

Some Implications of Pierre Bourdieu's Works for a Theory of Social Self-Organization

Christian Fuchs

VIENNA UNIVERSITY OF TECHNOLOGY, AUSTRIA

Abstract

The philosophical implications of the sciences of complexity suggest that complex systems (such as society) function according to a dialectic of chance and necessity, multidimensionality, non-linearity and circular causality. It is argued that one could employ aspects of Pierre Bourdieu's theory in order to establish a consistent theory of social self-organization. Bourdieu describes society in epistemological terms as consisting of mutual relationships of subjectivity/objectivity, individual/society, homogeneity/diversity, freedom/necessity, externalization of internality/internalization of externality, embodiment/objectification, *modus operandi/opus operatum*. The concept of the habitus is a means of explaining the re-creation/self-organization of social systems in terms of human beings as permanent creators and permanently created results of society.

Key words

■ Bourdieu ■ causality ■ class ■ habitus ■ social self-organization

The aim of this article is to show that Pierre Bourdieu's work withstands charges of determinism and reductionism and that there are certain aspects of his theory that would fit well into the framework of a unified theory of social self-organization. The sciences of complexity and the theory of self-organization are based on a dialectic of chance and necessity in the natural and social world as well as a mutual relationship of human beings and society. This article argues that making use of some of Bourdieu's conceptions can help to establish a theory of social self-organization that can avoid the shortcomings of dualism, determinism and reductionism.

The theory of self-organization has led to a change of scientific paradigms, from the Newtonian paradigm to the approaches of complexity. There is a shift from predictability to non-predictability, from order and stability to instability, chaos and dynamics; from certainty and determination to risk, ambiguity and uncertainty; from the control and steering to the self-organization of systems;

from linearity to complexity and multidimensional causality; from reductionism to emergentism; from being to becoming and from fragmentation to interdisciplinarity. This has been interpreted as a shift from modern to post-modern knowledge (Best and Kellner, 1997).

In physics and chemistry, self-organization has been described as the spontaneous emergence of order out of chaos in thermo-dynamical systems (Nicolis and Prigogine, 1989; Prigogine, 1980). Similarly to Prigogine, Hermann Haken has described aspects of physical self-organization, but in terms of synergetic systems which can be characterized by synergies between their parts that result in the emergence of new qualities (Haken, 1978; 1983). In biology, self-organization has been conceived as the autopoietic self-reproduction of living systems (Maturana and Varela, 1992).

With regard to causality, the new sciences suggest a shift from reductionism and determinism to emergence, mutual relationships and circular causality. Reductionism can be defined as epistemology that explains new properties of a system and the whole in terms of old properties and the system's parts. A system is seen as the agglomeration of its parts, a differentiation of a system, its structure and its behaviour in time and space is explained by reference to processes immanent to single parts of the system. Mechanical determinism can be defined as a mechanistic and rigid epistemological approach that argues that an event or a sum of events necessarily results in a certain way and in a certain output. In the social sciences, deterministic theories argue that a certain social system, subsystem or category determines other events or systems necessarily to a full extent. No autonomy or degree of freedom is granted to the category that is considered as the one being determined by an instance. Phenomena in one system are completely reduced to events in other systems. Mechanical determinism implies that causes and effects can be mapped linearly: each cause has one and only one effect, similar causes have similar effects, different causes different effects. The assumption is that small changes of causes necessarily have small effects and large changes of causes necessarily large effects.

The new sciences of complexity do not simply substitute determinism by complete indeterminism and do not suggest that all evolutionary processes (in the universe, nature and society) are completely governed by chance. If this were the case, one would have to dismiss the human capability of intervention and systems-design that can increase the possibility that a system will develop in a desirable way. Self-organization theory rather suggests both chance and necessity. There are certain aspects of the behaviour of a complex system that are determined and can be described by general laws, whereas others are governed by the principle of chance (see e.g. Fuchs, 2002a; Laszlo, 1987; Wallerstein, 1991; 1998a; 1998b; 1999).

Ervin Laszlo (1987) has argued that the evolution of nature and society takes place in such a way that complex systems again and again enter phases of instability and crisis (an aspect of necessity), but it is not exactly determined when exactly this will take place (an aspect of chance). In such a phase of instability and chaos, small fluctuations intensify themselves and order emerges from chaos.

In such a phase one will find a situation of bifurcation: there are various alternative paths the system could take, but not any development is possible at any time, the field and range of possibilities are conditioned by the objective conditions of existence of the system; this again is an aspect of necessity, but it is not determined which paths will be taken (an aspect of chance) (Hörz, 1974). In the social sciences, this general dialectic of chance and necessity has been interpreted in such a way that in the historical development of society, phases of crisis show up, but it is not pre-determined when exactly they will appear, what their exact causes are and especially what their outcome will look like because this depends on the complex relationships of human actors.

The Dialectic of Subjectivity and Objectivity

One of Pierre Bourdieu's scientific intentions was to 'escape from the ritual either/or choice between objectivism and subjectivism in which the social sciences have so far allowed themselves to be trapped' (Bourdieu, 1977: 4). To do so, objectivist knowledge would have to be embedded into practical experiences. This could be achieved by a dialectical methodology, by a 'science of the dialectical relations between the objective structures to which the objectivist mode of knowledge gives access and the structured dispositions within which those structures are actualized and which tend to reproduce them' (Bourdieu, 1977: 3).

On the one hand, Bourdieu was critical of structuralist positions such as Saussurian linguistics because there, in his view, practice was only a waste product that was immediately discarded or Althusser-Marxism which he found arguing too economistically (see Bourdieu, 1975). Saussure's concept of language would be one that sees language as an intellectual instrument detached from real usage. Mechanistic forms of structuralism would reduce history to a process without a subject and historical agents to the role of supports of the structure and unconscious bearers of objective structures (Althusser) (see Bourdieu, 1990b: 30–41).

On the other hand, Bourdieu also criticized subjectivist theories such as that of Jean-Paul Sartre (see Bourdieu, 1990b: 42–51; 1977: 73–6; 1993: 56). Sartre did not leave space in his theory for some kind of objectivism; in his view, the world of action would only move because the subject chooses to be moved and would be revolting because he chooses to be revolted. Sartre argued in favour of a dualism of the subject and the material world. In fact, the early Sartre of *Being and Nothingness* spoke of a primacy of free individual praxis. Bourdieu saw Sartre's theory as an intellectual determinism that believes in fully autonomous consciousness without inertia. In my view, Bourdieu's critique is true for the young Sartre, but not for the old one of *Critique of Dialectical Reason*.

Dialectical rationality . . . must be seen as the permanent and dialectical unity of freedom and necessity. . . . So, in a sense, man submits to the dialectic as to an enemy power; in another sense, he *creates* it; . . . man must be controlled by the dialectic in so far as he *creates* it, and *create* it in so far as he is controlled by it. (Sartre, 1976)

Sartre also suggested that *real* freedom can only exist beyond the production of life. The later Sartre is much closer to a dialectic of structures and actions, freedom and necessity, as Bourdieu admitted.

Bourdieu's theory avoids dualism or one-sidedness and incorporates both the structuration of actions and thinking by objective conditions of existence and agency that results in the differentiation of social structures. Action is neither fully rational action (as suggested by Rational Choice Theory which believes in individuals who can grasp reality fully and calculate rational decisions) nor mechanical reaction: 'There is an economy of practices, a reason immanent in practices, whose "origin" lies neither in the "decisions" of reason understood as rational calculation nor in the determinations of mechanisms external to and superior to the agents' (Bourdieu, 1990b: 50).

Against objectivism, Bourdieu points out that the symbolic forms used in the practices of human beings are relatively autonomous with respect to the objective social conditions; contrary to subjectivism he stresses that social order is not a simple mechanical addition of individual orders (Bourdieu, 1990b: 139; see also 1986a: 483). He thought that sociology is in need of both deterministic scientism and subjectivist spontaneism (Bourdieu, 1993: 55) which means that he saw the dialectic of chance and necessity that is today suggested by the sciences of complexity as an epistemological apparatus for the sciences. Bourdieu suggests that political and everyday struggles are struggles between a centralizing, scientific tendency and a more spontaneist tendency (Bourdieu, 1993: 59). For him, neither practice is a mechanical result of social conditions, nor is there a fully free, creative individual will that is independent of social conditions. He says that there is a false dilemma between mechanism and finalism (Bourdieu, 1977: 72ff.).

Bourdieu wanted to overcome the dichotomy between objectivism and subjectivism with the help of the concept of the habitus. Although the latter is a dialectical conception that mediates between objective reality and subjective practices, it has been argued in some criticisms of Bourdieu's works that it is a reductionistic and deterministic conception. Jeffrey Alexander (1995: 137) says that Bourdieu is a reductionist because the dispositions of the habitus are considered as the product of economic and social processes (Bourdieu, 1990b: 50). 'What we have here is a materially reflective rather than culturally mediated conception of socialization and family life . . . The theory of practice, then, is nothing other than a theory of the determination of practice' (Alexander, 1995: 137, 140). Bourdieu would be inattentive to the autonomy of actors and would deterministically recast structure as practice. Jon Elster (1981) argues, like Alexander, that Bourdieu's approach can be described as materialistic reductionism. Alexander argues that Bourdieu's theory is contradictory and oxymoronic because, on the one hand, he stresses the influence of objective conditions on habitus and, on the other, rational actions having objective results (Alexander, 1995: 153). Thus Alexander suggests that one has to decide either between objectivism or subjectivism in order to argue consistently. Also Richard Jenkins (1992) argues that Bourdieu's theory is a deterministic one because there would only be an emphasis

on structuration and stability, not on agency and social change. 'One can only speculate as to how "objective structures" are constituted or changed by that practice. Objective structures . . . are somehow given as "cultural arbitrariness", which the actions of embodied agents then reproduce' (Jenkins, 1992: 82).

In order to understand that Bourdieu in fact successfully posits dialectical thinking against reductionism and determinism, one has to think of the relationships between structure, habitus and social struggles.

The Capital Structure of the Modern World

What distinguishes Bourdieu from orthodox forms of Marxism is that he does *not* reduce all aspects of social life to the economy. He stresses degrees of autonomy of the political, symbolic and cultural realms which are nonetheless not independent from the economy. If one assumed full autonomy, this would result in a rigid dualistic view of society's subsystems. Therefore when describing the structure of modern society, Bourdieu stresses economic as well as political and cultural capital and does not suggest that one of these types of capital determines the others in the last instance. He sees the subsystem of modern society as *relatively* autonomous (not in the sense of economic determination in the last instance), the subsystems are conceived as neither independent, nor fully determined, there are 'specific laws of each field' (Bourdieu, 1986a: 113). Bourdieu criticized economism for its neglect of the symbolic realm of life.

Bourdieu himself has a very broad conception of economic processes which involves not just material production, but also symbolic and political production. Hence there is a 'whole universe of economies' (Bourdieu, 1990b: 51) that differ in the composition of capital that is employed in the specific fields. In economic fields (in the classical sense) we will find a domination of economic capital, in political fields, the domination of social capital, and in cultural fields, the domination of cultural and educational capital. Social fields all have their specific economies, i.e. a certain distribution and composition of capital and mechanisms for accumulating capital. Accumulation again is seen by Bourdieu in a very broad sense, it is not confined to economic capital. So people like Alexander misunderstand Bourdieu's conception of economic processes and hence unwarrantedly accuse him of economic determinism and reductionism. Garry Potter (2000) correctly points out in a criticism of Alexander that the 'demonstration of the working of material interests [as done by Bourdieu], whether in the fields of cultural production and reproduction, or knowledge production and reproduction, does not abolish the relatively autonomous integrity of either arts or ideas'.

By saying that the habitus is a product of economic and social processes, Bourdieu simply refers to an aspect of structuration, to the fact that the habitus is conditioned by the objective conditions of existence (i.e. the economy of the capital structure of society = distribution and composition of overall capital). These are not only economic aspects (in the traditional sense), but also political

and cultural ones. The structuration of habitus does not exclude aspects of agency that result in social change.

On the structural level of society Bourdieu distinguishes different types of capital (Bourdieu, 1986b): economic capital in the sense of Marx (money capital, commodities), social capital (social relationships, social origin) and cultural capital (qualification, education, knowledge).

Symbolic capital depends on publicity and appreciation, it has to do with prestige, reputation, honour, etc. It is economic, cultural or social capital in its socially recognized and legitimized form. There are symbolic as well as material dimensions of all three types of capital. Symbolic capital is a 'capital of honour and prestige' (Bourdieu, 1977: 179). Accumulating symbolic capital requires considerable labour and time devoted to making and maintaining relations and to material and symbolic investments.

These forms of capital are closely and 'inextricably interlinked' (Bourdieu, 1977: 180), they can neither be seen as functioning independently, nor as being determined by one form such as the economic one, e.g. a material entity can have a symbolic value that will raise its economic value and symbols are always related to material reality. Bourdieu also points out that social capital (connections) 'is needed to make the most of economic and cultural capital' (1986a: 337). Due to these mutual relationships, Bourdieu suggests one must 'abandon the economic/non-economic dichotomy' (1990b: 122). Also entities such as titles and qualifications have social value that is attached to them, they are a 'measure of rank or order' (Bourdieu, 1990b: 131) and make agents with the same qualifications interchangeable. They enter a relation of commensurability.

Educational qualifications, such as money, have a conventional, fixed value which, being guaranteed by law, is freed from local imitations (in contrast to academically uncertified cultural capital) and temporal fluctuations: the cultural capital which they in a sense guarantee once and for all does not constantly need to be proved. (Bourdieu, 1990b: 132)

This again shows Bourdieu's broad conception of economic processes. Cultural, social and symbolic capital are just like the economic capital unequally distributed in society and dominating classes are deriving profits from them at the expense of others – profits in distinction and legitimacy as well as material profit (Bourdieu, 1986a: 228).

Probably the best example of Bourdieu's non-economistic theory is his concept of class. He does not, as in classical Marxism, define class as depending on the position in the economic relationships of production, but as depending on the volume and composition of capital. The social position and power of an actor depend on the volume and composition of capital (i.e. the relative relationship of the three forms of capital) that he owns and that he can mobilize as well as the temporal changing of these two factors (Bourdieu, 1986a: 114). The main classes of society are for Bourdieu a result of the distribution of the *whole* (i.e. economic and social and cultural) capital. This results in a social hierarchy with those at the top who are best provided with economic and cultural capital, and those at the bottom who are most deprived. Within the classes that get a high, medium or

low share of the total volume of capital, there are again different distributions of capitals and this results in a hierarchy of class sectors. For example, within the sector of those who have much capital, the sectors whose reproduction depends on economic capital (industrial and commercial employers at the higher level, craftsmen and shopkeepers at the intermediate level) are opposed to the sectors which are least endowed with economic capital and whose reproduction mainly depends on cultural capital (higher-education and secondary teachers at the higher level, primary teachers at the intermediate level) (Bourdieu, 1986a: 115).

Bourdieu is not suggesting that people in the same class or class sector have entirely the same patterns of thinking, experience and behaviour. If this were the case, this would indeed be a deterministic conception. What he is saying is that 'each member of the same class is *more likely* than any member of another class to have been confronted with the situations most frequent for the members of that class' (Bourdieu, 1977: 85). This does not imply that one can fully predict the behaviour of certain members of a class in a certain situation, nor that for members of the same class the behaviour necessarily will have to be the same. It only suggests that to a certain extent members of the same class will show, as Bourdieu says, '*homologous*' behaviour in a number of situations. This does not imply complete freedom of action because the class habitus influences behaviour and thinking of an individual. What Bourdieu suggests is that a certain extent of *uncertainty* remains in all social situations, even in cases in which the agents' habitus seem to be perfectly harmonized because practice gives a foundation to 'strategies aimed at avoiding the most probable outcome' (Bourdieu, 1977: 9).

Classes and class sectors are not homogenous, monolithic blocks, there is diversity within homogeneity (Bourdieu, 1977: 86) or (what is just another expression for it) a dialectic of diversity and unity of behaviours and ways of thinking. Structures do not mechanically determine the class-habitus, it only gives 'orientations and limits' to 'the habitus's operations of invention' (Bourdieu, 1977: 95; see also Bourdieu, 1990b: 55). So one could say that social structures constrain and enable the creative dimension of the habitus. The habitus secures 'conditioned and conditional freedom', it is 'remote from a creation of unpredictable novelty' as well as from 'a simple mechanical reproduction of the initial conditionings' (Bourdieu, 1977: 95). The habitus is a conception that, just like the new sciences of complexity, suggests dialectics of chance and necessity, freedom and determinism, creativity and conditioning, the unconscious and consciousness, society and the individual (see Bourdieu, 1990b: 55). The habitus goes hand in glove with 'vagueness and indeterminacy' (Bourdieu, 1990a: 77), there are degrees of indeterminacy, openness and uncertainty (Bourdieu, 1990a: 78), the same habitus can indeed lead to very different practices (Bourdieu, 1990a: 116).

Bourdieu says that orthodox Marxism cannot explain new forms of social struggles that are e.g. linked to the contradictions resulting from the functioning of the educational system (Bourdieu, 1993: 32). He points out that it is important to not only take economic capital into consideration: 'What concerns me is

what is abandoned by others, because they lack the interest or the theoretical tools for these things, cultural capital and social capital' (Bourdieu, 1993: 32).

Bourdieu's Conception of the Habitus and Social Change

Certain life-styles mediated by the habitus correspond to classes and class sectors. Habitus can be understood as the specific systems of dispositions (i.e. specific ways of thinking and acting) characteristic for specific classes and class sectors. Social practices, i.e. the aspect of social actions, are dependent on habitus, capital and the social field (Bourdieu, 1986a: 101). The habitus can be considered

as a subjective but not individual system of internalized structures, schemes of perception, conception, and action common to all members of the same group or class constituting the precondition for all objectification and apperception. (Bourdieu, 1977: 86)

The habitus is not only a structuring structure, which organizes practices and the perception of practices, but also a structured structure: the principle of division into logical classes which organizes the perception of the social world is itself the product of internalization of the division into social classes. (Bourdieu, 1986a: 170)

These quotes do not necessarily mean that all members of a group or class act, think and perceive the same way, they can be interpreted in such a way that habitus is the totality of actions and thinking of a class or social group. The language Bourdieu uses is sophisticated, leading to numerous possible interpretations. One will both find arguments that speak in favour of determinist positions as well as arguments that stress that there is both determinism and indeterminism in the social world. If one looks at Bourdieu's work as a whole, one will see that quite commonly he did not refer to the habitus as a structure that fully determines actions and thinking of group members. Bourdieu says that uncertainty is an aspect of all social situations (Bourdieu, 1990a: 78), that actors always have strategies for avoiding the most probable outcomes (Bourdieu, 1977: 9) and that the habitus means *invention* (Bourdieu, 1977: 95; 1990b: 55). This inventive dimension of the habitus refers to knowledgeable, creative actors. The creative human being is not a pure object of social structures, he has relative freedom of action due to creativity and self-consciousness. In society, creativity and invention always have to do with relative chance and relative indeterminism. Social practices, interactions and relationships are very complex. The complex group behaviour of human beings is another reason why Bourdieu assumes a degree of uncertainty of human behaviour (Bourdieu, 1977: 9; 1990a: 8). What Bourdieu suggests is not mechanical determinism, but that habitus *both* enables the creativity of actors and constrains ways of acting. Hence he says that the habitus gives orientations and limits (Bourdieu, 1977: 95), it neither results in unpredictable novelty nor in a simple mechanical reproduction of initial conditions (Bourdieu, 1977: 95). The habitus provides conditioned and conditional freedom (Bourdieu, 1977: 95), i.e. it is a condition for freedom, but it also

conditions and limits full freedom of action. This is equal to saying that structures are the medium and the outcome of social actions (Giddens, 1979; 1984; Fuchs, 2003a). For Bourdieu, practices are relatively unpredictable, but also limited in diversity (Bourdieu, 1990b: 55). Due to the creative ability of human beings, the habitus also has to do with vagueness and indeterminacy (Bourdieu, 1990a: 77). The habitus not only constrains practices, it is also a result of the creative relationships of human beings. Bourdieu wants to express this when he says the habitus is both *opus operatum* (result of practices) and *modus operandi* (mode of practices) (Bourdieu, 1977: 18, 72ff.; 1990b: 52). Considering all these formulations which stress the creative dimension of the practical existence and group existence of human beings, one cannot say that Pierre Bourdieu argued deterministically.

The habitus is the collective history of practices of a class or class sector. These practices not only depend on the relationships of production, but also on secondary properties of a class or a class sector such as sex-ratio, distributions in geographical space, origin, age, family status, tacit knowledge, etc. (Bourdieu, 1986a: 102). Habitus is defined by the relationship between the capacity to produce classifiable practices and works, and the capacity to differentiate and appreciate these practices and products (taste). By being confronted with tastes and schemes of perception of other classes and class sectors, specific life-styles of a class or class sector emerge (Bourdieu, 1986a: 170ff.). Habitus can be seen as a matrix of patterns of cognition, perception and action that produces in interplay with actual context conditions of the social field an actor is situated in, the praxis of this actor.

For Bourdieu, taste is not given naturally, it rather has to do with social factors. A life-style can be seen as a system of classified and classifying practices and distinctive signs: 'Life-styles are thus the systematic products of habitus, which, perceived in their mutual relations through the schemes of the habitus, become sign systems that are socially qualified (as "distinguished", "vulgar" etc.)' (Bourdieu, 1986a: 172). Life-styles are the result of practices that relate individuals. Just imagine some daily situation, you will find numerous gestures, manners, carriage and social practices. All of these entities are distinctive signs, an expression of habitus. Habitus, on the one hand, has to do with the social patterns of action, thinking and with social practices; but it also depends on and is influenced by social structures. Bourdieu says that various conditions of existence produce different forms of habitus. The dialectic of structures and actions in Bourdieu's work can be found in the concept of the habitus as both a structured and structuring structure. This means that habitus is a result of social structures, i.e. of the social classes, the distribution of social capital, the secondary factors and the position in the structures of the conditions of existence. In this respect, economic, cultural and social capital as parts of the structures of society play an important role. On the other hand, the habitus also structures, i.e. changes and influences life-styles and social practices. The life-styles are closely related to the conditions of existence. Bourdieu himself speaks of a dialectic of conditions of existence and habitus (Bourdieu, 1986a: 172).

Only a one-sided reading of Bourdieu's theory will result in the assumption that he assumes that the objective conditions of existence mechanically determine practices in the last instance. Taking a closer look at his work shows that he is not at all a structuralistic determinist because as well as an analysis of structuration there is also a large emphasis on agency. There are numerous passages where Bourdieu points out that the relationship of structures and actors/groups is not deterministic, but a mutual one. One does not have to make a choice between determination of the world either by social structures or by social actions as is suggested by Jeffrey Alexander and others who do not seem to be able to go beyond either/or choices, actors and structures as opposing forces that are related practically.

Bourdieu says that all knowledge is an act of construction that is only possible with the activity of agents intervening in the conditions of existence. Here the emphasis is on agency. In the same passage Bourdieu stresses that the principle of this agency is a result of collective history that is acquired in the course of individual history (Bourdieu, 1986a: 467). Here the emphasis is on structural aspects of the social world. Agents are seen, on the one hand, as subjects of acts of construction of the social world, on the other, it is also maintained that the basis of the principles of construction can be found in the social world. Structures and actors are considered as opposing moments that are not strict pure beings, but related by practices and hence are also being-for-another.

Alexander (1995) only sees one side of Bourdieu's theory and argues that the latter is deterministic due to a description of society in terms of an internalization of externality. On the one hand, Bourdieu argues that cognitive structures which social agents implement in their practical knowledge of the social world are internalized, embodied social structures (1986a: 468); on the other, Bourdieu says that there is a *dialectic of the internalization of externality and the externalization of internality, a dialectic of incorporation and objectification* (1977: 72). Bourdieu, in fact, does not reduce, as suggested by Alexander, sociality to incorporation of external structures, he also stresses that agents consciously create social structures, their cognitive structures and ways of thinking and acting are objectified in external structures during the course of social relationships and struggles. This dialectic is one of objectification and embodiment (Bourdieu, 1977: 87ff.) between the human body and a structured space which results in the 'appropriating by the world of a body thus enabled to appropriate the world' (Bourdieu, 1977: 89).

This mutual relationship means that individuals are practically related to others and the structures they live in. By the internalization of externalities and the externalization of internalities, internality incorporates externality and externality incorporates internality. Hence society is not static, but a permanent development process that involves the connectedness of actors and structures.

Bourdieu's emphasis is not only on the structuring of thinking and actions by social structures and the distribution of capital, he equally emphasizes the creative and inventive capacities of social actors. Being defined as 'systems of durable, transposable dispositions, structured structures predisposed to function as

structuring structures, that is, as principles of the generation and structuring of practices and representations' (Bourdieu, 1977: 72), there is an emphasis on dispositions which mean results of organizing actions (structures) and yet also designate ways of being, habitual states (especially of bodies) (Bourdieu, 1977: 214, footnote 1). This shows that the habitus is a structural category, but it is one that is very closely related to the human being and its practices. The habitus can neither be simply ascribed to social structures nor to the actor, it is a category that dialectically mediates the relationship of society and actors.

This means that the self-transformation of society can achieve this process with the help of the habitus. The interaction of the two moments (structures and actors) takes place through the habitus which both involves objectivity and subjectivity. It is important for Bourdieu that the mutual relationship of structures and actors is enabled through practices. It is this emphasis on practice and class struggles that shows that Bourdieu considers the mutual interactions of group members that result in the production of life-styles as important constituting aspects of the dialectical process of society. Bourdieu points out the practical character of knowledge and says that practical knowledge based on the continuous decoding of the perceived indices of the welcome given to actions already accomplished, continuously carries out the checks and corrections intended to ensure the adjustment of practices and expressions to the reactions of expectations of the other agents (Bourdieu, 1977: 10). Practical schemes would enable the agents to produce the practices necessary for social existence. With the examples of gift exchange and the question of honourability in challenges from the society of the Kabyles, Bourdieu shows that every exchange – not only the exchange of gifts, but also the practical, interactive exchange present in all social situations – contains a challenge for riposte. There is a 'dialectic of challenge and riposte' (Bourdieu, 1977: 14) in the social world, 'calls to order from the group' (Bourdieu, 1977: 15) result in permanent social activity. It is this social activity that drives forward the dialectical process of society because it enables the dialectical relationship of structures and actors in which both moments are mutually connected by the internalization of externalities and the externalization of internalities. For Bourdieu, the individual is not an isolated atom and can only exist in relationship to others. He stresses that the individual is *practically* and in its struggles connected to others and that this connectedness is the decisive aspect of the social process.

I have suggested in my own work that society is a self-organizing, re-creative system (Fuchs, 2002a; 2002b; 2002c; 2003a; 2003b; 2003c; Fuchs et al., 2002). The human being is a social, self-conscious, creative, reflective, cultural, symbols- and language-using, active natural, labouring, producing, objective, corporeal, living, real, sensuous, anticipating, visionary, imaginative, designing, cooperative, wishful, hopeful being that makes its own history and can strive towards freedom and autonomy. By practical social interactions in groups, new qualities and structures emerge that cannot be reduced to the individual level. This is a process of bottom-up emergence that is called agency. Emergence in this context means the appearance of at least one new systemic quality that cannot

be reduced to the elements of the system. So this quality is irreducible and it is also to a certain extent unpredictable, i.e. time, form and result of the process of emergence cannot be fully forecast by taking a look at the elements and their interactions. Social structures also constrain and enable social practices. This is a process of top-down emergence where new individual and group properties can emerge. The whole cycle is the basic process of systemic social self-organization and can also be called re-creation because by permanent processes of agency and constraining/enabling a social system can maintain and reproduce itself (see Figure 1). It again and again creates its own unity and maintains itself.

Re-creation denotes that groups and actors that are parts of a social system permanently change their environment. This enables the social system to change, maintain, adapt and reproduce itself. It is important that the term re-creation also refers to the ability of all humans to consciously shape and create social systems and structures, an ability that is based on self-consciousness and the reflexive monitoring of action. Social systems are re-creative ones because they can create new reality, the socio-cultural human being that enters group relationships has the ability to create the conditions for his further evolution all by himself. Society reproduces man as a social being and man produces society by socially co-ordinating human actions. Man is the creator and the created result of society; society and humans produce each other mutually. The notion of re-creation corresponds to Bourdieu's emphasis on the relationship of internalization and externalization, the top-down arrow in Figure 1 indicates internalization and limitation, but there is also the enabling of creativity and externalization that is expressed by the bottom-up arrow. Bourdieu's works show that the habitus mediates the two levels of social systems; it secures conditioned (constraining) and conditional (enabling creativity and invention) freedom, it enables the creative, inventive dimension of practice, but also gives orientations and limits to invention. Habitus mediates the mutual relationship of social structures and actors/groups. The notion of re-creation also corresponds to Giddens's concept of the duality of structure, but it differs from it in the respect that it considers society within the framework of a grand, interdisciplinary, unified theory of self-organization (see Fuchs, 2003a).

Structures and habitus are both the result (*opus operatum*) and modes of

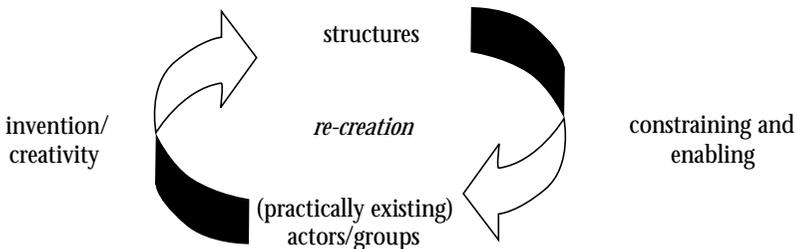


Figure 1 The self-organization/re-creation of social systems

production (*modus operandi*) of practices (see Bourdieu, 1977: 18, 72ff.; 1990b: 52). There is also a mutual relationship between a habitus 'understood as system of lasting, transposable dispositions which, integrating past experiences functions at every moment as a matrix of perceptions, appreciations, and actions and makes possible the achievement of infinitely diversified tasks, . . . and on the other hand, an objective event' (Bourdieu, 1977: 83). This means that the habitus is in need of concrete situations in order to mediate the relationship of structures and human beings. Bourdieu has very clearly stated that there is a mutual relationship of society and actors that is opposed to determinating effects of one category onto the other. He says there is a

dialectical relationship between the objective structures and the cognitive and motivating structures which they produce and which tend to reproduce them, . . . these objective structures are themselves products of historical practices and are constantly reproduced and transformed by historical practices whose productive principle is itself the product of the structures which it consequently tends to reproduce. (Bourdieu, 1977: 83)

This complex formulation means that society is being reproduced by the productive relationships of individuals (and the mapping of their cognitive and motivating structures onto emerging social structures), i.e. their existence as beings who enter groups, and that the human being is at the same time a produced result of society. Cognitive structures are reproduced by actors engaging in social practices and relationships that reproduce society, social structures are reproduced by their production of cognitive structures of individuals that have social practices.

A human being finds itself thrown into society as a member of a certain class and as such it acquires a certain life-style in practice with the members of its class and other classes. The mutual relationship of objective structures and motivating structures suggests that, by practices and class struggles, motivating structures are externalized and influence the structures of society whereas these overall societal structures are also internalized through practices and class struggle, i.e. they influence the motivational structures. This means that the objective structures and the motivational structures are related, they are each a being-for-another. As opposing forces they influence each other through practices and the mediations of the habitus and create the unity of society. This is a permanently developing process.

Critics who say that Bourdieu's theory is a static one that does not include social change do not seem to be aware of the importance he has given to class struggles and strategies of social change. One aspect of this is what Bourdieu has called social mobility.

People, families and groups in modern society commonly strive for upward mobility and if it becomes necessary they struggle against downward mobility. Reconversion strategies are employed by individuals and families in order to improve their position in social space and are reflected in social transformations which modify the volume of the different class sectors and the structure of their assets (Bourdieu, 1986a: 135). Strategies for preservation and upward mobility

that Bourdieu outlines are e.g. the reconversion of economic into educational capital by the business bourgeoisie, protectionism, segregation, discrimination, pretension, imitation.

The world of employment and labour is one of permanent struggles. Not only are there material struggles, there are also permanent symbolic and competence struggles within organizations which result from the individuals' aim to achieve upward mobility and to avoid downward mobility. Position-holders clash with superiors, subordinates, occupants of neighbouring, similar and rival positions (Bourdieu, 1986a: 151).

There is a dialectic of downward and upward mobility (Bourdieu, 1986a: 163): people in a certain class or class-sector strive towards being part of a leading group or an upper class (section). The maintenance of order of the whole system, 'of the whole set of gaps, differences, "differentials", ranks, precedences, priorities, exclusions, distinctions, ordinal properties, and thus of the relations of order which give a social formation its structure, is provided by an unceasing change in substantial (i.e., non-relational) properties' (Bourdieu, 1986a: 163). So what results from permanent change is order, in the sciences of complexity a similar principle was introduced by Ilya Prigogine as order through fluctuation (Prigogine, 1980; Nicolis and Prigogine, 1989). There is a permanent flux and movement in society that corresponds to the numerous social struggles of upward and downward mobility. This results in the permanent emergence and re-production of the existing order as long as the struggles do not question the class structure itself and the systems and schemes of classification and as long as they relate to mobility within the overall structure. If the class structure itself is questioned, this can result in major instabilities and disorder which can result in a new, different order (order by disorder). So one can say that there are two types of struggles: integrative, reproductive ones (Bourdieu, 1986a: 165), and disintegrative, discontinuous ones.

There are strategies of groups for distinguishing themselves from the group below and identifying with the group immediately above which they recognize as the possessor of the legitimate life-style. Groups, classes and class sectors hence try to symbolically distinguish themselves, their tastes and life-styles from others. This results in symbolic struggles (Bourdieu, 1986a: 244–56), the devaluation of objects and an endless drive for novelty: 'Struggles over the appropriation of economic or cultural goods are, simultaneously, symbolic struggles to appropriate distinctive signs in the form of classified, classifying goods or practices, or to conserve or subvert the principles of classification of these distinctive properties' (Bourdieu, 1986a: 249). The possessors of symbolic, distinctive properties or goods are threatened permanently with popularization due to the struggles for upward mobility. This results in the generation of demand for new tastes which define themselves negatively against other tastes and the dispossessed (Bourdieu, 1986a: 251ff., 256). Taste and identity are at the heart of symbolic struggles and are employed by the dominating classes and class sectors to stigmatize the dominated classes and class sectors. Class struggles of the dominating against the dominated are different today than 150 years ago; they rely less on direct, physical

violence, there is a 'shift from forms of rough violence to forms of soft, symbolic violence' (Bourdieu, 1993: 171). But also the forms of struggles of the dominated such as strikes not only have a physical, but also a symbolic dimension (Bourdieu, 1993: 173ff.).

Concreteness of a social theory means that a social theory has to take a look at the real live existing active human being, at the real given social connections and the existing conditions of life. It does not stop at the abstraction 'man'. Bourdieu's theory was a concrete one that was connected to its time. The human being was not an abstraction for him, but a concrete being who had to struggle in a capitalist world and sociology for him was also a way of intervening into political struggles.

Bourdieu has shown, especially in his later phase, the importance of concreteness, stressing that social struggles are not an abstraction but are essential to enforce and defend democracy. He says that social fields are relatively autonomous, but that this autonomy is threatened by the penetration of economic market logic into other fields (such as education, culture, public health, etc.) (Bourdieu, 2001a: 82ff.). In this context one has to mention his opposition to neo-liberal ideologies (see Bourdieu, 1998a; 1998b; 2001a; 2001b; Bourdieu and Wacquant, 2001) and his participation in the struggles for a European social movement. Bourdieu argues that the neo-liberal ideology has been well grounded scientifically and that hence there should be intellectuals who try to fight it scientifically. Thus, he suggests that the political war against neo-liberalism is also in need of intellectual weapons of resistance, a scientific dimension of class struggle that shows the results of neo-liberal policies.

In self-organization theory there are some conceptions which conceive of self-organization of society as a mutual relationship of social structures and actors/groups (e.g. Beyerle, 1994; Fuchs, 2002a; Hejl, 1984; Maturana, 1980). Others conceive of society dualistically and structuralistically and argue that the modern economy can regulate and steer itself and that any human intervention is harmful (this is done mostly with reference to the theories of N. Luhmann and F.A. von Hayek). These types of sociological and economical theories of self-organization are part of the scientific dimension of neo-liberalism. What we suggest is a theory of social self-organization that conceives of society as a mutual relationship of social structures and practical existence, systems and actors and that integrates aspects of Bourdieu's theory. Such a theory can avoid the shortcomings of dualistic conceptions of self-organization.

Bourdieu pointed out how this political engagement relates to his theory: people are structured by society, but there is also change. Individuals are not simply unconscious bearers and executioners of structures, 'people can find that their expectations and ways of living are suddenly out of step with the new social position they find themselves in, . . . Then the question of social agency and political intervention becomes very important' (Bourdieu, 2000).

Some Suggestions for Incorporating Bourdieu's Concepts into a Theory of Social Self-Organization

Bourdieu has been very clear on the question of determinism (Bourdieu, 1993: 25ff.; 1990a: 9–22). The social sciences can discover certain necessities of the social world, they can show how social structures work. Dominant groups have an interest in a physical interpretation of laws, whereas in reality laws are historical and can (and presumably will) change. Critical sociology de-fatalizes, it shows the historicity of the social world. Laws can be abolished if the conditions of their functioning are removed.

Bringing the tendential laws to light is a precondition for the success of actions aimed at frustrating them. . . . Knowledge of the law gives them (the dominated) a chance, a possibility of countering the effects of the law, a possibility that does not exist so long as the law is unknown and operates unbeknown to those who undergo it. (Bourdieu, 1993: 26)

Hence all progress in knowledge of necessity is a progress in possible freedom (Bourdieu, 1993: 25).

Such a conception of social laws as historical categories avoids the flaws of arguments that see the social world as being either determined by universal laws or as being a fully accidental result of fully autonomous behaving individuals. The first argumentation dismisses agency, the second does not recognize a certain conditioning, enabling and constraining of social actions by social structures. As has been shown in this article, Bourdieu goes way beyond these shortcomings and conceives the laws of the social world within a dialectic of freedom and necessity. The behaviour of individuals in a certain class or class sector is not fully determined by the social structures, for there is diversity within homogeneity. One cannot fully predict the behaviour of individuals in certain situations, it can only be said that in a number of situations there will be *homologous* behaviours of a certain percentage of members of the same class or class sector. Interactions are never perfectly harmonized and fully predictable, there is always an uncertainty in behaviour. In the social challenge by others, actors can put strategies to work in their answer, there is room for strategies and the agents are always in command of the interval between the obligatory moments and can therefore act on their opponents by playing with the tempo of interaction (Bourdieu, 1977: 15).

The human being in the modern world is one that is, as Marx noted, a class individual. He is practically and in struggles connected to members of other classes and members of its own class. The totality of society develops and transforms itself by a dialectical relationship of structures and actors as e.g. expressed in the famous passage in Marx's *Brumaire*. 'Men make their own history, but they do not make it as they please; they do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past' (1852: 115). Structures and practices are not simply pure categories, but through human practices and the habitus connected to each other. So they are also beings-for-another. The practical existence of the human being results in the

internalization of externalities (objective structures) and the externalization of internalities (motivational structures). Opposing and at the same time connected moments are, as Bourdieu shows, objective structures/motivational structures, objectification/embodiment, internalities/externalities, diversity/homogeneity, society/individual, chance/necessity.

The practical existence of human beings, their interconnectedness and the mutual connection of actors/groups and structures constitute a permanent development process that results in new, *emergent* properties or qualities of society that cannot be reduced to the underlying moments. The decisive element in this process is human practice which relates individuals to other members of its group and other groups as well as mediates the infinite dialectical process of the social world.

Figure 2 shows how the self-organization/re-creation of society can be explained by integrating aspects of Pierre Bourdieu's theory. A certain distribution of capital (in its three forms: economic, cultural and social/political) results in different classes and class sectors.

In the lower part of Figure 2 class sectors are shown as social relationships of human beings, classes as relationships between class sectors and it is pointed out that there are mutual relationships between the classes. There is a specific habitus characteristic for each class sector. As Bourdieu pointed out, the behaviour of the members of a class or class sector is not fully determined by the social structure, there are certain degrees of freedom and a dialectic of necessity and freedom. One cannot predict the exact behaviour of all class members and groups in a specific situation, all that one can say and empirically research is that in certain situations a certain number/percentage of members of a class (sector) will show homologous behaviour. The habitus is a mediating structure; it is medium and result of social actions as well as of social structures. The dotted lines show that the habitus is a principle of producing practices and the practical result of collective practices and class struggles. It allows the internalization of the external social conditions as well as the externalization of internality, it mediates the embodiment of social structures in practices and the individual as well as the objectification of practices and struggles in social structures. The habitus is the mediating structure that makes possible the constraining and enabling of (collective and individual) practices. As also pointed out by Bourdieu, the social world is in constant flux and movement because people strive for upward mobility and want to avoid downward mobility. In modern society, the social relationships are mainly relationships of (economic, political and cultural) struggle. In Figure 2 these struggles between class sectors, classes and individuals within one class are shown as mutual social relationships. Certain strategies (symbolic distinctions, reconversion, material and symbolic struggles, imitation, protectionism, segregation, discrimination, pretension, etc.) are employed in order to try to achieve defined goals. These struggles result in influences on the habitus that result in differentiations and transformations of the objective conditions of existence, i.e. social change. There are vertical as well as transverse movements in the social structure. What changes is the distribution of overall capital in society, the composition of

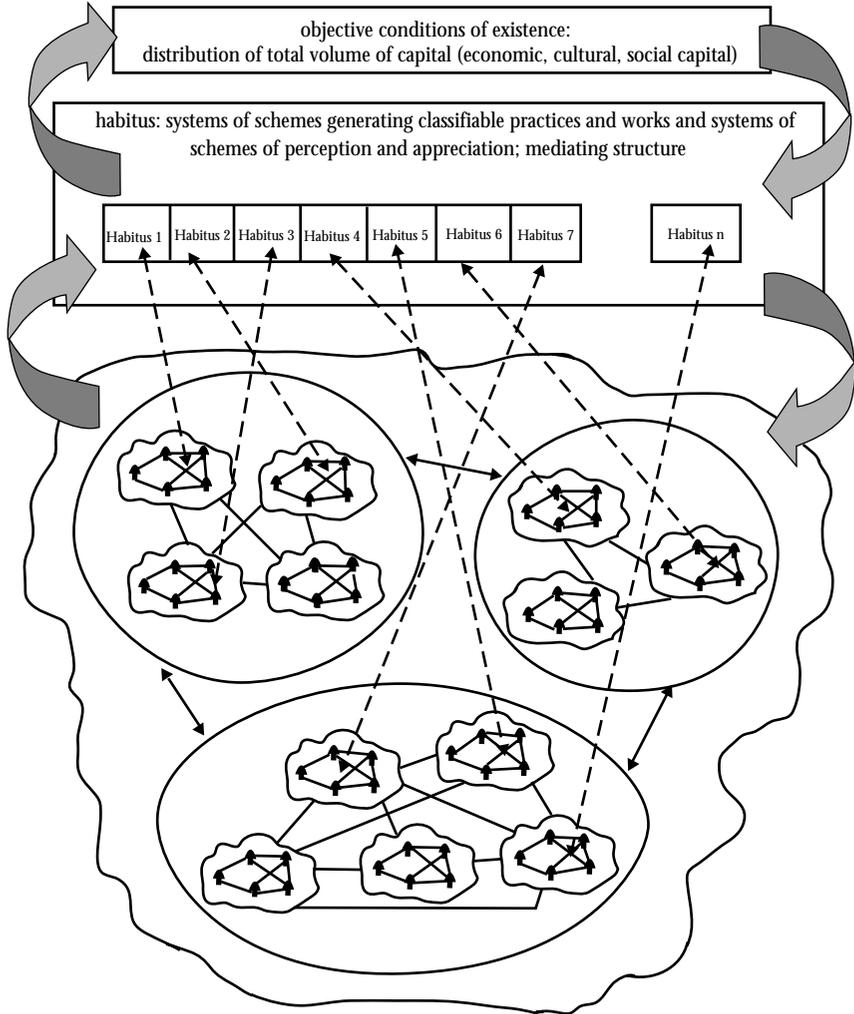


Figure 2 The self-organization of modern society as dialectics of capital structure and class relationships mediated by the habitus

capital, membership of classes and class sectors, the emergence of new classes and class sectors, the emergence (or disappearance) of certain classes and class sectors. The aspect of agency is related to social struggles, social mobility and the movements that result from it. The social relationships we find in society constitute a complex structure. Due to this complexity the results of social change cannot be fully predicted. Social change cannot be accounted for by adding up all strategies and movements undertaken by groups and individuals at a certain moment of time. There are emergent qualities in society that cannot be reduced to

individuals or groups because they result from the complex interplay and interactions between social groups and human beings. As Bourdieu states, the social world is a 'space of objective relations that transcend the agents and is irreducible to interactions between individuals' (1990a: 8).

The habitus as the structure mediating between the capital structure and practices imposes certain regularities, but the practices are not fully determined by the capital structure, nor is the capital structure fully determined by practices. There is a dialectic of freedom and necessity that is made possible by the habitus as a mediating, dynamically changing structure that secures conditioned and conditional freedom as well as the enabling and constraining of practices. So the dialectical relationship of structures and habitus and of society and the individual includes irreducibility: 'the structures are objectivities irreducible to their manifestation in the habitus which they produce and which tend to reproduce them' (Bourdieu, 1977: 84). The habitus produces an infinite number of practices 'that are relatively unpredictable (like the corresponding situations) but also limited in their diversity' (Bourdieu, 1990b: 55). As has already been mentioned, the concept of the habitus does not imply perfectly predictable behaviour, there is a degree of uncertainty due to the complex nature of interactions (Bourdieu, 1977: 9).

Practices are the mediated result of social structures, social structures are the mediated result of practices. This dialectical relationship of structures and practices (mediated by the habitus) constitutes the self-organization (or self-reproduction or re-creation) of society. A constant movement and flux related to practices of struggling in the modern world secures the permanent overall reproduction of the social order. This process can be described as one of order through fluctuation. Mediated by the habitus, practices and social struggles, the two moments of the social process (structures and actors) which are opposed and interconnected incorporate each other mutually so that society as their unity transforms itself permanently and each moment reasserts itself in difference to the other one. By this permanent, endless process the old state of the objective structures and the motivational structures cease to be, but at both levels something new emerges (a new state and new qualities) which means that both are also at the same time a coming-to-be.

For reasons of better understanding, Figure 2 does not show the social hierarchy immanent in the modern social world. In reality, the classes and class sectors are hierarchically ordered, the dominating class which constitutes itself by control of the largest part of the total volume of capital is made up of two sub-sectors: The dominant part includes industrial owners, bankers, managers, aristocratic families and the judiciary, the subordinated part of the dominant class includes scientists, technicians, journalist, artists, advertisers, etc. Below this class one finds the middle class and, at the bottom, the traditional working class comprised of farm and manual workers. We have not portrayed today's class structure in Figure 2, it is only one of several possible ones that one could find in modern society. Nonetheless, Figure 2 shows how the reproduction of society takes place synchronously, although it does not cover the historical, diachronous evolution of modern society (for the diachronous aspects, see Fuchs, 2003c).

Bourdieu has pointed out that the re-creation process of modern society is one that is based on exclusion, class separation and domination. His analysis concludes that class societies do not guarantee full democratic participation and that democracy is today especially threatened by the neo-liberal ideology that expands the distance between dominating and dominated class (sectors). That is why Bourdieu suggested that agency of those who suffer from the dominating neo-liberal policies is necessary in order to guarantee a democratic and just self-reproduction of the world society. This is similar to saying that one should proceed from the reproductive principle of order through fluctuation to the one of order from disorder that implies major social changes and the questioning of the principles of classifying, distinction and exclusion. This could result in a new type of overall societal self-organization that is much more based on democratic inclusion, distribution and participation.

Acknowledgements

This article is based on research done within the framework of the project 'Human Strategies in Complexity: Philosophical Foundations for a Theory of Evolutionary Systems' (<http://www.self-organization.org>) funded by INTAS (#0298) and supported by the Austrian Federal Ministry of Education, Science and Culture.

References

- Alexander, Jeffrey C. (1995) *Fin de Siècle Social Theory: Relativism, Reduction, and the Problem of Reason*. London and New York: Verso.
- Best, Steven and Kellner, Douglas (1997) *The Postmodern Turn*. New York and London: Guilford Press.
- Beyerle, Matthias (1994) *Staatstheorie und Autopoiesis: über die Auflösung der modernen Staatsidee im nachmodernen Denken durch die Theorie autopoietischer Systeme und der Entwurf eines nachmodernen Staatskonzepts*. Frankfurt am Main: Peter Lang.
- Bourdieu, Pierre (1975) 'La lecture de Marx: quelques remarques critiques à propos de "Quelques remarques à propos de 'Lire le Capital' "', *Actes de la recherche en science sociaux* 5/6: 65–79.
- (1977) *Outline of a Theory of Practice*. Cambridge: Cambridge University Press.
- (1986a) *Distinction: A Social Critique of the Judgement of Taste*. London: Routledge.
- (1986b) 'The (three) Forms of Capital', in John G. Richardson (ed.) *Handbook of Theory and Research in the Sociology of Education*. New York and London: Greenwood Press.
- (1990a) *In Other Words: Essays Towards a Reflexive Sociology*. Cambridge: Polity Press.
- (1990b) *The Logic of Practice*. Stanford, CA: Stanford University Press.
- (1993) *Sociology in Question*. London/Thousand Oaks, CA/New Delhi: Sage.
- (1998a) *Contre-feux: Propos pour servir à la résistance contre l'invasion néo-libérale*. Paris: Liber.

- (1998b) 'The Essence of Neoliberalism', *Le Monde*, December.
- (2000) 'The Politics of Protest. An Interview with Pierre Bourdieu', *Socialist Review* 242.
- (2001a) *Contre-Feux 2: Pour un mouvement social européen*. Paris/FRA: Ed. Raisons d'agir.
- (2001b) 'Pierre Bourdieu on Radio Libertaire'. Interview conducted by Archibald Zurvan, trans. Sharif Gemie, *Le Monde Libertaire* 1240 (April 12).
- Bourdieu, Pierre and Wacquant, Loic (2001) 'Neoliberal Newspeak. Notes on the New Planetary Vulgate', *Radical Philosophy* 108 (January).
- Elster, Jon (1981) 'Snobs' (review of Bourdieu's *Distinction*), *London Review of Books* 3(20) (November 5): 10–12.
- Fuchs, Christian (2002a) 'Aspekte der evolutionären Systemtheorie in ökonomischen Krisentheorien unter besonderer Berücksichtigung techniksociologischer Aspekte', in Christian Fuchs, *Krise und Kritik in der Informationsgesellschaft*. Vienna and Norderstedt: Libri BOD.
- (2002b) 'Social Information and Self-Organisation' (INTAS Project 'Human Strategies in Complexity' Report, HSIC Paper No. 3), in Robert Trappl (ed.) *Cybernetics and Systems*. Vienna: Austrian Society for Cybernetic Studies. <http://www.self-organization.org/results/papers/pdf/hsicpaper3.pdf>
- (2002c) 'Concepts of Social Self-Organisation'. (INTAS Project 'Human Strategies in Complexity'-Report. HSIC Paper No. 4). Vienna: Vienna University of Technology. <http://www.self-organization.org/results/papers/pdf/hsicpaper4.pdf>
- (2003a) 'Structuration Theory and Self-Organization', *Systemic Practice and Action Research* 16(4): 133–67.
- (2003b) 'The Role of the Individual in the Social Information Process', *Entropy* 5(1): 34–60.
- (2003c) 'The Self-Organisation of Modern Society', *Studies in Political Economy* 25 (forthcoming).
- Fuchs, Christian, Hofkirchner, Wolfgang and Klauninger, Bert (2002) 'The Dialectic of Bottom-Up and Top-Down-Emergence in Social Systems', in *Proceedings of the Conference 'Problems of Invididual Emergence'* (HSIC Paper No. 8). <http://www.self-organization.org/results/papers/pdf/hsicpaper8.pdf>
- Giddens, Anthony (1979) *Central Problems in Social Theory: Action Structure and Contradiction in Social Analysis*. London: Macmillan.
- (1984) *The Constitution of Society*. Berkeley, CA: University of California Press.
- Haken, Hermann (1978) *Synergetics*. Heidelberg: Springer.
- (1983) *Advanced Synergetics*. Heidelberg: Springer.
- Hejl, Peter M. (1984) 'Towards a Theory of Social Systems: Self-Organization and Self-Maintenance, Self-Reference and Syn-Reference', in H. Ulrich and G.J.B. Probst (eds) *Self-Organization and Management of Social Systems: Insights, Promises, Doubts, and Questions*. Berlin: Springer.
- Hörz, Herbert (1974) *Marxistische Philosophie und Naturwissenschaften*. Cologne: Pahl-Rugenstein.
- Jantsch, Erich (1979/1992) *Die Selbstorganisation des Universums: Vom Urknall zum menschlichen Geist*. Munich and Vienna: Hanser.
- Jenkins, Richard (1992) *Pierre Bourdieu*. London and New York: Routledge.
- Laszlo, Ervin (1987) *Evolution: The Grand Synthesis*. Boston: Shambhala.
- Marx, Karl (1852) 'The Eighteenth Brumaire of Louis Bonaparte', MEW, Vol. 8. Berlin: Dietz.

- Maturana, Humberto (1980) 'Man and Society', in F. Benseleer, P. Hejl and W. Kock (eds) *Autopoiesis, Communication, and Society: The Theory of Autopoietic Systems in the Social Sciences*. Frankfurt: Campus.
- Maturana, Humberto and Varela, Francisco (1992) *The Tree of Knowledge: The Biological Roots of Human Understanding*. Boston: Shambhala.
- Nicolis, Gregoire and Prigogine, Ilya (1989) *Exploring Complexity*. New York: Freeman.
- Potter, Garry (2000) 'For Bourdieu, Against Alexander: Reality and Reduction', *Journal for the Theory of Social Behaviour* 30(2): 229–46.
- Prigogine, Ilya (1980) *From Being to Becoming*. New York: Freeman.
- Sartre, Jean-Paul (1976) *Critique of Dialectical Reason*. London: NLB.
- Wallerstein, Immanuel (1991) *Unthinking Social Science: The Limits of Nineteenth Century Paradigms*. Cambridge: Polity Press.
- (1998a) 'The End of Certainties in the Social Sciences'. Talk at the Seminar 'Conceptos en Ciencias y Humanidades', Mexico City, October 16.
<http://fbc.binghamton.edu/iwendcrt.htm>
- (1998b) *Utopistics: or, Historical Choices for the Twenty-First Century*. New Press.
- (1999) 'Uncertainty and Historical Progress'.
<http://fbc.binghamton.edu/iwposb.htm>

■ **Christian Fuchs** is a sociologist specializing in the sociology of technology, technology assessment and self-organization. His current research is a project 'Human Strategies in Complexity' (<http://www.self-organization.org>). Some of his recent publications are *Krise und Kritik in der Informationsgesellschaft* (2002); *Stufen zur Informationsgesellschaft* edited with C. Floyd and W. Hofkirchner (2002) and *Soziale Selbstorganisation in informationsgesellschaftlichen Kapitalismus* (2001). Address: Institute of Design and Technology Assessment, Vienna University of Technology, Favoritenstr. 9–11, A-1040 Vienna, Austria. [email: christian@igw.tuwien.ac.at]