continuous flow of actions. Recursive structures are reproduced in these actions. However, these reproductions, together with changes, cannot be directly attributed to the intentionality of the persons acting. Spaces emerge in action with both intentional and unintentional consequences which must be taken into consideration in equal measure in the study of spaces. The motivation of the action and the substance of the action need not correspond and accordingly, can be examined separately.

These various steps of analysis do not only result from the unintended consequences of action, which the acting persons cannot foresee, but also because consciousness is influenced by unconscious motives. The unconscious, says Giddens—and here I agree—designates "those forms of cognition and impulsion which are either wholly repressed from consciousness or appear in consciousness only in distorted form" (Giddens 1984, 4–5). Unconscious motives of space constitution are particularly difficult to study since they are not discursively accessible. For many research questions, it should suffice to provide information about the constitution of space in action, together with intended and unintended consequences, and about the recursively reproduced structures and structural principles. For the analysis of this process, however, it is necessary to know that actions and motives are not one and the same.

5.2.6   *Symbolism and Materiality*

Space is constituted in interplay between action and structures. This means that spaces are by no means arbitrarily created; rather, the arrangements are as a rule socially pre-structured. This does not entirely come to terms with the fact that spaces can only be produced out of what is available or what can be procured for acts of synthesis and spacing. This includes all that is given in nature; where there is no river, no river can be included in the constitution of space. The possibilities of constituting spaces are accordingly always dependent on the *symbolic and material factors* pre-given in an *action situation*.

Though this principle applies more generally to all forms of action, it is obvious in the constitution of space because of the presence of place and places. These material conditions of an action situation have been largely ignored in much of social theory. Giddens, for example, assumes that reflexivity is not only directed at actions, but also at action contexts, but he hardly takes "context" into consideration in his further deliberations. At best, it can be inferred from his distinction between allocative and authoritative resources that these contexts are characterized by both material and symbolic factors.

By contrast, a systematic discussion of a link between material and symbolic factors can be found in Reinhard Kreckel's works (1976, 1982, 1992). According to him, action is always in a relationship of dependency on the "conditions of an action situation" (Kreckel 1992, 76). Action situations are composed of a material and a symbolic component; therefore, he concludes, social action always has two aspects: a *material* and a *symbolic* aspect (Kreckel 1976, 1982, 1992). Kreckel understands the symbolic aspect as behavior which is oriented toward values, norms, institutions, role expectations, and so on and is structured by language. The material aspect refers to the interaction between acting people and material environment. This means human artifacts, natural circumstances, and the actor's physical organism. Both components are always contained in concrete actions.

Reinhard Kreckel has thus elaborated a differentiation that makes it possible to grasp more precisely the limits and possibilities of action that is constitutive of space. This means that the constitution of space is always dependent on the conditions of an action situation composed of material and symbolic components, that is, composed of the material conditions presented in the action situation for synthesis or placement as well as of the symbolic components, for example, the symbolic effects of goods and people.

The material component indicates that natural circumstances as well as the social goods available in an action situation pre-arrange the constitution of spaces. Bodily possibilities and necessities (movement patterns, need for sleep, and so on) also limit the constitution of space depending on the action situation, but also make it possible. The material component is as a rule the presupposition for the symbolic component.

Like people, material goods have a symbolic effect on the basis of their material structure. Thus, a stairway is not simply a stairway, but rather has different effects due to material and the symbolic charge of this mate-

rial, depending on whether the stairway is made of marble or wood. Consequently, spaces are constituted differently depending on whether a marble or a wood stairway is involved in the configuration of space. This means that social goods are differently synthesized to spaces according to what material the stairway is made of (sometimes the stairway is an eye-catcher, whereas at other times it might be quite ordinary). Moreover, architects offer different space constructions by means of different materials. Placements also differ from each other according to materialities and their symbolic effects (depending in part on the disposition of the social actor and their habitus).

The symbolic components of an action situation make it possible for institutional arrangements to condense into patterns of space. Institutionalized spaces are reproducible *en masse* (for a detailed discussion see Ipsen 1997).

If action situations fundamentally have a material and a symbolic component, then it follows, according to Kreckel, that action, too, fundamentally has two aspects, a material and a symbolic, even if as a rule one aspect prevails over the other. This applies especially to action constituting space. If, for example, at a reception, people in a group take position so that a closed space emerges, then in material terms people are moved, objects are often positioned, and symbolic effects are achieved in the process. If a newcomer observes and synthesizes this group of people to a space and at the same time changes his or her original intention to join the group, perhaps going to the buffet instead, this action also has a symbolic aspect (demonstrating non-belonging) and a material aspect (walking across the floor, moving the body, obtaining cutlery). Here, too, by applying rules and resources in carrying out actions, power structures are negotiated through the constitution of spaces, and, as the example shows, exclusion from and inclusion in spaces is organized (for details cf. Chap. 5.5). The processual character of space formation demonstrates the flexibility of the spatial.

Hence, to start with we have to take note of the fact that action that is constitutive of space as well as action situations have both material and symbolic aspects that have to be analytically distinguished. The constitution of space is accordingly pre-structured by social structures and by the conditions of an action situation; it has to be noted that the conditions of an action situation are derived in no small measure from the action of other people. Changes to spatial arrangements that up to now have only been explained on the basis of social processes can now also be attributed

to a change of natural environmental circumstances (e.g. the triggering of an avalanche) which are indirectly or directly influenced by human action.

However, social goods in the sense of primarily material goods (cf. Chap. 5.1) have up to now mainly been treated in terms of how the human being places or links them—for the sake of reduction of complexity. But the relationship between human being and social goods is in fact more complicated because things, too, have external effectuality. Consider, for example, the computer that quietly hums and thus has an effect beyond its form and size, or smells emanating from objects, or the suggestive power of colors. This external effectuality of social goods cannot simply be explained solely as a symbolic effect, but rather it is an influence on people through perceptible smells, tones, or colors; though they emanate from social goods, they are not bound to the visibility of the objects.

Thus, in addition to social structures and the conditions of an action situation, the external effectuality of social goods is a factor influencing the constitution of space; and this factor makes the necessity of understanding perception as an aspect of action manifest.

5.2.7   Perception

The architecture of sociological theories tends to neglect perception in comparison with the reflexive faculties of human beings. Though synthesis can indeed be performed through reflexivity, in everyday action it is always also channeled through perceptual processes. It is rare for single things to be perceived, but rather "things in their arrangement" (Böhme 1995, 94). As Maurice Merleau-Ponty (1962, 15 [1945, 23]; 1966, 35ff.) says in his foundational work *Phenomenology of Perception* with reference to Wolfgang Köhler's Gestalt psychology, it is "things" and "spaces between things" that are perceived. That is, in everyday action syntheses are formed in perceiving, the social goods and people that one encounters are linked to form spaces.

I emphasize the aspect of perception for the constitution of spaces since this is the only way to express the fact that people *do not only see*, *but also smell*, *hear*, *or feel* the social goods that they link or place. Sounds are involved in the emergence of spaces, for example when music plays, goods are cried, vehicle motors sound. The special point about perceptual processes is not only that the external effects of social goods and other people are registered, but also that these can exert an influence even when the objects themselves are not visible. The smell of plants, freshly painted walls, or vehicle exhaust emissions influence the perception and thus also

the constitution of space, though the social goods need not be visible to exert this influence. Since all senses are addressed, things that are heard or smelled can influence constitution without being seen at the same time.

In perception, sensorial impressions are condensed to a process, to a sensing of one's surroundings such that the social goods are not merely placed objects, but rather influence the sensations of the people involved by way of their external effectuality. These impressions are radiated not only by social goods, but also by other people, and influence perception.

For this reason I understand by perception a process of *simultaneous emanation from social goods and/or people* and the *perceptual activity of bodily sensation*. The typical division between object- and subject-oriented theories of perception can only be overcome by taking account of the fact that both aspects take place simultaneously in the process of perception. In contrast, for example, to Jerome S. Bruner (1974) we do not only look at the perceiving subject which forms its surroundings, and as distinct, for example, from James J. Gibson (1982), we do not primarily emphasize that perceptions are shaped by the pre-given world of things.

The everyday constitution of space is bound to perceptual processes. In practical consciousness, social goods and people are linked with each other in perceiving them. These syntheses are not only pre-arranged by habitus and social structures, as argued above, but also influenced by the external effectuality of social goods and people. Spacing is oriented on these syntheses formed in perceiving. This applies, however, only to the everyday constitution of space.

In contrast, the constitution of space when working at a drafting table, on the computer, and the like is only partially or not at all bound to perception of the space to be created. In this case, social goods (and sometimes, by way of exception, people) are linked to yield spaces mainly through operations of abstraction. In this process, the space to be constituted is not perceived (or only a few aspects of it are perceived, for example the colors on the screen); instead, the space that is linked to physical presence is perceived. This means that two processes take place simultaneously: the everyday perception of space, which is bound to the corporeality of the perceiving person, and the spaces produced by planning and architecture mainly by means of operations of abstraction. In the context of cyberspace technologies, however, two spaces are constituted simultaneously in analogy to the drafting table, but with the peculiarity that both are perceived in part. The floor on which one stands, the smells of the surrounding people are perceived just as well as the sounds and colors of the

computer simulations. This overlapping results in a blurring of reality and simulation.

Let me summarize. Everyday constitution of spaces goes hand in hand with perceptions that are based both on the external effectuality of social goods and other people for the one part and on the perceptual activity of the person doing the constituting for the other. This does not mean that perception is direct or unmediated. Various researchers on perception, among them Gestalt psychologists, neurophysiologists, philosophers such as Wolfgang Welsch (1995), and sociologists such as Niklas Luhmann have shown that perception, too, is subject to a filtering process.

> What is at stake in actual perception, as well as in reactualized intuitive representation [*Vorstellung*], results from simultaneously processing a manifold of impressions that allows a focus for awareness to be selected without letting the surroundings slip from view. (Luhmann 2000, 7 [1998, 17])

This rightly emphasizes that a selection must be made from the multitude of what is perceivable and thus that perception does not have the character of something immediate, but only conveys the impression of immediacy whereas it is in fact a highly selective and constructive process. For example, perception is strongly pre-formed by school education oriented on Euclidean geometry. This organizes perception in a grid. In the course of socialization, perception is adapted to the world as it is imagined and re-imagined, but is not completely absorbed by it because Euclidean geometry influences many processes of vision, but not smelling and hearing.

For this reason, perception of the surrounding world is not a process that runs the same way for all people, but rather is characterized by habitus as a "perceptual schema." In the process of socialization, people learn, for example, to develop senses well or poorly, or to rely in different ways on senses. Relevance criteria are also habitually pre-structured. Thus, ideas of space and educational processes are factors influencing perception, but they are not over-determinate.

Perception is accordingly not immediate, but rather is pre-structured by education and socialization. Thus, perception is not only directed at material artifacts, but also at smells, sounds, and haptic impressions. It presupposes the activity of the perceiving person and the external effectuality of what is perceived. Perception is an aspect of action that permeates both the operation of synthesis and spacing.

5.3   Localization of Spaces at Places

Reflecting on this process of constitution of space further, we encounter two important phenomena: the emergence of places and of atmospheres. Since the constitution of places itself influences the emergence of atmospheres, I shall begin by treating the localization of spaces at places (on atmospheres cf. Chap. 5.4). As pointed out in Chap. 2, places are often haphazardly equated with spaces when sociological relevance is attributed to them. If, however, space is understood as a relational arrangement of social goods and living beings, the question of the meaning of places can be posed anew and the veil of naturalness can be lifted.

The constitution of space is a process that, as explained, occurs through two processes that have to be analytically distinguished, namely the operation of synthesis and spacing. I analyze spacing as a process of placing or being placed. For it to be possible to place oneself or something, there have to be places where it is possible to place.

Places are identifiable when occupied by social goods or people, but they do not disappear with the removal of the object, but rather are available to be otherwise occupied. *Place is thus the goal and result of placement* and not—like people and social goods—itself an element placed in spacing. Places emerge through placements, but are not identical with the placement since places remain through a certain period of time even without the placed element or simply through the symbolic effect of placement. The constitution of space thus systematically generates places, just as places make the emergence of space possible. Placement can be a one-time action, but it can also generate fixed structures such as buildings or town signs. These exercise a symbolic effect.

The distinction between space and place is accordingly an essential terminological definition. A place means a location, a position that can be specifically named, generally geographically marked; as Jörg Brauns expresses it, "the personal, unmistakable, incomparable is preserved" in the place (Brauns 1992, 163). Albert Einstein had this personal aspect in mind when he defined the place as "a (small) part of the surface of the earth identified by a name" (Einstein 1960, xiii). Places emerge in spacing, can be specifically named, and are unique. This naming enhances the symbolic effect of places.

At this point we can now distinguish three forms of synthesis: synthesizing in perception, in memory, and in abstract imagination. In abstraction, that is, in synthesis at the drafting table, on the computer, in scientific

design, and the like, the focus is often only on social goods that are linked together to yield spaces. Places, that is, the unique locations, do not have a role to play.

It is different in perception. Since perception is generally directed toward social goods or living beings, these are perceived together with the places at which they are placed. Place and placed element are not separated. Memory operates similarly. In memory, objects and people merge with their localizations at specific places to yield single elements which are kept in memory, thus influencing the everyday constitution of space. Accordingly, Maurice Halbwachs (1941) and Jan Assmann (1997) speak of memory's orientation on places.

As an example, consider the space of one's "own" city quarter. This can be constituted through the street on which one lives, the shops to the north of one's home where one goes shopping, and the riverbank to which one rarely goes but which is nonetheless experienced as belonging to one's space. Neither in perception nor in memory is a distinction made between the place where the house is and the house itself as a social good. Nonetheless, these are two different aspects of a context: after all, the house could just as well have been built at another place. The distinction becomes more significant in the case of flexible social goods and people. If one places one's car at the same place in front of the house every day, a place for "my car" emerges there. Even without the parked car, the locals can know that this place must not be otherwise occupied. The placement of the car in this location generates a unique place, and at the same time, the place makes the placement possible. However, places generated by placement can also be transient.

Castells (1994, cf. Chap. 3.3) distinguishes between three forms of place: transient places in the network, privileged, and peripheral places. Here it becomes apparent that transient places are not by any means limited to digital networks. Every placement generates places; however, most of these places are temporary. Every placement has a symbolic and a material aspect. The flexibility, the privilege, and the peripherality of places depend on the material with its fixedness and on the symbolism, which is often achieved through the material structure.

The constitution of space, consisting of the home, the shops, and the riverbank, generates a place that either has an individual name (e.g. the Nikolai Quarter in Berlin) or is personally referred to as the "neighborhood" or as "one's own city quarter." One can remember this place without distinguishing the various aspects of space construction. The riverbank

itself is also a space due to the synthesis of water, stones, park benches, an ice-cream parlor, and so on. This space, which is typical of many riverbanks, becomes a special place when it is unique, for example due to a name (the Rosa Luxemburg Riverbank in Berlin and the like) or in memory.

Josef Tal also describes space and place. The stone blocks, remnants of the old temple, are built at a special place and generate a place, the location of the Wailing Wall that is also identified as such. If the Wailing Wall were to be torn down, the place would still long remain in existence. Even someone who has never seen this place knows of the uniqueness of the localization. However, space is the linking of the Wailing Wall, the open square, and, for instance, the tourists. Each of these three elements and all three together generate places, different places: privileged and peripheral, fixed and flexible. Space is the linking of the elements. Due to the great symbolic significance, this space is hardly separable from the place. Nonetheless, the distinction is indispensable because, for example, Palestinians constitute different spaces at the same place and thus generate the place itself anew. Even if Tal's constitution of space were institutionalized and implemented by all Jews and all Christians in the same way, this space is still not universal, and the possibility of creating different spaces at the same place is always given.

The artist Danielle Vallet Kleiner documents her synthesis of social goods and their places to a space in a video film. Her film *Inspection Istanbul–Helsinki* (*La traversée du vide*), which was shown at *documenta* in Kassel in 1997, presents a trip through Central Europe, not in chronological order, but rather according to the artist's memories. The video show jumps between the various countries, showing connections between geographically distant places, brings together things that are alien to each other. Many places and social goods are forgotten, others are presented extensively and in detail. In the film, new spaces emerge corresponding to the specific perception of a traveler; but in large measure, they are understandable for other viewers because the links are not random, but characterized by her habitus (see also Vallet-Kleiner 1996).

For the constitution of space in general, taking spacing and synthesis together, places have a fundamental significance. This is founded less in the fact that individual places identified by name such as New York or Rosa Luxemburg Riverbank are involved in the construction than in the fact that all constructions of space are directly or indirectly based on localizations through which places emerge. If a localization cannot be determined, then the concept of space is only used metaphorically.

In the social sciences, the exploration of places has a varying significance. If, for example, participants of a study are asked what the space of their city quarter consists of, then a number of places will be identified together with the construction of space. If, however, we ask in general about the significance of rivers for cities, thus posing a question that aims at abstraction and does not address own memories, then places will disappear from the field of study even though the same arrangements may be described. The distinguishing feature is whether we are dealing with a special, unique figuration that is often geographically marked, or whether an institutionalized form of linkage is to be analyzed.

When the significance of places in the process of space constitution is taken into consideration, it is my conclusion that three aspects can be analytically distinguished. Firstly, a designation is gained for localizations that are biographically or socially unique, and secondly it is possible to designate former placements even when what was placed there has long vanished but the place has retained its symbolic character and as such is involved in the construction of space (e.g. "This is where the Berlin Wall was …"). Beyond this, the concept of place has a third advantage for theorizing in social science inasmuch as it makes it clear that not only what is placed, but also the synthesizing person is at a place. As has already been suggested, this is of significance for the determination of the relatedness of distant perceptual constructions of space to the body as well as for the discussion of the "frames of reference" of the persons doing the synthesizing; I shall look into this point briefly here.

Now that place and person have been systematically ordered as levels that must be analytically distinguished, the factors influencing synthesis can be reconsidered. It can be posited that not only the person doing the synthesis and his or her habitus, but also the localization of the synthesizing person has an impact on the synthesis. The space of the Wailing Wall will be constituted differently according to habitus, but also depending on localization. It makes a difference whether one stands directly in front of the Wall or looks through the gates of the Old City first at the open square and then at the Wall, or whether one thinks about the Wailing Wall while at a memorial for the victims of the Holocaust or in a New York bar.

Not all people synthesize from the same place in the same way. Depending on the structural principles class and gender, which form part of habitus, space can be synthesized very differently from one and the same place. Nonetheless, syntheses by different groups of people from one

and the same place can have more features in common than those from different places.

In his book *Space, Time and Architecture*, a title playing on *Space, Time and Gravitation*, the main work of the physicist Sir Arthur Stanley Eddington ([1935] 1995), the architect Sigfried Giedion speaks of the "point of reference" as that which has to change to grasp space.

> The essence of space as it is conceived today is its many-sidedness, the infinite potentiality for relations within it. Exhaustive description of an area from one point of reference is, accordingly, impossible; its character changes with the point from which it is viewed. (Giedion 1967, 435–6 [1965, 280])

In the wording "point of reference," "point from which [space] is viewed," the seeing eye (admittedly a reduction of perception to the visual) merges with the point, that is, the place from which one looks. Generally speaking, in placements places emerge that influence syntheses both because from different places different syntheses are likely and because locations are symbolically and materially occupied that have an impact on space construction. Spaces generate places, and at the same time these places are the presupposition for all constitution of space. Places can be transient or fixed, and according to the state of the social power structure, they can be experienced as peripheral or privileged.[6]

5.4   The Visibility of the Invisibility of Space

In brief terms it can be said that the constitution of spaces takes place through (structured) arrangements of social goods and people at places. Spaces are created in action by synthesizing objects and people and arranging them relationally. In this context, the action is performed in pre-arranged spaces and takes place in everyday action making use of institutionalized arrangements and spatial structures.

These structures are in themselves not visible—the social goods and their placements are seen, but not the space as a whole—but they are nonetheless materially perceptible. The inclusive and exclusive character of spaces as well as the terminus of spaces can be sensed. The beginning of new spaces can be perceived with the senses. Let us now take a closer look at this intrinsic materiality of the spatial, which, according to my hypothesis, is developed from the external effectuality of social goods and the faculty of the people doing the synthesizing for perception.

Heidegger's existential philosophy (e.g. 1975 [1985]) and the analyses presented by phenomenologists (such as Bollnow 1989) have shown that spaces are "attuned." When a pedestrian underpass is experienced as ominous, a study as austere, or a sunset over the sea as romantic, this can be attributed to attunement. Now it could be assumed that attunement is nothing more than a projection of feelings onto the surrounding spaces if it were not for the phenomenon of "being re-attuned" by spaces. For example, one rushes into a small store to make some necessary purchases just before closing time and one's mood is calmed by, for example, quiet music, agreeable smells, and the like. Accordingly, spaces develop their own potentiality, which can influence feelings. In the following discussion, I shall call this potentiality "atmosphere."

In the above reflections on perception, I stated that social goods and people have external effectuality. This external effectuality of social goods and people does not exist simply as various effects in juxtaposition to each other, but rather develops its own potentiality in their joint arrangement. Let me put it in more pointed terms: in the synopsis of various external effects specific atmospheres develop which, however, like perceptual processes in general, have to be actively picked up. Atmospheres are accordingly the *external effects of social goods and people in their spatial arrangement as realized in perception*. This means that atmospheres develop through the perception of the interaction between people and/or from the external effectuality of social goods in arrangement.

Conventionally in sociology, relatively little significance has been attributed to atmospheres. As previously pointed out, Niklas Luhmann is one of the few to conceive space and atmosphere in close connection with each other. According to him, atmosphere is an "excess effect" (Luhmann 2000, 113 [1998, 181]) of the unity of the difference between object and location. Atmosphere is bound to "individual objects" because it vanishes when the things vanish; nonetheless, it is not actuated until the locations are occupied by things. The unity of the difference between object and location becomes visible in atmosphere. Luhmann therefore speaks of atmosphere as the "visibility of the invisibility of space"[7] (1998, 181; cf. 2000, 112).

Luhmann accentuates the distinction between the social good and the place that comes to be due to its placement. In so doing, he neglects the relational connections among the objects concerned; but they are just as constitutive as the placement of the objects at places inasmuch as atmospheres are based on perception and perception is oriented on ensem-

bles of social goods. Luhmann loses sight of this relationship because he has "individual objects" in mind and neglects placements done by people, which almost always come about in negotiation with other people. Nonetheless, his statement of the problem points out the decisive phenomenon, namely that spatial arrangements produce specific auras.

In contrast to Luhmann, however, I understand the arrangement on which space is based not only as an arrangement of location and object, but one of people and social goods at places. Accordingly, the development of atmospheres has to be systematically derived from the relational arrangement at places. Space is a figuration laid down in material states of affairs; its noticeable but invisible side is atmosphere. Atmospheres make space as such perceptible, not merely the individual objects.

Atmospheres thus presuppose the simultaneity of perceiving subject and perceptible object. The philosopher Gernot Böhme (1995) also proposes that such a unity of the difference of subject and object be used to determine the phenomenon of atmosphere. In Böhme the distinction between subject and object takes the place of that between location and object in Luhmann. Gernot Böhme (1995) is interested in atmospheres with respect to the production of art, perception of nature, and the world of commodities. He demonstrates that social goods have a scenic function that serves to generate atmospheres. In this context he refers to Wolfgang Fritz Haug's *Kritik der Warenästhetik* [Critique of commodity aesthetics] (1971), according to which in late capitalism the appearance of social goods dominates their utility value. Design gives the goods an appearance that makes them readily saleable but often is directly in contradiction with their utility value. Böhme adheres to Haug's proposition that design, advertising, and the arrangements in which goods are presented fill these goods with atmospheric function increasing sales. In contrast to Haug, however, he advocates the view that the utility value of things consists precisely in generating atmospheres.

Böhme defines atmosphere as the "joint reality of the perceiving person and what is perceived" (Böhme 1995, 34). He thus opposes both an understanding of atmosphere as a projection of one's own state of mind on social goods and a concept of atmosphere detached from the person. A point against the projection proposition is that atmospheres are conspicuous precisely when they are contrary to one's own mood. With reference to Hermann Schmitz (1965, 1967, 1969) he emphasizes that the idea of a projection of feelings on the surrounding world of things is based on the assumption that feelings are in the body. This assumption of a containing

body as the seat of feelings is, however, not a historical constant. Schmitz demonstrates that in the Homeric period, for example, feelings were understood as something external that intervenes in human corporeality.

Schmitz adheres to this idea of the detachment of feelings from the interior of the body, describing them as "indeterminate, like an outpouring of atmospheres, in which the person affectively touched is embedded in a way that can be physically sensed" (Schmitz 1969, 185). Schmitz thus detaches not only feelings from the person, but also atmospheres from the things. He emphasizes the aspect of affective concern with atmospheres, but neglects the aspect of the aesthetic function of social goods, which, for example, is accentuated by Haug.

By contrast, it is Gernot Böhme's goal to take theoretical account of both aspects: the intrinsic productivity of atmospheres, which can transport people into moods more or less against their will, and the deliberate producibility of atmospheres based on knowledge of the scenic functions of social goods. Accordingly, he is interested in conceiving things not merely as delimiting and including—as they are understood in terms of container space—but rather as objects with extension and form, that is, with external effectuality. He sees the subject that knows and posits things in this connection.

Similar to Luhmann, Böhme emphasizes that atmospheres belong to the things since they are based on the things' external effectuality, but nonetheless cannot simply be regarded as properties of the things. Böhme thus does not tie atmospheres solely to the things because he accentuates people's potential for perception (Luhmann accentuates places as the second presupposition). However, he regards them not merely as subjectively tied to the subjects' emotional world since the things would then only be a projection surface; nonetheless, people have to sense atmospheres physically. According to Böhme, atmospheres are composed of the effects of the perceived objects and the physical sensing of the perceiving subject. Based on Böhme, the geographer Jürgen Hasse (1997, 1998, 53; 2012a, b) calls the intrinsic quality of atmosphere a "medial space," thus stating what Böhme does not systematically treat, namely the fact that atmospheres are tied to the constitution of spaces.

The social dimension of Gernot Böhme's work consists above all in his analysis of the producibility of atmospheres. A large part of social work is the work of staging. Goods, politics, companies, and entire cities are staged. People's self-staging is also an essential aspect of everyday life. The point is to provide people and things with an appearance that achieves the

desired appeal. Designers work on this, as do cosmeticians, stage designers, interior decorators, advertising and fashion experts, and the like.

> When an interior decorator furnishes a room with sea-green wallpaper, his goal is not to produce walls with this color, but to generate a spatial atmosphere. When a sales expert has a certain music played in a supermarket, he is not having a work performed, but wants to generate a mood favorable for sales. (Böhme 1995, 87)

In this section, Böhme specifies very clearly that it is not only the case that people constitute spaces through an operation of synthesis or recognize institutionalized spaces, but also that these spaces are consciously organized in order to be recognizable. It turns out that processes of spacing, that is, the placement of oneself, other people, or goods, also includes the work of staging, specifically, preparing *what is positioned for perception*.

But there is one point that Böhme hardly takes notice of: the influence of culture and socialization on the sensing of atmospheres. The only aspect of the socialization of perception that is of direct interest to him is the question as to whether the human being has unlearned sensing due to techniques of civilization; he denies this. For instance, he construes the populace of an era as sexless subjects without social influences. Böhme holds atmospheres to be objectively perceptible. They are either repellent or inviting, authoritative or familiar, and so on.

There are, however, other research results that argue against a universal character of atmospheres. Luc Ciompi (1988, 235f.) analyzed various studies comparing cultures and came to the conclusion that Italians, for example, feel at ease in living rooms and bedrooms that are high, cool, and dark, whereas Nordics prefer low, bright, warm rooms that are decorated with wood and carpets. These preferences originate in the climatic conditions of the countries concerned, where people are socialized in childhood to become familiar with them as agreeable atmospheres. Bourdieu's study (1984) according to which over half of the interviewees from the lower classes found a sunset to be a nice subject for a photograph compared to only about an eighth of the higher classes, also points in the same direction of socialized perception. Böhme grants no significance to cultural differences, but infers universal validity from producibility.

> One enters a home and is struck by a middle-class atmosphere. One enters a church and feels swathed in a holy twilight. One sees the ocean and feels as

if swept away to distant climes.… The furniture is packed into middle-class confines, the blue of the sky seems to flee, the empty pews in the church are an invitation to devotional contemplation. That, at least, is how the perceiving person experiences it. (Böhme 1995, 95)

The middle-class narrowness that "strikes" Böhme can be experienced as smothering or as cozy. The church that invites the Roman Catholic to contemplation can infuriate someone of another faith with its amassed opulence. Atmospheres seem to be perceived by certain groups of people in the same way, but by no means does this imply that they are universal.

Böhme accentuates the staging of human bodies and social goods to prime the perception of certain atmospheres, but he neglects the degree to which cultures, classes, and genders are inscribed into the bodies of the perceiving people. For Böhme, the staging seems to be directed outwards inasmuch as he fails to analyze physical sensing in its social dimension. The manners in which atmospheres take effect are not, however, perceived by all people equally; rather, the perception of spaces is always socially pre-structured.

Thus, if atmosphere is defined as the external effectuality of social goods and people in their arrangement at places as realized in perception, then the perceiving person always has to be regarded in his or her social context; perception itself is a constructive process. As above, perception is not only an aspect of action, but is also an aspect of habitus in the sense of a perceptual pattern. Being shaped by class and gender, perception is the product of past conflicts and the expression of the power structure of a society.

The propositions on the constitution of space that have been set forth in this work up to now make it possible to understand atmospheres as sociologically relevant phenomena and to link the aspects expressed by Luhmann and Böhme with each other. Space emerges in action as a relational arrangement and as such structures action. First of all, the relational arrangement is based on placements of social goods and people (spacing), and secondly it is only actuated in an operation of synthesis as a linked arrangement. Places emerge in spacing as the goals and results of placement. Since, however, both people and social goods are determinable not only by way of their materiality, but also by way of their external effectuality, atmospheres emerge through the effect of social goods and people at places and influence synthesis and spacing by way of perception. Since perception is not an immediate process, but rather selective and structured

through habitus, the realization of atmospheres is dependent on structural principles such as gender, class, or ethnicity. For this reason, the following discussion will focus on the dimensions of social inequality in the constitution of space, which will also make it possible to identify junctures for further research.

5.5   SPACE AND SOCIAL INEQUALITY

In some aspects, the following discussion of the process of the constitution of space and concurrent aspects of social inequality functions as a summary of the above arguments. The reproduction of social inequality is systematically possible and does occur at every level of the constitution of space. Structural principles such as class and gender permeate all levels of constitution and are instrumental in establishing advantages and disadvantages, exclusion and inclusion. In addition to gender and class, the repetitive and institutionalized discrimination of social sub-groups due to ethnicity or religion, sexual preference, or mental or physical potentials, must be reflected upon in the process of the constitution of space. Following Reinhard Kreckel, I speak of social inequality when individuals or groups are enduringly disadvantaged or privileged.

> Social inequality in the broad sense exists wherever the possibilities of access to generally available and desirable social goods and/or to social positions endowed with unequal power and/or interaction possibilities are subject to permanent limitations, thus impairing or promoting the opportunities for a livelihood of the individuals, groups, or societies concerned. (Kreckel 1992, 17)

The concept of structured social inequality means "structures of inequality with long-term effect influencing the opportunities of entire generations for a livelihood" (Kreckel 1992, 19). In his book *Politische Soziologie der sozialen Ungleichheit* [Political sociology of social inequality], Kreckel distinguishes two general states of social inequality: asymmetrical relationships between people and unequal distribution of goods.[8] The first is a relational form of social inequality, the second a distributive form. Analytically, the distributive aspects of social inequality can be divided into a "wealth dimension" and a "knowledge dimension" (Kreckel 1992, 78ff.). By the wealth dimension, Kreckel means the opportunities to access primarily material products and conditions, by the knowledge

dimension the opportunities to access primarily symbolic culture. Since actors are not only oriented to material and symbolic non-human objects, but also to other humans, relational forms influence the emergence and reproduction of social inequality—as a relationship both between equals and between unequals. Accordingly, with respect to the relational aspects, Kreckel distinguishes between "hierarchical organization" and "selective association." In the one case, this refers to opportunities of access due to one's social position within a hierarchy, in the other case symmetrical relationships between equals that can have an excluding force toward outsiders and at the same time favor those who are integrated, such as student fraternities, political loyalties, and the like. These four dimensions of wealth, knowledge, organization, and association can be matched to institutionalized media of exchange: money, credentials, rank, and membership as "currencies of social inequality" (Kreckel 1992, 86). Three of Bourdieu's key types of capital, economic, cultural, and social capital, are included in Kreckel's inequality dimensions; Kreckel enhances the social dimension with the distinction between hierarchical and associative (on this point cf. Kreckel 1982, 633). Moreover, with his approach he succeeds in keeping the material and the symbolic component of the inequality dimensions analytically separate while conceiving them in relation to each other. Against the background of this analysis of social inequality, some of the core propositions on the constitution of space shall be investigated systematically with respect to its dimensions.

Space is a relational arrangement of social goods and living beings in places. To be able to arrange social goods relationally, it is necessary to gain access to these goods. But the opportunities of access to social goods are for their part asymmetrically distributed. Accordingly, the potentials for shaping or changing spaces are unequally distributed. The potentials for accessing social goods are primarily organized through wealth. Hence, higher classes typically have enhanced possibilities for space constitution in comparison with lower classes, men better possibilities than women.

However, access possibilities are also regulated by way of relational forms of social inequality, that is, by way of hierarchical organization and selective association. Whereas hierarchical organization reproduces class- and gender-specific discrimination in retrieving social goods, association to form a group makes it possible to gain opportunities to retrieve corresponding resources that generate heterotopic or countercultural spaces. *Rank*, for example, plays a substantial role in planning projects. Corresponding to social positions, proximity and distance between areas

is negotiated, for example between public housing and residential areas said to be attractively located. People with a high position in the social hierarchy are accorded more space, both symbolically and materially, than those in lower positions. The opportunities for a livelihood are differently distributed according to the part of the city where one grew up and the like; but also *association*, for example, networks of tradesmen or groups with a homogeneous gender structure can grant decisive advantages in the constitution of space.

Possibilities of access and exclusions are also organized by way of knowledge. The knowledge required for space constitution is diversified according to the multiplicity of possible spaces. Depending on which component is most prevalent in constitution, knowledge refers either to primarily symbolic or primarily material processes. Knowledge about how to deal with the material components of spaces is more readily accessible than knowledge of the symbolic attributions since they are subject to processes of interpretation mediated and embodied by habitus. Moreover, there has been a gendered distribution of interest between, on the one hand, the realm of the humanities and social sciences, and on the other, technical and natural scientific fields: women are more likely to enroll in the former, and men in the latter. According to the spectrum of knowledge concerned, different spaces can be created with power structures specific to them.

In a specific case, social inequality can take on a primarily relational or a primarily distributive form, but both aspects will always be involved. Membership in a group is an associative form that can be linked to possibilities of utilizing social goods. Rank, too, can be linked to knowledge and/or social goods. Conversely, access to knowledge and money can for their part also be organized by way of membership.

Corresponding to Kreckel's classification, I propose to distinguish four levels of social inequality in the analysis of the "constitution of spaces." It is necessary to examine whether:

1. the opportunities to constitute space are enduringly restricted or enhanced due to limited or increased possibilities of utilizing social goods (the dimension of wealth);
2. the opportunities to constitute space are enduringly restricted or enhanced due to limited or broader knowledge or credentials (the dimension of knowledge);

3. the opportunities to constitute space are enduringly restricted or enhanced due to limited or increased possibilities of utilizing social status (the dimension of rank);
4. the opportunities to constitute space are enhanced by membership or restricted by non-membership (the dimension of association).

Space is constituted by two processes that must be analytically distinguished: the operation of synthesis and spacing. I call the practice by which social goods or living beings are linked to yield spaces by means of processes of perception, imagination, and memory an operation of synthesis. Those links that are institutionalized and thus constantly repeated are of particular significance for the emergence and reproduction of social inequality.

An immanent aspect of spaces is the principle of distribution. Relations among goods and people and between goods and people are generated by means of spaces; whoever or whatever is not relationally involved is accordingly excluded. The constitution of space thus always also constitutes the difference between "included" and "segregated." This also applies to the constitution of the territories of nation-states as spaces. In the first place, the exclusion (and at times the inclusion) of immigrating members is organized through the production of spaces specific to the host society. Secondly, international distributions of states are, of course, characterized by relational forms of inequality. Thus, unequal distributions are manifested through institutionalized syntheses.

Furthermore, not only are inclusion and exclusion organized in the operation of synthesis; relationships between the relata are also determined. This way, not only are social goods and living beings linked with each other, but also rank and association are reproduced in the operation of synthesis.

For this reason, the person or group doing the synthesizing is also of decisive significance for the reproduction of social inequality in the case of institutionalized links. Structural principles are incorporated and integrated into habitus as patterns of perception and relevance. Objectified patterns of perception and expression thus emerge which ensure deference to the common reality. How spaces are synthesized then becomes shaped by gender- and class-specific habitus. In many spaces, inclusion and exclusion need not be organized through prohibition or physical force, but rather take force through self-exclusion built upon habitus preferences.

The processes of spacing and the operation of synthesis on which the arrangement is based are, as shown, dependent on the resources wealth, knowledge, hierarchy, and association. As shown in the last section, the emergence of atmospheres goes hand in hand with this constitution of spaces. Atmospheres are the external effectuality of social goods and people in their spatial arrangement as realized in perception. It turns out that social goods and people are not only placed or take place, but also that these processes of placement are prepared by presentation work or are a self-presentation. Inasmuch as intentional planning has been involved in the appearance of the social goods or people, their external effectuality has also been planned, and an attempt has been made to generate the atmosphere to be realized in perception.

In this respect, the emergence of atmospheres can be understood as a secondary objectification in analogy to Reinhard Kreckel's analysis of the prestige order with reference to Berger and Luckmann (cf. Kreckel 1992, 87ff.). Whereas the specific resources available to groups of people in action generally remain unmentioned and latent, people embody and emanate prestige that can be attributed to the utilization of resources and to socialization processes in dealing with these resources. The social prestige of people and groups of people is integrated into an order of prestige that secures social positions in society. Kreckel calls the order of prestige a "secondary, ideological level of reality" (Kreckel 1992, 90) that obscures the unequal possibilities of using resources, thus securing acceptance of social inequality.

The constitution of space is primarily determined by placements and operations of synthesis. Spacing is based on the use of primary resources to secure one's own placements and to influence other people's operations of synthesis and placements. As a consequence, atmospheres in the sense of secondary objectivations develop in the intermeshing of staged spacing and habitus of those performing the synthesis; feelings of belonging and strangeness are generated through these atmospheres. Although the possibilities of constituting space are dependent on primary sources of wealth, knowledge, hierarchy, and association, sensations such as wellbeing or unease, security or fear are generated through atmospheric qualities. For this reason, though spaces are constituted objectively through possibilities of accessing resources and through the formation of habitus, on the subjective level, preferences are formed in accordance with atmospheres. Just as preferences vary, so does the distribution of social esteem. Thus, atmospheres are also secondary, ideological realities obscuring the

unequal opportunities to generate spaces and to be integrated in processes of space formation, thus at the same time securing assent to inclusion and exclusion. In this context, it should be emphasized that neither the habitus of the person performing the placement and synthesis, nor the production of an atmosphere is alone enough to produce exclusion or inclusion. It is only in the interaction of both aspects of habitus and atmospheres that exclusion and inclusion are realized.

In summary, arrangements become objectified through repetitive placement and synthesis, especially when they are institutionalized. The atmosphere of such an arrangement is understood as a secondary objectivation. By way of this atmosphere as a secondary objectivation, exclusion and inclusion, hence social inequality, are produced in a manner that is subjectively experienced but which has objective effects.

In this process, the significance of spatial structures cannot go unconsidered. Spatial structures are a form of social structures; together, they constitute the social structure. With reference to Giddens, I understand structures as rules and resources that are recursively incorporated in institutions. Structures are recursively reproduced in action. Social structures and thus spatial structures make action possible, and at the same time they limit action. There is no exclusive connection between the existence of spatial structures together with their embedding in institutions and the existence of social inequality. Rather, class- and gender-specific inequality as well as the discrimination of various social sub-groups is produced and fixed by, among other factors, spatial structures. However, their mode of action cannot be reduced to the reproduction of social inequality.

This context calls our attention to one spatial structure in particular: the privatization of land. The fixation of spatial arrangements at specific places makes it possible to deploy the spaces that thus emerge as objects of exchange secured by social institutions. In capitalism, a specific group of spaces become a commodity, that is, those that in the first instance become private property through the entrenchment of institutionalized arrangements on the surface of the earth, later through the privatization of dwellings. Social inequality thus becomes manifest not only in the opportunities to constitute space or through the social position assumed in spacing; rather, spaces themselves can become a strategic resource in the social power structure as wealth.

In summary, it can be stated that the constitution of space ought to be understood both in distributions among societies and within any one society. In hierarchically organized contexts, these are mostly unequal

distributions or distributions favoring various groups of persons. These arrangements have effects of inclusion and exclusion. For this reason, spaces are often "objects" of social conflicts. Possibilities of utilizing money, credentials, rank, or association are thus decisive in asserting arrangements; and the other way round, the possibility of utilizing spaces can become a resource.

5.6   Methodological Consequences

"Unless it takes into account these multiple perspectives, any analysis of social positions and social functions must remain one-sided," writes Norbert Elias (1978b, 126 [1993, 137]). This applies also and especially to the constitution of space. Just as El Lissitzky's *Cabinet of Abstraction* forces the viewer to move in order to grasp the diversity of the space—including the diversity of the overlapping spaces—for the scientist the knowledge of the multiplicity of perspectives is the presupposition for the study of the constitution of spaces.

This multiplicity of perspectives must be taken into consideration on several levels. All constitution of space is determined by social goods and people on the one hand and by linking them on the other. Accordingly, what has to be examined is both the individual elements and their relationships. Most scientific studies determine the individual objects in the first place, and then infer the relationships.

> Every conscious methodological structuration of a reality to be studied distinguishes between the objects of the study area focused on and the relationships among them in a comprehensive sense. As I have already shown … procedures used up to now have concentrated mostly on the *material elements* of the relative element, only deriving relationships from comparisons. Thought that in this way looks to position begins by segmenting the things, then defines the purportedly interesting features, and only in conclusion assigns possible connections—which always separates what otherwise belongs together. (Sturm 2000, 145; italics in the original)

Since in this manner of study relationships always seem to be subordinate and are only recognized when they result from the elements studied, Gabriele Sturm proposes to take both perspectives in alternation. She derives these two perspectives, for the one part looking at the relationships between the elements on the basis of knowledge of the elements and for

the other part determination of the elements on the basis of knowledge of the relationships, from the methodological construct of the "empirical relative."

The duality of action and structure gives cause to extend the perspective switch between element and relationship with a structural analytical perspective and an interactive and biographical perspective. The production of spaces in action can be researched in open, unstandardized quantitative and qualitative procedures. For example, in action, people can link very different elements to yield a space. This operation of linking must first of all be ideographically established. The consequences of the links, for example increased vehicle traffic, can only be detected by way of structural analysis. Thus, the second path to space, which is a complement to analysis of the individual case, takes structural analysis as its method.

Hence, every analysis must also distinguish between the motifs of the constitution of space and their consequences. In everyday action, spaces are constituted on the basis of practical consciousness. People are, of course, capable of understanding and explaining how they constitute space, while unconscious motifs of action are inaccessible to reflexive consciousness. Moreover, the unintended consequences of action are unforeseeable and must hence be analyzed separately. For the scientific analysis of spaces, it follows that though the spaces that emerge and the motifs of their constitution are related to each other, they must be analyzed independently of each other.

Different perspectives also emerge from fixed dimensions and groups under study. If we analyze how a certain group of people constitute space, we have important information about this group. However, this does not imply that we know how other groups localized at the same place might constitute space. If we know how various groups give rise to space at one place, we are still uncertain about whether these groups do not perhaps give rise to different spaces at other places. If we study a city district, we know little about the constitution of urban space in general, if we study a city we know little about the constitution of space in a building, and so on; but at the same time, we do learn a considerable amount about processes in the selected dimension or about the group chosen for the study. Since most social goods and all people are at the same time an element with which a space is formed and can themselves be space, the *observer's perspective is immanent to every constitution of space.*

The insight remains that one's own perspective is always limited and that space is constituted in the scientific research of space itself. This pro-

cess of construction can, however, be subjected to a reflexive analysis, and it can be analyzed in scientific discourse with respect to the institutionalized linkages on which they are based.

As a matter of course, when we think for example of the space bedroom, we think it consists of walls, floor, ceiling, bed, and wardrobe. This kind of arrangement is institutionalized; as a rule it is always perceived in the same way and reproduced in furnishing a dwelling. However, the tree in front of the window, for example, which is the first thing one sees every morning, could just as well be assigned to the space of the bedroom. But this does not happen because institutionalized arrangements give cause to the permanent reproduction of the same space constructions (even in scientific analyses). Science does not map the reality of the space, but contributes to the construction of space; and this process of construction can itself be made an object of research.

In order to determine her own cognitive interest in the study of space, the range of the aspects of the constitution of space included in the empirical analysis, and the interplay of the various aspects of the constitution of space that have been theoretically elaborated, Gabriele Sturm (2000) has developed a methodological model of space. Her model is a quadrant model for space with a temporal spiral (Fig. 5.1).

The four quadrants represent independent aspects of the constitution of space, but all together are necessary to give rise to space. Sturm distinguishes (I) the material form of space, (II) the structuring regulation in and of space, (III) the historical constituting of space, and (IV) the cultural expression in and of space. The temporal spiral is intended to demonstrate that space is something that has come to be in history; each cycle—thus each spatial problem—always ends or begins at a new point in history. The enumeration from I to IV does not mean that every study should begin in the first quadrant. The smaller figures illustrate relational patterns. The material form and regulation in Sturm's classification are taken to be familiar, and are contrasted with the dynamics of the historical development and cultural expression. Expression and form on the left side are regarded as receptive in contrast to the constitutive activity of regulation and of the historical. The clockwise temporal spiral symbolizes the changing, dissolving processes; anti-clockwise, it expresses preserving, objectifying processes. Individual quadrants can also enter into relationships with each other.

Sturm's model is strongly influenced by Dieter Läpple's four components of matrix space (on this point cf. Breckner and Sturm 1997), but her
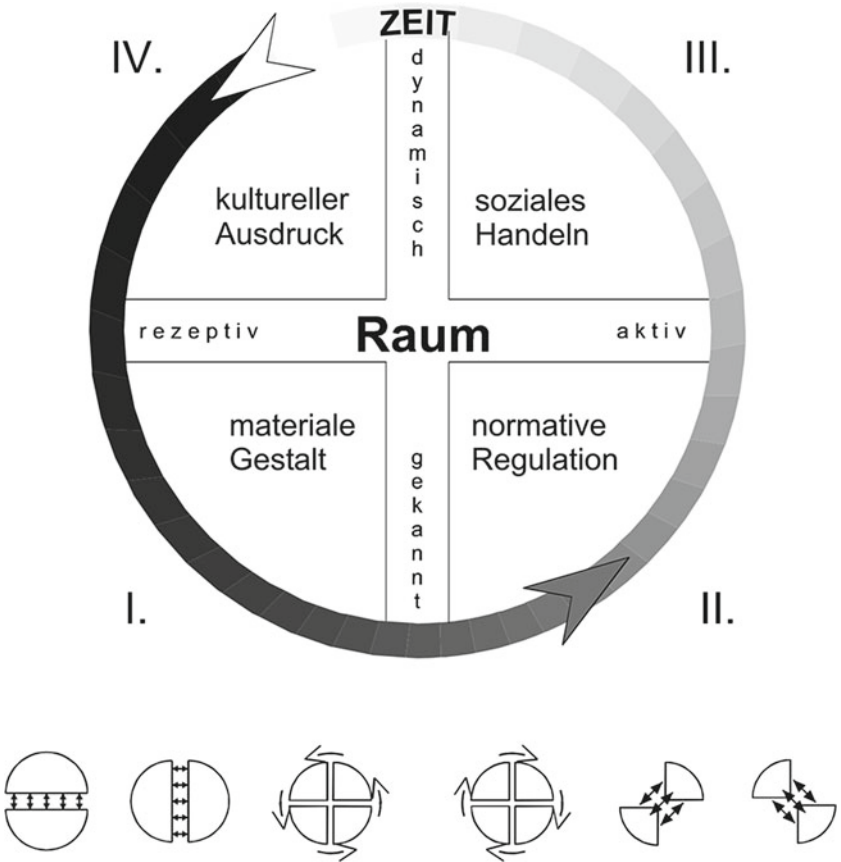
Fig. 5.1 Preliminary formation of a methodological quadrant model for space with a temporal spiral as a developmental dimension as well as an orientation bar for the operationalizable interactions among quadrants. *Source*: Sturm 2000, 199. Translation of wording: *top*, in the outer circle: ZEIT → TIME; *middle*: RAUM → SPACE; *upper vertical bar*: dynamisch → dynamic; *lower vertical bar*: gekannt: → known; *left horizontal bar*: rezeptiv → receptive; *right horizontal bar*: aktiv → active; *quadrant I*: materiale Gestalt → material form; *quadrant II*: strukturierende Regulation → structuring regulation; *quadrant III*: historisches Konstituieren → historical constitution; *quadrant IV*: kultureller Ausdruck → cultural expression

designations refer back to Aristotle's four causes. If we attempt to apply the theoretical developments presented to this model of space, the following distribution seems to be possible: social goods and people with their pre-organized arrangements and their material and symbolic spaces as well as their atmospheric effects are located in the first quadrant. Synthesis is placed in the second quadrant. Included are images, perceptions and memory processes, directed by notions of space and habitus. The third quadrant comprises spacing and thus institutionalized action, but as deviant, countercultural action, both influenced by habitus. Finally, structures and structural principles are located in the fourth quadrant.

In the course of time, the given social goods and people, for example, make up the possible elements of which spaces can be synthesized in the next step. They do not constrain a certain synthesis, but they do suggest certain syntheses due to the historical arrangements that already have come to be in the course of time. The synthesis that is formed results for its part in placements in everyday action. The structures are recursively reproduced in placements. The structures are manifested as institutionalized arrangements; thus, our examination reaches the first quadrant again, but due to the passage of time it is on a different level of examination.

Sturm's partition between receptive and active brings about some difficulties. My extension of the material world to include people that are arranged and involved in space constitution and to include the potentiality ascribed to atmospheres and structures blocks a clear attribution of the active and receptive spectrum. The same applies to the partition between dynamic and known; the result is that from my vantage, an active and dynamic, a receptive and a known aspect will be attributed to each quadrant.

Nonetheless, the acting, synthesizing, and placing people are arranged on the right side in the second and third quadrant; structures and matter are opposite them, interacting with them and endowed with atmospheric potentiality. On the one hand there are interactions between synthesis/ spacing and structures/arrangements; on the other hand, time passes. The result is that in the course of action, new spaces are created in the opposition between conscious and unconscious, emotional and rational motives.

Based on Sturm, four levels of procedure for scientific study can be derived from this classification: (i) the study of social goods and people in their arrangements, (ii) the analysis of operations of synthesis, (iii) the treatment of processes of spacing, and (iv) the exploration of spatial structures. The exploration of the processes that are ascribed to a quadrant can

generate insights that are just as essential for the research of space as can the study of the interaction between various quadrants or the processual observation of temporal developments (as described above).

These structuring partitions are also helpful during reflection on scientific analysis. What goods and people did the researcher examine, how were they synthesized, what actions were inferred in interaction with what structures. By way of these questions, it can be determined what spaces are constituted in research itself.

The concept of space presented here is one that assumes movement and change to be immanent factors. Nonetheless, movement has to be artificially halted in empirical analysis in order to be able to determine a configuration. The presentation of results in two-dimensional figures, which is usual in sociology, reinforces thought in rigid forms. In order to be able to express the process character of a category, which is traditionally the epitome of the rigid, moving forms of presentation such as videos or computer simulation offer great potential in enabling visualizations that are better aligned with theoretical reflections.

5.7   Summary View of the Constitution of Space

Space is a relational arrangement of social goods and people (living beings) at places. The concept of "social goods" primarily means material goods because these are the only ones that can be placed. By virtue of their material properties, social goods are linkable to yield spaces, and on the basis of these properties, they acquire symbolic effect. People are involved in the constitution of space in two respects. They can themselves be elements linked to form spaces, while the acts of linkage are themselves bound to human activity. Like people, other living beings can also be involved in the constitution of spaces.

In order to be able to place something, there has to be a place at which it can be placed. A *place* means a position, a site that can be specifically identified, geographically marked. Places are identified by the placement of social goods or people, but do not disappear with the goods or people, but rather are available to be otherwise occupied. Place is thus the goal and result of placement, but unlike goods and people it is not an element that itself can be placed. However, places can enter into syntheses as elements of social goods. The constitution of space systematically generates places, just as places make the emergence of space possible.

The concept of *relational arrangement* designates several things. Relationality is emphasized in order to accentuate the fact that space emerges by virtue of elements (or figurations composed of elements) and by virtue of their relational connection. Space is never only a substance and never only the relationship; rather, space emerges from the arrangement, that is, from placement in relation to other placements. The term arrangement is used to point out the structural dimension by reference to the aspect of ordered arrangement and to point out the action dimension of the constitution of space with reference to the act of arranging. Arranging is a process; in this process, two different activities can be analytically distinguished.

Space is constituted by two processes that must be analytically separated: the operation of synthesis and spacing. The operation of synthesis makes it possible to combine ensembles of goods and people as one element. One aspect of every constitution of space is the *synthesis* of social goods as well as people to yield spaces. Spaces are not naturally existent, but have to be actively (re-)produced through an operation of synthesis. Social goods and living beings are combined to yield spaces through *processes of imagination*, *perception, and memory.* This operation of linking is socially pre-structured by virtue of ideas of space, institutionalized space constructions, and class-, gender-, and culture-specific habitus. It is dependent on the place of the synthesis and the external effectuality of social goods and other people. In synthesis, *ensembles of goods or people* can be perceived, remembered, or imagined as one element and accordingly integrated as one element into the linking to yield spaces.

In the practical performance of action, the operation of synthesis is linked to processes of placement and the other way round. These *processes of placement*, that is, the placing of social goods or living beings, or their self-placement, as well as building, deploying, or surveying, furthermore the positioning of markings that are primarily symbolic to identify ensembles of goods and people as such and the placing of information are referred to as *spacing*. Spacing processes are negotiation processes.

Synthesis and spacing are in a relationship of dependency on the conditions of an action situation. Action situations are composed of a material and a symbolic component. The only things that can be linked and placed are those available in an activity situation. Thus, the operation of synthesis and spacing are also dependent on natural givens.

Spaces that are not or have not yet been harmonized with practical spacing can be constituted in academic work, designing, planning, in art,

and so on. This constitution of space is primarily influenced by imagination and memory. As in dealing with virtual spaces, two spaces emerge at the same time in this case, too; however, there is one point of difference inasmuch as in the case of virtual spaces constitution is linked with perceptions of both spaces involved so that for this precise reason, the relationship between simulation and reality is blurred.

The process of constitution of space generates and reproduces structure. The mutual co-ordination of action and structure, which can only be analytically separated, is referred to as the *duality of space*. Structures are rules and resources that are recursively incorporated in institutions and are valid independently of place and point in time. The overall set of structures is referred to as social structure. Arrangements of social goods and people to yield spaces are referred to as *spatial structures* when they are stipulated in rules or secured by resources and incorporated in institutions. Spatial structures are a form of *social structures*. Accordingly, the spatial is not delimited from the social, but rather understood as an aspect of the social. The reproduction of spatial structures takes place recursively. That is, spatial structures are continually created anew from the rules and resources that they constitute. This means that we can properly speak of spatial structure when the constitution of spaces, that is, either synthesis or spacing, can be stated in rules and/or is secured in resources that are incorporated in institutions independently of place and point in time. Spatial structures make action possible and at the same time limit possibilities of action.

In everyday life, spaces are routinely constituted in the course of action, that is, in the flow of actions. As a rule, the constitution of spaces takes place in practical consciousness. Nonetheless, the constitution of individual spaces can be extracted from the flow of action and represented verbally. However, this discursive consciousness of the constitution of spaces is limited by unconscious motifs and by consequences of action that are unforeseeable for the actor. The arrangements on which synthesis and spacing are based are to a great extent pre-organized. Linkages and placements are institutionalized in pedestrian zones, at train stations, and the like. We speak of institutionalized spaces when the arrangements remain in effect beyond individual action and entail conventional operations of synthesis and spacings. These institutionalized arrangements are reproduced in *routines*, that is, in regular social practices.

As a result of conscious and intentional confrontation with the conditions of life, due to physical desire, other people's manner of acting, or

conditions of strangeness, deviations from routines arise, or situations can emerge that cannot be coped with by applying available routine actions. Changes emerge when routines are not merely varied, but rather old habits are replaced by new routines. If this happens regularly, collectively, and with reference to relevant rules and resources, institutionalized spaces and spatial structures can be changed. The creation of one's own institutionalized arrangements is a tendency countervailing dominant culture, and is called *countercultural*. It opens individual options for action, can—as does opposition in general—lead to changes to social structures, but can also confirm them through violation. In contrast to countercultural spaces, spaces are called *heterotopic* when illusory or compensatory functions are systematically attributed to these spaces.

In contrast to social (and thus also spatial) structures that are reproduced in routines and internalized as memory traces, the structural principles "class and gender" are inscribed in the body and habitualized. Whereas there are various structures that take effect in different ways in courses of action and which can be in conflict with each other, structural principles permeate all structures and all actions. They are reproduced as habitus in a class- and gender-specific system of perceptions and forms of thought and action; due to the bodily inscription, they are only susceptible to change by way of organized re-learning. The perception of spatial arrangements, the criteria of relevance of synthesis, spacings, and spatial structures are accordingly pervaded, as are all structures, by the *principles of class society and the hierarchically organized binary gender order.* Class habitus is further differentiated by gender, and gender habitus by class, and both are shaped by age, ethnic or religious orientation, mental and physical potential, sexual preferences. In other words, insofar as we can speak of a female and a male and a class-specific habitus, they are not homogeneous, but assume various forms.

The constitution of spaces in action is not as a rule done in isolation, but takes place in processes of negotiation with other actors. Negotiation of power structures is an immanent aspect of this process.

Principles of distribution, inclusions, and segregations are organized by way of spaces, that is, by way of relational arrangements of social goods and living beings, in particular by way of institutionalized arrangements. The constitution of space generates distributions among societies and within any one society. In a society with a manifold hierarchic organization, these are mostly unequal distributions or distributions favoring various groups of persons. The opportunities to constitute space can be

enduringly enhanced or confined due to limited or broader access to social goods, due to limited or broader knowledge, due to limited or broader access to social positions, and/or due to membership or non-membership. Access to money, credentials, rank, or association are accordingly decisive for the question as to whether spatial arrangements can be put into effect, just as conversely the control of spaces in the sense of arrangements declared to be private property or in the sense of the enforcement of spacings is itself a resource.

Spaces are relational arrangements of social goods and living beings. All spaces are *social spaces* inasmuch as no spaces exist that are not constituted by people who synthesize. All spaces have a *symbolic* and a *material component*. From placement it ensues that the social goods that are arranged are primarily material goods. Space attains *material quality* from the fact that social goods that are linked to yield spaces are primarily material goods. The formation of relations is a primarily symbolic process. Accordingly, space as a whole has no materiality in the sense of a physical substrate; rather, only the individual social goods and living beings display materiality.

However, when the formation of relations is institutionalized, it is experienced as objective. Space becomes an objectivation. It follows from institutionalization that arrangements remain in effect beyond individual action and lead to renewed conventional operations of synthesis and spacings. This means that spaces are experienced as historically existing structures that are routinely reproduced in the course of action.

On the level of perception, it is often the case that the arrangement of goods and beings is not directly experienceable, but rather the atmospheric quality of a space. An intrinsic potentiality emerges in the interaction between people who are at once constructing and perceiving and the symbolic–material appearance of what is perceived; this shall be called *atmosphere*. Since, however, what is perceived is as a rule not simply lying around, but rather staged for perception—this applies both to the shaping of the individual goods and people and to their relational placement—atmospheres are also socially produced. Atmospheres are understood as secondary objectivations. Well-being and rejection, membership and strangeness are subjectively related to atmospheres. In fact, atmosphere is a consequence of staged placement and habitualized synthesis, and by virtue of its effects it obscures real access to wealth, knowledge, hierarchy, and association as aspects constitutive of space.

The statement that space is a relational arrangement of social goods at places also implicates that these arrangements develop atmospheres that then again influence synthesis in the course of action. Atmospheres are based on localizations of goods and people, but are not themselves localized.

Since most social goods and all people are at the same time elements with which a space is formed and can (from another perspective) themselves be space, the perspective of the synthesizing person is immanent to every constitution of space. In scientific analysis or through the reflexivity of each individual, the synthesis of social goods and people to yield spaces and the concomitant perspective of the actor can be addressed as a problem. In this reflexive analysis, however, the process of constitution is itself analyzed from a specific perspective so that in reflection itself new spaces emerge. This process of constitution can for its part also be made an object of critical analysis. Accordingly, science does not map the reality of space, but constructs space anew; and this process of construction can itself be made an object of research.

Giddens's concept of action has to be differentiated to accommodate the operation of synthesis and spacing—this can be appreciated from looking at spaces, but can also be transferred to other social processes. Whereas the operation of synthesis comprises processes of perception, imagination, and memory through which goods and people are combined to yield spaces, spacing designates the placing of social goods and people in relation to other goods and people or the positioning of primarily symbolic markings to identify ensembles of goods and people as such. Spacing and the operation of synthesis on the part of people frequently occur simultaneously or in direct succession.

The placing of social goods, oneself, or other people together with the operation of synthesis takes place in pre-arranged processes, that is, action is performed in structured contexts; but this need not mean that by principle it always confirms space constructions. Placements and syntheses can also take place in resistance. The constitution of spaces is never rigid, but rather always processual.

Notes

1. The English neologism "spacing" was used in the original German version of this book because according to the dictionary (Wahrig 1997, 1009) the German word that readily comes to mind, the verb "räumen" (derived from "Raum," space), means either "to empty," "to clear," "to vacate," which is

contrary to what is meant here, or "to bring something to another place," which only applies to a substance and does not grasp the complex process of formation.

2. In many societies and in many social contexts in Germany, ethnicity can also be counted as one of the structural principles. However, ethnicity conceptually presupposes a process of group formation corresponding to the ethnic group (on this point, cf., e.g., Rex 1990), which, however, in contrast to class and gender, is not observable in every situation. So as not to provoke a scientific categorization for something that in social practice proves to be more differentiated, ethnicity shall be conceptualized not as a structural principle, but as an influencing factor.

3. Ilse Lenz (1995) extends the two-fold to a "three-fold socialization" by pointing out the dimension "ethnic group" as a socialization in the modern nation state.

4. It is often difficult to work with Bourdieu's concepts because he has no interest in a precise formulation of the concepts and wishes instead to develop "fuzzy concepts" (Bourdieu and Wacquant 1992 [1996]). For practical purposes this often means that he will develop concepts, but then does not always use them consistently, and as a rule also does not justify deviations. Here I shall discuss the most prevalent definitions of these concepts.

5. [Translator's note: Translated from a German translation of Bourdieu's French. No French or English version of the article quoted here could be found. The chapter "Site Effects" in *The Weight of the World* [Bourdieu 1999] is closely related to the article quoted, but does not include this or a similar passage.]

6. General reflections on perspective can be derived from this, in particular on the dependency of perspectives not only on habitus, but also on localization. In feminist philosophy of science as developed in particular by Sandra Harding (1991, 1994), the perspectival character of scientific work is discussed as something bound to a standpoint, in Harding's discussion class, gender, and ethnicity (cf. e.g. Haraway 1995). Harding thus draws attention to an important phenomenon, the constitution of the object of science depending on habitus. But in so doing she also takes on the problem that she has to allege that there is, e.g., a uniform experience of a gender. The distinction between place and person makes it possible to link the perspective not only to the habitus of a person, but also to the place where the person takes place. This brings clarity to the idea that from one place, the domestic kitchen, a different perspective is adopted than from a desk in an office, although in both cases it is the gender perspective of a person with a feminine socialization.

7. [Translator's note: In the published English translation of Luhmann's work, the sentence referred to here is not translated literally so that the figure to which our author alludes is lost. The published translation of the passage reads: "Atmosphere *makes visible* both the unity of the difference that constitutes space and *the invisibility of space* as a medium for the creation of forms. But it is not the same as space, which, as a medium, can never become visible" (Luhmann 2000, 112; italics added for better recognition of the pasage in question). A more literal translation of Luhmann's sentence might read: "Atmosphere is thus the manifestation [literally: the becoming visible] of the unity of the difference that constitutes space and is hence also the visibility of the invisibility of space as a medium for the creation of forms."]
8. Cf. Giddens's (1984) distinction between allocative and authoritative resources.

CHAPTER 6

Exemplary Analyses

It is in empirical work that the utility of the relational concept of space developed here will have to prove itself. In one way as a sort of prospect of what can be done with it, but also as a first test case, this new way of looking at things shall now be subjected to an initial review. To this end, Paul Willis's study of youth counterculture in a working-class school (1979) seems appropriate. This study is the central example that Anthony Giddens (1984) uses to demonstrate his theory of structuration. It thus becomes possible to demonstrate what additional insights can be gained with a relational concept of space in direct comparison with an absolutist perspective.

As a second example, the interpretation of empirical findings, specifically that girls display a smaller radius of action in cities than do boys and are thus limited in their appropriation of space, is challenged on the basis of the approach developed here. In this case, too, the logic of the argumentation, which implies that the radius of action correlates with differing competencies with respect to space, is linked to thought in terms of absolute space. Working with a relational concept of space, fundamental shifts in the research approach and in the results shall become manifest.

In the third analysis, I turn my attention to the constitution of space by way of urban milieus. Through a critical analysis of Gerhard Schulze's proposal to differentiate between the constitution of space as "surroundings," "zones neutral to the milieu," and "sceneries," problem areas for future research projects in urban sociology are outlined.

6.1   COUNTERCULTURAL SCHOOL SPACES

From 1972 to 1975, Paul Willis (1979) performed a study in Great Britain about young working-class males without advanced education and their passage to gainful employment. Using case studies, interviews, group discussions, and participatory observation with groups of boys during the last two years of school and the first months of work, he sought to research these boys' opportunities for education and advancement. Willis writes "an ethnography of the male white working class counter-school culture" (Willis 1979, 2). This makes it possible for him to show how working-class boys' culture—more specifically, their culture of resistance—effectively prepares them for unqualified factory work.

The central study group, who called themselves the "lads," is composed of twelve working-class male high school students who act together as a clique. Willis chose this group because of their opposition culture in a boys' school in which the pupils stem mainly from the working class.

Paul Willis is not interested in studying spatial structures or the constitution of space. Information about spaces is only provided when Willis considers it necessary in order to understand actions. Rather, he shows how by rebelling against the authority system of the school, the boys bring about a situation in which they leave the school without a certificate so that, like their parents, they have to accept unqualified, poorly paid jobs: thus, resistance can lead to compliance. This rebellion against the school, Willis continues, is neither conditioned behavior nor helpless defiance; rather, it targets the weaknesses of the system so adeptly that the youths can be assumed to have precise knowledge of how the school functions.

These findings are of great interest to Anthony Giddens (1984, 288ff.), who uses Willis's study to illustrate the basic features of his theory of structuration. First, he emphasizes that Willis refers to the boys as agents who have a practical knowledge of their school environment, and to a certain extent also a discursive knowledge of it. He is thus able to explain reflexive control of action in a culture that is deemed to be only marginally discursive. The lads' discursive abilities become manifest more in humor, teasing, and aggressive sarcasm. It is especially in their culture of joking that a complex understanding of the school as institution becomes apparent. Moreover, the lads' rebellion is a good case to show that reflexive control is not identical with consequences of action. The culture of resistance logically results in a life as an unskilled laborer. The "penetration" of the institution school and the defiance oriented to it bring about a consolidation

of the conditions of their life. The duality of the structure also becomes obvious inasmuch as the boys' actions reproduce essential aspects of work organization in industrial capitalism. To put it the other way around: the structural conditions of society take effect in the individual's well-founded action. These structures are maintained in action and reproduced through it, though not as a simple mirroring, but rather in a complex process of action.

Up to this point, the application of the theoretical deliberations is convincing. But why does Giddens abstain from elaborating the spatial reference of action although it is, as he himself writes, a core element of the theory of structuration? He wants to use Willis's study to explain the basics of his approach, but does not comment on the spatial and temporal aspects of the complex social world of the lads. This is all the more striking inasmuch as Giddens projects his spatial analyses on the school, without, however, empirical references; we have discussed this in detail in the second chapter of this study.

School, says Giddens in his explanation of his conception of space, is a "power container" (Giddens 1984, 136). Like all disciplining institutions, school is closed to the outside. The walls of the school, he continues, separate internal interactions from other everyday interactions. This isolation makes a spatial and temporal control possible, expressed, for example, in division into various classes. The disciplining architecture, the argument continues, is repeated in the arrangement of desks in the classroom and in the positioning of the teacher vis-à-vis the pupils. School is internally regionalized, which also makes the constitution of back regions possible, for example the staff room. For Giddens, space is given as a matter of course and becomes sociologically relevant when it is shaped as a concrete place with social regionalization. At least in the case of the school, Giddens assumes a special form: that of a container closed to the outside.

But in presenting the example of the lads to illustrate his theory, Giddens no longer draws on his quite detailed analyses of school space. However, he does mention (Giddens 1984, 299) that the teachers' direct control of the pupils' spatial activities clashes with the lads' street culture, but does not relate this to his own discussion of regionalization and container space.

What Giddens fails to recognize is that though the constitution of the school space as delimited from the street by the school gate and building is indeed the institutionalized arrangement materialized in a municipal plan and in property rights corresponding to the thinking of at least a part

of the teaching staff, this spatial construction is not necessarily accepted by all actors. Though Giddens does indeed recognize the constitution of "other" spaces through the lads' street culture, he cannot interpret it because for him, space is a common place. A multiplicity of different—competing, hierarchical—spaces on the same piece of land is inconceivable in his conception of space. His reasoning cannot be applied to Willis's study inasmuch as Willis chooses a different perspective, namely the lads, who undermine the institutionalized arrangement. It is not due to the sparseness of the information that Willis provides about spaces that Giddens fails to discuss space in the context of this study in any greater detail, but rather the assumption of a given space that need only be regionalized makes it possible to see the lads only "inside" or "outside" space, and to fail to see their space-constituting competencies and struggles.

If, by contrast, we assume that space is a relational arrangement of social goods and people in places, then space cannot be assumed to be given by virtue of the building structure of the schoolhouse and schoolyard. Rather, when we look at a study of a group of youths, the first question to arise is how this group constitutes school as space. To sort the information that Paul Willis provides to answer this question, it is helpful first to ask which pre-organized arrangements of social goods and people are presented.

We learn that the school building was built between the World Wars and that it is located in the middle of a crowded housing estate dating from the same period "composed of standard, often terraced, reasonably well maintained houses interlinked with a maze of roads, crescents and alleys and served by numerous large pubs and clusters of shops and small supermarkets" (Willis 1979, 4). Due to the central location of the school, all other places in the town can be reached from it quickly. There is a girls' school adjacent to the boys' school. There is a youth wing integrated into the school building so that any attempt to establish the school as a closed space is systematically rendered impossible.

> An added advantage of the particular school chosen was that it had a new and well equipped youth wing which was well attended by the pupils and gave the opportunity of a very open and informal initial entry into the school. (Willis 1979, 4)

A look at the social assets—in this case the arrangement of the buildings—puts a limit on the assumption that the school is a complex closed

to the outside. The youth wing makes it possible for young people to enter and leave the school even at times when the school is not in session. Moreover, young people who do not go to this school can also enter the building.

In the school building, the layout of the rooms matches the usual arrangements: separate classrooms, supply rooms, staff room, corridors, schoolyard, and so on. Three groups of people who are constitutive of space are presented: the lads, the teachers, and the pupils; these last are portrayed as conformist, but Willis provides hardly any further information about them. The lads and the teachers are presented in relation to each other. The most conspicuous difference between the teachers and the lads is that the former are depicted as remaining in places, more or less static, whereas the lads seem to change their location constantly. The teachers stand at the blackboard, the pupils crawl behind the curtain or along the backs of chairs, try in passing to kick somebody's chair apart, try out every way of sitting or lying on a chair, or sit on the central heating because their trousers are purportedly wet from the rain (Willis 1979, 13).

The only thing that remains constant is that as a group they sit or stand as close together as possible, thus constituting their own space as a group that they can restore at any new location. One typical example of this way of constituting a space of their own is found as they place themselves in the school corridor, described by Willis as follows:

> There is a way of standing collectively down the sides of the corridor to form an Indian gauntlet run—though this can never be proved: 'We're just waiting for Spansky, sir'. (Willis 1979, 13)

In his study, Paul Willis pays little attention to atmospheres. The only reference to atmosphere is when either the pubs in the town, dances, or the youth wing is mentioned. Whereas according to the descriptions bars and pubs have a different or attractive atmosphere, the youth wing does not. Thus, atmospheres are referred to when heterotopias are addressed, that is, those spaces in which young people break out of their everyday life and want to try out being adults. Here, atmosphere is perceived as being special and is therefore emphasized. This also makes the explanatory force of atmospheres clear inasmuch as feelings are captured in describing them. In particular, phenomena of feeling affiliated or excluded are articulated via the description of atmospheres. Moreover, reference to atmospheres makes it possible to reconstruct what is perceived as normality and

what is highlighted as a special atmosphere (bars and pubs). It seems that for the lads (or Paul Willis) the atmosphere of the school is not a dimension on which they reflect; however, the impression that this is simply self-evident and taken as given can be challenged if one looks not only at the atmospheric qualities of evening activities, but also at those of the school itself (on the methodological possibilities cf. Lorenz 1998).

The three dimensions in which the space "school" can be examined in the present study are: school in relation to the streets, pubs, houses, and so on of the town, the arrangement of the rooms with respect to each other, and the space that is constituted by each individual boy in the group. As Giddens involuntarily demonstrates, school is normally regarded as a space of its own. It belongs to the space of the town or quarter, but its space is assumed to end at the gate. First objections to the universality of this construction arise by looking at the youth wing, which moderates the inside–outside structure by virtue of being integrated in the school center. An even more decisive point is that nothing about what the lads say and do indicates that they accept these arrangements. Smoking is the best illustration of this point.

> The majority of them smoke and, perhaps more importantly, are *seen* to smoke. The essence of schoolboy smoking is school gate smoking. A great deal of time is typically spent by the 'the lads' planning their next smoke and 'hopping off' lessons 'for a quick drag'. (Willis 1979, 18)

When the lads go to school, they are frequently moving between two places. In the morning, they smoke on the street before school begins so that the teacher unlocking the door cannot help but see them. Between periods and even during the lessons, they move back and forth between the school building and the street. Even on school excursions, for example a visit to a museum, the youths take every opportunity to have a "smoke" on the street.

For the lads, the street space in front of the school belongs to the school space both in everyday actions and in their synthesis after their schooldays. It is generated in action by the constant movement between the street and the school building. For the lads, this part of the street is immediately linked with the school building. Together they constitute the school space. This can also be demonstrated by the fact that smoking on the street in front of the school is part of the culture of remembrance which the youths savor in their working life. In memory, too, the street

and the school building are synthesized to one space. It is also typical of this that the lads provoke the teachers during classes by staring at the street. Here, too, the street is appended to the school space by way of the window. The lads constitute the school space as a relational arrangement of school building and street.

The school building was erected at a certain place, specifically in the center of a small town referred to as "Hammertown" in the Midlands of England. It can be geographically specified by a street name and number. A second place emerges from the link between school building and street. Initially as a goal, later as the result of placement, the section of the road in front of the school building becomes a place for the lads. It can be remembered later during evening visits to the pub.

The building and the street, together with the places emerging from these social goods, constitute two essential "building blocks" of the lads' school space. However, the teachers are also integrated into the relational arrangement. In repetitive actions, the lads reiterate their construction. Every morning, they repeatedly reclaim the street as a part of the school space. However, this construction is ineffective without confirmation from the teachers.

The lads' space is volatile; it is bound to their physical presence. The institutionalized school space is constituted by an interior with the school-yard enclosed by walls or fences. These institutionalized arrangements are materially defined (walls, fences, land-use plans, property rights) and they are based on symbolical links, for example the entrance gate with the beginning or end of a space. This space construction of the school space consists of a relational arrangement of gate, school building, and school-yard, and does not integrate the street, but rather explicitly identifies the street by means of a demarcation as another space. As the study shows, the majority of teachers accept this space construction as constituting the school space.

Now the lads, for reasons that have yet to be analyzed, make an effort to oppose this space construction with their own. In this sense they act counterculturally. However, they do not have the resources, whether in law, in urban planning, or in construction, to define their space materially and institutionally. Hence they can only mark their countercultural space construction materially and symbolically by using their own bodies or by means of temporary symbolic or material occupations such as cigarette butts on the ground or graffiti on the walls. The only things that can be placed and linked with each other are those available through activity in

a given situation. While teachers possess social goods, knowledge, and social positions and can thus maintain institutionalized space construction, the lads possess opportunities to pit their group membership against this. They thus need their space construction to be perceived and to be recognized as competing and differing. It is only in the teachers' (punitive) recognition of the lads' countercultural space that it begins to consolidate materially and symbolically. Hence, the space that the lads establish as the school space cannot be explained without the participants: the lads with their physical presence and the teachers as witnesses. The teachers and the lads are accordingly also a "building block" of the relational arrangement.

However, the balance of power between the lads and the teachers should not by any means be understood as "top–down relationship." Quite a few teachers react to the lads' provocations with helpless disregard. In teacher interviews, they reflect that they have little possibility to impose sanctions and that they are unable to keep up, running after them and continually administering penalties (Willis 1979, 63–4). One teacher even compares the lads with the tide.

> You're faced with a tide, you can't stop it, we try to stem it … at some places they let the tide go over them. (Willis 1979, 78)

It is only by means of a high degree of mobility, that is, by means of a continual alternation between the two places, that the lads are able to make the school building and the street merge into one space. This being in motion has some similarities with the teacher's perception of the tide. Tides cross boundaries, break down barriers and take over land. The tides are frightening, but also appealing. The teachers described by Paul Willis synthesize the institutionalized arrangements of the space of the school according to the territory of the building and yard. By contrast, the lads synthesize not only the gate, school building, and school yard into one space, but also integrate the street into their spatial construction. They, too, overstep the set boundaries and integrate "new land" by physically moving around. The potential for power immanent to movement and to the shifting of the boundaries is tersely expressed by the characterization as a "tide." The necessity of moving keeps the spatial construction in a state of flux. The lads' space is not rigid, but rather bound to the mobile activities. But the teachers' constitution of space cannot be analyzed as a rigid, fixed space, either, because it, too, is—at least sporadically—challenged by the lads' countercultural ventures.

The lads' spacing is countercultural and demonstratively in motion. This pattern can also be recognized in the constitution of space of smaller dimensions. Even in the relational arrangement of the rooms and corridors with respect to each other, the lads remain permanently in motion, thus undermining institutionalized arrangements.

> Some of 'the lads' develop the ability of moving about the school at their own will to a remarkable degree. They construct virtually their own day from what is offered by the school.… being free out of class, being in class and doing no work, being in the wrong class, roaming the corridors.… The core skill which articulates these possibilities is being able to get out of any given class: the preservation of personal mobility. (Willis 1979, 27)

Thus, they not only constantly roam back and forth between the school building and the street, they also switch rooms and steadily bring about new spatial arrangements within one room. Their action is repetitive and is physically expressed, for example, in conspicuously colorful clothing, in submitting to the caning meted out as punishment, or in inhaling cigarette smoke. A class- and gender-specific habitus is manifested and developed in this kind of physical appearance and comportment, in their tastes and interests, in their commentaries, for example in sexist humor (Willis 1979, 43ff.). This habitus characterizes the type of space consti-tution in the manner described. The lads constitute the school space by claiming the street—against the teachers—as part of this space and they make a point of linking this spacing by means of permanent movement. The significance of street culture particularly in a working-class milieu is not unknown in sociological literature. For example, it has been described by William Foote Whyte (1996, originally 1943) as "street corner soci-ety." Helmut Becker and Michael May also describe the cultural practices of working-class youths of meeting at public places and street corners. Here, information is exchanged, jokes are told, and anecdotes reported. These places provide opportunities for exchange of experience and for relaying information, that is, they are educational spaces of a kind that the school only peripherally affords (see also on this point Willis 1979, 26).[1] When Becker and May describe the rituals with which "youths" greet each other, for example—"a slap of the hand on the back or a moderately hard punch on the upper arm,"—interpreting them as "masculine elements of strength and boldness" (Becker and May 1987, 41), it becomes clear that this is not only a working-class, but also a masculine culture. A large-

scale study by the Deutsches Jugendinstitut (German Youth Institute) in Munich (1992) shows that in every region and every social stratum of the age group under study, namely young people from eight to twelve years old, boys tend to be on the street and in public places more often than girls (Deutsches Jugendinstitut 1992; especially Nissen 1992; Ruhne 2003; Sobiech 2013). Heinz-Hermann Krüger (1996) confirmed this finding in an empirical study comparing growing up in East and West Germany. Beyond this, the study by the Munich institute also shows that urban children and young people manifest a class-specific use of the street. According to this study, working-class children and young people tend to be on the street more than children of other social strata (Nissen 1992; cf. Herlyn 1990b). Loitering and meeting people on street corners and in public places are more pronounced in proletarian culture than in middle- and upper-class cultures. Moreover, in the working class it pertains more to male than to female culture.[2] When working-class boys extend the space of their school to include the road space, they are integrating an element of their culture into the traditional middle-class school culture. Hans-Günter Rolff (1997) has analyzed numerous studies of teachers' social backgrounds. It turned out that the majority of teachers are from middle-class milieus; moreover, in the case of teachers at academic-stream secondary schools, almost half are from civil servants' families. The decisive factors shaping the culture of a school are determined by class-specific views of professionalism, images of society, and concepts of socialization. However, school culture cannot be one-sidedly shaped by school teachers and administrators; rather, as for example Werner Helsper et al. (1998) have shown, it develops in a dynamic interaction between teachers, pupils, and parents. This process of negotiation, which also has to be read as a conflict about power structures, also relates to space constructions, as the example of the lads clearly shows. When pupils are able to extend school space "like the tides" to include street space, then they do not only gain more space, above all they force the teachers to perceive the cultural heterogeneity of their space. Street space is the space that is culturally familiar to them and in which they can feel secure (often securer than teachers). By frequently leaving the school building and returning to the street, they repeatedly return to the space that they experience as "familiar" or their "own." In this way, they maintain freedom of action and self-confidence. However, they do not juxtapose two incompatible spaces, but rather make the two merge to their school space—especially by means of their constant mobility. They thus offer the teachers a countercultural space that links

two cultures symbolically and materially with each other; but the teachers reject this space—at least in Willis's study. The street is not only a symbol of proletarian culture, it is also the setting for short-term encounters and for road traffic. It is here that up to now young men stage their dares and risk-taking to demonstrate what they hold to be masculine and what is socially conveyed as images of masculinity.

Studies of male socialization (for example Schnack and Neutzling 1994) have shown that risk-taking, dares, and coping with fear are essential factors in socialization. Whereas girls are too often reminded of potential dangers that could threaten their body, boys do not learn to pay ample attention to the physical safety of their own body. Boys' willingness to take a risk—and that of some girls who attempt to break out of the constraints of their socialization by means of behavior with masculine associations—can be observed in sports such as the physical artistry and risks in skateboarding, or more dramatically in train "hopping," or even stealing cars for street racing.

On the basis of a qualitative study of bibliographical profiles of children and young people in a metropolitan milieu, Tilmann Allert (1997) discusses the fact that the dangerous speed of road traffic together with the reduction of control due to the fact that the people encountered on the street are strangers provide ideal opportunities for "youthful" self-presentation, which here means boyish self-presentation. In reconstructing the biography of a young man referred to as Kevin, Allert examines the meaning structure of the road and the significance of having the greatest possible mobility by means of car theft and car usage. The outer form of the biographical pattern, writes Allert, is the adventurer: The search for adventure in the metropolitan space takes place on the streets in which the boy feels at home. Logically, it is also the streets that he appropriates by car on which he seeks risk. His skill in procuring cars and his ability to drive them at a fast pace earned him the nickname "Manta."[3]

> The street is the space in which something happens and in which what happens is volatile. Under these circumstances competition is staged for its own sake, and the essential point is the demonstration of hazardous behavior. (Allert 1997, 961)

Driving cars fast thus provides an opportunity to transform the limiting bond to places into volatility, and in so doing to express masculinity, boldness, and a willingness to take risks. The lads do not drive cars. But

they, too, stress that the street has the connotation of speed or lack of control, and is consequently a medium for the presentation of masculinity. In response to the researcher's question "What's excitement?" they say "breaking a law," "drinking," "thieving" and "goin' down the streets," "vandalising" (Willis 1979, 33–4). Willis observes that the aura of violence is associated with masculinity by the boys, and increases on the street as well as in dancing halls in comparison to school (Willis 1979, 36).

The symbolic meaning of the street space is "fast/mobile," "uncontrolled," and "masculine." The lads' spacing can be characterized in precise correspondence to this. They make a point of always remaining mobile, moving quickly to and fro between school building and street, evading the teachers' control, and associate this action with masculinity. Always being in motion is necessary in order to maintain the constitution of the street as part of school space. At the same time, it is a form of spacing that opposes the rules and resources of the constitution of space in school, and in doing so reproduces the rule of another, equally institutionalized arrangement: the street. By violating all basic rules of their school's space constitution—not to move around in the classroom, to remain in one room during lessons instead of switching classrooms at will, not to leave the school building instead of smoking on the street, to spread at random along the corridors instead of standing in a row along the walls—the lads reproduce the spatial rules of the constitution of street space.

The rules and resources of the institutionalized space "street" are reproduced recursively; that is, by means of the rules that apply to working-class boys with respect to the street, new spaces are constituted, thus reproducing spatial structures. This is the ground of the duality of space, specifically, that on the one hand it structures action, and on the other hand it is generated and reproduced in action. Since the spatial rules of the street are not simply random and do not constitute a reference point utilized by all, but rather are linked to class- and gender-specific structural principles, class and gender are also reproduced in spacing.

The lads' and the teachers' spaces are in a hierarchical relationship to each other. This shows that spaces can be in conflict with each other and can have different values for people, even at the same place, or, more emphatically: in spacing, too, different places can come to be on one and the same ground. By way of this difference in space constructions, power structures are negotiated, social structures reproduced or changed, power-related resources and symbolic values are assigned. The simultaneity and mutual influence of various processes constitutive of space and their inter-

action with other social processes can only be recognized when space is not taken to be ontologically given and is not reduced to boundaries stipulated by planning and property rights. Of sociological interest is precisely the relationship between spaces institutionalized in rules and resources and spaces actualized in action, as well as the various forces of various institutionalized arrangements for various groups of people at various places.

The example of the lads shows how space constructions are the object of struggle (even up to corporal punishment for disruptive space constructions). It also shows that a habitus acquired in different spaces generates different spacings. The refusal of education, which is experienced as resistance and in the long run results in conformity to the marginalized position in the social structure passed down in the family, thus has an immanent spatial component. The example teaches us that even resistance to institutionalized space constructions can lead to conformity. The analysis of these processes—that is, not of rigid space (with, as a rule, clear inside–outside structures), which necessitates actions, but rather of mobile spacing—makes it possible to rethink aspects of the struggle for space from the perspective of educational policy and educational science. Thus, some form of teaching on the street might even be a step worth thinking about.

How space is constituted is the result of an educational process. Pupils have to learn to recognize institutionalized orders of relationships between social goods and people as spaces, and in so doing to develop their own ability to act (cf. on this point Georg Breidenstein's analysis 2004). Generating countercultural spaces can be an essential means of maintaining this ability to act.

Thus, in traditional schooling there is an institutionalized arrangement for the constitution of space in the classroom. It is expressed in the staging of a stipulated arrangement of the pupils' chairs toward the teacher, and their systematic placement on these chairs. Hierarchies and power structures can be gathered from the arrangement. Foucault describes this as the principle of localization, which compels individualization by means of placement (cf. on this point Rumpf 1988). Giddens designates this structure by the term regionalization. However, the analysis of spaces must not be limited to the analysis of the structuring effect of spaces that are already institutionalized—as is very clearly shown by the example of the lads. In the everyday constitution of space, these arrangements are constantly subject to challenge and are shifted, temporarily suspended, and sometimes even annulled—for example by moving around or select-

ing one's place oneself. This resistance to institutionalized arrangements can have various causes: acting differently on reflection, feeling ill at ease, other people's manners of action, or constellations of otherness. The violation of dominant space constitutions can thus prove to be the realization of another habitus.

6.2   Gender-Specific Spaces

Instead of a critical reading of yet another study, an empirical finding that has been repeatedly corroborated in numerous studies shall be reinterpreted as a second example to illustrate the new perspectives resulting from the concept of space presented here. In the 1930s, Martha and Hans Muchow (1935) came to the conclusion that in the city uncontrolled, disorderly behavior could only be found among boys. They had children draw what they called "living space maps," that is, the children first charted familiar streets on a city map, later streets that they only vaguely knew. Muchow and Muchow drew the following conclusion:

> We saw that especially the girls were closely attached to this neighborhood; innate as well as environmentally determined gender differences play a part in this. By contrast, the boys were much more expansive; their living space maps are therefore not only more comprehensive, but also have more variety. (Muchow and Muchow 1935, 28)

In Muchow and Muchow's study we already encounter a perceptual pattern on the part of the research team that is often repeated in later studies: the girls' localized action seems to need explanation, whereas masculine expansive behavior becomes the norm. The authors ask why the girls do not roam around the city, and Muchow and Muchow look for the causes in social and biological conditions. The household demands on the girls are attributed as causes; however, since the girls' roaming space is only half as large as the boys', while the time needed for their duties is only fifteen per cent more than the boys', it had to be assumed "that the girls are by nature not as inclined to 'roam around' as boys are" (Muchow and Muchow 1935, 16).

What drives the boys to rove and to wander far from their parents' homes was not a question that was asked; expansive spatial behavior seems normal and desirable. The reasons for addressing girls' behavior one-sidedly as a problem are found in the fact that women are symboli-

cally posited to be the Other, to be explained, whereas men's behavior is deemed to be the norm and thus not in need of explanation. Beyond that, the causes are also found in the ideas of space assumed by the authors.

More recently, the finding that boys' range of action is larger has been corroborated repeatedly by very diverse empirical studies (e.g. Zinnecker 1979; Bruhns 1985; Harms et al. 1985; Hart 1987; Nissen 1990; McDowell 1996; Flade and Kustor 1996). While these differences are no longer attributed to essences, sometimes these findings are reported without further interpretation, and there is a persistent assumption that "a larger space" for girls would be desirable. The substantiated finding is still that girls tend to seek places to play near the home. When they cover longer distances in cities, then for the most part it is done for a goal and purpose and is not comparable with the boys' "roaming about."

The gender-specific discrimination attendant on this is the enhanced inclusion of girls in domestic work, which in part goes to rationalize their goal-oriented movements, the sexualization of the female body with real and imagined threats in urban spaces, and the association of public space with masculinity, which still makes itself felt in action (cf. on this point Chap. 5.2.4 of this book). Thus, it cannot be denied that the gender-specific difference in the urban life of young women and young men is an indicator of unequal opportunities and possibilities.

But the question arises as to what this finding means for the gender-specific constitution of space. Most interpretations of the conclusion that girls act in a smaller range of action adhere to the logic of thought in terms of absolute space. First, space is presupposed, but the gender-specific process of constitution is not examined. Second, space is treated like a "black box." What happens is deemed to be inessential, but rather the size of the space is essential. In a larger space—according to the assumption—it is possible to learn more.

> They are not encouraged to appropriate space in a self-assured manner. But body and space are central components of the reality of life and of the individual's coping with the environment. (Leven and Weber 1996, 181)
>
> The constraints brought about by socialization and prohibitions in the family or school must be addressed in educational projects. They must be countered, for example with assertiveness training or in girl-specific athletic and exercise activities to make it easier for girls to occupy space actively. (Steinmaier 1996, 176)

Girls, by contrast, are not prepared for roles requiring spatial competence. This finds its visible expression in, for example, the later choice of vocation and in performance in their occupation, less visibly in intelligence tests. (Flade 1993, 33)

On the street, girls do not only move more purposefully and play less than boys do (especially active games), they also leave these game areas sooner.… That is, they occupy the street less actively and less naturally. (Spitthöver 1989, 71)

Due to the restriction of their range of action, girls do not learn to develop spatial competencies (Flade) or to appropriate space self-confidently, naturally, or actively (Spitthöver; Leven and Weber); for Leven and Weber this also means that they do not appropriate body and motion. Therefore, according to Steinmaier, educational activities have to be used to facilitate "active occupation of space."

The use of the term "appropriation" (Aneignung) is an allusion to the concept coined by Karl Marx, a usage that is not often subject to reflection; it is applied to children's socialization conditions, especially by Soviet psychologists such as Aleksei N. Leontiev as well as in Klaus Holzkamp's "critical psychology." With respect to space, it operates with the idea of a space existing beyond human action that can be actively appropriated. Space is thus not conceived as processual, nor as something to be constituted; rather, it is presupposed, and own activity is stressed (on the concept of appropriation, see also Nissen 1998; Deinet and Reutlinger 2005). In a next step, it is alleged that expansive movements express self-assurance and activity, and result in "spatial competence." What spatial competencies or an appropriated space are exactly supposed to be is not explained, rather it is presupposed that the readers know this. It is implicitly suggested that the result of a successful spatial socialization is moving in various places as a matter of course and with full self-assurance. But can it be argued so simply that women have not learned this? One result of feminist urban research is also that on average women have to cover more pathways in their everyday lives and to link more places with each other in a day than do men.

If a typical man's day is compared with the everyday paths of a woman who links family and work, it turns out that the woman has no choice but to be on the move in many more places than does the man (Spitzner et al. 1995). Here there is a gap in the explanation as to how "spatially constrained" girls become "spatially competent" women. The decisive

problem, however, is that the idea of what enables people to move self-confidently and naturally "in spaces," or, expressed in terms of relational space concepts, to constitute space self-confidently and naturally and to pick up pre-existing arrangements recursively and to act with them is more complicated than what can be expressed in size dimensions. Moving in very different spatial arrangements as might be assumed on the basis of a large range of action (which would have to be subjected to study first) is only one aspect of this.

The argument that is primarily based on variable ranges of action operates similarly to Hägerstrand's time geography (cf. Chap. 2.2.1 in this book) with "black boxes." Little light is shed on the events happening at a certain place, instead the number and extensiveness of the places counts. In order to research the action dimension and thus the relationship forms and power structures, the process by which girls and boys constitute space has to be studied. The processes of imagination, perception, and memory in which girls and boys themselves create spaces in grappling with spatial structures would have to be analyzed. The appropriation of the body must then not be understood as a result of spatial socialization, as Leven and Weber suggest, but as a means of constitution. The body is the medium of movement, but also an element of emerging spaces as well as an expression of gender-, class-, and culture-specific habitus.

The question would thus be: what social goods and people do girls and boys link to yield spaces? How are these links established, that is, with what symbolic and material resources, at what speed or with what perseverance, in what habitus, in what negotiation processes? At what places do they locate themselves and others? What atmospheres emerge in the constitution of space? What pre-organized arrangements do they encounter? How are structures recursively reproduced? What inclusions and exclusions are produced, what power structures are generated, how is social inequality dealt with?

There are few answers to these questions, but there are some indications that the approach can lead to new results in feminist research. In a qualitative study taking a school class as an example, Christine Ahrend (1997, 2002) examines what children at the age of nine to eleven years learn in the streets and in vacant public places. With respect to children's range of action, she comes to the following conclusions:

> However, almost all the boys associated *solitude* with extensive roaming, often enough even *loneliness*. They gained access to adults' public spaces,

but in such a manner that neither actions nor contacts came about. They remained in the role of the observers. By contrast, a group of girls from this class used adults on the street or at vacant lots for dares, or included them in role games. (Ahrend 1997, 208; italics in the original)

For example, the girls establish a club for nature conservation, and collect money for whales, dolphins, and the rain forest. It becomes a dare to approach strangers to ask for money and to discuss issues. While at the same time the boys roam around and constitute spaces by grappling with various social goods, the girls generate space at one place by involving diverse people. Among other factors, the process character of their spaces emerges due to the fact that people become an element of the relational arrangement.

It is conspicuous that in group discussions, the girls' and boys' groups express diametrically opposed ideas about what they would like to change in their part of the city. The boys rebel against the adults, whom they experience as "guardians of space," and they want "more friendly people"; the girls, by contrast, do not mind the adults as they are. However, they would like changes in the available social goods. "More nature" is their demand. The boys in this study, who act in relative solitude to generate spaces in coming to terms with the pre-given social goods, would like adults who could be included in their spaces. The girls who play to come to terms with the adults whom they encounter would like more opportunities to come to terms with social goods. For them, "nature" is a synonym for the unordered where something new can be found, where there are opportunities to hide (cf. Ahrend 1997, 209). In these ideas, both boys and girls display a differentiated discursive knowledge of the conditions of their spatial socialization and of the deficits of their experience.

Christa Preissing and Ursula Rabe-Kleberg (1995) also obtain similar results on the gender-specific forms of constitution of spaces with a view to nursery school. According to the authors, the girls generate spaces by establishing relationships via language, the boys by running around and staying in places as rarely as possible. With reference to psychoanalytic theories, Preissing and Rabe-Kleberg, in contrast to the experts on space cited above, do not take the boys' larger range of action as a sign of self-assurance.

Boys, by contrast, look for paths, they are constantly fleeing from the danger of renewed affiliation and in search of a masculine example, particularly in

such female dominated institutions as nursery schools. (Preissing and Rabe-Kleberg 1995, 208)

In the face of such findings, it is tempting to rashly draw the reverse conclusion. It is not the boys who have spatial competencies, but the girls. Girls seem to generate spaces, boys by contrast remain elusive, do not stay, and thus locate themselves in temporalities. That, however, would only reproduce the symbolic links space–body–woman and time–mind–man in the ideal types of Karl Schmidt's anthropology (1865, cf. Chap. 3.5).

Only a concept of space that integrates movement as an element, that is, which proceeds on the basis of processual constitution of space in the course of action, provides the resources to understand the gender-specific forms of the constitution of two (and more) forms of spacing on the part of children with different competencies and deficiencies. The children can also articulate this, as demonstrated by the group discussions with Ahrend. Whereas boys tend to learn the constitution of space better in coming to terms with social goods, girls learn competencies in the constitution of space by way of people. If space is understood, as in this book, not only as an arrangement of things, but also as a configuration of people, then the boys' action no longer seems more spatially competent than that of the girls; rather, boys and girls acquire different aspects of constitution. The girls become experts in the involvement of people in space constitution, the boys experts on spaces oriented on social goods. Even the form of dares reproduces the gender-specific domains: boys jump from cliffs or climb onto trains, girls venture to speak to adult strangers and hold their own in discussions. This dichotomy would be more differentiated if class-specific aspects were included. However, due to the data acquired this has not yet been possible. How these links are established remains largely in the dark.

For the time being, the proposition that can be formulated is that the development of the two aspects essential to spacing, the linking of people and social goods to form spaces, is gender specific. The children have knowledge of their action and can articulate deficits in socialization. Due to the pre-arranged spaces, that is, rule-bound land-use planning with respect both to the control of children by adults and to planning open spaces, it seems to them to be impossible to acquire these competencies. In contrast to the lads presented in Sect. 6.1, these children do not act counterculturally. They reproduce gender-specific domains and thus the structures of society organized in two genders.

6.3   URBAN SPACES

Cities are generally viewed from the structural level. The social causes of urban growth and suburbanization are studied as are the subdivision of urban space into various zones with their various social functions, segregation processes and the separation between public and private. Action theoretical perspectives on the city are encountered only in certain individual studies, for example in lifestyle research, migration research or sociology of housing (cf. also Löw 1999). The research strategy is either to analyze a phenomenon in cities with the outcome that the phenomenon is studied and not urban constitution of space, or the city is in focus so that in quantitative surveys the effect of social structures on space conceived as territory is studied (cf. Chap. 2.2.3). Consequently the empirical basis to demonstrate the duality of space in urban processes is remarkably poor. It is still the case that not enough work has been done on the question as to how, for example, a city develops in action, that is, how Cologne, Hamburg, or Munich become a city for the people who act (see Löw 2013).

On the basis of his extensive study of the event society (Erlebnisgesellschaft) ([1992] 1997), Gerhard Schulze undertakes in a subsequent publication (1994) an examination of the relationship of urban milieus to space. The point of departure of his analyses is a concept of milieu that was usual at the time in research regarding milieus as groups living in certain spaces. In his observations he comes to the conclusion that the "grounding of social milieus … has been largely lost" (Schulze 1994, 41). Since the increase in mobility, the deconventionalization of social relationships, and the enhancement of the standard of living have augmented the available options, Schulze argues, the sedentary and integrated character of milieus at places has dissolved. People who belong to a milieu can no longer be correlated as a matter of course with certain spaces.

Schulze then attempts to understand this process of migration, the social diversity of urban quarters, as well as the fact that meeting places of various milieus are distributed over the city and are only visited for short periods as a space–milieu complex. He proposes a distinction between traditional space as "surroundings" and the newly emerged spaces as "sceneries" and "zones neutral to milieus." His thesis is that in the process of modernization, surroundings have been gradually displaced by sceneries and zones neutral to milieus (Schulze 1994, 46).

Space as surroundings means a territory that people regard as their common habitat. A homogeneous group of people shares the assumption

that they live in a common space. This common space represents the range of action of the acting people. It is thus both the result of the activities of the people of a milieu and a factor constitutive of milieus because the common space binds the inhabitants to the group and its habitus.

However, Schulze can only detect this surrounding space in his empirical study in rudimentary form. Instead, he observes that in their real actions people are not oriented on a common space and that at the same time, ideas of a homogeneous space are disintegrating. Milieu theory with its prior assumption that milieus display a strong bond to spaces cannot explain this process.

At this point, for want of a sociological concept of space, Schulze gets caught up in either–or reasoning. If spatial association does not proceed by way of the construction of homogeneous surroundings, then people only use space as sceneries for self-presentation. Sceneries are supposed to be meeting places where one is highly likely to find one's own kind. Where one lives is said to be less indicative of milieu membership. Instead, space is only used in a milieu-specific manner in brief visits as a place experienced as modern.

> This kind of relationship to space is most obvious in the pub and club landscape of major cities. Other reference spaces for social milieus are, for example, pedestrian zones, train stations, sports grounds, club houses, museums and galleries, concert halls, community centers, luxury stores, pastry shops, squash centers, fitness studios. (Schulze 1994, 50)

He claims that for adults, too, the use of space accordingly occurs by way of space islands that are temporarily visited. The result of this process is supposed to be that identification with the spaces is slight with the resultant social and ecological consequences. Zones neutral to the milieus are said to emerge between the networks functioning as sceneries: zones as territories that are only used in transit.

On the basis of his empirical data, Schulze recognizes that the urban processes observed can no longer be understood with the idea of a continuously given space with demarcated territories. But he is so firmly rooted in a territorial conception of space that the only alternative that he can conceive is another division of the surface of the earth. Where once the space available in common was staked off to territories (between which, due to the homogeneity idea, vacant lots or zones neutral to milieus were never conceived) places and unused surfaces now emerge. The equation

of space and surface of the earth compels him to the conviction that one place cannot be occupied twice at the same time; thus, for Schulze there is either association in sceneries or socialization in milieus.

A look at other studies (cf. also Chap. 3.3), however, demonstrates the short-sightedness of this either–or logic. In a report commissioned by the Senate Department for Urban Development, Environmental Protection, and Technology (Senatsverwaltung für Stadtentwicklung, Umweltschutz und Technologie) in Berlin, Hartmut Häußermann and Andreas Kapphan (1998) studied the development of social environments in the German capital on the basis of data on social structure and interviews with experts. The point of departure is the conjecture that the fall of the Berlin Wall brought about changes in the composition of the population with the result that certain population groups are concentrated in particular quarters of the city. The concentration of homogeneous milieus in specific city quarters, which Schulze considers a responsible way of living together, is for politicians a reason to worry. In various quarters in Berlin, social segregation has intensified so that areas have emerged in which socially and economically discriminated or marginalized population groups are concentrated.

According to Häußermann and Kapphan, a city is fragmented when class-specific city quarters develop; for Schulze, fragmentation comes about from the disintegration of homogeneous areas. Here, speaking of fragmentation—in the case of all these authors—is meant to address the problem of the disintegration of the proper whole. The crux of the matter is that these two empirically established phenomena, the development of spaces in which people in similar social situations gather and the network of insular spaces, need not be in conflict with each other. However, this presupposes that space is not regarded simply as a territorial backdrop against which action takes place, but rather that the type and significance of spaces is reconstructed from the practice of the actors in relationship to social structures.

The question of the relationship between milieu and space then cannot be treated with *one* oscillating mode of association, for example oriented on surroundings or scenery. Rather, the milieu-specific associations and thus the different constitutions of spaces, which sometimes have reciprocal effect on each other, must be detected. For example, the milieus of unemployed immigrants constitute space differently from the milieus of "young urban professionals"; the sociologically interesting point is "how" these milieus are spatially constituted.

Urban space is a relational arrangement of social goods and people. The operation of synthesis on which every space constitution is based makes it possible to perceive an ensemble of social goods as one element. In this case, it is the pubs and discotheques, or the pedestrian zones, train stations, sports fields, and the like that are linked with one's own home, the home of parents or friends, perhaps to one's own workplace in order to yield spaces.

On the basis of the data presentation of the kind that Schulze selects, it is not possible to perform a secondary analysis of space constitution comparable to Willis's ethnographic analyses. But tendencies can be indicated to outline the advantage that would be gained from a change of perspective and could suggest a research design for later studies.

Schulze lists the urban objects that the groups of people surveyed like to visit. The objects that he names are not all included by all the people in the same measure in the constitution of their urban spaces, rather, as we can gather from his study (Schulze 1997), there are milieu-specific utilization structures and relevance criteria. Schulze distinguishes five milieus: the self-fulfillment milieu, the entertainment milieu, the quality milieu, the integration milieu, and the harmony milieu. The first two consist for the greater part of people under forty years, the last three of people over forty. There are objections that can be made against this division of milieus, but this is not of central importance at this point.

If we only compare the "quality milieu" (older, well-educated middle class) with the "harmony milieu" (older people with less school education), it is clear that the spaces that the two milieus generate in the city hardly overlap, and that "scene oriented" or "surroundings oriented" offer an inadequate contrast. The "quality milieu" synthesizes municipal museums and theatres, galleries, concert halls, the opera house, the golf club, selected restaurants and shops to their urban spaces. They live in suburbs for the well-to-do or in downtown condominiums. The urban quarters in which they live are not inhabited exclusively by one milieu. They use various means of transport, and the manner of movement is speed.

By distinction, the people who are designated as the "harmony milieu" synthesize the following objects to their urban space: the regional shopping center, their own home, the homes of acquaintances, the soccer stadium (men) or pastry shops (women). They have little contact with the city center. Their home environment is largely socially homogeneous. The men drive, the women use public transport. The manner of movement is slow.

In Schulze's milieu descriptions it becomes clear that for both groups the location of the home is still of significance. Even though the second group (harmony milieu) tends to stay near home more (above all, at home), urban space is constituted for both groups by the location of their home. In this connection, the home as an element of the link is determined in the first place by the price (affordability) as well as its symbolical and material furnishings, in the second place also by its location in relation to the positioning of other people of the same milieu or of other milieus and to social goods such as green spaces, parks, rivers, and the like. Accordingly, the significance of the home and of the city quarter in which it is located is not disappearing as Schulze suggests in his emphasis on a "scene-oriented association." It is only relationally integrated in the urban constitution of space. It is linked with various urban objects used as meeting places or event locations. Schulze writes:

> Sceneries have a low spatial extension. When surroundings shrink to yield sceneries, large spaces remain: zones neutral to milieus. (Schulze 1994, 46)

Thus, he examines only the individual places or objects, but not the links made between them by the city inhabitants to yield spaces. But in his milieu descriptions (1997, 277ff.), he clearly specifies that urban places and buildings are frequented and endowed with significance in a milieu-specific manner. With a relational understanding of space, it can be easily recognized that various elements are connected in milieu-specific operations of synthesis to yield home space and urban space. Even in the modern era, urban space does not emerge by way of ephemeral, event-oriented space constructions. Rather, community spaces and the city are constituted as relational structures through operations of synthesis and through spacing according to milieu-specific relevance criteria.

The comparison of the milieus shows that in the "harmony milieu" the arrangement that is experienced as urban space largely coincides with residential space. In this case, the city is not, as suggested by the "economy of symbols" (Zukin 1998), the city center and culturally significant buildings. Instead, homes in peripheral areas of the city are linked with other suburban facilities (e.g. the soccer stadium) and with objects selected according to social relationships (e.g. the homes of family members). It is conspicuous in this connection that in this milieu there are decided differences in gender-specific constitution of space.

The city of poor female pensioners has little in common with the city of the well-educated middle class. Although both spaces are based on institutionalized links and spacings, the operation of synthesis of the "quality milieu" corresponds largely with what is symbolically orchestrated and presented as the city—although far more people belong to the "harmony milieu" than to the "quality milieu." Browsing through a city's travel guides, we find all the objects and places that are synthesized to the city in the "quality milieu" (supplemented with elements of the "integration milieu" and the lower middle class such as pedestrian zones). Thus, "the city" is, as I would like to conclude, a class-specific product of synthesis.

Schulze ascribes a great aptitude for self-presentation to the "quality milieu." Thus, it remains unclear to what extent the links that have been outlined (only) portray the operation of synthesis, which, however, achieves a great symbolic effect, or whether they are associated with regular spacings. In other words, it remains unclear how often the opera or the theatre is really visited. The correspondence between operation of synthesis and spacings in urban processes of constitution has not yet been researched.

Schulze attributes little significance to employment; therefore, the places of work and training are not mentioned in the description of urban spaces. However, in addition to milieu- and gender-specific actions, the commuter flows that contribute to the daily production of urban space by means of the trip to the workplace or the vocational training center are also typical for urban constitution of space. For the commuters, the city is a relational arrangement on the basis of the workplace or training center in connection with other elements, with class-, gender-, and milieu-specific elements and their places.

How cities grow out of these group-specific networks is a relatively new field of research. The majority of planners attempt to shape space that is imagined to be uniform. In addition to other factors such as the planners' own habitus, this leads to a generalization of class-specific spatial structures. Only on the basis of a systematic knowledge of gender- and class-specific institutionalized spaces that through their diversity and mutual intermeshing generate cities as mobile structures is it possible to develop planning concepts for plural urban spaces.

At the same time, by way of a milieu- and gender-specific study of the constitution of urban spaces, the dimensions of social inequality in cities could be examined from a new perspective. The group that Schulze calls

the harmony milieu is systematically excluded from access to social goods. This exclusion functions by way of a habitualized self-exclusion, but also, as Volker Kirchberg (1998) very rightly observes, by way of the placement of symbolic thresholds and consequently by way of the orchestration of atmospheres. Just as atmospheres are generated in supermarkets, it can also be recognized in cities—especially in processes of structural transformation—how the negotiation of power structures is done by way of the representation of syntheses and by way of spacings, and as a consequence by way of the orchestration of atmospheres. Simply consider the recent construction of Potsdam Square in Berlin where the atmosphere was supposed to be communicated to the (milieu-specific) interested public by means of a computer simulation available for viewing even before any building was located. By communicating the outcome of the planners' operations of synthesis and the orchestration of atmospheres, it was possible for Potsdamer Platz to be created as a place before the spacing was done. The display of the atmosphere with its milieu-specific attractiveness obscured the placement that was done later. Behind the post-modern atmosphere, it cannot be seen that that the central city space is constituted by market-leading businesses. The dynamics of synthesis, placement and the consequent development of places is breached, generating a symbolic effect that is all the more effective.

In summary, it can be concluded that the constitution of space—as Gerhard Schulze's data show—can no longer be researched in a manner such that a continuously existing concept of space to be structured by people can be applied. Processes of space constitution can be readily identified that cannot be understood in terms of a territorial logic or exclusively by way of regionalization. However, Schulze does not challenge the concept of space, but rather assumes a dissociation and fragmentation of space since it seems to him that the data cannot be interpreted in any other way.

If instead the city is conceived as a relational arrangement, then operations of synthesis bring about class- and gender-specific links between homogeneous and heterogeneous residential areas with recreational meeting places scattered across the city. Therefore, I suggest that milieus be distinguished in their spatial dimension by way of their specific syntheses and spacings. In a processual perspective, they can be related to spatial structures and the mode of operation of orchestrated atmospheres, thus enabling a differentiated examination of the various spaces in a city. The development of urban space itself is substantiated as a class-specific operation of synthesis.

Notes

1. In pop music, "highways," "roads," and "freeways" are symbols for young men's exploits. The songs are often about hard working, socially disadvantaged young men from small towns who are on the road in search of their dreams (cf. Klotz 1997).

2. Studies in Sweden show that there is there a trend toward a reversal of the situation. According to the studies, boys tend to return to the private realm, whereas girls are discovering traditional boys' spaces such as the street and clubs for themselves (cf. in summary Lieberg 1996). Important changes in the relationships between women and men could be brought to light by studying this transformation in the context of the discussion of the transformation of public space in the wake of the use of new communication technologies.

3. [Translator's note: Manta was a sports coupé built by Opel targeting young, male, technically oriented drivers. In contemporary German folklore, Manta connotes macho, dull, lower social status. Similarly, the name "Kevin," which only gained popularity in Germany in the late 1980s, initially connoted lower social and educational status; this connotation has since waned, but was current at the time of the study.]

Foundations
of a Sociology of Space—Summary

The emergence of space is a social phenomenon and can thus only be understood on the basis of social developments, which also means that it ought to be understood as a processual phenomenon. Space is constituted as a synthesis of social goods, other people, and places in imagination, through perception and memories, but also in spacing by means of the physical placement (building, surveying, deploying) of these goods and people at places in relation to other goods and people. In everyday life, the constitution of space (synthesis and spacing) often takes place in routines. Spatial structures are recursively reproduced through repetitive actions. Spatial structures are incorporated in institutions that are repetitively replicated by relational placements and the recognition or reproduction of these arrangements. Spatial structures are a variation of social structures.

One central problem of the sociology of space has been that it has been possible to describe or analyze processes of organization of spatial phenomena, but that in sociology there is a lack of theoretical ideas for explaining the interaction of the various aspects of space constitution. Moreover, it has not been possible to come to terms with changes in the organization of proximity using those container concepts that continue to be employed and applied without further reflection. Transformations of spatial processes then seem to be no more than processes of dissolution and fragmentation.

Hence, in this book proposals are developed about how the various partial aspects of the constitution of space can be put together to yield a

consistent whole. In so doing, special attention is devoted to changes in the constitution of space inasmuch as in recent decades society's common knowledge of and experience with space has shifted due to the development of new information and leisure technologies and due to mass use of rapid transport technologies.

Even today, with the exception of specialists developing theories of space, an absolutist idea of space is often assumed in sociological theories, that is, in metaphorical terms, an idea of space as a container for things and people. Here, absolutist means that space is understood as a reality in its own right, and not as an outcome of human action. Space is used as a synonym for ground, territory, or place. The designation "absolutist" also applies to concepts of space that assume Euclidean geometry as the sole reference system for the constitution of space.

In contradistinction, I propose a processual concept of space, briefly defined at the beginning of this chapter. My thesis is that changes to the phenomena of space can only be understood when we cease to assume two different realities—on the one hand space itself, on the other social goods, people, and their actions—but rather derive space from the structure of people and social goods. Thus, if space is not the rigid background of actions, but rather integrated in the context of action, then a changing practice of the organization of proximity can be brought into focus. The point of departure of the concept of space developed here is accordingly relativistic. However, the analysis of the process goes beyond a relativistic perspective since not only the relational structure is taken into consideration, but also the social goods and people that are arranged. The result is a relational concept of space. Reconceptualizing the sociology of space— as proposed here—takes account of data on the constitution of spaces collected in empirical social research, which in some cases I have reinterpreted, as well as interdisciplinary, theoretical reflection on concepts of space in the modern era.

7.1   Social Changes

The distinction that I have made between synthesis and spacing makes it possible to view changes in the constitution of space on these two levels separately, whether in imagination, perception, or memory, in the organization of proximity, in structures of distribution, or placements. On the basis of already existing empirical studies and the reflections derived from

them in this work, the following forms of reorganization of space can be identified.

All constitutions of space, whether on the computer, a drawing board, paper, or in practical action, are influenced by the synthesizing person's idea of space. Ideas and perceptions of space are developed in socialization and education processes. School and preschool educational processes are meant to integrate topological and visual perceptions in the idea of a unified space. Children learn and are trained to understand space as a universal frame, as a container for objects that makes it possible for them to organize them on a grid. This faculty for abstraction is necessary for measurement, planning, and orientation, and is imparted in a way that does not distinguish between the idealization of perception and perception itself. Thus Euclidean–perspectival thought and the traditional idea of container space are merged to one idea of space; the idea of container space, for its part, is based on the ancient idea of space and the Jewish–Christian account of creation, and understands space as something that contains or surrounds, as existent before humanity.

For children of previous generations, this idea of space is confirmed by the fact that the surroundings are experienced as a homogeneous space that becomes progressively larger. Today, spatial socialization is changing. An "insularized" socialization is emerging that makes space experienceable as individual, functional islands connected to each other by way of rapid movement (car, public transport) and linked to yield spaces through operations of synthesis. Thus, up to the nineteen-sixties, an alliance between (pre-)school educational processes, the traditional idea of space and experiences of socialization can be assumed. In terms of ideal type, the constitution of a children's space takes place in concentric circles that become progressively larger. This alliance no longer exists because in addition to the experience of insularization, communication forms are also changing.

Communication without time delay between people who do not share spatial unity is a decisive factor in changing constitutions of space. Spaces that are thought of as far apart and disparate can be merged through verbal and visual contact afforded by telecommunications technology. But also the overlapping of spaces, which results from bringing distant spaces into one's own living room on television, transforms spatial socialization. A radically new experience of perception is conveyed through the use of virtual-reality technologies. For the first time, perception and placement is made possible in different spaces at the same time, triggered by the move-

ment of one's own body. The body serves as the locus for the organization of the connection between the two spaces. In contrast to the telephone, for example, in which the connection is made by technology, in this case the body is the mediator in the simultaneous constitution of very different spaces.

This new experience of socialization no longer corroborates the notion of living in space. Henceforth, space is also experienced as discontinuous, constitutable, and moved. Different spaces can emerge at one place. It is my thesis that in addition to the notion of "living in space" that is traditional in our culture, that is, the notion of being surrounded by a unified, homogeneous space, another idea of space thus emerges, one that is comparable to a network in flux. Whereas the first idea is corroborated by the practical applicability of Euclidean theorems, the second idea draws on the experience that perceptions beyond Euclidean space are possible.

The ground for this expansion of spatiality, I have argued, was paved by an academic discussion of notions of space that itself was triggered by the discovery of non-Euclidean mathematics, as well as its empirical basis in physics. In the course of many decades, we have become accustomed to images of non-uniform spaces due to the mass marketing of modern abstract art. Due to globalization processes, the development of new computer technologies, especially the Internet, and mass use of rapid transportation technologies, especially airplanes, as well as due to changes in spatial socialization, the idea of space as an arrangement of individual spaces in networks has become established. The hypothesis that ideas of space have changed can also be verified by the fact that ideas of the body, which, like space, was historically conceived as a container from the seventeenth century on, are now also becoming manifold and changing. The image of the body as a container is changing and being replaced by other images, for example, by the idea of the body as an immune system.

However, the traditional idea of space has not concurrently lost its plausibility due to these developments. Hence, a coexistence or competition of two different ideas of space has to be assumed, both of which influence the constitution of space. Ideas of space can make spatial actions possible or easier: people can act, for example, on the basis of ideas of Euclidean geometry, which have an impact on constitution, but cannot be equated with constitution because as a rule space also involves an aspect of placement, as shown by the discussion of socialization.

Just as ideas of space are being transformed, the practice of placement is changing due to the use of new leisure and communication technolo-

gies. This becomes manifest in the use of rapid transportation as well as in the shopping tour on the Internet or in the design of discotheques in the image of monitors. In the sensorial turmoil of dancing under pulsing strobe lights, any uniformity of space, whether in imagination or in perception, becomes an illusion.

Changes to the constitution of spaces are not, however, restricted to everyday actions. Changes can also be observed in macro-sociological dimensions, for example as a result of globalization processes. Here, too, a distinction can be made between spacing and synthesis. In recent decades, what are called "global cities" have emerged, forming a space of their own. This is based both on spacing processes, which in this case are observable above all in the form of digital networking with a permanent flow of information and transfer of data, as well as on processes of synthesis on the part of the agents involved. The synthesis of the cities of New York, Tokyo, London, Paris, and Hong Kong to a global space structures the action of financial brokers; and the other way round, spacing, that is, the placement of information and the transfer of data, induces syntheses.

If space were construed merely as the background to action, this process could be analyzed solely in the dimensions local, national, global. But there is much to support the view that social developments can no longer be analyzed in accordance with this logic referring to homogeneous space. With the development of global cities as networked nodes that control and mediate global flows subject to the legal provisions of the nation state concerned and open to the local labor market, while also closely integrated in a network with other global cities, networked spaces are emerging that can no longer be adequately described in the dimensions of global or local. Within the configurations emerging through electronic networking, information is continuously being transferred and financial transactions performed. By way of networking, a space of its own is developing that does not only appear as a virtual space, but rather by virtue of its localization also generates specific urban spaces that are fundamentally structurally different from other urban spaces. Just as the body mediates between virtual reality and the surrounding space, global cities emerge as an interface between a networked space in flux and a space that is nationally and/or locally constituted.

From this it follows that the change in spatial socialization can only be understood if space is not construed as a background or platform of action; rather, space must be conceptually integrated in the course of action. The constitution of various spaces at one place must become conceivable. In

addition to the faculty of placement resulting from action constitutive of space, a faculty of synthesis must be attributed to people if individual "islands," people at other places, distant cities, and the like are no longer to be viewed as fragmented and disjoined. Aside from operations of abstraction in science and planning, these (institutionalized) syntheses shall be understood as deeply interrelated with spacing processes.

7.2   Sociological Ideas of Space

A sociology of space does not merely map spaces, rather it constitutes spaces itself through the selection of the social goods and people to be analyzed. If for no other reason, it is therefore necessary to state clearly what idea of space is used in approaching the object of study.

Conventionally, a distinction is made between absolutist and relativist ideas of space. Whereas from an absolutist standpoint a dualism is assumed, that is, the existence of space and bodies is presupposed, relativist traditions are of the view that space forms the structure of the relative locations of the bodies.

This debate on the "correct" interpretation of space dates back to, among others, Isaac Newton and Gottfried Wilhelm Leibniz, and contemporary attempts to determine space tend to be based on the one or the other view, with the exception of the efforts of phenomenologists, who wish to study the subjective view of space. The idea of "living in space," which up to now has been dominant in everyday life and can be traced back to the idea of container space in Greek antiquity and to the Jewish–Christian account of creation, also harmonizes with the absolutist idea of space. Thus, the idea has been established that there is a space that has a reality independent of bodies.

The development of the sociology of space is now dependent on the decision as to whether both concepts of space are consciously drawn on to explain social phenomena, which can be observed for everyday consciousness, or whether *one* concept of space can be formed that is formulated such that the various social processes to be subjected to sociological analysis can be understood. A purely absolutist argumentation, which juxtaposes space as something material and unmoved to moving action can no longer explain virtual spaces, for example, and can be excluded as the sole sociological concept of space for this very reason. It differs from the relativist hypothesis that space is derived from the arrangement of social goods and people. Since sociology deals with social figurations, the obvi-

ous option is the derivation of spaces from social goods, which are usually produced by work, and from the placements (and movements) of people. A relativist idea of space can accordingly serve as an initial conception.

Working with two different concepts of space would have the decisive disadvantage that the permanent uncertainty of communication would be aggravated. One function of a basic sociological concept is that it is a medium of communication. Simultaneously retaining these two different concepts of space only conditionally fulfills this function: space must be qualified in communication. Moreover, it creates a gap in understanding when one phenomenon, that is, the constitution of space, depending on its specific character, can only be explained with different definitions of one and the same basic concept. Accordingly, it will have to be expected of a basic sociological concept of "space" that it grasps the process of constitution and does not already presuppose its result, for example, being a container. The actions and building techniques oriented on Euclidean geometry are consequently also understood as aspects of the process and not presupposed as inherent to the idea of space. This means that we must take leave of the key epistemological idea that space has an existence independent of social goods, people, or human action, or that it can be considered separately from action or only selectively related to action. Space cannot be reduced to place because that would reduce a complex process to one isolated aspect, namely to being localized at a place; moreover, it would fail to account for the constitution of various spaces at one and the same place.

The equation of space and territory as a section of the earth's surface is also unhelpful. It results primarily from a conscious effort witnessed in some sociological studies to dissociate from geopolitical discourse. However, the consequence is that space is still not determined as a sociological concept, and instead the analysis of spatial phenomena is left up to other disciplines. The point of this abstemious approach is to demonstrate that no compelling consequences for action emerge from spaces, for example, that an imperialistic policy should be implemented because of lack of space, but rather that social processes shape action. As convincing as the criticism of ideology is, the equation of space with physical space in territorial shape is implausible. Something is rejected as unsociological which itself was previously conceptualized as space. Space is naturalized as territory, and the social construction of space is completely excluded.

What point could there be to taking a dualistic point of view with respect to space when as a rule it only admits of the conclusion that the category

thus determined is sociologically irrelevant? If, as described above, certain significant social changes are taking place that are best explained by appealing to the category of space, then there is little point in selecting a definition of the concept which in previous sociological studies always led to the insight that space ought to be dissociated from the context of action. The processual character immanent to the constitution of space remains unidentified in an absolutist concept of space.

Accordingly, a present-day sociology of space must explain the emergence of space from the arrangement of social goods and people instead of juxtaposing it with these goods and people as an external reality in its own right. This also applies to talk of "space fragments," "dismemberment," "disintegration," and so on. These discourses do indeed refer to the phenomenon that spatial socialization no longer consistently admits of the idea of unified space; however, the idea of the breakdown of space presupposes something that was originally whole. This overlooks the fact that the whole itself is constructed. It is precisely the idea of a worldwide homogeneous space that makes certain hierarchies and divisions possible, enabling the expansion of forms of buying and selling. In the following concluding section, this division and structuration shall not be understood as parts of something that is really whole, but rather as arrangements reproduced in action. Space exists only as a scientific abstraction; in the interaction between structure and action, spaces are always constituted in the plural. Hence, space can never be overcome; rather the development of spaces is always based on a process of renewed syntheses and spacings.

7.3   Sociology of Space in Eight Theses

To avoid unnecessary repetitions (cf. the detailed summary in Chap. 5.7), let me present the essential aspects of the constitution of space in the form of concise propositions:

1. Space is a relational arrangement of living beings and social goods at places. Space is constituted by two processes that must be analytically distinguished: spacing and the operation of synthesis.
2. Spaces are institutionalized when the arrangements remain in effect beyond individual action and entail conventional operations of synthesis and spacings.
3. We can speak of spatial structures when the constitution of space, that is, either the arrangement of social goods or people, or the syn-

thesis of goods or people to spaces is inscribed into rules and secured by resources which are recursively incorporated in institutions independent of place and point in time. Spatial structures, like temporal structures, are also forms of social structures; together, they constitute the social structure. Action and structure are permeated by structural principles such as gender and class.

4. The possibilities of constituting spaces are dependent on the symbolic and material factors found in an action situation, on the habitus of the actors, on structurally organized inclusions and exclusions, as well as bodily capacity.

5. Spaces generate distributions which, in a hierarchically organized society, are generally unequal distributions or distributions that favor different groups of people. For this reason, spaces are often the object of social conflicts. Possibilities of utilizing money, credentials, rank, or association are decisive in enforcing arrangements; and the other way round, the possibility of utilizing spaces can become a resource.

6. Atmospheres are the external effectuality of social goods and people in their spatial arrangement as realized in perception. Due to atmospheres, people feel at home or strange in spatial arrangements. Atmospheres obscure the practice of placement.

7. The reproduction of spaces takes place repetitively in everyday life. Changes to individual spaces emerge as possible in relation to necessity, physical desire, other people's manners of action, and the state of being considered "other." Changes to institutionalized spaces or spatial structures must take place collectively with reference to the relevant rules and resources.

8. The constitution of space systematically generates places, just as places are needed to make the emergence of space possible. Place is thus both the goal and the result of placement. At one place, various spaces can emerge that coexist or compete with each other, or are negotiated in, for example, class- and gender-specific conflicts.

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