



# Systems Theory as an Alternative to Action Theory? The Rise of 'Communication' as a Theoretical Option

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## ABSTRACT

The argument of the essay has two main parts. First, it reflects on the presumed conflict between action theories and systems theories in sociology. Looking at authors such as James Coleman, Talcott Parsons and Niklas Luhmann, the essay tries to show that there is a natural complementarity of action and systems theories, and therefore the presumed disjunction of 'action' and 'system' is not based on the empirical reality of theory-building ventures. But then another line of conflict becomes visible. Since the information theories of the late 1940s, 'communication theory' has become a viable and universalistic option in social theory, one that indeed conflicts with action theory. In its second part, the essay first gives a brief sketch of the conceptual career of communication theory since Shannon and Weaver. It then presents the sociological theory of Niklas Luhmann as the first major sociological theory that opts for communication as the constitutive element of society and other social systems. Causes and reasons for this theoretical decision are reconstructed, first in terms of problems internal to Niklas Luhmann's social theory (the distinction of psychic and social systems; the distinction of action and experience; formal properties of the concept of communication; the implications of autopoiesis) and secondly in terms of processes of societal change (the rise of the information society; the genesis of world society), which favour the switch towards a communication-based (instead of action-based) systems theory.

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## 1. Systems theory versus action theory

Systems theory and action theory are normally supposed to be alternative sociological approaches.<sup>1</sup> Therefore, my first question is if this description is really true. Are systems theory and action theory complete options in social theory, closed in on themselves and competing as such? The answer this essay favours is clearly 'no': There is no such thing as a disjunction of systems and action theories.

This may easily be seen in looking, for example, at James Coleman, probably the most influential action theorist in present-day sociol-

ogy. Coleman's social theory, as presented in its definitive form in *Foundations of Social Theory* from 1990, is first of all an exchange theory, that is, social exchange is considered to be *the* elementary transaction constitutive of society (Coleman 1990; cf. Clark 1996; Müller & Schmid 1998). But how to combine social exchange and social action? One can exchange resources or property, or perhaps even information, although I doubt this last possibility of so-called 'information exchange'. But obviously there is no sense in saying that actors exchange actions. How could they do it? An action is not something I can hand over to another actor,

saying to him or her, 'Now it is your action, please give me an action of yours in return'. Therefore, action theory and exchange theory are incompatible, or even incommensurable, to use Thomas Kuhn's term. James Coleman has found an interesting solution to this problem. In his view, social exchange is focussed on *rights of control*. Actors typically exchange rights of control over actions, and Coleman's book is an extended essay that shows the near universality of this formula. To take one suggestive example from his book: if while escaping in a panic from a burning cinema or theatre I decide to follow a spontaneously emerging leader who tries to stop the running and to lead the crowd quietly to an exit, in Coleman's interpretation I transfer the right of control over my actions to this leader, and I do this because I hope to acquire an enhanced probability of survival in return (Coleman 1990:203–215).

What I find remarkable is Coleman's central formula: *rights of control over actions*. Where do these rights of control come from? If one does not want to argue in terms of natural rights (*lex naturae*), one will have to accept that these rights must be created, institutionalized and legitimized in social processes. Thus, action theory even in its most basic terms presupposes an encompassing social system, which functions as the context of creating, institutionalizing and legitimizing rights of control over actions (cf. Fararo 1996; Stichweh 1998a). This conceptual situation is akin to a well-known problem in Talcott Parsons' theorizing. Parsons wanted to prove the possibility of social order by analysing an elementary social situation he called *double contingency* (Parsons & Shils 1951:16; Parsons 1968:167–168). There are always at least two actors, *alter* and *ego*. If in such an elementary situation the choices of each one of these two actors are contingent on the choices of the other one, then there arises a circular situation of double contingency in which no action at all may happen. Parsons tried to show that a *shared symbolic system* for these two actors must be presupposed if one wants to evade the conceptual consequence of action being blocked by reciprocal uncertainty. Only if such a shared symbolic system exists can uncertainty about the probable choices and reactions of the other one be reduced. Only then does it become possible for one of the two participants to begin acting. In other words: the probability of social order can only be demonstrated if an already existing social order is presupposed.

The same logic seems to reign in Coleman's argument. Only if a pre-existent distribution of rights of control over actions is presupposed can elementary processes of social exchange – i.e. processes of exchanging these rights of control – start. What this reconstruction of parallel problems in Parsons and Coleman is intended to show is that action and system are not alternative or competing versions of social theory. They are more realistically to be described as complementary aspects of social theorizing – and if you read Coleman's massive tome from 1990, you register an extensive use of the words 'system' and 'social system'.<sup>2</sup> What makes the crucial difference in theory design is the fact that the degree of conceptual elaboration of the concept of system is minimal in Coleman, whereas he invested much effort in the concept of action (Coleman 1986).

I want to introduce a further argument for complementarity by looking at Parsons again. In my opinion there is no sense in classifying Talcott Parsons as either an action or systems theorist, or in postulating different stages in the development of his theory which gradually shift the focus from action to system. Regarding the interrelation of action and system, Parsons' point simply seems to be that *action is system*. This point is already present in *The Structure of Social Action* from 1937, where he decomposes the *unit act* into its constituent components (i.e. ends, conditions, means, norms and, finally, the actor).<sup>3</sup> None of these components can be considered the final determinant or cause of a unit act. Therefore, even in the early Parsons, you make a categorical mistake if you attribute a unit act to an actor as its originator. The actor or the personality is only one of five components, which are always necessary for producing a unit act. There must *always* be an actor, but he is not privileged in relation to the other components, such as conditions, means and norms.

The same analytical strategy is to be found in the later Parsons. Now the classification of the components of the unit act, which even in 1937 was called the 'action frame of reference', has been replaced by four subsystems of action – behavioural system, personality, social system and culture.<sup>4</sup> All of these four subsystems must always be involved if a single action is to arise. This allows a remarkable symmetry in analysing action and system. On the one hand, action is always a system, because it is not a final, irreducible entity, but a complex emergence from plural structural components. On the

other hand, the social system – being the prototypical candidate for *systemness* in many respects – is only a lower-level system in relation to action. The action frame of reference encompasses the social system as one of its subsystems, not the other way around.

## 2. Luhmann as an action theorist

I could finish my paper here and conclude that there is no problem at all regarding action and systems theories. Obviously it is very difficult to synthesize exchange theory and action theory, as we saw in the case of James Coleman. The same difficulty would arise if we tried to compare or synthesize network and action theories (cf. White 1992). On the other hand, there seems to be a natural complementarity of action theory and systems theory. There are differences in perspective, different ways of solving or evading the micro/macro problem, of course. But there is no such thing as an alternative of action theory versus systems theory, so far. Systems theories seem to presuppose a microstructure of actions and action theories presuppose a macrostructure of systems. And there is, as a special case, the original and unorthodox solution by Parsons in which action is considered to be the more general phenomenon and as such presupposes an infrastructure of contributing systems.

If one looks at the more recent developments of sociological systems theory, primarily represented in the writings of Niklas Luhmann, one might for the time being come to exactly the same conclusion. In Luhmann's writings from the 1970s, one often finds the term *action systems*. But it is used as an obvious term, not as a problem in theory building and not as a focus of his conceptual interests. In the essays from the late 1960s/early 1970s,<sup>5</sup> in which Niklas Luhmann presents the foundations of his version of systems theory for the first time – which are still valid in most relevant respects – one finds no discussion of a supposed alternative 'action versus systems' theory. For Luhmann it was obvious that action is an elementary term in describing social systems.

Not until 1978 did Luhmann publish an essay called 'Handlungstheorie und Systemtheorie', reprinted in *Soziologische Aufklärung 3* in 1981 (Luhmann 1978a). It is a polemical essay directed against authors such as Alan Dawe or Michel Crozier and Erhard Friedberg who try to construct 'the actor' and 'the system'

as two paradigms for two alternative sociologies. Luhmann decrees, in contrast, that there can be no such disjunction of action versus system after Durkheim, Weber and Parsons. The only question in which there is a real conceptual option at hand is *how* action and system are related to one another in sociological theories. In Luhmann's essay there arises no doubt that *actions are considered to be the elements of social systems*. Luhmann goes on to debate questions such as the temporality of actions and the hypothesis that social systems process attributions by which it is decided of whose actions we speak. But these attributions are contestable and there may arise disagreements regarding the question as to whom we hold to be responsible for an action.

There are some related essays in the years from 1978 to 1980, among which the most original is, in my opinion, 'Time and Action. A Forgotten Theory' from 1979 (Luhmann 1979). There again, actions are treated as elements of social systems, and the decisive point of the essay is to establish the specific temporality of actions. Actions are events, vanishing the same moment they happen, and therefrom arises a peculiar property of social systems. Social systems operate against a considerable probability of void. The emergence of ever-new actions may be attributed to a kind of *horror vacui*.

From this well-defined and therefore apparently stable conceptual situation arose a sharp theoretical shift in the early 1980s. I am not quite sure if this instability and subsequent shift might be anticipated from a careful reading of the essays I just mentioned. But I remember well that in the late 1970s/early 1980s Luhmann repeatedly said in lectures and seminars that he did not yet know how to take a major theoretical decision: if one looks for the constitutive elements of social systems, which is the best candidate for element status, *actions* or *communications*? Some years later in *Soziale Systeme* from 1984, the decision is taken. Systems theory is reformulated as communications theory, with the concept of action relegated to a secondary status. Therewith arises a real and consequential alternative in constructing sociological theories: one can either formulate them as communication theories or opt for continuing action theories.

In the following I look for the causes and reasons for this theoretical discontinuity. First I describe trends and shifts in science and social science after World War II, which are respon-

sible for communication theory becoming a viable option in social theory (section III). Then I look for the more specific context of systems theory in the writings of Niklas Luhmann. Which conceptual tensions inherent to Luhmann's writings motivate the switch from action theory to communication theory (section IV)? And are there any trends in the evolution of the structures of modern society on which an argument might be based that changing from action to communication theory reflects on societal change and increases the adequacy of sociological theory to the emergent structures of modern society (section V)?

### 3. The rise of communication theory

First of all I will look for global trends in science and social science since World War II. It should be noted that not a single sociological theory based on communication theory existed before Niklas Luhmann. The subject of communication was surely relegated to special sociologies such as mass communication, public opinion research, etc. Communication theory had been around since antiquity in the rhetorical tradition (cf. Craig 1999). But this was received neither into sociology nor into other social scientific disciplines. Only after World War II did the concept of communication and the closely related concept of information enter science and social science as fundamental scientific concepts; this entry into the foundations of science was based on technologies of information processing arising at the same time.

My hypothesis is that there is a relatively direct lineage from the early information and communication theories of the late 1940s and 1950s to the adoption of communication theories in sociological theory, and especially in Niklas Luhmann. There are, first of all, the ideas of Claude E. Shannon, well presented in the co-authored book with Warren Weaver *The Mathematical Theory of Communication* from 1949, of which it is often unjustly said that it restricts itself to machine communication (Shannon & Weaver 1949; Shannon 1970). But the most interesting point in Shannon and Weaver, which has nothing to do with machine communication, regards the relation of information and selection. Information is defined via the number of states from which it selects, and therefore information is related to unpredictability. This allows the famous analogy of information and entropy, of which Ruesch and

Bateson, two years later in *Communication: The Social Matrix of Psychiatry*, enthusiastically say that they consider it the most important scientific discovery since Aristotle (Ruesch & Bateson 1951). The book by Ruesch and Bateson, which is still a very remarkable text today, is, as far as I know, the first essay to base an entire scientific discipline (psychiatry) in its fundamentals on the new concept of communication. Regarding Bateson, in later writings he added the very apt formula 'information is a difference which makes a difference', which couples a concept of information based on selectivity with the idea that there are always two systems involved that are operationally closed and therefore differ in their selectivities (Bateson 1973:286ff. *et passim*). Therefore information is always related to the selectivity operative in a system. There is one further decisive point in Ruesch and Bateson. In their key chapter called 'Information and Codification', they incessantly try to level the difference between fact and value, the difference of informing and evaluating (Ruesch & Bateson 1951:168–211). From this levelling effort arises the idea of distinguishing communication and metacommunication as two components always inextricably entangled in any act of communication. It is easily seen that Luhmann's distinction between 'Information' and 'Mitteilung', *information* and *utterance*, derives from this.

To these antecedents a number of new developments were added in the 1960s. There is the Palo Alto school of Watzlawick and others popularizing and extending the Bateson line of argument and exploring the pragmatics and paradoxes of communication (Watzlawick et al. 1967). Speech act theory arises via Austin and Searle and in its sociological reception transmits the so-called 'linguistic turn', which is registered in many disciplines to the discipline of sociology (see Searle 1969). At last there are Ethnomethodology and Conversation Analysis, the first theories-cum-methodologies germane to sociology that allow exploration of the domain of communication (Sacks 1992). The point I want to establish is simply that these developments seem to make it nearly unavoidable that a major sociological theorist should draw the consequences, synthesize these rather diverse conceptual strategies and then no longer base sociology on the concept of action, but instead on the concept of communication. There was no chance of Parsons becoming the theorist to take on this role, his thinking being

rooted firmly in the action theory of the 1930s. Even Parsons' ingenious idea of generalized symbolic media, which inevitably had to be conceived as macrosocietal mechanisms, was, via the language Parsons used for it, subsumed under the concept of *interaction*. Thus, it was Luhmann, in choosing communication theory over action theory, who took on the role of the first major sociological communication theorist, a role which had to be taken by someone anyway.

#### 4. Tension in Luhmann's writings: causes for a practical switch

Why did in Niklas Luhmann's theories arise a need for deciding between communication and action as alternative constitutive elements of society? To this question I give an answer in two parts. First, I discuss tensions inherent to Luhmann's theory and its conceptual developments, which in the long run favoured the switch to communication theory. Secondly, I will complement this list of causes and reasons by pointing to structural changes in modern society, which, being reflected in Luhmann's theories, again privileged communication over the rival concept of action.

##### **Psychic and social systems**

One of the earliest and most enduring distinctions in Luhmann's theory is that between psychic and social systems. These are two levels of system formation, autonomous as self-organizing entities, but related because social systems are dependent on psychic systems operating in their environments, and psychic systems are incessantly being socialized and disturbed by ongoing processes in social systems. If one regards this distinction as fundamental, one will soon perceive that it is not easily compatible with action theory. Action normally is closely related to an actor and his/her goals, intentions, motives, will and effort. One can then introduce a distinction of action and *social action*, as has often been done since Max Weber. But how to distinguish psychic and social systems in these terms? If one refers actions to the domain of psychic systems and social actions to the domain of social systems, one obviously argues in terms of an analytical theory, which attributes different aspects of one and the same *action event* to the two different levels of system formation. Parsons is a good illustration of this, as he combined a commit-

ment to action theory with a clear demarcation between psychic and social systems, and this on the basis of an analytical systems theory (which he called 'analytical realism'). But there are no such things as analytical systems in Niklas Luhmann, who introduced the distinction between psychic and social systems as referring to concrete, 'real' systems. Therefore there was always an in-built, latent bias against action theory in Niklas Luhmann, which had to become more explicit as soon as he perceived action only as a conceptual option with various conceptual alternatives.

##### **Action and experience**

My second point refers to another distinction central to systems theory: action and experience. This is a distinction Luhmann introduced early in the 1970s.<sup>6</sup> In German it is *Handeln* and *Erleben*. In my view this is one of the most original of Luhmann's ideas, for which I see no antecedents in the history of sociological theory. In distinguishing action and experience, Luhmann claims first of all that the most general description of social systems would describe them as processing selections.<sup>7</sup> In social systems there are two ways of processing selections. One may interpret selections as *actions*, attributing them to a concrete acting system which is thought to be responsible for the genesis of these selections. But this is only one of two possibilities. There are other cases in which one takes a selective event as information about states of the world. Then there is no need and no motive to attribute these selections to concrete actors. These selections are not actions, and they are not causally related to actors, but they function in Luhmann's terminology as experience (*Erleben*).

This distinction is not ontological. Selections are not actions or experiences due to inherent properties that they possess. Classification as action or experience is an achievement of the participants in social processes, whose classifications are contestable. There may arise disagreement as to whether a relevant event should be attributed to an actor whose responsibility can then be postulated, or if it simply represents a state of the world not having been caused by actors involved in the present situation.

What we learn from this distinction is that there has always been one difficulty for any sociological action theory. No matter which social entity is considered the constitutive element of social systems, it has to be denomi-

nated by a more general term than either 'action' or 'experience'. This disqualifies the concept of action as the constitutive element, as *action* cannot function as the generic term for the distinction between action and experience. *Communication* is a much better candidate for two reasons. First, the concept of communication is more specific than the concept of selection, which does not discriminate between social and biological systems. Secondly, the concept of communication is more general than either action or experience. It seems to be plausible that the processes in which attributions are made, contested and remade are communication processes. Therefore many years before Luhmann adopted communication theory as the basis of his sociology, there was a second in-built bias favouring this choice.

### **Formal properties of the concept of communication**

My third point regards what may be called *formal properties of the concept of communication* in contradistinction to the concept of action. In action theory relations of action and actor are symmetrical. There exists always one individual or collective actor for one action. Symmetry implies that this relation can be interpreted in both directions: the action may be caused by the actor; the actor may be constituted or selected by the action, which only then is his or her action.<sup>8</sup> There is no need for a third term in addition to action and actor. In communication theory it is wholly different. There, one always needs at least three terms: sender, receiver and the information or communication that relates them. Or, in Luhmann's version, which focuses on the internal structure of the communicative act: one needs an observing system which *understands* communication by projecting the difference between *information* and *utterance* on the system observed, and by doing this infers communication (Luhmann 1984, ch. 4).

This three-term structure – observing system, observed system, communication – has two more interesting formal properties. It is asymmetrical and it is bidirectional. Bidirectionality means that one can read a communication forwards and backwards. One reads it forwards when one looks at a sequence of communications, at communication as an ongoing process in time. On the other hand, one must read it backwards, too, as a communication only begins with the second participant who *understands* and in the act of understanding projects the difference between *information* and

*utterance* on the first participant. In this respect any communicative event is retrospective; it depends on the projection of differences on past events. From bidirectionality immediately follows the other formal property: asymmetry. Whereas in action theory action and actor can exchange their roles – the actor producing the action, the action constituting the actor – the same is not true in communication theory. Only in the next step, in the next communicative event, can the observed system become an observer itself and observe the previous observer in assuming that his or her behaviour may be interpreted as communication and as a reaction to the first communicative event.

One further remark regarding formal properties of communication. It has already become obvious that any communicative event is distributed over at least two participating systems. One cannot say that communication is *done* by the observer or alternatively is effected by the observed system. Both are involved, and the three-component structure of communication (information, utterance, understanding) refers to and includes both of them. This is well adapted to systems theory and its thesis of operationally closed systems. It refutes any reductive strategy that tries to decompose a system by reducing its constitutive elements to causative agents in the environment of the system. In this atmosphere of indisputable irreducibility, communication theory is much better adapted to the premises of systems theory than any action theory might be. Communication theory is clearly incompatible with methodological individualism. Systems theory, on the other hand, still has to find its own methodological agenda, for which the distinction between social macro-order as self-organization and an elementary level characterized by microdiversity gives some suggestive hints.<sup>9</sup>

### **Autopoiesis**

My fourth and perhaps most important point regards a theoretical shift effected in the same book in which communication theory was introduced: *autopoiesis* (Luhmann 1984). In the shift from a cybernetic theory of selective system/environment relations to a Maturana-style theory of operationally closed systems, a great number of concepts had to be adapted. Autopoiesis, as defined by Maturana and Varela, demands a system that produces all its components via the interaction of these same components, which are recursively involved in the network of production of components by which

they themselves were produced (Maturana & Varela 1980). To prove that a specific system is autopoietic, by this definition, one needs a more precise concept of the elements of a system than one might have had before. In my opinion this is the proximate cause for Luhmann's change to a communication theory.<sup>10</sup> In Luhmann's writings of the 1970s there is a certain ambiguity in his designations of the elements of society. For example, his standard definition of 'world society' said that this system consists of actions that reach towards one another via communications ('*Handlungen, die kommunikativ füreinander erreichbar sind*', Luhmann 1984:755). One might add that there is a strategic use of such ambiguities in Luhmann's work in dealing with dilemmata and bifurcation points, at which a conceptual alternative does not yet enforce an obvious decision on him. But autopoiesis does not allow ambiguity in designating the constitutive element of society, which was obviously one of the motives behind the decision between action and communication.

One may furthermore suppose that autopoiesis favours communication as the element of society. It is not at all simple to imagine a description of society as an autopoietic system closed on the basis of *actions* as its constitutive elements. Recursive closure of a system is probably more easily established for a communication system than for an action system.<sup>11</sup> Actions are very much individualized. Each single action introduces a discontinuity into social process. Either something finishes or something new begins. An action is somehow isolated from its antecedents and its consequences; therefore it is very difficult to imagine recursive closure and the production of something from its own products for an action system.<sup>12</sup> It is wholly different with communications, where it is much simpler to imagine a *continuous flow* of communications, recursively returning to its somehow modified starting point and thereby closing in on itself.

## 5. Communication theory as description of modern society

In the last part of this paper I extend the list of arguments, motives and causes for Luhmann's switching to communication theory by pointing to aspects of societal change that favour conceiving communication as the elementary constituent of society. I discuss these aspects

under two main headings: (1) Information/Information Society and (2) World Society.

### **Information/information society**

How well is sociological theory able to deal with information and knowledge processes? Richard Emerson, one of the most interesting exchange theorists of recent decades, has said that exchange theory is well adapted to studying the flow of resources in social processes, but for studying the flow of information you need another theory, for example, symbolic interactionism (Emerson 1981). Information transfer cannot be reduced to exchange, as the information is not lost to the person who hands it over to someone else. If the diagnosis of the marginality of information in the intellectual core of individualist sociology is true, it describes an unsatisfactory state. In this regard again the balance sheet of communication theory looks more promising. Whichever formulation of communication theory one chooses, the concept of information is always a strategic part of it. The unidirectional flow of information from point to point; a diffusion process; an epidemiological process of information dispersal; all are clearly analysable phenomena in any communication theory. On the other hand, a pairwise coupling of two communications may well prove to be *exchange*, or it may exhibit the properties of *social conflict*. Thus, communication theory is universal in its ability to reconstruct the core concepts of alternative sociological approaches. Finally, in Niklas Luhmann's communication theory, *information* and *action* are included as indispensable components of any single act of communication (see esp. Luhmann 1984, ch. 4). As far as I can see, there are no categorical exclusions inherent to the concept of communication.

One may resume this point in terms of the sociology of knowledge or the sociology of sociological knowledge. Then one might classify action theory as an intellectual phenomenon germane to *industrial society*. Its cognitive focus is on processes of producing and processing goods and resources, and on exchanging the goods and resources produced. Communication theory can then be classified as a kind of sociology adequate to *information or knowledge societies*.<sup>13</sup> Sociological paradigm shifts thus would be perceived to reflect the societal transformations which the same theories try to understand.

### World society

The last point is related to the previous one. It refers to *world society*. I already quoted Luhmann's early conception of world society developed when he was still an action theorist. This conception said: 'World society is the system which consists of all actions that can reach towards one another via communications'.<sup>14</sup> This definition already pointed in its inconclusive parallelization of actions and communications to the difficulty of formulating a concept of macrosociety in action theoretical terms. One may illustrate this in looking at one of the function systems of modern society. I take the global system of science as an example.

Science studies have been dominated in the last ten or fifteen years by a school for which one name is 'laboratory studies'.<sup>15</sup> That is, many empirical studies have been microsociologies of concrete places of scientific research, mainly laboratories in natural science and the smaller or larger experiments which inhabit them. The implicit or explicit social theory of these studies was mostly action theory. This action theoretical tendency was supported by processes of scientific research often being confrontations with *nature*, other social actors only being of indirect relevance. Such lone 'conversations' with nature obviously are not communicative acts. There were, of course, many valuable insights in laboratory studies, but no sociological view of the *global system of science* was ever articulated. In my view the reason for this failure is that the global system of science can only be identified via communications (Stichweh 1987, 1990). Global processes of generating scientific hypotheses, of validating and falsifying theories, of informing about research findings, are communication processes that are very selective about which action events (i.e. research acts) in science come to light. Many research processes in science are never documented in print, never reported about at conferences or otherwise made public. But the global system of science – and I think it is one of the few undisputed global systems – consists only of these communicative events and the research actions they refer to via attribution processes (cf. Stichweh 1996). I assert that a macrosociology of science must be written via communication theory.

I take this example as a paradigm. My thesis says once more that communication theory as a foundation of sociology reflects societal change. Not only is world society in one relevant respect brought about by communica-

tion technologies (cf. Lübbe 1996; Stichweh 1999). World society is also an unforeseen societal circumstance, which disprivileges action theories. This does not mean that it is impossible to analyse world society via action theory. One thinks of Norbert Elias, who speaks of the prolongation of action chains as a specific trait of global civilization (Elias 1969). But such an action theory of globalization may have the disadvantage – again found in the writings of Elias – that it describes the global circumstance as mainly consisting of unintended effects. That points to the discontinuity that separates actions from their consequences. If we only wait long enough, most structures in world society will be explained as resulting from unintended effects. Again, my hypothesis is that a continuous modelling of change processes and a systematic description of world society are only possible in terms of communication theory.

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### Notes

<sup>1</sup> See for a recent statement Nolte (1999).

<sup>2</sup> Cf. Coleman (1994:166): 'Rational choice theory is not theory designed to account for action, despite its name. It is theory designed to account for the functioning of social and economic systems'.

<sup>3</sup> Parsons (1937, esp. pp. 731–737, 'The Action Frame of Reference' and pp. 737–748, 'Systems of Action and Their Units').

<sup>4</sup> For this last statement see Parsons (1978).

<sup>5</sup> Collected in *Soziologische Aufklärung* 1 and 2 (Luhmann 1970, 1975).

<sup>6</sup> The representative text is Luhmann (1978b).

<sup>7</sup> This description is, of course, true for biological and physical systems, too, which means that a generalized selection theory functions as the basis of general systems theory.

<sup>8</sup> Cf. White (1992:3): 'Social action is induced before actors, who derive from the action and need not be persons'.

<sup>9</sup> Luhmann (1997); some interesting remarks in Hodgson (1998).

<sup>10</sup> For the distinction between proximate and ultimate causation, see Mayr (1983); cf. Durham (1991:36–37).

<sup>11</sup> Cf. the opening passages of the chapter 'Kommunikation und Handlung' (191ff.) in Luhmann (1984).

<sup>12</sup> Cf. very interesting discussion in Tyrell (1998, esp. 115ff).

<sup>13</sup> On information society in sociological theory, see Stichweh (1998b).

<sup>14</sup> Cf. the definition Luhmann gives in a dictionary entry from 1973: 'Das umfassendste System menschlichen Zusammenlebens (Gesellschaft) nur welteinheitlich gebildet werden kann, nachdem alle Menschen füreinander kommunikativ erreichbar sind und durch Folgen ihrer Handlungen betroffen werden' (Luhmann 1973:755).

<sup>15</sup> See for an overview Knorr-Cetina (1995).



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