On the Basis of Space Theory and Its Impact on Organization Studies and the Social Sciences

Philipp Schnell

Institute for Sociology and Social Research

Institute for Nonprofit Management

Vienna University of Economics and Business

Abstract

The current paper aims at providing an overview of research approaches in organizational theory as well as of concepts of philosophy of science that take a perspective of space theory in order to deduce qualities and characteristics of multidimensional, multirelational spaces that can be applied in the design of research projects in organization studies and the social sciences. A wide range of literature from the both strands has been reviewed in order to construct a framework for the design of research projects based on theories of space. By relating and integrating different research fields and theoretic concepts from the areas of organization studies, philosophy of science and space theory, properties, qualities and dimensions of a multidimensional, multirelational model for the planning and structuring of research projects will been described that aims at establishing connections and linkages between different research disciplines, theoretical concepts and levels of scientific analysis. Establishing and shaping multiple relations between different spaces and spatial dimensions as well as between elements, actors and perspectives, interacting in time and space, allows for creating connections between different theoretical backgrounds, different disciplines and scientific methods in a multidimensional, multirelational concept that lends itself to the dynamic design of interdisciplinary research projects. In the scope of this article, a research framework, based on the principles of space theory as well as on research in the field of organization studies and organizational space, will be established and described in detail, including the foundations and characteristics of multidimensional, multirelational spaces and meta-spatial models, which can subsequently be used for the design of interdisciplinary research projects in organization studies and the social sciences. The concept developed in this analysis ultimately aims at laying the groundwork for integrating science, art, management and social studies in a comprehensive multidisciplinary framework.

Introduction

In recent years organizational space has been an ever-evolving topic in organizational literature (Clegg & Kornberger, 2006b; Dale & Burrell, 2008; Hernes, 2004; van Marrewijk & Yanow, 2010a) and many authors have argued over time that more attention should be directed at the matter of space and organizations (Kreiner, 2010; Orlikowski & Scott, 2008; Orlikowski, 2007; van Marrewijk & Yanow, 2010b; Yanow, 2010). There has been considerable interest in physical spaces occupied and transformed by the organization, which have commonly been referred to as „organizational spaces“ (van Marrewijk & Yanow, 2010b, p. 1). Also, interrelations between physical space and the social sphere have been discussed, employing the term „sociomateriality“ (Dale & Burrell, 2008; Dale, 2005; Orlikowski & Scott, 2008; Orlikowski, 2007). It seems obvious that the relation between organizations and their physical manifestation in space, but also their representation, analysis and structuration in abstract, imaginary or virtual spaces have been a central topic not only in organizational theory but also in everyday management (Gastelaars, 2010; Go & van Fenema, 2006; Kiniven, 2006; Mobach, 2010; van Marrewijk, 2010). Especially the design and application of multidimensional models of space, often constructed on the basis of Henri Lefebvre's concept for „the production of space“, have always held great promise for the comprehensive analysis and description of different organizational tasks, functions and operations, with special regard to the modeling of connections between social, physical and imaginary (or symbolic) aspects of the organization (Dale, 2005; Lefebvre, 1991; S. Taylor & Spicer, 2007; Watkins, 2005).

In this article it will be attempted to outline a multidimensional model for the spatial analysis of organizations as well as to describe its functions and properties in order to create a framework for a multidisciplinary, multirelational approach for organizational research, based on the principles of space theory. In this model, which is partly based on Henri Lefebvre's spatial concept concerning the production of space, it should be possible to relate different spatial spheres, to introduce multiple relations between spatial dimensions and to use these relations in order to design multidisciplinary research projects in economics and the social sciences. In order to tackle this issue, an number of traditional perspectives in the field of space theory will be discussed (Augé, 2012; Bourdieu & Wacquant, 2006; De Certeau, 2006; Derrida, 2008; Foucault, 1986; Lefebvre, 1991; Lewin, 2006; Luckner, 2001), highlighting their special relation to certain organizational theories that can demonstrate and explain the tempo-spatial structuration of the organization (Kosiol, 1962, 1978; Orlikowski & Yates, 2002; Schreyögg, 2003; Weick, 1995a, 1995b). The classic concept of task analysis created by Kosiol (1962, 1978) is chosen and related to a background of space theory, in order to illustrate the introduction of tasks and functions as well as the creation of structures and processes, integrating both dimensions in the management of organizations. Also, Weick's (1995a, 1995b) perspectives on sensemaking and process-building will be analyzed, emphasizing their relation to time and space, in order to highlight the continuous introduction and transformation of organizational processes and explain their role in organizational sensemaking and the tempo-spatial structuration of the organization. It seems obvious that space not only serves as a background, against which the operations of the organization are planned and carried out, but that time and space are the very media that form the basis for human sensemaking as well as for individual orientation and the organization of collective action in the world. Time and space can thus be appropriated as tools, not only for shaping and understanding human life-worlds, but also for designing multirelational, multidimensional concepts for research in economics and the social sciences.

Space and Organizational Theory

The continuous transformation and adaptation of tempo-spatial structures, dynamic spatial perspectives, multidimensional linkages in space and time, which are connected to systems of power, social relations, means of access to and use of space, as well as spatial practices and social interactions produce the spaces of organizations and everyday human life (Dale, 2005; Giddens, 1997; Lefebvre, 1991; S. Taylor & Spicer, 2007; Watkins, 2005). Furthermore, the interrelations between symbolic spaces, spaces of human practice and abstract spatial analysis have been thoroughly established in the social sciences in different contexts (Bourdieu & Wacquant, 2006; Bourdieu, 2009; Foucault, 1986, 1995; Lefebvre, 1991). In his work on the production of space Lefebvre (1991) provides a basic multi-spatial model, which has been adopted for organizational research on multiple occasions (Dale, 2005; S. Taylor & Spicer, 2007; Watkins, 2005; Zhang, Spicer, & Hancock, 2008). Based on Lefebvre's thoughts on the relation between spatial practice, abstract and imaginary spaces, this article seeks to establish a multirelational system of spaces that allows for connecting and interrelating different spatial dimensions as well as different levels of spatial analysis in a comprehensive framework, derived from a number of theories of space and spatial existence (Bourdieu, 2009; De Certeau, 2006; Derrida, 2008; Foucault, 1986; Goodman, 1990; Lefebvre, 1991; Lewin, 2006; Luckner, 2001; Wittgenstein, 2006). The said model can then be applied in order to depict, relate, design and integrate spatial contexts, multiple spatial dimensions and perspectives, constructing a meta-spatial framework that relies on the properties and qualities of real space as much as on its relations to abstract, imaginary, virtual, simulated or hyperreal spaces (Baudrillard, 1981; Dobers, 2006; Grandy & Mills, 2004; Kiniven, 2006; Mobach, 2010; Steyaert, 2006). The current paper thus aims at constructing a conceptual framework that differentiates and integrates multiple spatial dimensions in a comprehensive model that can be applied in designing and creating research projects in organizational research, but also in the general field of social sciences.

Lefebvre outlines the basic properties and structures of a multi-dimensional spatial concept that has at various instances been used in order to describe and analyze organizations and organizational spaces (Dale, 2005; Lefebvre, 1991; S. Taylor & Spicer, 2007; Watkins, 2005; Zhang et al., 2008). In this regard, multidimensional spaces and multiple spatial relations can be modeled in order to contextualize, texture or reconfigure spatial relations and tempo-spatial assemblages, social settings and their manifestation in space and time as well as the evolution and transformation of tempo-spatial structures and human environments (Dale & Burrell, 2008, 2010; Foucault, 1995; Giddens, 1997; Hernes, Bakken, & Olsen, 2006; Orlikowski & Scott, 2008). These spatial relations, however, can also freely and readily be extended to include imaginary spaces (Dobers, 2006; Pedersen, 2006; Steyaert, 2006), virtual space (Kiniven, 2006; Mobach, 2010), multi-relational conceptual spaces (Go & van Fenema, 2006; Munro & Jordon, 2013; Watkins, 2005) as well as spaces of differing cultures and social backgrounds (Wåhlin, 2006; Weir, 2010). Based on a spatial approach towards organizations, organizational contexts (Hernes, 2004), buildings and architecture (Gastelaars, 2010; Markus, 2006; Pedersen, 2006; van Marrewijk, 2010) as well as relations between the social sphere, the spaces and places of the organization can be mapped and analyzed (Dale & Burrell, 2008; Dale, 2005; Orlikowski & Scott, 2008; Orlikowski, 2007). In this respect, space can be understood as a tool to represent as well as to model organizational reality, demonstrating its multiple roles providing the basis, the result and medium for continuous organizational change (Koolhas, 1994; Kornberger & Clegg, 2004; Kosiol, 1962, 1978; Lefebvre, 1991; F. W. Taylor, 1996; Yanow, 2010). In addition space can thus be used to depict, form and inform versions of human reality and to represent these version and perspectives in physical form (Gastelaars, 2010; Kenis, Kruyen, & Baaijens, 2010;

Kornberger & Clegg, 2004; Kornberger, 2012; van Marrewijk, 2010). Moreover, the concept of space has also frequently been applied in order to analyze the effects of tempo-spatial practices as well as their perception in real life (Iedema, Long, & Carroll, 2010; Munro & Jordon, 2013; S. Taylor & Spicer, 2007; Wicks & Reason, 2015; Yanow, 2010), the distribution and relation of bodies in space through a network of boundaries, positions and spatial contexts (Chanlat, 2006; Dale & Burrell, 2008; F. W. Taylor, 1996; S. Taylor & Spicer, 2007) as well as the effects of power on space and spatial structures (Bourdieu & Wacquant, 2006; Foucault, 1995; Kornberger, 2012; Lefebvre, 1991; Markus, 2006). Space can thus be understood as a tool, as a medium, as an analytic principle and an analytic model, as a depiction and finally as the basis of understanding, forming and representing human reality at the same time. Moreover, spatial concepts allow for relating the physical realm to the imaginary aspects of life (Dobers, 2006; Foucault, 1986; Lefebvre, 1991; Steyaert, 2006) and demonstrate how real, imaginary, practical, collective and personal approaches to space can be integrated in creative conceptions of everyday spatial settings (Dale, 2005; Kenis et al., 2010; Orlikowski & Scott, 2008; Orlikowski, 2007). In space people engage with their immediate surroundings and it can thus be understood as the very medium, through which they access the reality of physical human existence (Kaprow, 1993a; Kreiner, 2010; Luckner, 2001; van Marrewijk, 2010; Yanow, 2010). Space thus holds multiple functions that can be appropriated in order to organize and structure academic research, analyze and deconstruct social contexts as well as to describe relations between physical settings and the organizational realm. In this article it is now aimed at delineating functions, qualities and properties of a multidimensional spatial framework that can guide the creation and design of research projects in organizational research an the social sciences.

Scope of This Study

The current study will deconstruct the emergence and modeling of spatial multidimensionality and deduce the properties of a multirelational tempo-spatial system for its use in research design. In this process space is shown to be a fluid, malleable and omnipresent medium, people use in order to establish and transform relations towards reality, their own identity and the world they live in (Dale & Burrell, 2008; Hernes, 2004; Luckner, 2001; Weick, Sutcliffe, & Obstfeld, 2005; Zanoni & Janssen, 2006). Conducting the analysis outlined above, basic theories from the field of organization studies (Giddens, 1997; Kosiol, 1962, 1978; Schreyögg, 2003; Weick, 1995a, 1995b) will be addressed from a perspective of space theory, putting a special focus on the creation and modeling of human tempo-spatial relations. A number of classics theories of space will be addressed in order to analyze and deconstruct these relations in a framework of organization theory, establishing a meta-theoretic view on organizational tempo-spatial structuring and the emergence of space and time in organizations (Bourdieu & Wacquant, 2006; Bourdieu, 2009; De Certeau, 2006; Derrida, 2008; Foucault, 1986, 1995; Lefebvre, 1991; Luckner, 2001). Specifically, the interactions between structures and processes as well as their role in temporizing and spatializing organizational space will also be discussed (Kosiol, 1962, 1978; Schreyögg, 2003; Weick, 1995a). Also, different aspects of sensemaking will be addressed with regard to their impact on forming and transforming organizational realities in time and space (Weick et al., 2005; Weick, 1995b, 2001). After integrating basic process-building, the structuring of operations and organizational sensemaking with perspectives derived from space theory, a postmodern approach will be taken on the temporization and spatialization of organizations in order to highlight particular aspects of spatial dynamics as well as the fluid creation, continuous modeling and constant creation of tempo-spatial relations (Baudrillard, 1978, 1981, 1987;

Deleuze & Guattari, 1977, 2005, 2006; Derrida, 1978, 1985, 2008). From a postmodern perspective space can only be understood as a dynamic, omnipresent and multifunctional tool for negotiating and transforming human approaches towards reality as well as for creating those realities in their tempo-spatial context (Deleuze & Guattari, 1977, 2005; Luckner, 2001; Munro & Jordon, 2013). Space can now also be acknowledged as a medium, integrating and juxtaposing different worldviews, viewpoints and self-concepts in its all-encompassing physical form that can thus be understood as the tangible expression of human perspectives on reality (Baudrillard, 1978; Dale & Burrell, 2008; Dale, 2005; Kreiner, 2010; van Marrewijk & Yanow, 2010b; Zanoni & Janssen, 2006). Thus, the manifestation of individual identities in space can not only regularly be observed, but also can the forms and processes of human interaction in space be deconstructed and analyzed so that space itself can be understood as a valuable and readily available medium for scientific analysis and structural research (Bellas, 2006; Chanlat, 2006; Dale, 2005; Gastelaars, 2010; Kornberger & Clegg, 2004; Markus, 2006; van Marrewijk, 2010; Yanow, 2010).

It will then be shown how approaches derived from space theory can be used in a number of instances in order to model, represent and transform certain aspects and concepts of human reality. This allows for a practical demonstration of the use of tools for tempo-spatial structuring and their role in creating and modeling versions of human reality (Diekmann, 2010; Goodman, 1990; Grandy & Mills, 2004; Neftci, 2000; Orlikowski & Yates, 2002; Taleb, 2010). It will be illustrated, how space as well as the modeling of tempo-spatial relations are widely applied, not only in organizing and structuring everyday human existence, but also in various instances in the design and creation of research projects, in the domain of art as well as in philosophy of science, often without explicitly being noticed. Finally, it will be attempted to delineate functions, properties and operations that can regularly be observed, constructing meaning, order and systemic consistencies from human relations to space and time as well as creating comprehensive models of the world that are naturally connected to physical space and spatial practice. After outlining the properties of a system of multispatial relations, analytic tempo-spatial structuration and the processes of dynamic modeling of multidimensional, multirelational spaces, a conceptual framework will be constructed that allows for integrating multiple spatial dimensions into a multirelational meta-model of space that can be applied in designing research projects in organization studies and the social sciences. The current study thus aims at describing the foundations of a scientific model, based on theories of space, that allows for the integration of multiple spatial approaches, multiple levels of analysis and various perspectives on time and space in a multidimensional, multirelational model that establishes relations between different disciplines, concepts and theoretic backgrounds. It is clear at this point that the entirety of the objectives described above might not be covered in one single article. It is nevertheless hoped that a part of the way towards an integrative framework for the planning and implementation of research projects in organization studies and the social sciences, based on a comprehensive perspective rooted in space theory, can be paved by conducting this analysis. This may in turn promote the transparent and unambiguous use of space and space theory in the design and realization of research projects as well as the development of theoretic concepts.

Tempo-spatial Structures in Organizations

The basic structures and processes of the organization regularly hint at the creation and pattering of time and space in the organization (Kosiol, 1962, 1978; Orlikowski & Yates, 2002; Schreyögg, 2003; Weick, 1995a). This may be especially evident, when organizations are interpreted as contexts for the ordering and coordination of human interaction (Hernes, 2004). Derrida describes contexts as being derived from a moment of continuous presence so that, by the use of signs and symbols, complex models of the world and thus of the organization can be created along with tempo-spatial structures that allow for the dimensioning and structuring of human reality (Derrida, 1978, 2008). In a similar notion Heidegger points towards the conceptualization and realization of human existence as well as the construction of human identities via time and space (Luckner, 2001). Also, the structure of possible realities and potential realizations of different states of the world are created and outlined in their relation to time and space so that possible future, present or past worlds can more or less apparently be incorporated in current perceptions of reality (Goodman, 1990; Wittgenstein, 2006). Wittgenstein (2006, p. 11) relates the perception and conception of a "Sachverhalt" to possible relations of elements in a space comprising all possible states of the world. The concrete realization derived from all potential or conceivable states of the world will in turn be mirrored in the named "Sachverhalt". It seems obvious at this point, how the introduction of tasks, their analysis as well as the creation of structures and processes create time and space in relation to a more or less commonly shared worldview that ultimately lies at the basis of designing and structuring the organization (Kosiol, 1962, 1978). Weick's (1995a, 1995b) texts highlight how patterns of order and sensemaking are introduced in the organizational realm and contribute to organizational sensemaking. The patterning of organizational interaction thus allows for the creation of sensible organizational environments and the construction of a system of potential realities that define and structure the tasks and processes of the organization (Kosiol, 1962, 1978; Luckner, 2001; Weick et al., 2005; Wittgenstein, 2006). The introduction of contexts and context-specific practices therefore serves for purposes of introducing tempo-spatial structures as well as for relating and recreating those very structures from a moment of total presence in time and space (Derrida, 2008; Hernes, 2004). Thus, organizational contexts as well as related tempo-spatial structures are subject to constant reconstruction, dynamic modeling and the redefinition of fluid relationships to the living environment (Hernes et al., 2006; Hernes, 2004; Luckner, 2001; Wittgenstein, 2006). As a consequence, the contexts of the organization, although they exist and persist over time and space, always are a matter of continuous reconstruction, modeling the aspects, outlines and potentialities of organizational reality (Albert & Whetten, 1985; Dutton & Dukerich, 1991; Gioia & Thomas, 1996; Hogg & Terry, 2001). As Hernes points out, the organization is characterized by the construction of relational contexts that can also be conceptualized as spaces and that emanate from a moment of ultimate presence in space and time (Derrida, 2008; Hernes, 2004). These spaces tend to be influenced and mirrored in the physical realm, reflecting and integrating potential realities, that are represented by the concepts, models, structures and processes shaped in the organization (Chanlat, 2006; Dale, 2005; Grandy & Mills, 2004; Hernes et al., 2006; Orlikowski & Scott, 2008). Also, abstract concepts of the organizational realm tend to be incorporated in tangible structures of the organization and generate interactions in the physical world that can be observed and analyzed (Dale & Burrell, 2008, 2010; Dale, 2005; Orlikowski & Scott, 2008; Orlikowski, 2007). It is subsequently possible to relate abstract conceptions of organizational reality to a present moment in time and space that lies at the heart of the dynamic modeling of the organization as well as of human tempo-spatial relations. Organizations and tempo-spatial structures in organizations are thus continuously modeled and reconfigured as well as they are related to a moment of permanent presence that allows for the mapping of potentiality

structures, at the same time as systems and processes for the dimensioning and creation of organizational realities are being formed and transformed (Luckner, 2001). Finally, it also becomes clear that multiple spaces, tempo-spatial models and individual perspectives on time and space are ultimately integrated and mirrored in the present space and time of ongoing human existence, where all possible states of the world along with all conceivable spaces of possibility are generated and ultimately reunited.

If Lefebvre's multidimensional approach on space is considered in order to try and use it for designing projects in organizational research, it becomes obvious that it relates different (albeit interpretational) dimensions of space and employs these in an analysis of multirelational and multidimensional spaces that allows for a thorough discussion of space, spatiality and their transformation in time (Lefebvre, 1991; S. Taylor & Spicer, 2007; Watkins, 2005; Zhang et al., 2008). If different parts of the organization and their environment are subsequently interpreted as spaces that are ultimately related to our presence in physical space and, moreover, it is assumed that complex abstract as well as imaginary, interpretive or symbolic spaces are generally deduced from our basic spatial existence, then all those spatial contexts can be understood as interrelated systems of relational spaces based on direct spatial experience (Derrida, 2008; Hernes, 2004). After conceptualizing different contexts, abstract and imaginary settings of the organization as spaces, these can be related by a multirelational, multidimensional model that allows for the connection of different spheres of the organization via concepts rooted in space theory. Therefore, it will be attempted in this article to deduce functions, operations and properties of a meta-spatial system that can be applied in the planning and realization of research projects in organization studies and the social sciences.

In his analysis Lefebvre applies a model based on three conceptual dimensions, which include spatial practice (and practical space), representational spaces and spaces of representation (in other words: physical space, symbolic space and abstract space) (Lefebvre, 1991). Those three spatial dimensions are interconnected through myriad social relations that form the basis for the continuous production of space. Lefebvre then models the established relations between different spatial dimensions in order to examine and analyze certain aspects and developments in human history. He thus uses the derived multirelational spatial model to create a conceptual context that allows for the interpretation of certain aspects of possible human realities, ultimately represented by tangible, physical space. The term “possible” is used here, because, as we speak, reality, especially historical reality, is in itself expressed in potentialities instead of certainties, in possible spaces that are mirrored in real spaces (Luckner, 2001; Wittgenstein, 2006). Lefebvre thus creates a space of historic potentiality through a system of spaces appropriated for conceptual, tempo-spatial analysis that ultimately resides in the creation of multidimensional contexts emanating from a moment of total presence in the here and now (Meillassoux, 2008). This moment is marked by Derrida as the moment of the “différance” (Derrida, 2008, p. 79) that lies at the basis of the creation of myriad contexts of human existence that lie at the heart of the current analysis and that are regularly engaged in the “temporization” and “spatialization” (Derrida, 2008, p. 125) of the world. In the case outlined above, space is not merely regarded as a distant signifier of a possible reality or the inanimate background for human interaction, but it is understood as the very medium, as an abstract, conceptual and at the same time creative and interpretive medium, that can be used in order to dissect, direct, represent and investigate the space of our living environment. In the light of an almost infinite number of different conceptualizations of space, spatial realities and tempo-spatial relations, it appears that it is spatial abstraction and the conceptual, often creative production of worlds that results in a great number of tempo-spatial artifacts, spatial models and possible spatial realities that influence human existence in

space as they are ultimately deduced from direct spatial experience (Goodman, 1990). We can now link direct spatial perception to a complex system of possible, interrelated spaces that lie at the basis of creating ordered and organized worldviews at the same time as they are represented in the spaces of everyday human practice. At this point it should become clear that space, aside from its function as a basic medium for human interaction with the living environment, is equipped with certain properties and functions that can be applied in the creation of multidimensional representations of reality, which can be used in the design and creation of research projects.

Sensemaking and its Relation to Space

Space in organizations also fulfills other important functions for individuals and social collectives that are closely connected to activities and processes of sensemaking, shaping human realities as well as physical environments (Luckner, 2001; Weick et al., 2005; Weick, 1995a, 1995b). As has been indicated above, space and time are basic media for human orientation in the world and lie at the heart of planning and executing collective action (Chanlat, 2006; Dale, 2005; Kosiol, 1962, 1978; Luckner, 2001). Moreover, space regularly includes symbolic as well as imaginary aspects that allow for relating different facets of individual identity to spatial settings and that can not only be transformed and rearranged in order to produce meaningful versions of the world, but are also ultimately bound to individual identity construction (Bachelard, 2011; Dutton & Dukerich, 1991; Dutton & Penner, 1993; Goodman, 1990; Lefebvre, 1991; Luckner, 2001; Weick, 1995b). Especially the imaginary, often outright poetic, the creative and aesthetic aspects of generating and transforming space as well as the spatial strategies and tactics connected to these seem to open space up for an instrumental approach on human life as well as for the creation and transformation of dynamic relations with the living environment (Dale & Burrell, 2008; Dobers, 2006; Foucault, 1986; Steyaert, 2006). Therefore, Weick's (1995b) seven properties of sensemaking, which have mainly been defined for an organizational background and which include the foundation of sensemaking in identity construction, the retrospective nature of sensemaking, the enactment of sensible environments, the social dimension and the ongoing character of sensemaking, the focus on and by extracted cues as well as a drive towards probability rather than accuracy, can all be connected to the spatiality of human existence, which demonstrates how space is not only used as a medium for creating possible and factual environments, but also how it is regularly vested with meaning and engaged in the process of sensemaking.

At this point it seems evident that space forms a (more or less) stable point of reference for the planning and organizing of human life and moreover serves as a fluid medium for creating patterns and processes of human sensemaking. Thus, it appears that present physical space is related to an infinite number of possible spaces, tempo-spatial models, worldviews as well as individual and collective perspectives on reality that are ultimately negotiated in and represented by real, present space. The space of human existence then serves as a prisma and a medium used to unify, negotiate, to contest and transform spatial reality, individual sensemaking and collective meaning in the real world. As a consequence, it is possible to relate multiple functions, social, creative and abstract tempo-spatial relations to present space and concrete spatial settings so that multidimensional spatial models can serve as a tool for conceptualizing and modeling various aspects of human reality in their relation to space and time. As the present, physical space of human life seems to be connected to a sheer unlimited number of potential, speculative or outright imaginary spaces, we may now ask for the processes of realization of tempo-spatial simulations and their impact the physical world.

Space as Simulation?

This section mainly revolves around the question, which aspects of space will be deemed „real“, „simulated“, „modeled“ or maybe even “absurd” and how spaces will in fact be connected to the continuous construction of reality (Baudrillard, 1978, 1981, 1987). As Wittgenstein (2006, p. 11) points out, all possible states of the world are included in the “space of possibility”, which in turn excludes all impossible states, although this concept does not tell us exactly about the relation between “real”, “possible” and “impossible” spaces, which seem to coexist in a permanent state of re-negotiation and re-configuration. On the other hand it can (with near certainty) be confirmed that present spatial cognition and the physicality of real, tangible space might be the closest and most accessible hint at spatial reality, its forms and implications, because all other forms of spatial representation and conceptualization seem to be deduced from this primary form of spatial perception (Derrida, 2008; Lefebvre, 1991; Luckner, 2001; Wittgenstein, 2006). Moreover, tangible, present space is, at least in the physical world, the one main certainty that is always transformable, but never contestable. This also holds true for the organizational realm that can be interpreted as an abstract, but also as an imaginary, symbolic and social context realized in space (Hernes, 2004). It also serves for organizing and integrating collective action as well as for relating social contexts to individual sensemaking. On the other hand, all the spaces created or imagined in respect to the organization, are ultimately found to be represented and incorporated in present space and accessed by direct spatial cognition (Dale, 2005; Gastelaars, 2010; van Marrewijk, 2010; Yanow, 2010). As a consequence, we can ask for the role of abstract, imaginary, symbolic, analytic and even scientific models of space in dimensioning and modeling different aspects of reality and their relation to space and time.

The question thus arises, if abstract, imaginary or otherwise interpretive conceptions of space are mere simulations of reality, a fact that can easily be extended to the organizational realm, its strategic tools and analytic concepts that, above all, seem to serve as a means of conceptualizing and dimensioning possible, impossible, probable and improbable realities (Dobers, 2006; Grandy & Mills, 2004; Kenis et al., 2010; Kornberger, 2012). In the same sense it may be asked, if and how the abstract, imaginary or symbolic conception of possible realities will affect present, physical space and spatial cognition as well as human relations to the living environment (Dale & Burrell, 2008; Foucault, 1986; Kiniven, 2006; Steyaert, 2006). So the connection between abstract, imaginary or symbolic spatial contexts (not to speak of all the additional dimensions that could be introduced) is a basically natural, but nevertheless problematic one that is largely neglected in discussions on space theory and organizational spaces. This aspect will nevertheless have considerable impact on organizational research based on space theory, because it allows for the analysis of the conceptual relations between tempo-spatial models and spatial practice as well as between different contexts of the organization and physical organizational space. In order to ask, in which sense space may be used for simulating possible realities, one has to take the dynamic modeling of tempo-spatial relations into account and their role in the creation of possible worlds as well as their appropriation through discourse, pictures, concepts, etc. (Baudrillard, 1978, 1981; Goodman, 1990). Therefore, it seems more than appropriate to search for structures, processes and principles that enable the dynamic modeling of tempo-spatial relations, which seems central for accessing, constructing and understanding human reality. From a perspective of space theory the construction of past, future and present states of the world as well as the modeling of linkages between these states also constitute a mere exercise in creating continuity between different “extasies of time” (“Extasen der Zeitlichkeit” (Luckner, 2001, p. 148)), which are themselves related to particular worldviews, such as collective and individual perspectives on possible versions of reality (Albert & Whetten,

1985; Derrida, 2008; Dutton & Penner, 1993; Weick, 1995b; Wittgenstein, 2006). In this context the simulation of space does not seem as a distant aspect of human existence or as an illusive manifestation of an utopian identity, but as an everyday practice that is actively applied in order to establish continuity and meaning in the passing of time. The simulation of reality that is mentioned by Baudrillard (Baudrillard, 1981, 1987), especially with respect to time and space, thus appears as a common process that is central to the continuous construction of reality, because to establish connections between physical, abstract, imaginary or symbolic spaces (or contexts), can be identified as a central function in the dynamic reconfiguration and transformation of reality as well as of the spaces it occupies. Searching for the effects and impacts of simulative models of time and space in their connection to the creation of human reality, Baudrillard himself indicates, what can be expected as a consequence of the continuing and ever intensifying simulation of the real:

"*Simulation is no longer that of a territory, a referential being, or a substance. It is the generation by models of a real without origin or reality: a hyperreal. The territory no longer precedes the map, nor does it survive it. It is nevertheless the map that precedes the territory - precession of simulacra - that engenders the territory, and if one must return to the fable, today it is the territory whose shreds slowly rot across the extent of the map."* (Baudrillard, 1981, p. 1)

In fact, human approaches to space as well as its various modalities allow us and at the same time force us to reconstruct and continually renegotiate our relation to time and space as a function of our very existence in this world (Luckner, 2001; Wittgenstein, 2006). Hence, people employ more or less complex systems that enable them to map, represent and model tempo-spatial relations in more or less controlled settings and by the of use more or less sophisticated tools (Go & van Fenema, 2006; Grandy & Mills, 2004; Lefebvre, 1991). Since in the early days of capitalism the basic structures and processes of organizations can be interpreted as systems of tempo-spatial control and coordination, thereby changing and aligning worldviews, work-flows as well as work-related identities (Chanlat, 2006; Foucault, 1995; F. W. Taylor, 1996). These systems do not only serve as a means for controlling time, space and the movement of bodies, but may also introduce tempo-spatial order, territorialize social relations and shape hierarchies in the form of modern institutions (Dale & Burrell, 2008; Foucault, 1995; Giddens, 1997; Kosiol, 1962, 1978). Hence, even complex models of organizing and also the most sophisticated tools for organizational design, strategic management and organizational research are ultimately based on fundamental tempo-spatial relations that have been outlined above and that extend from present, physical space to imaginary, abstract, symbolic or virtual conceptions of the world (Bellas, 2006; Dale, 2005; Grandy & Mills, 2004; Mobach, 2010; Panayiotou & Kafiris, 2010; Zhang et al., 2008). As a consequence all possible simulations of the world ultimately can be traced back to a present moment in time and space, from which they emanate, in which they are modeled and integrated with factual reality.

From Simulation to Heterotopic Space

There are two major insights that can be drawn from a perspective of tempo-spatial modeling, used as a means for simulating and ultimately creating reality in time and space. First, simulating and modeling relations to time and space as well as links between different levels and dimensions of abstract, imaginary, virtual or practical spaces appears to be an everyday practice in collective sensemaking and personal identity construction (Dale & Burrell, 2008,

2010; Luckner, 2001; Weick, 1995a, 1995b; Wittgenstein, 2006). Second, all aspects of continuous simulation ultimately refer to a present moment in space and time, where abstract conceptions of reality originate and different spatial contexts and relations are regularly created and modified (Derrida, 1978, 2008). This fact also prevents space or spatial conceptions from disintegrating or vanishing in hyperreal simulations of space, because even the most abstract spatial models ultimately refer to and emanate from basic human perception of the here and now (Baudrillard, 1981; Luckner, 2001). This also necessitates that space and time will be dynamically modeled and defined by a nomadic conception of a continuous, tempo-spatial assemblage that refers to a permanently changing reality and that is established, formed and transformed through its continuous and fluid tempo-spatial relations (Deleuze & Guattari, 1977, 2005, 2006). Also, the notion of a continuous assemblage of tempo-spatial relations highlights the present moment in time as the very instance, that implicates, integrates and embodies different potential realities, along with varying tempo-spatial conceptions of the world, and relates them to present, physical space. It is this continually present moment in time and space, from which abstract, imaginary, symbolic, simulated and signifying spaces emerge.

From a perspective of permanent change and dynamic tempo-spatial modeling space and spatial concepts can thus be defined by processes of continuous, tempo-spatial assemblage that is perceived in the form of milieus, patterns, structures and consistencies that characterize human perception of space and time. These assemblages can subsequently be manipulated, redirected and redimensioned in the process of individual and collective sensemaking as well as in the course of multidimensional, multirelational referencing between different instances in time and space. Therefore, tempo-spatial assemblages can also be understood as artifacts of our dynamic relation to time and space and can be willfully sculpted in dimensioning, creating, modeling and analyzing aspects of human existence in their relation to time and space. Tempo-spatial structures may moreover be defined as rhizomatic forms of multidimensional, multirelational assemblages that are accessible via planes of consistency that are not only formed in every instance of observation, analysis and representation, but that can be extended and transformed by continuous reconstruction and permanent modeling as a function of creating realities, worlds and worldviews that lie at the heart of individual and collective processes of sensemaking (Deleuze & Guattari, 1977, 2005; Goodman, 1990). As a consequence it can be stated that organizations as well as human perspectives on (organizational) reality will ultimately manifest in “sonorous space” (Deleuze & Guattari, 2005, pp. 479, 481; Munro & Jordon, 2013, p. 1502), which is accessed by immediate spatial cognition and can be observed and analyzed in its emergence and transformation via the structures and fluid forms of “smooth space” (Deleuze & Guattari, 2005, p. 481; Munro & Jordon, 2013, pp. 1498, 1502) in the short term as well as via the structures, spaces of buildings and places of the organization in the long term (Bellas, 2006; Kenis et al., 2010; Mobach, 2010; van Marrewijk & Yanow, 2010b; van Marrewijk, 2010; Yanow, 2010). As it has been stated above, it now appears to be obvious that human tempo-spatial relations are bound to a moment of continuous presence in space and time, from which abstract, creative, imaginary or virtual conceptions of reality ultimately emanate and which also prevents tempo-spatial models to dissolve in sheer hyperreal simulation.

What can be observed in tempo-spatial patterns and structures are systems of reference that are established and transformed in the process of sensemaking, which are related to and inscribed in physical space and which can subsequently be represented and deconstructed by analytic assemblages based on approaches derived from space theory, such as Lefebvre’s concept on the production of space (Deleuze & Guattari, 2005; Lefebvre, 1991). Also, these systems of reference and the emergence of tempo-spatial structures can be reproduced, reified

or reconstructed by using various techniques, like multi-sensory sculpting or cognitive mapping, so that relationships between physical, analytic, imaginary, symbolic or virtual spaces can be drawn, illustrated and explored (Ackermann, Eden, & Cropper, 1992; Christensen & Olson, 2002; Eden, 2004; Sims & Doyle, 1995; von Wallpach & Kreuzer, 2013). In society as well as in organizations, particularly with regard to their manifestation in physical space, systems of closures and openings are frequently used in order to introduce consistencies, continuity and structures in tempo-spatial relations (Dale & Burrell, 2008; Foucault, 1986, 1995; Kornberger & Clegg, 2004). These are regularly connected to various aspects of individual or collective sensemaking as well as imaginary, symbolic or interpretive aspects of reality(Dale, 2005; Lefebvre, 1991; Panayiotou & Kafiris, 2010). Also, these systems of closures and openings, along with programs for tempo-spatial organizing, are widely considered to lie at the basis of the emergence of social institutions (at least in modern states of western conception) (Dale & Burrell, 2008; Foucault, 1995; Giddens, 1997). Finally, the said regimes of systematic order and interaction are regularly applied to relate certain abstract, imaginary, symbolic or otherwise interpretive aspects of human existence to spatial reality, in order to connect them to tempo-spatial structures and processes as well as to social practices via rites and rituals of everyday life (Bourdieu & Wacquant, 2006; Bourdieu, 2009; Dale & Burrell, 2008; Foucault, 1986; Giddens, 1997; Orlikowski & Yates, 2002). These aspects also allow for the connection of utopian conceptions of reality to practical settings, physical contexts and human actions that can be controlled and shaped in time and space (Dobers, 2006; Kornberger & Clegg, 2004; Kornberger, 2012; Steyaert, 2006).

It now seems obvious that the relations between utopian and heterotopic spaces can be used in order to introduce and inscribe meanings, social hierarchies, power structures and other forms of social order into space and thus influence implications for individual existence and collective action by manipulating tempo-spatial relations from an imaginary, utopian perspective that is central to creating social meaning and tempo-spatial order and that is ultimately mirrored in physical space as well as spatial practice (Bourdieu, 2009; Foucault, 1986, 1995; Markus, 2006; Panayiotou & Kafiris, 2010). As a consequence, the interaction between utopian and heterotopic spaces can be seen as a tool readily available for the negotiation of spatial reality in reference to different spaces of possibility or probability. Present, physical space appears to be vested with imaginary and often outright utopian aspects that at the same time lie at the basis of rendering space intelligible, interpretable and meaningful (Foucault, 1986; Iser, 1993). The dimensioning and modeling of space and tempo-spatial relations from an utopian, imaginary perspective finally does not appear as a very abstract and far-fetched projection, but forms the basis of tying order, structure, social hierarchy and meaning to real world situations and individual life worlds (Foucault, 1986; Iser, 1993; Luckner, 2001; Wittgenstein, 2006). It is this link between utopian spaces, physical reality and spatial structure that is regularly used in everyday life for forming and transforming conceivable models of the world and building social institutions. Finally, rites and rituals frequently signal and accompany transitions between different tempo-spatial zones, the transformations of roles, social identities and conceptions of reality in time and space and tie them to practical social settings that structure and guide human existence in the social realm (Andrieu & Boetsch, 2008; Foucault, 1986; Mayrhofer & Iellatchitch, 2005; Mayrhofer, 1993; Orlikowski & Yates, 2002; Orlikowski, 2007). In fact, space and time are continuously constructed via processes of sensemaking, collective action as well as continuous (often ritualized) interaction and are thus, mostly without explicitly being recognized, actively employed in shaping, creating and modeling versions of human reality.

Some Examples for the Multidimensional Modeling of Space

If the structure of possible spaces is mirrored in spatial reality and the relations that are formed to shape this reality then the connection between real and potential space clearly also includes aspects of fictionality and their impact on real, present space (Bachelard, 2011; Iser, 1993; Luckner, 2001; Wittgenstein, 2006). The potentiality of space as well as tempo-spatial structures and assemblages defined and informed by it lead to a realization of spaces of possibility and fictions of possible reality in present space and time: the potentiality of space will be "real-ized" in a moment of permanent presence in the here and now (Dale & Burrell, 2010; Foucault, 1986, 1995). On the other hand, present objects carry within them possible meanings, possible relations and connections to the world around them, to other elements and actors in space and time (Iser, 1993; Luckner, 2001; Wittgenstein, 2006). The fictional, imaginary aspects that define elements of space therefore constitute a valuable means to understand and transform human relationships towards reality. Moreover, these relations embodied and mirrored in objects and spaces of human life-worlds can be manipulated and appropriated in the construction of individual or collective identities. The conception of time and space emanating from the present space of physical reality is thus fundamentally characterized by modeling potential relations in time and space from a moment of total tempo-spatial presence, which also allows to directly access and retrace the creation of abstract, imaginary, utopian or virtual spaces as a function of creating and shaping human reality in the course of time. This aspect has at numerous occasions been acknowledged in the literature concerning organizational space as well as interdisciplinary methods of spatial design (Bellas, 2006; Clegg & Kornberger, 2006a; Go & van Fenema, 2006; Kiniven, 2006; Mobach, 2010). Also in the organization, the structures of potential tempo-spatial relations and organizational processes are ultimately designed in an instance of total presence so that the organization can not only be understood as an abstract, conceptual entity, but also as a social construct that is significantly defined by imaginary, fictional or outright utopian aspects that are regularly addressed in renegotiating, redefining and structuring forms and features of social reality.

From a similar point of view the creation of time and space can be understood as the media of continuous processes of "worldmaking" (Goodman, 1990, p. 20) so that reshaping relations in and ascribing meaning to time and space will be fundamentally tied to the transformation and definition of the world and the self as well as to the continuous production of new realities as new "versions of the world" (Goodman, 1990, p. 15; Luckner, 2001; Wittgenstein, 2006). Goodman explicitly refers to the production of "facts from fiction" (Goodman, 1990, p. 126) that also extends to the production of space so that those facts/fictions will subsequently be embodied in present space and appropriated in transforming and producing new versions of reality. Space and time then serve as tools to shape the world as well as to control and reify its infinite possibilities, while binding them to a present moment. Models of the organization, plans, strategies, organizational procedures, structures and processes are thus used in the same sense as tools to render the organizational realm understandable, meaningful and ultimately "real" in order to determine its dimensions, boundaries, "planes of consistency" and "lines of flight" (Deleuze & Guattari, 2005, p. 9). Moreover, they allow to temporalize, territorialize and objectify individual sensemaking and collective worldviews that are negotiated in everyday organizational practice (Derrida, 2008, p. 125; Dobers, 2006; Grandy & Mills, 2004; Hernes et al., 2006; Hernes, 2004; Kornberger, 2012). Time and space finally can finally serve as means by which the creation of sensible and meaningful environments is mediated. Thus, the creation of models and representations of reality in a number of different disciplines, such as art, literature, science or management, can also be interpreted as acts of introducing, manipulating or transforming aspects of tempo-spatial order and illustrating

those realizations, using different methods and different media (Bachelard, 2011; Bachtin, 2008; Douane, 2002; Grandy & Mills, 2004; Kornberger & Clegg, 2004; Neftci, 2000; Orlikowski & Yates, 2002). The creation and transformation of models, representations, forms and features of reality can thus also be understood as processes of spatialization and temporization of possible worlds and worldviews (Derrida, 2008). It are those very processes that are regularly applied in the creation of contexts that lie at the heart of generating concepts of organizational reality, which has been described by Hernes (2004). Referring to Derrida and Baudrillard, the creation of tempo-spatial representations and models of the real also include the fluid construction of possible realities in relation to ever-changing real world experiences (Baudrillard, 1981, 1987; Derrida, 1978, 1985). Thus, the continuous construction of a real from possible, imaginable worlds finds its correspondence and realization in present space and spatial cognition. According to Goodman, the creation of abstract, imaginary, creative or symbolic representations of reality also includes the creation of different versions of the world as well as multiple versions of possible worlds that are not to be understood as mere alternatives, but as complementary conceptions of reality that form the entirety of possible versions of the real and that are actively formed and appropriated, while creating meaning as well as territorializing and temporalizing individual or collective identities (Goodman, 1990; Weick, 1995b). The existence and functionality of these versions and models of the world are thus very real and common features of human reality that allow people to interpret and understand the world they live in (Iser, 1993). Fictional worlds and their impact on reality finally also enable people to understand, transform, interpret and relate to physical space, while they at the same time parallel, superimpose and extend it.

Different analytic frameworks in science, economics and management can now easily be understood as tools for the introduction and manipulation of tempo-spatial order and consistent perspectives on possible realities (Fontana & Pasquale, 1980; Foucault, 1995; Grandy & Mills, 2004; Orlikowski & Yates, 2002). On the other hand, also different methods and media of artistic work infiltrate and transform creative, imaginary or symbolic spaces and contribute to the continuous transformation of art as an evolutionary concept and a dynamic form of of human expression (Baudrillard, 1978; Danto, 1991; Feyerabend, 1984; Goodman, 1990). As Feyerabend (1984) stated, not only in the domain of art, can different media and methods be fundamentally distinguished by their style that is used in order to create representations and versions of the world rather than by the “facts” they produce. As has been laid out before, the creation of meaningful worlds often amounts to nothing else than the creation of “facts from fiction” by employing different methods, media and strategies in the process of “worldmaking” (Goodman, 1990, pp. 20, 126). Simulating and renegotiating the world itself is thus, also in organizations, not only an abstract idea, but a very real means to relate fictions, ideas, plans and projects to the perceivable world and real life experiences (Baudrillard, 1981; Grandy & Mills, 2004; Kornberger, 2012). Statistics can be used, as it is common practice in finance and economics alike, to translate, introduce and formalize tempo-spatial relations along with probability spaces tied to different events that can be referred to in building scientific arguments, management strategies as well as business operations (Diekmann, 2010; Grandy & Mills, 2004; Neftci, 2000; Taleb, 2010). It has also been demonstrated that these statistical models and modulations of reality are often vested with tremendous interpretative, sometimes narrative, leeway that allows for the translation of data into spaces of scientific, economic or strategic interpretation. The mapping of reality by simulative or interpretive models further serves as a tool for dimensioning or depicting spaces of possibility along with probabilities of different states of the world that can be located in space and time and that can thus be used to shape and produce worlds, worldviews and realities through different forms, facts and functions (Diekmann, 2010; Neftci, 2000; Wittgenstein, 2006). The design and representation of spaces of probability, their

dimensioning and limitation in the process of making sense and producing possible worlds is now also central to rendering reality meaningful and relatable (Goodman, 1990; Luckner, 2001). Especially in fields like finance it is easy to see, how financial analysis can be understood as a continuous simulation of reality that is conceptually bound to events in the real world (Baudrillard, 1981; Neftci, 2000; Taleb, 2010). It is often overlooked that a great deal of creativity and outright fictional construction is invested, relating abstract conceptions of the world to real life events, in order to integrate and relate abstract or analytical conceptions to the real-life practices with the help of imagination and interpretation (Lefebvre, 1991). As a consequence conceptions and constructions of tempo-spatial relations also aim at relating real-life practices and events to extensive models of the world as well as at meaningfully integrating abstract, imaginary or symbolic spaces in real, present space. At this point it becomes clear that different tempo-spatial contexts, structures and models exist in necessary relation to each other, which results in their juxtaposition and integration at the same time, as spaces are ever translated, transformed and produced emanating form spatial experience in present space. Moreover, multiple links and relationships between different spaces and spatial conceptions can be established, which can actively be shaped in the process of human sensemaking and the tempo-spatial structuration of living environments.

As has been mentioned before, openings and closures in space, along with the establishment of timetables, timezones and tempo-spatial structures have widely been used, introducing tempo-spatial order and relating different spatial dimensions to the (more or less) controlled passage of time (Foucault, 1986; Orlikowski & Yates, 2002). Since the early days of scientific management the movement of bodies in space is to be modeled and controlled in relation to time and these procedures still form a basic aspect of complex business strategies and organizational process-building (Chanlat, 2006; Dale & Burrell, 2008; Foucault, 1995; F. W. Taylor, 1996). Regarding the construction and structuration of organizations, spatial order is thus closely connected to the temporization of operations and processes that are subsequently mirrored in the form and emergence of organizational spaces (Kosiol, 1962, 1978). The continuous modeling of connections and interactions between structures of time and space as well as their role in the process of organizational sensemaking resembles a process of dynamic sculpting that is reflected and permanently addressed in organizational practice. The setting of boundaries, the development of patterns and processes in time and space can thus be understood as only some of the unlimited instances in the constant flow of tempo-spatial sculpting, occurring within the organization. These complex means of dynamic sculpting are also actively employed in research techniques, such as mental mapping or multi-sensory sculpting, that lend themselves to explore complex work situations and allow managers and employees to relate the practical sphere of the organization to analytic, imaginary or personal-interpretive aspects of organizational reality (Ackermann et al., 1992; Eden, 2004; Sims & Doyle, 1995; von Wallpach & Kreuzer, 2013).

Furthermore, the management of time allows for the conceptualization and regulation of tempo-spatial relations that provide the basis for the modern organization (Foucault, 1995; Giddens, 1997; Sjöstrand, 1993), but also for relating events, interactions, practices and rituals to tempo-spatial structures (Andrieu & Boetsch, 2008; Foucault, 1986; Orlikowski & Yates, 2002). By orchestrating relations between tempo-spatial structures as well as open and closed spaces, different forms and levels of heterotopia can be created that lie at the basis of social hierarchy and the territorialization of social systems (Dale & Burrell, 2008). As Dale and Burrell (2008) demonstrated in their work, the creation of fissures, differences, connections and transit points in time and space, can introduce and model tempo-spatial zones and levels of interaction, that can be tied to standards, roles and regulations of organizations as well as to rules and restrictions for movement or contact that inscribe social values, power

structures or social relations into physical, organizational space. So by modeling and orchestrating tempo-spatial relations, systems of power can not only be inscribed and distributed in time and space, but may also guide the creation of sensible environments by influencing social relations and the means of social control (Dale, 2005; Foucault, 1995; Orlikowski & Yates, 2002; Orlikowski, 2007). Time and space can thus be interpreted as fluid media for dimensioning reality and establishing continuity between different "extasies of time" (Luckner, 2001, p. 148) as well as for relating them to the heterotopic structuration of reality so that the continuous linkages of time and space can be applied in producing seamless, self-actualizing models of the world that correspond to individual and collective worldviews, while providing the possibilities for the actualization and creation of new versions of the world at any time (Baudrillard, 1981; Deleuze & Guattari, 2005, 2006; Goodman, 1990). With regard to constructing meanings and worldviews connected to time and space, it seems evident that the distinction between reality and fiction is continuously renegotiated and that it is exactly the constant integration of different perspectives, identities, realities and worldviews that turns space into a powerful tool for understanding, representing, but also for modeling and shaping human existence.

Approaches derived from the world of art can now help to understand the processes of creation, transformation and structuration of space as a continuous means for sculpting reality. It was German artist Joseph Beuys who saw life as an ongoing process of sculpting that leads to different forms of human life and infinite possible models of reality that can be experienced and expressed in everyday existence (Heidt, 1989; Husslein-Arco & Busse, 2013; Szeemann, 2008). If we now consider the widely differing, yet interlocking contexts, negotiated in human reality, also in organizations, a continuous process of adaptation, reiteration and transformation must be acknowledged that allows for establishing and altering relations between the world and a spatialized and temporalized version of the self (Goodman, 1990; Iser, 1993). It is, thus, the establishment, construction and interpretation of linkages and connections between different dimensions of time and space, individual sensemaking, self-concepts and collective worldviews that are actively modeled and transformed in order to provide consistencies, milieus, structures and lines of flight that serve as basis for future alterations (Deleuze & Guattari, 1977, 2005). This also appears to be true for the organization (DiMaggio & Powell, 1983; Kosiol, 1962, 1978; Schreyögg, 2003; Sjöstrand, 1993) with different departments, sectors, hierarchies, functions, rules and operative principles serving as tools to form, communicate and orchestrate interactions between different spheres of the organization that guide human action as well as corporate operations (Hernes et al., 2006; Hernes, 2004; Orlikowski & Yates, 2002). Space can thus not only be understood as a means for forming and modeling space itself, but also for relating different tempo-spatial contexts, otherwise also defined as spaces (Hernes, 2004), to each other that can be integrated in a meta-conception of space, which can subsequently be constructed as a ***"space of spaces"***. On a higher level of abstraction countless spatial levels and contexts, derived from real, present space, can thus be recognized as a multidimensional, multirelational system of spaces that are continuously related, conflated and transformed by multiple actors and multiple operations and that can be approached via meta-spatial models of analysis, which can be applied in order to decipher, translate, represent or transform tempo-spatial relations and to formalize them, constructing abstract, imaginary or symbolic models of reality that can be related to or integrated with real, present space (Lefebvre, 1991).

The tactics used in film can give an example, how different perspectives on space can be integrated and combined (Douane, 2002; Panayiotou & Kafiris, 2010). The medium film works with active and willful manipulations of tempo-spatial relations and their integration into a narrative that is at the same time meaningful and approachable. It can be witnessed that,

similar to the creation of fictional realities in film, the construction of possible, imaginary or utopian forms of reality and their links to present, physical space follows similar patterns, when possible, future or past versions of reality are shaped in order to influence and inform the present state of the world and its multiple meanings (Dobers, 2006; Kornberger, 2012; Pedersen, 2006; Steyaert, 2006). The fictional aspects of tempo-spatial relations can be seen as an integral part in rendering the world sensible, constructing meaning and creating tempo-spatial continuity, while relating past and future in establishing the present. The strategies of film can thus not only serve as an example for how different spatial perspectives can be integrated into a coherent narrative (let alone how they can be used to alter and manipulate version of the real), but also how the continuous modeling of relations in space and time, their connection and integration can be used to form an interpretative framework that allows for the creation of narratives constructing possible versions of the real (Baudrillard, 1981; Panayiotou & Kafiris, 2010). The perspective of the camera in film not only represents a certain viewpoint, but also creates a vision that is at the same time integrated, focused and connected to past and future events, so that different elements in the narrative flow of time and space can be differentiated and connected (Douane, 2002). This again demonstrates the active manipulation of time and space, its implementation in the medium film and the narrative processes of worldmaking through strategies of art. The phenomenal characteristics of human perspective (Lewin, 2006; Luckner, 2001) and its manifestation in the human mind can be interpreted as a central trait of human approaches to space. This aspect can subsequently be operationalized in establishing a multidimensional model of reality as well as an integrated meta-spatial view for multirelational, multidimensional analysis in organizational research. By the nature of human perspective sensemaking is ultimately bound to cognition and aspects of practical reality. Objects and elements of space gain meaning for personal existence and can be structured in relations of distance, proximity, positions and movement. Human access to space and the nature of human perspective thus lie at the heart of creating tempo-spatial models of the world and provide the natural basic principles for representing, analyzing and deconstructing real-life settings and spatial contexts so that the integration and construction of a meta-spatial system for research design will necessarily rely on the principles of spatial cognition, the properties of the human gaze and the spatial relations of distance, proximity, position and movement that characterize the perception of space.

As it has described in the last paragraphs, it is a constant process of creation and recreation, of manifestation and transformation of tempo-spatial structures, possible worlds and spaces, which guides the rhizomatic and nomadic construction of reality in time and space as well as the continuous creation and adaptation of perspectives on the world and human existence, which naturally extend to the organizational realm as one of the most important contexts for human interaction in the modern world (Dale & Burrell, 2008; Deleuze & Guattari, 1977, 2005; Kiniven, 2006; Mobach, 2010; van Marrewijk & Yanow, 2010a, 2010b). The continuous modeling of reality from a perspective that is fundamentally based on the human relationship to space and time (Luckner, 2001), spaces of possibility and probability (Wittgenstein, 2006) as well as the utopian, fictional aspects of human approaches towards the real (Foucault, 1986, 1995; Iser, 1993), thus involves the adaptation and transformation of different “extasies of time” (Luckner, 2001, p. 148) as well as their forms and representations, while creating consistency and consistent worldviews that also allow for the ongoing manipulation and reconfiguration of different versions of the world in the process of sensemaking (Giddens, 1997; Goodman, 1990; Weick et al., 2005; Weick, 1995a, 1995b).

As an infinite amount of users and inhabitants take part in the manipulation and transformation of space as well as tempo-spatial structures, the question finally arises, why a greater number of chaotic spaces do not consistently emerge. Aside from answers relating to

morale, aesthetics or even social cohesion and social identity (Cornelissen, Haslam, & Balmer, 2007; Feyerabend, 1984; Goodman, 1990; Hogg & Terry, 2000; Stets & Burke, 2000; Welsch, 1996), an answer might be found in the human condition of immediate presence in space and time, which ultimately relates even the most creative and outrageous conceptions of reality back to physical existence and the present perception of the world. Jordon and Munro (Munro & Jordon, 2013, pp. 1498, 1502), employing the concept of "smooth space" (Deleuze & Guattari, 2005, p. 353), have demonstrated in their article, how spatial milieus, principles of order, rhythms and tempo-spatial structures can be created by performative practice in a social and interactive setting. In their article space is described as a malleable medium central to appropriating and transforming reality in the light of constant spatial presence and continuous social interaction. Similar to Lewin's (2006) work on the transformation of cognitive space in the course of a battle, it is spatial phenomenality that provides the basis for the immediate emergence of structural relations, tempo-spatial order and patterns of interaction in time and space. Space, along with its relations to time, hence emerges in front of our eyes so that the continuous and fluid change in position and perspective is not only an abstract conception regarding tempo-spatial continuity, but is ultimately grounded in our basic spatial cognition. These facts also remain true in the context of the organization, where different, possible, real and/or imaginary perspectives on time and space are regularly integrated, negotiated and located in a commonly shared organizational space that can thus serve as a tool and as an access-point for manipulating, creating and transforming time, space and their role in organizational reality (Dale & Burrell, 2008; Dale, 2005; Giddens, 1997; Orlikowski & Yates, 2002; Orlikowski, 2007). Space thus serves as a context that lies at the heart of human relations to reality as well as the subsequent construction of possible realities, which are both fundamentally nested in space and time (Luckner, 2001). Space is also regularly seen as a tool in the process of sensemaking as well as the creation and transformation of worldviews and perspectives on life that is employed in aggregating past, future and present in a constant modeling of human relations to the world. Thus, the far-reaching impact of space, time and the modeling of tempo-spatial relations cannot be underestimated, especially in connection with the structuration of organizations as well as the creation and adaptation of organizational contexts and social life-worlds.

Multidimensional Space as a Concept and a Tool for Research Projects in Organization Studies

In the next section it will be attempted to establish functions, properties and principles of multidimensional, multirelational spaces that are based on the experiences of direct spatial perception, human approaches towards space and time and the principles of space theory, outlined above. A multidimensional, multirelational concept of space may thus be applied for mapping, representing and analyzing real-life spatial settings as well as complex tempo-spatial interactions, while possibly integrating different approaches, concepts and perspectives related to time and space in a research tool, based on the principles of space theory. The following sub-sections will now discuss certain properties and characteristics of a conceptual framework, aiming at describing the foundations of a meta-spatial model for the design of research projects in organization studies.

As stated before, conceptualizing different spatial contexts as spaces and spatial dimensions, derived from real, present space, like abstract space, imaginary space, symbolic or virtual space, these dimensions are in their very nature fundamentally related to spatial perception, which serves as an anchor and a point of reference for the emergence, design and

transformation of different spatial dimensions and linkages between them (Bourdieu, 2009; Lefebvre, 1991; Luckner, 2001; Wittgenstein, 2006). Also in the organizational realm, real space serves as a basis and a starting point for the analytic or interpretive creation of higher levels of spatial analysis (Dale, 2005; Orlikowski, 2007; S. Taylor & Spicer, 2007; van Marrewijk & Yanow, 2010b; Watkins, 2005; Yanow, 2010). The investigation of present spatial arrangements by applying analytic models derived from space theory can ultimately always be traced back to real life experiences and basic spatial perception, which can hold special importance for the deconstruction of architectural structures, sociomaterial assemblages as well as the forms, functions and characteristics of organizational spaces (Gastelaars, 2010; Kenis et al., 2010; van Marrewijk, 2010; Yanow, 2010). The manipulation and transformation of organizational, strategic or economic spaces has been a major topic in economics and organization science since the rise of capitalism and the emergence of the modern state of western conception (Brocklehurst, 2006; Chanlat, 2006; Dale & Burrell, 2008; Foucault, 1995; F. W. Taylor, 1996). Also, the structure of the modern city reveals a clear relation to the forms and functions of homogenized, standardized and compartmentalized urban space in the light of the challenges of creating, governing and structuring social, yet at the same time political and economic spatial assemblages (Chanlat, 2006; Koolhas, 1994; Kornberger, 2012). Moreover, it has been shown that imaginary, symbolic and even utopian approaches towards reality largely influence our understanding and view of present space as well as the construction of meaning and identities in space and time that show clear connection to the symbolic structuring of life-worlds as well as the spatialization and temporization of the individual in its relation to the real world (or to possible versions of the world) (Derrida, 2008; Dobers, 2006; Foucault, 1986; Lefebvre, 1991; Steyaert, 2006; Wittgenstein, 2006). From a personal perspective it seems clear that space is one of the most important media, through which humans relate to the world around them and which is regularly addressed and appropriated in order to induce change and create new versions of the self as well as individual realities related to it (Clegg & Kornberger, 2006a; Goodman, 1990; Kornberger & Clegg, 2004; Luckner, 2001). By adapting and reconfiguring the interconnections and interactions between different “extasies of time”, people, but also institutions and social collectives, create continuity and meaningful environments that serve as an orientation and as a basis for constructing and transforming worldviews and living environments (Giddens, 1997; Luckner, 2001, p. 148; Orlikowski & Yates, 2002).

By applying a perspective of temporal continuity to social, but also to abstract and imaginary spaces that are ultimately fused with and integrated in present space, the relation between different spatial dimensions can be modeled and transformed, using methods and concepts ultimately grounded in space theory (Diekmann, 2010; Grandy & Mills, 2004; Hernes et al., 2006; Lefebvre, 1991; Neftci, 2000). Taking a closer look, it becomes clear that spaces of possibility and potential spaces are themselves deduced from and therefore rooted in present space, which forms the basis for complex spatial arrangements of higher order as well as the modeling of multiple spatial relations (Wittgenstein, 2006). Abstract, imaginary, social, technical or virtual spaces that can subsequently be deduced from real, present space are introduced as its correlate and extension and are therefore mirrored in distinct spatial settings and real-life situations (Lefebvre, 1991; Luckner, 2001). This is also evident in the case of linkages between real and imaginary characteristics of objects, spaces and real-life situations that are found to be constantly related, socially negotiated and reconfigured in the constant modeling of real, present space, its form, meaning and transformation in the passing of time (Dale & Burrell, 2008, 2010; Foucault, 1986; Iser, 1993). Moreover, simulations of space are thus always ultimately derived from and related to tempo-spatial presence and therefore emerge from a single moment of creation and transformation, which is situated in the here and

now – the moment that Derrida associated with the basic process of the difference (Baudrillard, 1981; Derrida, 1978, 2008; Grandy & Mills, 2004). This is why, abstract, symbolic, imaginary or simulative extensions and interpretations of space ultimately root in the above-mentioned relations to real, present space and the transformation of potential spaces is fundamentally bound to the moment of the here and now. This fact obviously remains true for the organization, its creation, transformation and structuration in space and time (Giddens, 1997; Grandy & Mills, 2004; Kosiol, 1962, 1978; Orlikowski & Yates, 2002). Space can thus be used and actively manipulated in order to introduce continuity, to deduce and create different functions, relations and events in time and space as well as to integrate these into consistent and meaningful worldviews as well as comprehensive models of our living environment. Multiple connections between multiple spaces and possible spatial dimensions are introduced and reshaped in order to deal with and relate to tempo-spatial presence, to render it understandable, meaningful and interpretable. The multidimensionalilty of spaces and the malleability of tempo-spatial relations allow to access and to create spaces of possibility and probability, spaces that are not yet present or tangible, and with them infinite connections between imaginary, abstract, analytic, symbolic or social conceptions of space and time. Also, temporality and spatiality are regularly designed and reconfigured in this way, including their continuous and omnipresent reference to the here and now.

Multidimensional, multirelational spaces are thus created and modeled in present space and are actively shaped and manipulated in order to relate to and to alter spaces of potentiality, creativity or analytic abstraction as well as to temporalize and spatialize individual interpretations of the world that are reflected in personal self-concepts, individual models of the world as well as the structures, stories and histories crated by them. Finally, it becomes clear that multiple, multifunctional and multirelational spaces, spatial conceptions and possible dimensions of space and time can be derived from real space and can subsequently be integrated in, connected to and deduced from each other. Organizations can thus be understood as an assemblage of multiple, interrelated spaces that can be combined, structured and represented in various ways through tools of management, statistics, organizational theory or organizational research (Hernes, 2004). In the next section basic aspects of spatial settings and spatial perception, such as principles of perspectivity as well as relations of distance and spatial positions, will be discussed, before the nature of spatial relationality and modes of interrelation between different spatial dimensions will be analyzed.

Perspectives, Positions and Relations of Distance and Proximity in Spatial Perception

In principle, human spatial perception is centered around a single point of view that defines and characterizes human perspective (Luckner, 2001). From this vantage point relations of proximity and distance, positions, movements and spatial relations are assessed and related to real space and spatial assemblages. Also, abstract models of space and theories of spatiality seem to be derived from and based upon the principles of human perspective so that its characteristics are usually also mirrored in complex spatial conceptions (Meillassoux, 2008; S. Taylor & Spicer, 2007; Watkins, 2005; Yanow, 2010). For instance, Bourdieu's approaches concerning social space, which include his analysis of the Kabyle house as well as the theory of social fields, clearly demonstrate these aspects (Bourdieu & Wacquant, 2006; Bourdieu, 2009). In both cases, parallels between the nature of a theoretic spatial model and the realities of space appear to be evident. The representation of the Kabyle house, directly addressing real-life places, can be conceptualized in Lefebvre's terms as a representation of space that serves as a starting point for a meta-spatial analysis that connects symbolic, social, analytic

and abstract spaces with real life situations in the course of scientific analysis (Bourdieu, 2009; Lefebvre, 1991). Fig … shows a representation of the Kabyl house discussed by Bourdieu that also provides the basis for the analysis of Kably social life. Bourdieu describes the house as a subdivided, structured and symbolic space, embedded in the social space of the Kably community and it is this interconnection of spaces that allows for a thorough analysis of everyday Kabyl life in connection to symbols, practices and spaces in and outside the house itself. The interrelation of spaces that will be discussed in detail in the next section serves as a prima to relate interior to exterior environment as well as family practices to the structure of the overall Kabyl society. Also, Bourdieu's (2009) investigation involves all elements of Lefebvre's (1991) spatial triad (without explicitly being mentioned) and applies these in the scientific case of the Kabyl house. Bourdieu then utilizes the connections, parallels and linkages between different levels and dimensions of space as well as their interplay, centered around the perspective of the human gaze, in order to construct a multidimensional, multirelational analytic model that is bound to real-life situations, while drawing conclusions and describing results in an analytic meta-space applied in for sociological research.

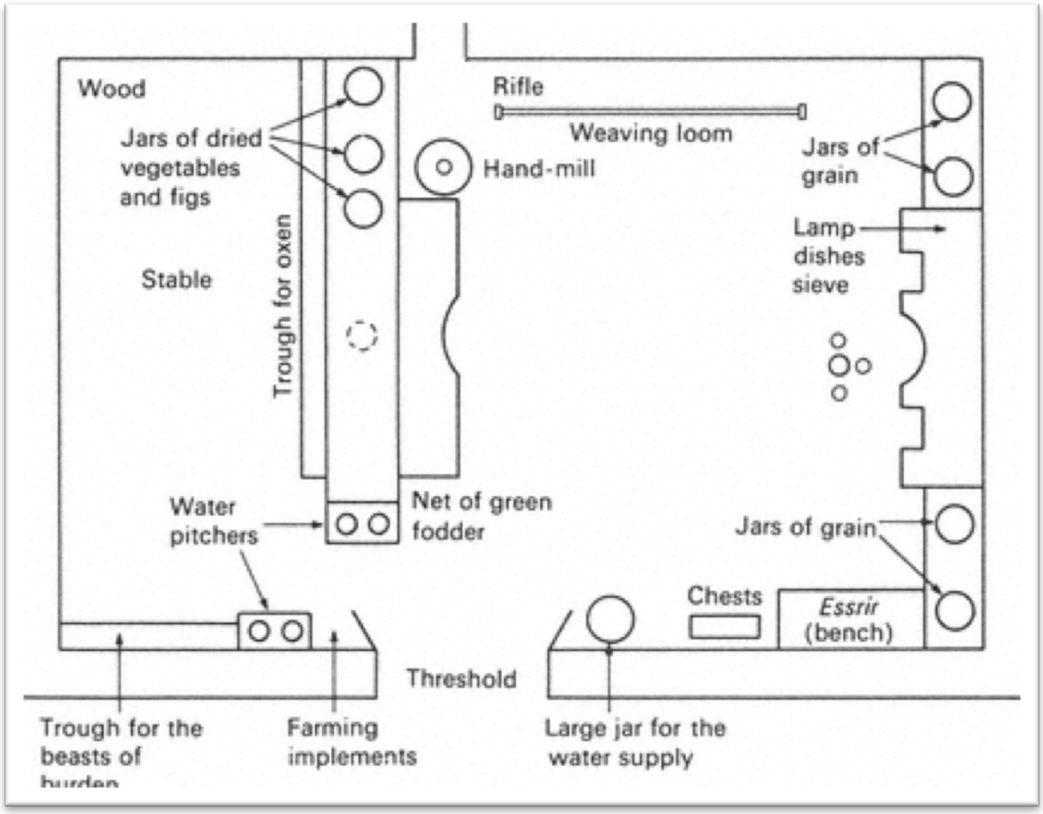


Figure …. : Structure of the Kablye house (Bourdieu, 2009, p. 49).

In Bourdieu's representations of social fields, on the other hand, different forms of capital, positions and relations in social space can be aggregated in graphics, but also analyzed in writing, applying models and modulations of social or theoretic order that form and structure social classes and social relations and that that lend themselves to interpretation via Bourdieu's theories on social space (and other concepts of sociology) (Bourdieu & Wacquant, 2006; Bourdieu, 1989, 1996b). Figure … shows Bourdieu's (1998, p. 5) classic representation of social space derived from data of French cultural tastes and can serve as an example for the transfiguration of social settings in the real world in a two-dimensional matrix of spatial

relations. Demographic data, combined with different forms of representation of social capital, are in case of Bourdieu's social fields frequently represented in two-dimensional graphic depictions that reflect the principles of spatial order as well as of distance and proximity, which are integral to an analytic space, subsequently used for the interpretation and the theoretic modeling of social space (Bourdieu, 1996a, 1998). In both of Bourdieu's models above, the model of the Kably house as well as his approach on social fields, relations of distance and proximity as well as positions of elements in space lie at the center of creating analytic, abstract space and subsequently lend themselves to interpretation and exploration (Bourdieu & Wacquant, 2006; Bourdieu, 1998, 2009). Also, it is basic human cognition of time and space that allows for the connection of abstract, spatial analysis to situations in the real world. The act of deducing abstract, imaginary, symbolic, simulated or virtual spaces from real space can thus be understood as one of the central strategies, not only for constructing complex analytic settings, but also for making sense of the world as well as creating and ordering space in the first place. Thus, the multidimensional construction and interpretation of space is not only used for complex scientific analysis, but constitutes an everyday tactic employed by humans, making sense of their everyday reality and their individual life-worlds.

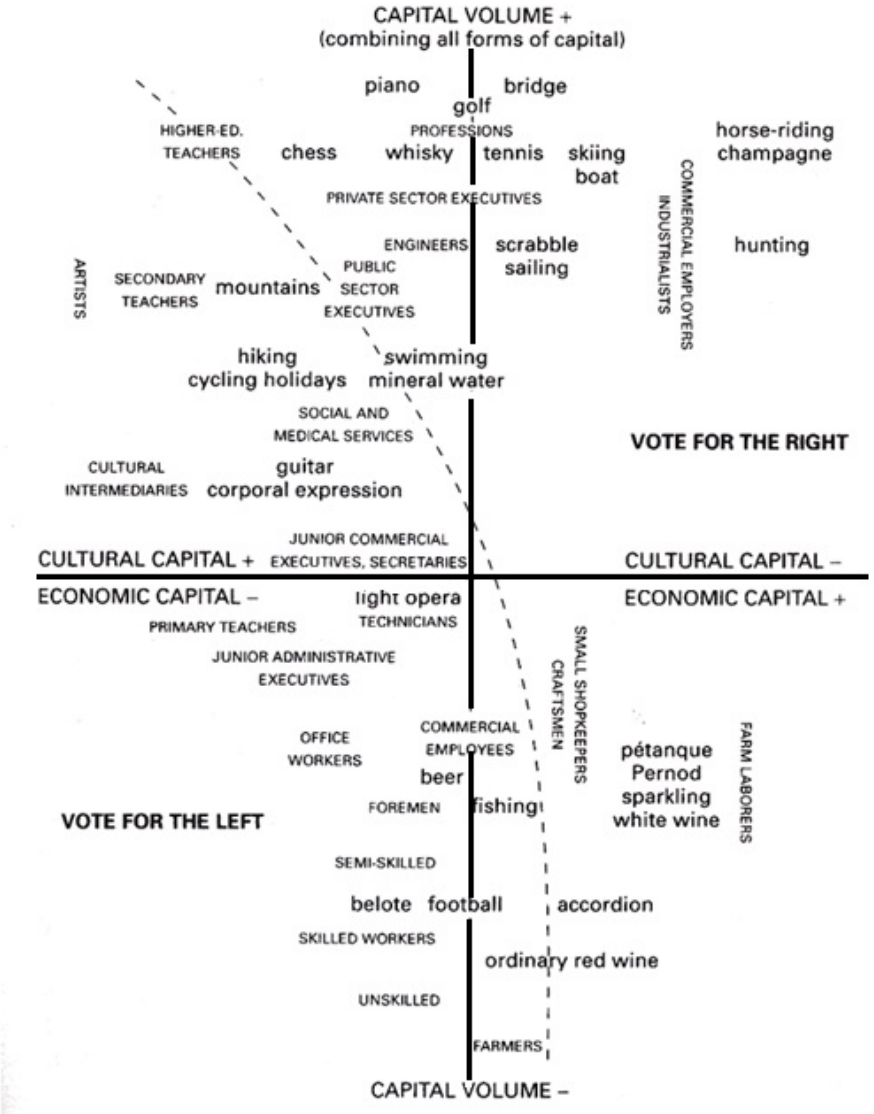


Figure … : The space of social positions and the space of lifestyles (Bourdieu, 1998, p. 5).

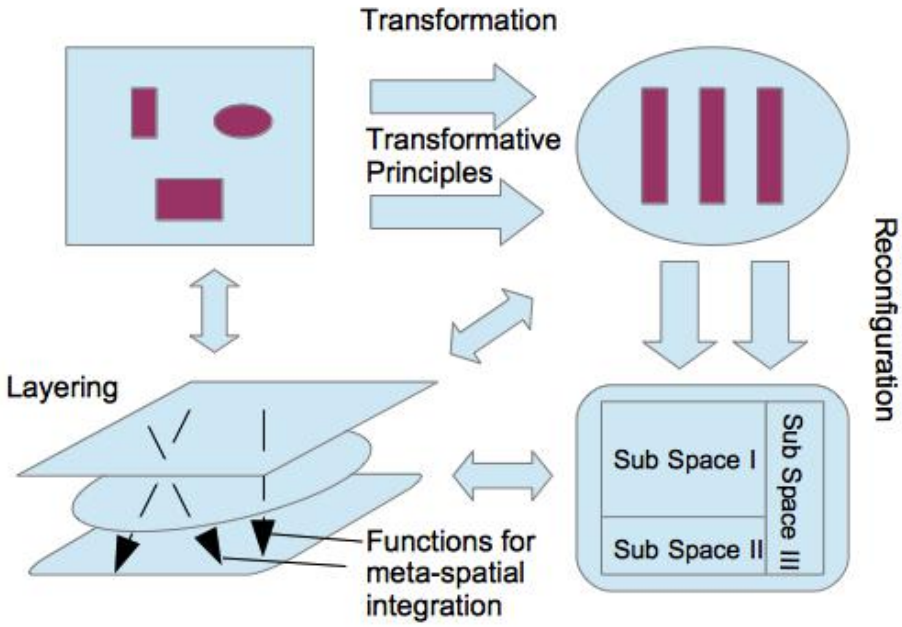
Analysis of organizational space usually makes use of these multidimensional relations, often without explicitly addressing their role and importance (Dale & Burrell, 2008, 2010; Kreiner, 2010; Orlikowski, 2007; Yanow, 2010). The obvious manipulation and transformation of abstract, analytic spaces allow for the modeling of tempo-spatial relations and the mapping of organizational space in the light of organizational research projects and discourse on organizational theory (Kenis et al., 2010; Pedersen, 2006; Steyaert, 2006; van Marrewijk & Yanow, 2010b). Finally, in conceptualizing organizational space, complex, abstract analytic settings more or less directly refer to real, physical space and can subsequently be used to exemplify, analyze or represent certain tempo-spatial settings. The exploration of organizational spaces can then serve as a means to reconfigure and transform present space and spatial practice. The multiplicity of relational spaces ultimately emanates from a moment of direct spatial perception that is central to spatial cognition and also serves as an anchor for the construction and integration of multiple spatial dimensions in present space and real-life spatial settings. Furthermore, multiple, relational spatial dimensions are commonly used and actively manipulated in order to understand, model and manipulate present space as well as complex tempo-spatial interactions, while creating possible, probable, abstract, utopian or imaginary worlds that transform and transcend everyday human existence.

Relationality of Space and Interrelated Spaces

Based on the principles outlined in the last sections, it appears evident that multiple spaces, their different forms and conceptions are ultimately derived from direct spatial cognition and that different dimensions of space can thus be ingratiated and related back to real, present space. Also, spaces created in this manner will thus be interrelated and show multiple links and connections between each other that are continuously altered and transformed by more or less conscious forms of manipulation and adaptation. An infinite number of spaces can thus be accessed, configured and related by applying a perspective of mulitrelationality and multidimensionality that may shape and establish connections between different spaces, tempo-spatial concepts and models of tempo-spatial interaction that are fundamentally bound to different perspectives on space and spatiality. In its simplest form this aspect was demonstrated by discussing Bourdieu's models on social space in the last section (Bourdieu & Wacquant, 2006; Bourdieu, 1998, 2009). However, it seems evident that economic models, methods of statistical analysis, management tools and strategic agendas are based on very similar relations between different tempo-spatial dimensions, the modeling of multidimensional relations in space and time and their impact on reality (Dobers, 2006; Grandy & Mills, 2004; Neftci, 2000; Orlikowski & Yates, 2002; Steyaert, 2006; Taleb, 2010). In this context, space, time and tempo-spatial structures are used in order to structure reality in the light of the continuous creation of new versions of the world as well as of the human self (Dutton & Penner, 1993; Gioia & Thomas, 1996; Goodman, 1990; Luckner, 2001). Also, creative strategies of art and design can be used in order to enhance or produce transformative forces that reflect back and manipulate the present space of human life so that creative impact on imaginary, symbolic or artistic spaces can ultimately influence basic spatial existence and spatial cognition (Douane, 2002; Heidt, 1989; Husslein-Arco & Busse, 2013; Kaprow, 1993a, 2004; Panayiotou & Kafiris, 2010). Furthermore, the transformative potential of space and spatial cognition must be recognized, with respect to different strategies that shape and manipulate the representation, the perception and the modes of production of space and that subsequently also affect interactions, performativity as well as social practice in space (Kaprow, 1993b, 2005; Munro & Jordon, 2013).

From an analytic point of view the organization can now be interpreted as an assemblage of multiple spaces that are related to each other by different functions, operations and transformation principles that are applied in order to differentiate, relate and integrate different spatial spheres, or – in Hernes' (2004) terms – organizational contexts, that are regularly interconnected to and mirrored in each other. Complex organizational structures can thus be derived from and made accessible via tempo-spatial patterns and put into perspective by applying different analytic or integrative principles. These multiple spaces and spatial relations are now regularly appropriated in human sensemaking in order to render the world understandable, reasonable and interpretable as well as to temporalize and territorialize social institutions and individual identities (Luckner, 2001; Weick, 1995a, 1995b). Finally, complex spatial models and myriad perspectives on the world can be related to real life situations and social settings through the often subconsciously constructed relations between multiple spatial spheres and real, present space. Human existence in space and time, its conceptualization through analytic models, but also via social identity and social institutions, provide the basis for the contextualization of human identity and collective action (Hernes, 2004), which can therefore be represented and investigated from multidimensional, multirelational perspectives that allow for the modeling of human realities, different versions of the world and shared worldviews. These are subsequently related to a multitude of potential, imaginary, simulated, symbolic or virtual spaces that are ultimately used in order to integrate and carry forward the transformation of space and time as well as their impact on personal reality. Deducing analytic principles for the design and creation of research projects, it is easily imaginable how (similar to Bourdieu's (Bourdieu & Wacquant, 2006; Bourdieu, 1996a, 1998, 2009) models and representations) a multiplicity of spaces can be designed that depict, integrate and reconfigure different spheres or contexts of organizational reality in an analytic setting, just like it has been done (mostly unnoticed and unmentioned) in many research projects related to organizational space (Gastelaars, 2010; Kenis et al., 2010; Kornberger & Clegg, 2004; van Marrewijk & Yanow, 2010b; Weir, 2010; Yanow, 2010).

From a perspective of space theory multiple spaces can be depicted and created in relation and in parallel to each other. These are connected and integrated by different functions and operations, which can be modeled and therefore have an impact on the spaces and spatial relations that they produce. By relating different spaces, modeling the connections between spatial dimensions as well as depicting and deciphering those relations in scientific analysis, multidimensional, multirelational spaces can be deliberately used in designing and conducting research projects in organization studies. In this sense the modeled spaces themselves, the multiple spatial relations, their representation as well as their transformation in the course of time can be the basic tools for designing and creating research projects in the social sciences and organizational research. Furthermore, the inevitable deduction of complex abstract or analytic spaces from present, physical space allows to relate multidimensional, multirelational research designs back to social reality and present, organizational space. Therefore, the principles of space theory and their use in research design as well as in theoretic analysis can have major importance for the modeling and creation of research concepts as well as for the interpretation of complex social settings. Figure … shows some examples of relations, translation processes and modeling operations that can be applied to transform spatial relationships and shap linkages between spatial dimensions. It has to be noticed that only in graphic representation spaces will appear strictly ordered and mathematically structured, whereas spaces of everyday sensemaking, of individual worldviews, of narration, creativity or imagination may be utterly complex, confusing or even contradictory (Bachelard, 2011; Bachtin, 2008; Dale, 2005; Panayiotou & Kafiris, 2010; Zhang et al., 2008)



Figure… : Principles and functions of spatial transformation

Transforming Spaces by Applying Strategies of Art, Science, Philosophy or Management

Similar to the ways of worldmaking that Goodman (Goodman, 1990) described, the act of modeling and constructing spaces can be interpreted as a transformation of space and, especially when possible, imaginary, abstract or analytic spaces are involved, as an extension of space that takes an effect on real, present space. Different ways and strategies of worldmaking that are employed in such diverse fields as arts, science, mathematics, philosophy, but also in the field of management and economics, help to order and to create realities as well as their inherent aspects in relations to space and time in order to produce meaningful, consistent and accessible environments (Bachelard, 2011; Bachtin, 2008; Diekmann, 2010; Grandy & Mills, 2004; Neftci, 2000; Orlikowski & Yates, 2002; Taleb, 2010). This seems to be especially evident, when acknowledging the fact that a large part of the world is not directly present to our cognition, so that it is largely produced and modeled in imagination or via potential or probable spaces (Meillassoux, 2008). As has been explained before, the absence of a direct referential in space will then be filled with actively modeled tempo-spatial representations, reconfigurations and relations that are constructed as a function of human orientation in the world and the production of human reality. In this context different ways of worldmaking serve as tools and guidelines for the creation of possible, imaginable, utopian or fictional future, present or past worlds that interact with our access to present space and time. In this sense space does not only serve as a medium for structuring human environments, but also for producing temporal continuity and integrated life-worlds.

In the field of art the techniques of film can be understood as a great example on how time and space can be manipulated and interwoven in a meta-spatial narrative (Douane, 2002; Panayiotou & Kafiris, 2010). An illusion of time and space is created in film and put in relation direct tempo-spatial cognition in the light of a specific narrative that has an

immediate impact on the spectator and his existence in present space and time. As Bachtin (2008) demonstrated with regard to literary space or Bachelard (2011) in poetic space, space and spatialization, time and temporization are in both cases narrated as well as they are witnessed, they are fictional at the same time as they are plausible and elusive as well as they are true. These aspects also appear to be true in the context of organizational spaces that often fundamentally rely on narrative or outright fictional aspects, while in most cases being masked by an objectifying, analytic and positivist discourse (Dobers, 2006; Kenis et al., 2010; Kiniven, 2006; Pedersen, 2006; Steyaert, 2006). In film on the other hand, different, visual spaces are easily manipulated, reconfigured and reassembled in order to form a tempo-spatial assemblage that transports and transcends the narrative that is ultimately shown on screen. The screen itself serves as a two-dimensional space opening up towards a three-dimensional manipulation of space-time that unfolds in the light of the narrative at hand. In a very simple setting the reconfiguration of space and spaces as well as the narrative assemblage of space-time can be witnessed in strategies of film that can easily be transferred to a possible construction of an arrangement of spaces in meta-spatial concepts that are based on translation, transposition or transformation of multiple tempo-spatial structures. The very technique and integration of different space-times on screen shows how easy and natural the manipulation of visual two-dimensional space can be carried out by modeling tempo-spatial assemblages that form and create an integrated, seamless narrative related to real world situations. Also, fictionality and creativity are found to be central forces in forming these assemblages, making active use of of fictional, utopian or symbolic spaces in the creation of tempo-spatial continuity and narratives related to the real world.

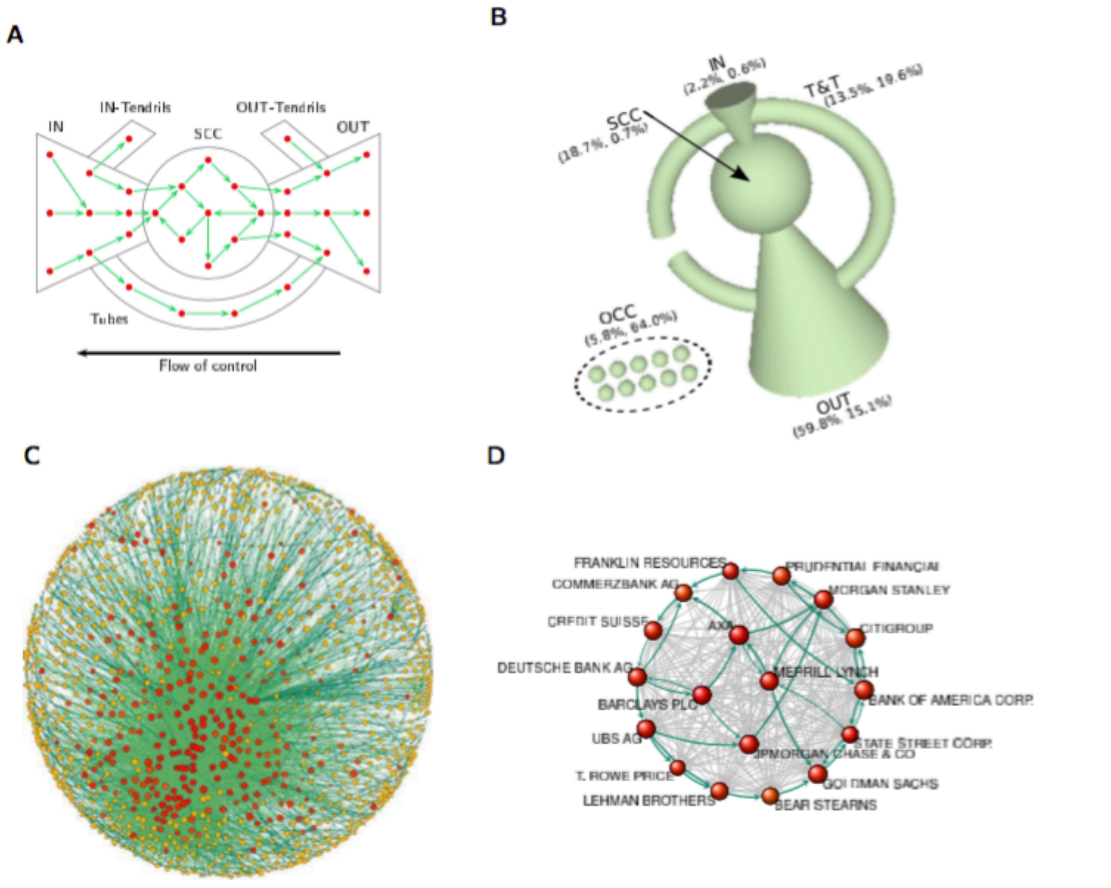


Figure … : Topology of the network of corporate control (Vitali, Glattfelder, & Battiston, 2011, p. 4).

In statistics, on the other hand, the mathematical, statistical manipulation of data tied to events in time and space as well as the transformation of information using quantitative models, which are regularly making use of spaces of representation (e.g. in the form of graphics, figures and tables) to illustrate results, can be witnessed (Bourdieu, 1996a, 1998; Diekmann, 2010; Lefebvre, 1991; Neftci, 2000; Taleb, 2010). Also, the modeling of information hints at the plasticity of numerical data and tempo-spatial relations that are shaped and represented by it (Allen & Phang, 1993; Neftci, 2000; Vitali et al., 2011). Figure … can serve as an example for the plasticity of numerical data in exploring relations of power and corporate control on a global scale (Vitali et al., 2011, p. 4) The graphic representation of data related to the formation of complex systems can illustrate the emergence of structures in space and time and demonstrated the continuous assemblage of milieus, interconnected spaces and ever-changing tempo-spatial relations (Deleuze & Guattari, 2005). In this context, space and time resemble a fluid matter that can be modeled in different ways in order to serve different purposes and to meet different ends. The created models and modulations seem to emerge from a continuous process of assemblage, imagination and reconfiguration that finds its basis in present space and tempo-spatial perception. Therefore, they can serve as an extension, as a correlate and an expansion of real, present space that would otherwise be limited to its concrete, physical form. Relations in space and time, their perception and realization are heavily influenced by the malleability of tempo-spatial relations as well as the form and nature of possible meta-spaces that are consequently integrated into tempo-spatial realities and human perspectives on the real world. Thus modeled, imagined, abstract, analytic or multidimensional, integrated spaces can be understood as constantly accompanying human experience of present reality, often without being noticed, and are actively manipulated, providing continuity, meaning and orientation for human existence in present time and space. Non-present spaces, derived from and related to real space and interrelated by meta-spatial relations, are therefore always subject to change, remodeling and constant reconstruction. It is exactly this aspect of ongoing remodeling and reconfiguration that can turn space and meta-spatial relations into a functional tool to shape and represent certain aspects of reality, while binding them to a moment of active sculpting in present time and space. This very aspect can thus be used in order to outline and carry out research projects in the social sciences, particularly in organization studies. The creation and interrelation of spaces, the modeling of meta-spatial connections, the translation and transformation of spaces, space-times and tempo-spatial linkages finally amount to the creation of a tempo-spatial artifacts that can make the world understandable, relatable or meaningful. These artifacts can be modeled and drawn up in such diverse fields as statistics, art, philosophy or economics in order to create, structure and represent multiple aspects of reality (and possible realities), while relating them to a present moment in time and space, from which abstract, imaginary, creative or analytic conceptions of the word ultimately emanate.

The manipulation and modeling of tempo-spatial relations is ultimately not only used to reconstruct, reconfigure and give meaning to real, present space, it is the interaction between present space, derivative, modeled spaces and related worldviews that allows people to integrate multiple spaces in a moment of nowness, shape and transform multiple spatial dimensions in present space as well as relate them, creating different versions of the past, future and present. In reference to this transformative dialectic De Certeau (2006, p. 345) describes the creation of “space” (espace) in relation to and emanating from specific “places” (lieus) of human life. Augé (2012, p. 83) subsequently extends the same principle in his description of “non-spaces”, places of total movement and modeled abstraction that have replaced and superimposed the anthropological roots of places and sites in social life, culture and history. Relating place and space, the manipulation and transcendence of actual sites through movement, language, abstraction or interpretation creates spaces as a multiplicity of

derivative abstract, imaginary, symbolic or interpretive entities that transform, manipulate and transcend places, introduce movement and variability and translate tangible settings into spatialized, temporized and simulated models of the world. At this point is becomes clear that there can exist no permanent, total, anthropological site in the first place – a fact that is pointed out and exploited by Augé in his work (Augé, 2012). The two extrema – space and place – constitute idealized entities of a spatial concept that distinguishes and models certain aspects of space and tempo-spatial transformation that show that there will ultimately be no constant site, no eternal object in space, but only spaces of transformation, movement and manipulation that demonstrate that human existence is bound continuous appropriation, constant change as well as the translation, transfiguration and transcendence of sites and places in the flow of time. Ultimately the creation of worlds and worldviews in relation to real world settings is based on these processes of constant modeling so that the creation and transformation of spaces, spatiality and temporality emanating from present space and time lies at the very heart of the emergence of a space of human existence that at the same time transforms the places of everyday life.

The constant and incessant creation of spaces and the excess of movement and transformation present in many places that characterize the 21st century, like airports, highways, shopping malls,..., subsequently lead to the emergence of non-spaces – places that have lost their relation to the anthropological place and that tend to be spaces of total transformation and movement embedded in physical space (Augé, 2012). Non-spaces, while ultimately always being bound to specific sites and buildings, thus maintaining a natural link to anthropological places, history and social space, are characterized by the constant flow of people, things, symbols or information that culminates in an excess of spatiality, thereby transforming and superseding the anthropological, historical sites of human existence. Augé describes this aspect, citing the example of historical city centers in Europe that have become mere scenes, contexts and backgrounds constructed by the operations of tourism and commercial travel – objectified projections for identification in a constant flow of sites, objects, symbols, things and information (Augé, 2012). These non-spaces are thus defined by constant change, fluid movement as well as continuous analytic, creative or discursive construction, modeled and modified against the background of a physical site that serves as distant point of reference, upon which simulations of history, present and future are projected. The non-space therefore resembles the total spatialization and temporization of real sites – the superimposition and dissolution of real places by a simulation of the real that is nevertheless bound to a specific moment in space and time (Augé, 2012; Baudrillard, 1981; De Certeau, 2006). As has been mentioned before, places, spaces and non-spaces can (and should) be understood as the extrema of a continuum that allows for the interpretation of tempo-spatial transformation, the analysis of relations in time and space and serves as a dynamic concept for discourse on time and space. Also, it has been demonstrated that temporization and spatialization are necessary effects of a constant and ever-changing relation to sites and places that are used to construct complex aspects of human reality as well as to organize spatial practice. Moreover, space is in this case actively manipulated in order to introduce different levels of abstract analysis as well as discursive entities, serving an analytic purpose that can be addressed in scientific research and theoretic discussion.

Space is therefore actively used and shaped in order to form an analytic framework, which is subsequently exploited for the analysis of real places as well as conceptual spatial settings. Multiple spaces, tempo-spatial relations and theories of space can thus be created and appropriated in different scientific projects, research methods or theoretic concepts in order to form structures and perspectives for the representation, modeling and deconstruction of scientific data, creative expression and real life experiences. Time and space can thus actively

be assembled, shaped and structured in scientific research and multiple, multidimensional, multirelational links and interconnections in time and space can be used in order to construct, conceptualize and represent analytic settings, research methods or theoretic concepts. These aspects are exemplified in various studies concerning organizational space (Dobers, 2006; Gastelaars, 2010; Kiniven, 2006; Steyaert, 2006; Weir, 2010; Yanow, 2010), applying different approaches from the field of space theory in order to create, transform or represent analytic settings in organizational research. The characteristics of interrelated, interconnected and interactive spaces that are described in this paper regularly form the basis for scientific research based on theories of space. Strategies of art, science, philosophy, literature and also management that have been described above can finally be interpreted as instruments for giving form to, creating and interpreting multiple tempo-spatial relations that lie at the basis of human orientation in time and space and that also allow for constantly adapting to and evolving in an ever-changing world.

Modeling of Real Space in Time and Other Ways of Tempo-spatial Sculpting

Spatialization and temporization are regularly used as a means to create, to order and to relate to possible realities and different versions of the world (Chanlat, 2006; Dale & Burrell, 2008; Dale, 2005; F. W. Taylor, 1996). Above all it is the emergence of space and tempo-spatial structures that should catch the attention of scientists, because it is the constant remodeling and reconfiguration of tempo-spatial relations and their impact on present space and time that allow for organizing collective action, ordering social interaction as well as the territorialization and temporization of individual and social identities. As has been explained before, space can also willfully be appropriated in the creation of multidimensional, multirelational frameworks for scientific research and conceptual analysis. Finally, the emergence of complex systems can demonstrate the dynamic formation of structures in time and space from an initial basis of chaos and disorder (Allen & Phang, 1993). Also, tools for the multidisciplinary modeling of data can be interpreted as a means to establish and to shape multiple relations between different data-dimensions in time and space that can subsequently be used for interpreting and analyzing the interactions between complex data-sets, real-life situations and methods of data-modeling (Diekmann, 2010; Kehrer, Boubela, Filzmoser, & Piringer, 2012; Neftci, 2000).

In the domain of arts, highlighting interactions between creative spaces and specific sites of artistic intervention, the emergence and shaping of patterns in time and space have frequently been used in order to create unexpected, varying, seemingly chaotic outcomes. Kaprow's happenings or Beuys' performances are only two examples that make use of people's reactions to a particular intervention and its subsequent impact on society and everyday lives (Heidt, 1989; Husslein-Arco & Busse, 2013; Kaprow, 1993b, 2004, 2005; Szeemann, 2008). Kaprow's happenings that start from an abstract layout of a spatial setting or a sequence of events and that lead to the unfolding of actions and interactions in time and space can be interpreted as the appropriation and remodeling of space via a chaotic development of events that evolves by shaping, unleashing and partly controlling the forces of chance, chaos and social interaction, while transforming and transcending real sites and places in an artistic context (Kaprow, 1993a, 2005). Kaprow thus used the accidental production and transformation of space, spatial order and social interaction as an artistic principle in order to create relations, patterns and sequences of action in real, present space, but also applied it as a tool to model spatial reality as well as emergent processes and structures in time and space from the chaotic basis of human relations. Beuys on the other hand understood sculpturation

as the basis of social life and the sculpting of the "body of society" as the ultima ratio of artistic intervention (Heidt, 1989; Husslein-Arco & Busse, 2013; Szeemann, 2008). His work, but also his philosophy is therefore infused with an essential political aspect that relates his artistic stance to the creation of a new society. The mapping and sculpting of the "social body", also mentioned by Foucault (1995, p. 78), can then be developed as a means to infiltrate and transform society, as a social space, from a point of artistic, discursive, analytic or political intervention. It seems obvious that interventions in one space can thus be mirrored in infinite adjacent or derivative spaces, while the relation between spaces of analysis, representation, interpretation or creativity can be used to model, translate, transform or transcend interactions, relations and repercussions between different possible spaces in the light of a sculptural approach to human reality.

Interactions between spatial practice, individual and collective tempo-spatial structures as well as the evolution of patterns in time and space have been described in Jordon and Munro's (2013) work on the performativity of space and spatial planning in the case of the world's biggest festival for the performing arts in Edinburgh. Their analysis is directed at the use and structuration of public space, which in this case holds multiple, differing functions, serving as a medium for integrating different approaches to spatial practice, different spheres of spatial cognition as well as different levels and models of representation and analysis that are related to the appropriation and performativity of space and tempo-spatial structures. These aspects are subsequently related to and mirrored in various tactics and strategies for dimensioning, dissecting and structuring real sites and places in the public space of the city. Various actors, actants, spaces and tempo-spatial structures are incessantly connected and enacted in the process of reconfiguring and renegotiating urban space (Hernes et al., 2006; Hernes, 2004; Munro & Jordon, 2013; Ruffing, 2009). The performativity of spatial practice ultimately binds strategies, conceptions, models and modulations of space and time to real, present space throughout the city. Similar processes can be observed in the case of the emergence and adaptation of structures and processes in the organization (Kosiol, 1962, 1978; Weick, 1995a, 1995b), the creation of timetables and social institutions (Foucault, 1995; Giddens, 1997; Orlikowski & Yates, 2002) as well as the conception and representation of organizations in virtual space (Kiniven, 2006; Mobach, 2010). To use and apply operations of integration, the modeling of tempo-spatial relations as well as the transformation and transfiguration of interconnected spaces in the creation and design of research projects in organization studies and the social sciences can now be seen as the next logical step in order to develop a comprehensive research framework derived from space theory. The integration, deduction, emergence, transformation and modeling of tempo-spatial relations can be identified as tools and operations that can be actively applied in designing and outlining the foundations for the creation of research projects based on space theory. Also, complex analysis of multiple spatial relations and concepts derived from space theory can have a significant impact on the creation and planning of places of social life as well as of organizational spaces (Clegg & Kornberger, 2006a; Dale & Burrell, 2008; Dale, 2005; Orlikowski & Scott, 2008; Orlikowski, 2007). Multirelational and multidimensional spaces have thus been described as fluid and ubiquitous media, that are based on and derived from practical relations to present space and that are constantly used, reconfigured and transformed in order to produce representations of the world as well as to model and to manipulate real world interactions and tempo-spatial relations, which subsequently structure human life, take an effect on human perceptions and perspectives towards reality and allow for the creation of meaningful and adaptable environments.

Processes of Multiple Spatial Integration and Dimensions of Spatial Analysis

Space and derivative spatial dimensions are modeled not only in relation to time, but necessarily in time itself, so that the continuous establishing of connections, interactions and relations between spatial dimensions in real time characterizes the fluid creation of reality that allows for the construction and interpretation human life-worlds. Modeling and adapting relations to time and space results in a continuous simulation of possible realities and their reification in present time and space by constructing the real from the fringes of the unreal, the fictitious and the imaginary (Baudrillard, 1981, 1987; Deleuze & Guattari, 2005; Iser, 1993). Also, by introducing forms, functions and order, trying to understand and model the world they live in, humans automatically create and transcend physical life-worlds, making them the blueprint and the result of manifesting ideas, ideologies and images of life. From this seemingly chaotic, multi-actor, creation of space, time and spatiality milieus and tempo-spatial assemblages are formed that subsequently materialize in physical sites and objects (Dale & Burrell, 2008; Dale, 2005; Deleuze & Guattari, 1977; Hernes et al., 2006). Moreover, the constant processes of rhizomatic evolution of a system of references, relationships and reifications that are connected to the temporization and spatialization of the environment as well as to human existence in time and space, ultimately result in the present cognition and performative properties of smooth space, which can be modeled, observed and influenced in the nature of real, present space and its associated spatial practices (Deleuze & Guattari, 1977, 2005; Munro & Jordon, 2013). Via the transformation and influence on smooth space and physical spatial settings, modeling realities, tempo-spatial perspectives and integrated worldviews, strongly resembles a process of constant sculpting and continuous transfiguration so that strategies of statistics, art, science and management ultimately all take a sculptural approach towards space and time that is regularly engaged in the construction of meaningful life-worlds, individual and social identities as well as versions of personal and collective history.

The creation, adaptation and integration of different spatial models and perspectives as well as their evolution and transfiguration in time therefore lie at the center of sculpting, embodying and representing aspects and elements of human existence that are constantly used to form, transform and translate basic conceptions of human reality. Thus, functions of tempo-spatial integration of different tempo-spatial dimensions and elements in time and space as well as the sculpting of multiple relations between spaces and tempo-spatial assemblages can be intentionally put to use in organization studies as well as the social sciences. As these procedures have been practiced for the longest time, mostly without explicitly being noticed, the formation, formulation and structuration of multiple dimensions in space and time can be put to use in the design of methods, models and theories for scientific research by applying basic properties and principles of space theory (Kiniven, 2006; Lefebvre, 1991; Mobach, 2010; Watkins, 2005). Multiple tempo-spatial structures and patterns can be modeled, formed, related and subsequently examined, by using concepts, methods and operations derived space theory. The modeling and integration of multiple spaces, space-times and tempo-spatial assemblages can thus be put to use in outlining, representing and sculpting research frameworks in the form of theoretic concepts, methods and models that subsequently guide the transformation and analysis of problems in scientific research.

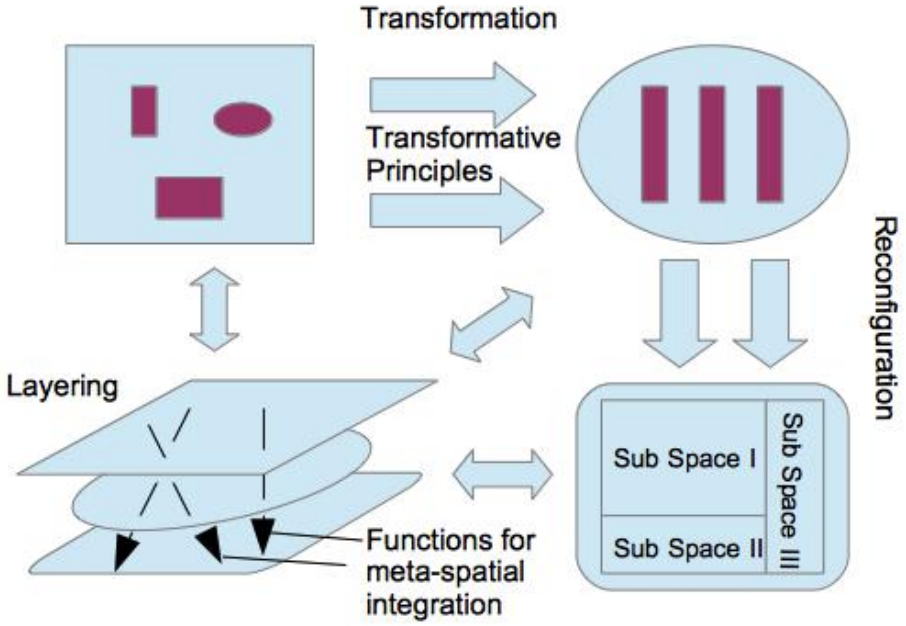
Multiple spaces can thus be derived from a moment of total presence in the here and now, while they are mirrored in real space and can be represented and modeled in abstract, imaginary or interpretive spaces that produce, shape or transform certain aspects of possible realities and relate them back to one (or several) specific moment(s) in space and time (Goodman, 1990; Wittgenstein, 2006). Therefore, different spatial dimensions are

continuously formed, created and integrated in the course of remodeling and sculpting the relations between different tempo-spatial dimensions and their interplay in the passage of time (Foucault, 1986, 1995; Munro & Jordon, 2013; Orlikowski & Yates, 2002). By modeling and sculpting these multiple and multidimensional connections and linkages, the interrelations between time and space are not only manipulated, but are fundamentally created as an abstract, but also very available and intuitive tool for modeling reality and producing this reality in the first place. It can be concluded at this point that the creation, transformation and integration of spaces can be used, and is actually constantly being used, in order to highlight, model or represent certain aspects of reality in various creative, abstract, analytic, imaginary or utterly real, tangible contexts. In addition to the formal aspects and the structural properties of space that often provide the basis for tempo-spatial analysis, it now seems evident that every conception of space and time also serves as a means for sculpting, transforming and transcending reality so that sculptural aspects must be emphasized in the construction and modulation of space and time, also and especially with respect to the design of research projects. Various techniques, strategies and disciplines for the modeling of space and time, in such diverse fields as art, science, politics or management, only differ by the means, the styles and tools that can help materialize, represent or reconfigure tempo-spatial relations and their impact on present space and time (Feyerabend, 1984). The aspect of sculpturation and continuous modeling can be recognized as central to the transformation and creation of human relations to space and time as well as to their abstract conception in models, theories and concepts of space theory.

If the functions outlined above are applied in the design of research projects, scientists will be able to create, integrate and relate different dimensions, structures and elements of space and time in malleable, fluid models, characterized by multiple, multidimensional relations that can be addressed and transformed, applying the tools and methods of scientific research and theoretic exploration derived from space theory. These models can then be employed in order to depict, analyze and transform central aspects of conceptual approaches on human reality. Finally, space also fundamentally draws its importance and its meaning from the continuous transformation and alteration of tempo-spatial relations as a central aspect of human orientation in time and space, the formation of social institutions and the organization of collective action (DiMaggio & Powell, 1983; Giddens, 1997; Kosiol, 1962, 1978). Imaginary, real, abstract, creative or analytic spaces can subsequently be recognized as different modes and dimensions for representing different forms of human relations to space and time, thereby structuring, ordering and shaping reality, tempo-spatial assemblages as well as versions of the world and the human self. Therefore, different spatial dimensions and multiple tempo-spatial relations can be manipulated and used in the creation of multiple perspectives towards reality, the construction of individual and collective worldviews as well as the design of abstract concepts and theoretic models of the world (Brocklehurst, 2006; Dale & Burrell, 2008; Dale, 2005; Deleuze & Guattari, 2005; Foucault, 1986; Luckner, 2001; Orlikowski & Yates, 2002). These aspects can finally explain the significant and far-reaching role that space may take in the design of interdisciplinary research projects, the scientific modeling of human reality as well as the conceptual exploration of creative perspectives on human existence.

The following graphic representations will summarize and complete the above-mentioned basic principles of spatial integration, the translation and linkage of different spaces and tempo-spatial structures in a multispatial, multirelational outline for the design of research projects. Moreover, the construction and sculpturation of interrelations between different spatial dimensions serve as an important tool for transforming, modeling and merging spaces that can be guided by different strategies, tools and tactics depending on the conceptual background and the disciplines involved. In its final form, the model herein presented hints at

a possible multidimensional, multirelational, meta-spatial system that allows to relate, modulate and integrate different spatial dimensions, forms and structures, applying multiple media that are presented by different disciplines for sculpting, modeling and conceptualizing versions of human reality.



Figure… : Principles and functions of spatial transformation

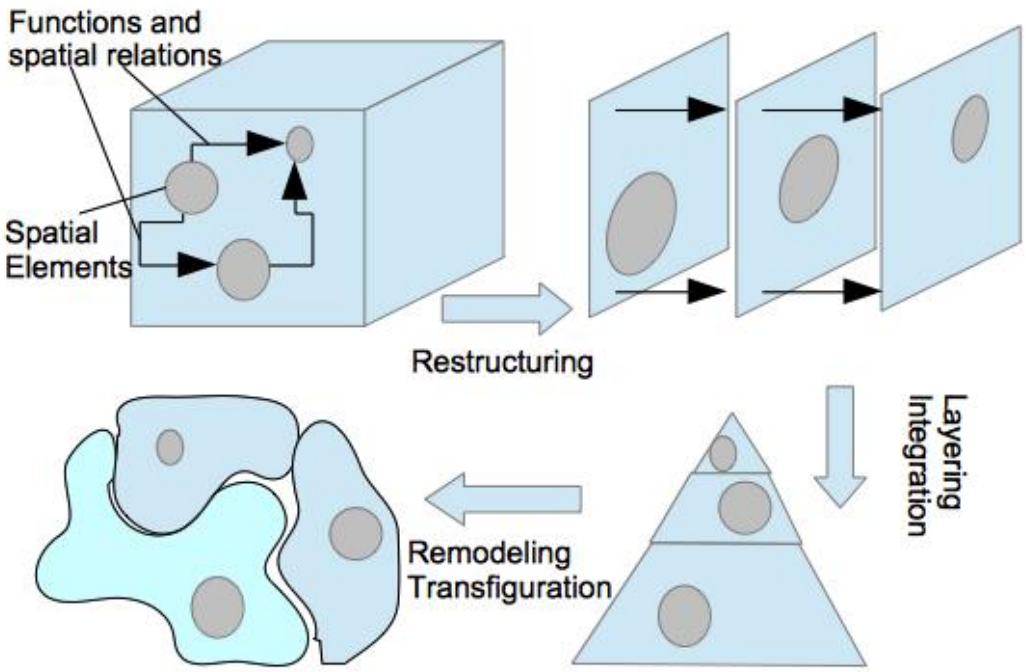


Figure …. : Reconfiguration of spaces, spatial elements and spatial structures

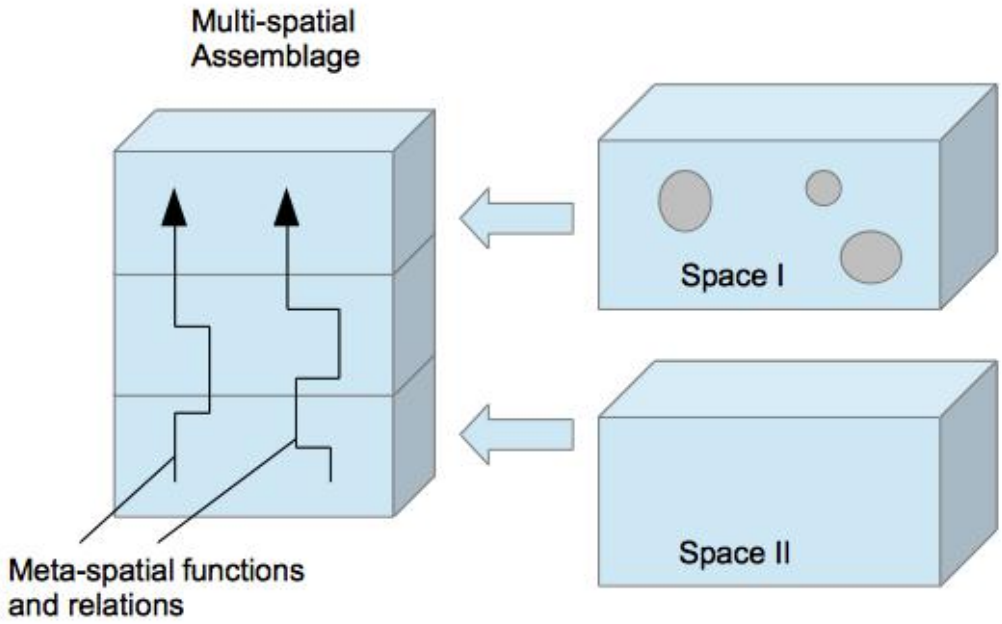


Figure … : Principles of meta-spatial assemblage

Space as an Integrative Tool to Relate Spatial Dimensions – A Multidimensional Model of Space

In the last sections, space has been described as an integrative tool that can be used in order to relate and to integrate different spatial dimensions, different perspectives on and perceptions of space in the form of differing, but relatable, differentiated, but yet connected models of space and time that serve as artifacts, examples and results of sculpting and creating human life-worlds. These life-worlds have regularly been modeled with regard to different forms of spaces, such as urban space (Chanlat, 2006; Koolhas, 1994; Kornberger, 2012), physical organizational space (Bellas, 2006; Dale & Burrell, 2010; Kornberger & Clegg, 2004), virtual organizational space (Go & van Fenema, 2006; Kiniven, 2006; Mobach, 2010) or traditional capitalist productive spaces(Brocklehurst, 2006; Foucault, 1995; F. W. Taylor, 1996). In each of the mentioned cases the interaction between structures of space and time is actively manipulated in order to create, model or transform certain aspects of collective or individual reality. In fact, the very malleability of tempo-spatial relations has always been understood as central to the introduction of collective structures of social interaction as well as to the planning and ordering of organizational operations (Dale & Burrell, 2008; Kosiol, 1962, 1978; Schreyögg, 2003; Sjöstrand, 1993). Also, the configuration and modeling of these relations in time and space seem to form the very basis for the creation of tempo-spatial order and social institutions (Foucault, 1995; Giddens, 1997). As has been set forth in the previous paragraphs, there are a number of functions, relations and functionalities of space that can actively be utilized in order to introduce, transform or shape relations of tempo-spatial order as well as systems of knowledge and meaning in time and space. These functions, traits and properties can serve as guiding principles and as theoretic groundwork for the use of approaches derived from space theory in the creation and design of research projects in the social sciences as well as in organization studies. Also, they may explain processes and operations employed in the introduction and structuration of multidimensional and multirelational meta-spatial models that can be used for designing and implementing research projects related to space and space theory. Finally, the properties and principles included in the following paragraph (table/paragraph) includes the main characteristics for the modeling and transformation of spaces, tempo-spatial relations and perspectives that describe and formalize human relations to time and space, outlining a concept for the formation and transfiguration of meta-spatial assemblages or a space of spaces.

A number of these principles, traits and characteristics are summarized in the following section: (Summary table?)

The deduction of abstract, imaginary and integrative spaces as well as their main properties and qualities from real, physical space as well as from principles of human existence in present space and time. - As has been shown before, spatial arrangements and properties of tempo-spatial relations are ultimately grounded on human existence in present physical space as well as the principles of human spatial cognition in the here and now.

The introduction of perspectives and relations of distance, position and movement in derivative spatial settings that are ultimately based on the perception of real, present space. - In relation to the first principle, basic properties of space, spatial objects and the nature of perspective are usually derived from human spatial cognition so that most spaces will refer to and be structured by principles that can be found in real, present space, such as the positioning of objects, relations of distance and proximity, properties of speed and movement as well as the integration of multiple spatial elements in more or less stable perspectives (depending on

the spatial medium chosen, e.g. mathematical space, statistical space, imaginary space, poetic space,...)

The relationality of elements in space, spatial boundaries and perspectives as well as the transformation of these relationships through movement, modulation or manipulation of space and time. - Based on the previously mentioned properties, spaces and spatial elements are usually characterized by systems of relationality, spatial boundaries and multiple perspectives that can be transformed, modeled and manipulated by reconfiguring or modifying the relations and linkages between spatial elements, changing or manipulating perspectives or viewpoints in time and space as well as moving spatial elements, spatial boundaries or entire spatial assemblages, which will influence and transform entire systems of spatial relationality.

The translation, transfiguration and relationality of spaces so that a multiplicity of derivative spaces can be related to, integrated into and derived from each other, while being actively formed, transformed and modeled in an act of multi-dimensional and multi-relational sculpting that will involve a multiplicity of disciplines, strategies, tools, actors and perspectives. - Multiple spaces that are regularly derived from and integrated into each other and that are based on the properties of present space allow for the translation, transposition and transfiguration of multiple spaces in relation to each other. A system of multiple space can thus be drawn up that involves multiple relations that can be established and shaped between those spaces in question. If an infinite number of possible spaces can be included in these processes, then the transfiguration, transformation and modeling of spatial relations and meta-spatial integration will be the main features and defining tasks in tempo-spatial form-giving and the creation of space and spatiality. Therefore, sculpturation and continuous modeling constitute the primary tasks and the outstanding property that defines human relations to space and time. Also, the relations between multiple, infinite spaces are fundamentally characterized by this quality. The translation and transfiguration of spaces can thus be defined as one of the major tasks and strategies in constructing and forming meta-spatial assemblages.

Therefore, the transformation, representation and integration of tempo-spatial structures and dimensions, applying different methods, strategies and principles that are mirrored and projected in real, present space. - As has been mentioned before, a multiplicity of strategies, methods and means can be applied in order to relate different spaces and to represent the interconnections and linkages between different spatial dimensions. Strategies of art, philosophy, science or management can be used to aggregate, depict and define tempo-spatial relations that can be expressed and modeled, using tempo-spatial assemblages and artifacts of sculptural, graphic, creative or abstract representation. Different disciplines thus include an infinite number of tools and strategies to represent, form and formalize tempo-spatial relations as well as the linkages between multiple spatial dimensions in an act of continuous sculpturation and permanent world-making. By creating, integrating and modeling relations between different exasties of time as well as between different tempo-spatial assemblages that unfold in space and time it is possible to shape, transform and transcend different versions of the present as well as present space so that possible future, past and present states of the world will be mirrored and reflected in present space and time. The modeling of different, possible spaces, spatialities and spatial dimensions is therefore fundamentally bound to the passage of time, which highlights the impact of constant processes of form-giving, sculpturation and active transformation of relations to space and time. Various methods of art, science as well as social, political or economic life can therefore also be understood as means to introduce forms, functions and meaning into the world and, thus, represent different styles, strategies and ways of world-making.

The modeling, emergence and transformation of tempo-spatial structures and relations in the passing of time, rendering the act of continuous influence and fluid referencing similar to an act of sculpting and permanent world-making that involves present space, but significantly relies on the forming and transforming of spaces of possibility, probability and imagination. - As has been mentioned in the last paragraph, the passing of time renders the act of permanent sculpting of space, time and tempo-spatial relations similar to an act of continuous form-giving and a sculptural process of constructing reality, while involving possible, probable, utopian, imaginary, abstract or virtual version of the world that are fundamentally bound to space and time and that are constantly reflected in present space. The unfolding of possible worlds and worldviews can be see as a primary example for the relation and interconnection of different dimensions of space, different spatialities and their continuous transformation in the passing of time. Space is therefore fundamentally characterized by a constant effort to create meaning and continuity in the world, relating past, present and future states of the world, while constructing reality as well as collective and individual identities in their relation to time and space. From the production of possible worlds, possible spaces and tempo-spatial relations in time and space the process of deduction and integration of multiple spaces can be derived, representing and exemplifying acts of continuous sculpturation that are involved in relating different spaces, spatial dimensions and tempo-spatial structures in processes of fluid assemblage and a sculptural understanding of human existence.

Finally, the integration and translation of multiple spaces that are derived from and complementary to real, present space into a coherent version of reality that relates past, present and future as well as it territorializies, temporizes and individualizes personal living environments as well as collective social space. - As has been outlined in the last section, multiple spaces, spatial dimensions and tempo-spatial relations are regularly integrated, represented and mirrored in real, present space. The modeling of time and space as well as the creation and transformation of tempo-spatial assemblages in the here and now highlight the role of representations and artifacts of tempo-spatial structuring that introduce consistency, order and means for orientation in the world. Moreover, the territorialization, spatialization and temporization of human life-worlds relate spaces of possibility, imaginary, abstract or symbolic worldviews as well as individual perspectives on time and space to present space and practical social interaction that serve as a medium to negotiate and transform aspects of human reality in real, present space. Not only can abstract, analytic, imaginary or symbolic spaces thus be seen as means and media for dimensioning, describing and dissecting human life-worlds, also, real, present space, its perception and interpretation can be understood as an omnipresent and immediate point of access for investigating, exploring and analyzing human relations to time and space as well as their impact on social life and individual life-worlds. Multiple spaces, a multiplicity of spatial dimensions, the integration of different tempo-spatial assemblages and their transformation in the passing of time can be defined as basic properties for drawing up a framework for the construction of meta-spatial relations as well as a concept for multidimensional, multirelational tempo-spatial integration. These properties and characteristics can subsequently be used, as they have been used so many times before, in the creation, design and implementation of research projects in organization studies and the social sciences and can actively be appropriated in creating a framework for scientific analysis and the systematic exploration of tempo-spatial relations. By highlighting the role of processes of continuous sculpturation and acts of fluid assemblage the impact of constant modeling of tempo-spatial relations and its possible role in research design are illustrated. Applying the principles, properties and processes outlined in this section, it can be attempted to create, structure and transform tempo-spatial assemblages that can be addressed, analyzed or used in drafting conceptual approaches for research in organization studies and the social sciences. Research on organizational spaces, sociomateriality, virtual organizational space, but also

sociological, philosophical or historical perspectives on space and time can serve as a great starting point for a deeper exploration of human relations to time and space.

In consequence of the factors just explained, space can serve as a tool that allows for the integration of multiple spaces into a meta-spatial model that may be used in order to create order, convey social meaning and make sense of individual life-worlds, but that may also be employed for the structuring and design of research projects and theoretic concepts in organization studies and the social sciences. A number of authors do not only understand space as a physical reference point, but also as an abstract tool to organize and structure entire research projects and scientific arguments (Clegg & Kornberger, 2006a; Dale & Burrell, 2010; Kenis et al., 2010; Kornberger & Clegg, 2004; Kornberger, 2012; Steyaert, 2006; van Marrewijk, 2010). Abstract, analytic space and conceptualized tempo-spatial relations resemble a rhizome that allows for the continuous creation, structuration and transformation of an ultimately abstract tempo-spatial assemblage that is nevertheless connected to real-life situations and specific social contexts (Deleuze & Guattari, 1977, 2005). By applying functions and characteristics of multidimensional, multirelational spaces that have been outlined above, it can be attempted to create analytic or interpretive spatial assemblages from a meta-spatial perspective that can be used for establishing or transforming conceptual or methodical contexts for social research. An example can be found in the techniques of multi-sensory sculpting (Sims & Doyle, 1995; von Wallpach & Kreuzer, 2013), in which case everyday objects are used for developing and analyzing social contexts and narrative spaces of the organization. Also, methods of mental mapping actively engage in transforming and translating experiences, worldviews and knowledge into spatial representations (Ackermann et al., 1992; Christensen & Olson, 2002; Eden, 2004). Another hands-on example can be found in the dynamic modeling of organizational spaces in the construction of buildings and places of the organization (Bellas, 2006; Mobach, 2010). Finally, aspects of design thinking can be addressed, not only to create organizations themselves but also to guide organizational change as well as to transform and design organizational spaces, their functions and meanings in different contexts of the organization (Brown, 2009; Clegg & Kornberger, 2006a; Dale & Burrell, 2008). If the premises and characteristics of fluid space are taken seriously, spatial structures and tempo-spatial order are only temporary mappings of real or derivative spaces that are maintained or constructed in order to render reality meaningful, real, imaginable and interpretable at the same time. The constant change and adaptability of relations towards space and time seem to constitute the very foundations for human orientation in the world, individual sensemaking and the collective negotiation of reality. Furthermore, the fluid conception of time and space necessarily determine the emergence and structuration of social institutions as well as the temporization and spatialization of individual identities. The multiple roles and functions that are fulfilled by the continuous modeling of tempo-spatial relations as well as the constant transfiguration of forms and structures in space and time, lie at the heart of continuously adapting, transforming and actualizing worldviews, living-environments and individual conceptions of reality alike. Finally, a multidimensional and multirelational approach on space, time as well as the creation and sculpturation of human reality allows for a comprehensive conception of human relations towards present space and time that can explain processes of worldmaking as well as the emergence of space and time from a moment of ultimate presence in the here and now. As has been demonstrated in the preceding sections, the relations, conceptions and interactions of spaces, tempo-spatial modeling and tempo-spatial assemblages can be formed, operationalized, and actively manipulated in the course of the design of research projects in organizations studies and the social sciences, applying a framework of features and functions of multidimensional, multirelational meta-spatial relations that has been developed throughout this paper.

Conclusion

In the context established above, this paper is expected to serve as a stepping stone for the design of multirelational, multidimensional research concepts in the social sciences, especially in organization studies, that are based on theories of space. It has been demonstrated that space can be appropriated, shaped and structured, creating theoretic frameworks and dynamic structures for the conception and implementation of research projects and scientific research methods. Also, a number of characteristics and functions of space have been derived that can serve as guidelines and constructing principles, drawing up said frameworks and concepts. Real, present space has been identified as the basis of derivative spatial dimensions, like abstract, analytic, symbolic or imaginary spaces, and as the very moment in time and space, in which these dimensions, along with their relations to reality are modeled and sculpted. The dimensioning and structuration of tempo-spatial realities resides on the adaptation and transformation of relations between multiple, possible or imaginable spaces and spatial dimensions that are to be understood as continuously interactant and in fluid transition to each other. This is why imagination, creativity, but also social order, hierarchy as well as analytic and abstract conceptions of reality will be found to be mirrored and represented in real, present space, which they are ultimately derived from. Possible interactions between and the integration of different spaces and spatial dimensions as well as their modeling via multiple tempo-spatial relations has identified space as a rich tool for the interpretation, structuration and analysis of various context of human life as well as of physical, real-world settings. While these aspects are continuously addressed in everyday life as well as in science, mostly without explicitly being considered or discussed in detail, this paper aims at laying the groundwork for the use and creation of multidimensional, multirelational tempo-spatial models for the design of research-projects in the social sciences with special consideration of organization studies. This will enable researchers to make use of spatial relations and multidimensional spaces in the implementation and planning of research projects, based on the concepts of space theory. In this paper the conceptual foundations for the deduction and creation of abstract, imaginary, symbolic, utopian, virtual or simulated spaces from real space, the introduction of perspectives, the nature of relations of distance and proximity, principles of position and movement in space and time, the integration and translation of spaces related to each other, the transformation and sculpturation of space in time, the relationality of multidimensional spaces, the modeling and use of tempo-spatial artifacts in interacting with the world as well as the willful use of these aspects in science, arts, management and every-day life have been described. The current work aims at sparking further research with regard to organizational spaces and at providing the basis for the development of tempo-spatial concepts for organization studies and the social sciences. Space has been identified as a freely applicable, hands-on and flexible tool for forming, transforming, interpreting and analyzing different aspects of human reality. It can thus actively be used in order to shape, represent and investigate the human relations to time and space that allow us to create and to understand the world we live in. This paper attempts to create knowledge about the manifestation of human life in time and space and how this knowledge can be used in order to actively form and transform meta-spatial models applicable in the social sciences. It is hoped that these goals have at least partly been fulfilled.

References:

Ackermann, F., Eden, C., & Cropper, S. (1992). Getting Started with Cognitive Mapping, (April 1992), 1–14.

Albert, S., & Whetten, D. A. (1985). Organizational Identity. *Research in Organizational Behavior*, *7*, 263–295. Retrieved from http://proxygsu-ken1.galileo.usg.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=6806228&site=ehost-live

Allen, P. M., & Phang, H. K. (1993). Evolution, Creativity and Intelligence in Complex Systems. In H. Haken & A. Mikhailov (Eds.), *Interdisciplinary Approaches to Nonlinear Complex Systems* (pp. 12–31). Heidelberg: Springer.

Andrieu, B., & Boetsch, G. (2008). *Dictionnaire du corps*. Paris: CNRS.

Augé, M. (2012). *Nicht-Orte*. München: Beck.

Bachelard, G. (2011). *Poetik des Raumes*. Frankfurt am Main: Fischer.

Bachtin, M. M. (2008). *Chronotopos*. Frankfurt am Main: Suhrkamp.

Baudrillard, J. (1978). *Kool Killer*. Berlin: Mervé.

Baudrillard, J. (1981). *Simulacra and Simulation*. Paris: Editions Galilée. Retrieved from http://www.bconradwilliams.com/files/7313/9690/1991/Baudrillard-Jean-Simulacra-And-Simulation2.pdf

Baudrillard, J. (1987). *Das andere Selbst*. Wien: Passagen.

Bellas, J. (2006). Interface between Organisational Design and Architectural. In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 241–247). Malmö/Copenhagen: Liber/Copenhagen University Press.

Bourdieu, P. (1989). Social Space and Symbolic Power. *Sociological Theory*, *7*(1), 14–25.

Bourdieu, P. (1996a). *Distinction: A Social Critique of the Judgment of Taste*. Cambridge: Harvard University Press. http://doi.org/10.1007/s13398-014-0173-7.2

Bourdieu, P. (1996b). Physical Space, Social Space and Habitus. Oslo: University of Oslo.

Bourdieu, P. (1998). *Practical Reason: On the Theory of Action*. Stanford: Stanford University Press.

Bourdieu, P. (2009). *Entwurf einer Theorie der Praxis*. Frankfurt am Main: Suhrkamp.

Bourdieu, P., & Wacquant, L. J. (2006). *Reflexive Anthropologie*. Frankfurt am Main: Suhrkamp.

Brocklehurst, M. (2006). Space, Organisation and Management. In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 79–91). Malmö/Copenhagen: Liber/Copenhagen University Press.

Brown, T. (2009). *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*. New York: HarperCollins.

Chanlat, J.-F. (2006). Space, Organisation and Management Thinking: a Socio-Historical Perspective. In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 17–43). Malmö/Copenhagen: Liber/Copenhagen University Press.

Christensen, G. L., & Olson, J. C. (2002). Mapping Consumers Mental Models with ZMET. *Psychology & Marketing*, *19*(6), 477–501. http://doi.org/10.1002/mar

Clegg, S. R., & Kornberger, M. (2006a). Organising Space. In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 143–162). Malmö/Copenhagen: Liber/Copenhagen University Press.

Clegg, S. R., & Kornberger, M. (2006b). *Space, Organizations and Management Theory*. (S. R. Clegg & M. Kornberger, Eds.). Malmö/Copenhagen: Liber/Copenhagen University Press.

Cornelissen, J. P., Haslam, S. A., & Balmer, J. M. T. (2007). Social identity, organizational

identity and corporate identity: Towards an integrated understanding of processes, patternings and products. *British Journal of Management*, *18*, 1–16. http://doi.org/10.1111/j.1467-8551.2007.00522.x
Dale, K. (2005). Building a Social Materiality: Spatial and Embodied Politics in Organizational Control. *Organization*, *12*(5), 649–678. http://doi.org/10.1177/1350508405055940
Dale, K., & Burrell, G. (2008). *The Spaces of Organisation and the Organisation of Space*. New York: Palgrave.
Dale, K., & Burrell, G. (2010). "All Together, Altogether Better": the Ideal of Community in the Reorganization of the Workplace. In A. van Marrewijk & D. Yanow (Eds.), *Organizational Spaces: Rematerializing the Workday World* (pp. 19–40). Celtenham/Northampton: Edward Elgar.
Danto, A. (1991). *Die Verklärung des Gewöhnlichen*. Frankfurt am Main: Suhrkamp.
De Certeau, M. (2006). Praktiken im Raum. In J. Dünne & S. Günzel (Eds.), *Raumtheorie* (pp. 343–353). Frankfurt am Main: Suhrkamp.
Deleuze, G., & Guattari, F. (1977). *Rhizom*. Berlin: Mervé.
Deleuze, G., & Guattari, F. (2005). *A Thousand Plateaus - Capitalism and Schizophrenia*. Minneapolis: University of Minnesota Press.
Deleuze, G., & Guattari, F. (2006). Das Glatte und das Gekerbte. In J. Dünne & S. Günzel (Eds.), *Raumtheorie* (pp. 434–446). Frankfurt am Main: Suhrkamp.
Derrida, J. (1978). Structure, Sign, and Play in the Discourse of the Human Sciences. *Writing and Difference*, *1*, 278–293. http://doi.org/10.1017/CBO9781107415324.004
Derrida, J. (1985). Des tours de Babel. In *Difference in translation* (Vol. 189, pp. 218–227).
Derrida, J. (2008). *Die Différance*. Stuttgart: Reclam.
Diekmann, A. (2010). *Empirische Sozialforschung*. Reinbek bei Hamburg: Rowohlt.
DiMaggio, P., & Powell, W. (1983). The Iron Cage Revisited. *American Sociological Review*, *48*(2), 147–160. http://doi.org/10.2307/3094810
Dobers, P. (2006). Empty Spaces or Illusionary Images? "Stockholm as a Mobile Valley." In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 287–304). Malmö/Copenhagen: Liber/Copenhagen University Press.
Douane, M. A. (2002). *The Emergence of Cinematic Time*. Cambridge: Harvard University Press.
Dutton, J. E., & Dukerich, J. M. (1991). Keeping an Eye on the Mirror: Image and Identity in Organizational Adaptation. *Academy of Management Journal*, *34*(3), 517–554. http://doi.org/10.2307/256405
Dutton, J. E., & Penner, W. J. (1993). The Importance of Organizational Identity for Strategic Agenda Building. In J. Hendry & G. Johnson (Eds.), *Strategic Thinking: Leadership and the Management of Change* (pp. 89–113). Hoboken: John Wiley & Sons.
Eden, C. (2004). Analyzing cognitive maps to help structure issues or problems. *European Journal of Operational Research*, *159*(3), 673–686. http://doi.org/10.1016/S0377-2217(03)00431-4
Feyerabend, P. (1984). *Wissenschaft als Kunst*. Frankfurt am Main: Suhrkamp.
Fontana, A., & Pasquale, P. (1980). Truth and Power. In C. Gordon (Ed.), *Power/Knowledge* (pp. 109–133). New York: Pantheon Books.
Foucault, M. (1986). Of Other Spaces. *Diacritics*, *16*(1), 22–27. http://doi.org/10.2307/464648
Foucault, M. (1995). *Discipline and Punish*. New York: Vintage.

Gastelaars, M. (2010). What Do Buildings Do? How Buildings-in-use Affect Organizations. In A. van Marrewijk & D. Yanow (Eds.), *Organizational Spaces: Rematerializing the Workday World* (pp. 77–95). Celtenham/Northampton: Edward Elgar.

Giddens, A. (1997). *Die Konstitution der Gesellschaft*. Frankfurt/New York: Campus.

Gioia, D. A., & Thomas, J. B. (1996). Identity, image, and issue interpretation: Sensemaking during strategic change in academia. *Administrative Science Quarterly*, *41*(3), 370–403. http://doi.org/10.2307/2393936

Go, F., & van Fenema, P. (2006). Moving Bodies and Connecting Minds in Space: a Matter of Mind over Matter. In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 64–78). Malmö/Copenhagen: Liber/Copenhagen University Press.

Goodman, N. (1990). *Weisen der Welterzeugung*. Frankfurt am Main: Suhrkamp.

Grandy, G., & Mills, A. J. (2004). Strategy as Simulacra? A Radical Reflexive Look at the Discipline and Practice of Strategy. *Journal of Management Studies*, *41*(7), 1153–1170. http://doi.org/10.1111/j.1467-6486.2004.00470.x

Heidt, W. (1989). Die Umstülpung des demiurgischen Prinzips. In W. Heidt (Ed.), *Die unsichtbare Skulptur*. Stuttgart: Urachhaus.

Hernes, T. (2004). *The spatial construction of organization*. Amsterdam/Philadelphia: John Benjamin.

Hernes, T., Bakken, T., & Olsen, P. I. (2006). Spaces as Process: Developing a Recursive Perspective on Organisational Space. In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 44–63). Malmö/Copenhagen: Liber/Copenhagen University Press.

Hogg, M. A., & Terry, D. I. (2000). Social Identity and Self- Categorization Processes in Organizational Contexts. *Academy of Management Review*, *25*(1), 121–140. http://doi.org/10.5465/AMR.2000.2791606

Hogg, M. A., & Terry, D. I. (2001). *Social Identity Processes in Organizational Contexts*. (M. A. Hogg & D. I. Terry, Eds.). Ann Arbor: Sheridan Books.

Husslein-Arco, A., & Busse, B. M. (2013). *Gironcoli: Context*. (A. Husslein-Arco & B. M. Busse, Eds.). Nürnberg: Verlag für Moderne Kunst.

Iedema, N., Long, D., & Carroll, K. (2010). Corridor Communication, Spatial Cesign and Patient Safety: Enacting and Managing Complexities. In A. van Marrewijk & D. Yanow (Eds.), *Organizational Spaces: Rematerializing the Workday World* (pp. 41–57). Celtenham/Northampton: Edward Elgar.

Iser, W. (1993). *Das Fiktive und das Imaginäre*. Frankfurt am Main: Suhrkamp.

Kaprow, A. (1993a). *Essays on the blurring of art and life*. (J. Kelley, Ed.). Berkeley/Los Angeles/London: University of California Press.

Kaprow, A. (1993b). "Happenings" in the New York Scene New York Scene. In J. Kelley (Ed.), *Essays on the Blurring of Art and Life* (pp. 15–27). Berkeley/Los Angeles/London: University of California Press.

Kaprow, A. (2004). *Some Recent Happenings*. (M. Tencer, Ed.). Ubu Classics.

Kaprow, A. (2005). Excerpts from "Assemblages, Environments and Happenings." In M. R. Sandford (Ed.), *Happenings and Other Acts* (pp. 197–205). New York: Routledge.

Kehrer, J., Boubela, R. N., Filzmoser, P., & Piringer, H. (2012). A Generic Model for the Integration of Interactive Visualization and Statistical Computing Using R. In *IEEE Conf. Visual Analytics Science and Technology* (pp. 133–134).

Kenis, P., Kruyen, P. M., & Baaijens, J. M. (2010). Bendable Bars in a Dutch Prison: a Creative Place in a Non-creative Space. In A. van Marrewijk & D. Yanow (Eds.), *Organizational Spaces: Rematerializing the Workday World* (pp. 58–73).

Celtenham/Northampton: Edward Elgar.
Kiniven, N. (2006). Constructing Nomadic Organizations in Virtual Spaces? In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 163–173). Malmö/Copenhagen: Liber/Copenhagen University Press.
Koolhas, R. (1994). *Delirious New York - A Retroactive Manifesto for Manhattan*. New York: The Monacelli Press.
Kornberger, M. (2012). Governing the City From Planning to Urban Strategy. *Culture & Society*, *29*(2), 84–106. http://doi.org/10.1177/0263276411426158
Kornberger, M., & Clegg, S. R. (2004). Bringing Space Back in: Organizing the Generative Building. *Organization Studies*, *25*(7), 1095–1114. http://doi.org/10.1177/0170840604046312
Kosiol, E. (1962). *Organisation der Unternehmung*. Wiesbaden: Gabler.
Kosiol, E. (1978). Aufgabenanalyse und Aufgabensynthese. In E. Grochla (Ed.), *Elemente der organisatorischen Gestaltung* (pp. 66–84). Reinbek bei Hamburg: Rowohlt.
Kreiner, K. (2010). Organizational Spaces: From "matters of fact" to "matters of concern." In A. van Marrewijk & D. Yanow (Eds.), *Organizational Spaces: Rematerializing the Workday World* (pp. 200–211). Celtenham/Northampton: Edward Elgar.
Lefebvre, H. (1991). *The Production of Space*. Oxford: Blackwell.
Lewin, K. (2006). Kriegslandschaft. In J. Dünne & S. Günzel (Eds.), *Raumtheorie* (pp. 129–141). Frankfurt am Main: Suhrkamp.
Luckner, A. (2001). *Martin Heidegger "Sein und Zeit."* Paderborn: Schöningh.
Markus, T. (2006). Built Space and Power. In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 129–142). Malmö/Copenhagen: Liber/Copenhagen University Press.
Mayrhofer, W. (1993). "Rites de Passage" in internationalen Karriereübergängen. In S. Laske (Ed.), *Spannungsfeld Personalentwicklung* (pp. 271–290). Wien: Manz.
Mayrhofer, W., & Iellatchitch, A. (2005). Rites, right? The value of rites de passage for dealing with today's career transitions. *Career Development International*, *10*(1), 52–66. http://doi.org/10.1108/13620430510577628
Meillassoux, Q. (2008). *Nach der Endlichkeit*. Berlin: diaphanes.
Mobach, M. (2010). Virtual Worlds for Organizational Spaces. In A. van Marrewijk & D. Yanow (Eds.), *Organizational Spaces: Rematerializing the Workday World* (pp. 159–173). Celtenham/Northampton: Edward Elgar.
Munro, I., & Jordon, S. (2013). "Living Space"at the Edinburgh Festival Fringe: Spatial tactics and the politics of smooth space. *Human Relations*, *66*(11), 1497–1520. http://doi.org/10.1177/0018726713480411
Neftci, S. (2000). *An Introduction to the Mathematics of Financial Derivatives*. San Diego/London: Academic Press.
Orlikowski, W. J. (2007). Sociomaterial Practices: Exploring Technology at Work. *Organization Studies*, *28*(9), 1435–1448. http://doi.org/10.1177/0170840607081138
Orlikowski, W. J., & Scott, S. V. (2008). Sociomateriality: Challenging the separation of technology, work and organization. *The Academy of Management Annals*, *2*(1), 433–474. http://doi.org/10.1080/19416520802211644
Orlikowski, W. J., & Yates, J. (2002). It's about time: Temporal structuring in organizations. *Organization Science*, *13*(6), 684–700.
Panayiotou, A., & Kafiris, K. (2010). Firms in Film: Representations of Organizational Space, Gender and Power. In A. van Marrewijk & D. Yanow (Eds.), *Organizational Spaces: Rematerializing the Workday World* (pp. 174–199).

Celtenham/Northampton: Edward Elgar.
Pedersen, S. (2006). Trains, Planes, Billboards and People at Kastrup Airport Station: Branding a Territorial Transformation form “Local” to “Global.” In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 183–203). Malmö/Copenhagen: Liber/Copenhagen University Press.
Ruffing, R. (2009). *Bruno Latour*. Paderborn: Fink.
Schreyögg, G. (2003). *Organisation: Grundlagen moderner Organisationsgestaltung*. Wiesbaden: Gabler.
Sims, D., & Doyle, J. R. (1995). Cognitive sculpting as a means of working with managers' metaphors. *Omega*, *23*(2), 117–124. http://doi.org/10.1016/0305-0483(94)00066-J
Sjöstrand, S.-E. (1993). Institutions as Infrastructures of Human Interaction. In S.-E. Sjöstrand (Ed.), *Institutional Change* (pp. 61–74). New York: M.E. Sharpe.
Stets, J. E., & Burke, P. J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly*, *63*(3), 224–237. http://doi.org/10.2307/2695870
Steyaert, C. (2006). Cities as Heterotopias and Third Spaces: The Example of ImagiNation, the Swiss Expo02. In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 248–265). Malmö/Copenhagen: Liber/Copenhagen University Press.
Szeemann, H. (2008). *Beuysnobiscum*. Hamburg: Philo Fine Arts/EVA.
Taleb, N. (2010). *The Black Swan*. London: Penguin.
Taylor, F. W. (1996). *The Principles of Scientific Management*. Düsseldorf: Verlag für Wirtschaft und Finanzen.
Taylor, S., & Spicer, A. (2007). Time for space: A narrative review of research on organizational spaces. *International Journal of Management Reviews*, *9*(4), 325–346. http://doi.org/10.1111/j.1468-2370.2007.00214.x
van Marrewijk, A. (2010). The Beauty and the Beast: the Embodied Experience of Two Corporate Buildings. In A. van Marrewijk & D. Yanow (Eds.), *Organizational Spaces: Rematerializing the Workday World* (pp. 96–114). Celtenham/Northampton: Edward Elgar.
van Marrewijk, A., & Yanow, D. (2010a). *Organizational Spaces: Rematerializing the Workday World*. (A. van Marrewijk & D. Yanow, Eds.). Celtenham/Northampton: Edward Elgar.
van Marrewijk, A., & Yanow, D. (2010b). The Spatial Turn in Organization Studies. In A. van Marrewijk & D. Yanow (Eds.), *Organizational Spaces: Rematerializing the Workday World* (pp. 1–16). Celtenham/Northampton: Edward Elgar.
Vitali, S., Glattfelder, J. B., & Battiston, S. (2011). The network of Global corporate control. *PLoS ONE*, *6*(10), 1–36. http://doi.org/10.1371/journal.pone.0025995
von Wallpach, S., & Kreuzer, M. (2013). Multi-Sensory Sculpting (MSS): Eliciting embodied brand knowledge via multi-sensory metaphors. *Journal of Business Research*, *66*(9), 1325–1331. http://doi.org/10.1016/j.jbusres.2012.02.032
Wåhlin, N. (2006). Transcultural Encounters in Cities: Convergence without Becoming Coincident. In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 266–286). Malmö/Copenhagen: Liber/Copenhagen University Press.
Watkins, C. (2005). Representations of Space, Spatial Practices and Spaces of Representation: An Application of Lefebvre's Spatial Triad. *Culture and Organization*, *11*(3), 209–220. http://doi.org/10.1080/14759550500203318
Weick, K. E. (1995a). *Der Prozeß des Organisierens*. Frankfurt am Main: Suhrkamp.
Weick, K. E. (1995b). *Sensemaking in Organizations*. Thousand Oaks: Sage.

Weick, K. E. (2001). Sources of Order in Underorganized Systems: Themes in Recent Organizational Theory. In K. E. Weick (Ed.), *Making Sense of the Organization* (pp. 32–56). Hoboken: John Wiley & Sons.

Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the Process of Sensemaking. *Organization Science*, *16*(4), 409–421. http://doi.org/10.1287/orsc.1050.0133

Weir, D. (2010). Space as Context and Content: the Divan as a Frame and a Structure for Decision-making. In A. van Marrewijk & D. Yanow (Eds.), *Organizational Spaces: Rematerializing the Workday World* (pp. 115–136). Celtenham/Northampton: Edward Elgar.

Welsch, W. (1996). *Grenzgänge der Ästhetik*. Stuttgart: Reclam.

Wicks, P. G., & Reason, P. (2015). Initiating action research - Challenges and paradoxes of opening communicative space. *Action Research*, *7*(3), 243–262. http://doi.org/10.1177/1476750309336715

Wittgenstein, L. (2006). *Tractatus logico-philosophicus*. Frankfurt am Main: Suhrkamp.

Yanow, D. (2010). Giving Voice to Space: Academic Practices and the Material World. In A. van Marrewijk & D. Yanow (Eds.), *Organizational Spaces: Rematerializing the Workday World* (pp. 139–158). Celtenham/Northampton: Edward Elgar.

Zanoni, P., & Janssen, M. (2006). Diversity Management as Identity Regulation in the Post-Fordist Productive Space. In S. R. Clegg & M. Kornberger (Eds.), *Space, Organizations and Management Theory* (pp. 92–112). Malmö/Copenhagen: Liber/Copenhagen University Press.

Zhang, Z., Spicer, A., & Hancock, P. (2008). Hyper-organizational space in the work of JG Ballard. *Organization*, *15*(6), 889–910. http://doi.org/10.1177/1350508408095819