

Niklas Luhmann

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The Person

Niklas Luhmann was born on December 8, 1927, in Lüneburg, as the son of a brewer (Wilhelm Luhmann). His mother (Dora Gurtner) came from the Swiss hotel industry. From 1937 he attended a well-known humanist Gymnasium at Lüneburg, the Johanneum. This Gymnasium was pervaded by national socialist thinking, but Luhmann's family cultivated its distance towards the regime. Niklas Luhmann spent his summer holidays in Switzerland which had an influence on the opinions and attitudes he acquired. Luhmann was an assiduous student and one of his classmates remembered his "forbidding reading mania". In spring 1943, being only 15, Luhmann was already obliged, as was his whole class, to become a helper of the German flak at airports nearby. School hours continued irregularly at the location of the German air force. In autumn 1944 he had to leave school, received a short military training and became a regular soldier in South Germany. In spring 1945 the American army took him as a prisoner of war and transported him first to Ludwigshafen and then to a labor camp near Marseille. The treatment was bad and he later remembered beatings.

As Luhmann still was not yet 18, he was released from the camp in autumn 1945. His secondary school degree was not accepted. Therefore Luhmann went back to the Johanneum in Lüneburg and took a special class which led to the 'Abitur' at Easter 1946. He decided to study law which was obviously motivated by his supposition that law is the kind of knowledge system that can help with the breakdowns of order he had experienced. From 1946 to 1949 he was a law student at Freiburg who had a strong interest in Roman law and in historical and comparative aspects of law. Luhmann went back to Lüneburg, became a trainee lawyer with a legal practitioner in the city, and prepared a legal dissertation which was never finalized. He only finished his second state examination in 1953 and had his first job in 1954. We do not know much about the years from 1949 to 1954. But because he probably started his famous file-card box at the end of his studies at

Freiburg it will some day be possible to reconstruct his intellectual agenda during these years using this source.

In working with a private legal practitioner Luhmann acquired a certain dislike towards what he perceived as dependence on clients. Therefore he preferred public service, when finally looking for a job. First he worked at a higher administrative court in Lüneburg (1954-5) and then he switched to the ministry of culture in the federal state Lower-Saxony in Hannover (1955-62). In these years, he slowly through private study became a sociologist. His first two papers were published in 1958 and 1960 in a journal for the sciences of administration. Then Luhmann applied for a stipend at the 'Littauer Center for Public Administration' (Harvard). He received it and went there, but studied primarily at the 'Department of Social Relations' with Talcott Parsons (1960-1).

In returning to Germany he switched from administration to research. In 1962 Luhmann took a job at the research institute of the University for Public Administration at Speyer (a school for the continuing education of public officials). In the same year he published his classical essay on 'Function and Causality' in the 'Kölner Zeitschrift für Soziologie und Sozialpsychologie'. In 1964 he gave a talk at the University of Münster on the same subject. On this occasion, Helmuth Schelsky, at this time probably the most influential German sociologist, asked him if he wanted to become a professor of sociology at the planned University of Bielefeld, of which Schelsky was one of the main initiators. Luhmann accepted after some hesitations, then in 1965 switched as a departmental head to the 'Institute of Social Research' at Dortmund, affiliated with the University of Münster. He received his 'Doctor of Philosophy' and his 'Habilitation' in 1966, taught in Münster and in 1968 taught in Frankfurt (as a substitute for Theodor W. Adorno). Also in 1968 he became the first professor of the University of Bielefeld, two years before the first students matriculated there. He stayed in Bielefeld until his retirement in 1993, and even afterwards had his main institutional address there. Luhmann liked travelling, but otherwise he preferred a rather uneventful life of which he made use in producing the most impressive publication record of 20th century sociology. He lived in Oerlinghausen near Bielefeld with his wife who died early (1977) and his three children. Only a

few years after retirement Luhmann contracted a severe illness which cut his life short in a way that he probably had not expected. He died from this illness on November 6, 1998.

The Social Context

National Socialism and the war experience were very important circumstances for the development of Niklas Luhmann's thought, but in a much more indirect way than it was for other German theorists of his generation. His choice of law as his first concentration of intellectual interest was motivated by the decay of social order in the 1930s and 1940s. But he never wrote on National Socialism directly. And he eventually left the law, becoming a general sociologist. As a sociologist he never made the mistake of ascribing to the system of law an exalted position in his social theory, although it was easily perceived up to his last publications that this was the field he knew the most about.

Another important social condition of Luhmann's work was that in his first professional career he did not opt for the private practice of law but for public administration. Both options Luhmann chose, law as a paradigm of social order (and not political democracy) and public administration as a paradigm of doing work on societal problems (and not the private practice of the professions) are strongly rooted in German traditions to be observed since at least the 18th century (Stolleis 2002; Stichweh 1994, Ch. 15). As an indirect result of the second decision Luhmann never wrote a sociology of the professions (on which Talcott Parsons worked for decades) but instead had, from his first writings, a strong interest in public administration, and in a more general sense in the sociology of organizations. For his work on organizations Herbert Simon (1950) was a much more important influence than Parsons.

Besides these important social influences Niklas Luhmann really tried not to be a product of his times, and this strong preference in itself probably has a social background. In his own life experience he was very much impressed by the complete switch, in Germany, in such a short time

from the ideology of national socialism to the belief in liberal democracy. Luhmann seems to have decided not to become a believer and propagandist of any ideology. Instead he cultivated an ironical detachment that even included his appreciation of his own writings.

When Luhmann became a professor in the late sixties Germany was very much agitated by the students' movement. Luhmann had no sympathies for it and at some points was possibly hurt by personal experiences. But he never embroiled himself in the kind of conservative resistance some German professors tried to organize. Later in the eighties and nineties he did some work on a theory of social movements and social protest (Luhmann 1996a). He neither had any sympathies for the variants of Marxism and Critical Theory rampant in the sixties and seventies. He considered these currents either intellectually outdated, or as moralizations of complex issues which had to be analyzed by conceptual means. Again his intellectual energies were not much absorbed by Marxism or Critical Theory as he never was interested in polemical work on other intellectual and scientific ventures. Luhmann had a strong sociological argument against moralization. He thought that it was divisive and not a constructive social force. From this he developed a general sociology of morale which looks at morale as a communication about the respect another person does or does not deserve (Luhmann 2008a).

Niklas Luhmann cultivated some contacts with political parties but he never became identified with one of them. He wasn't the kind of public intellectual who regularly commented on public controversies. By birth and by education he was a Lutheran protestant. And for him the sociology of religion became an important part of his work. But again this was done from a significant distance. There are no indicators which point to a personal religious belief. And his extensive readings in the theological tradition are mostly focused on Catholic thinkers, as his interests in the history of concepts mainly motivated readings in the medieval theological tradition.

Whereas many American and British university teachers cultivate a strong belief in the university systems in which they do their work this never was the case with Luhmann. In the

beginning he did not want to become a university teacher. In the fifties as part of his ministerial duties he had to deal with academics who had been professors in the Third Reich, had afterwards lost their jobs and now claimed reinstatement or damages. This experience did not raise his esteem for university people. Schelsky in recruiting him for Bielefeld had promised him a reformed university. But these promises did not materialize, and people who studied with him in Bielefeld very much came to know a person who somehow was an outsider in his own university although he was by far the most important scholar who ever taught there and he obviously liked to teach. Once more the difference from Parsons is instructive. Whereas for Parsons among the professions he studied the academic profession somehow had an extraordinary status (the university was described as “the most important structural component of modern societies that had no direct counterpart in earlier types of society” – Parsons 1961, p. 261) and became the subject of the last great theoretical book finished in his lifetime (Parsons/Platt 1973), Luhmann never wrote or even intended to write a sociology of universities as he understood the university to be a “small institution” (Luhmann 1992). Instead he conceived and published a sociology of science with an epistemological focus in which he conceded only a second-class place for the institutional infrastructures of science (Luhmann 1990a). Around 1975 Luhmann also began a multi-volume study of education (which for him primarily meant school education and secondly family education), but this is unfinished and has only partially been published (Luhmann 1979 and 2002a).

Another societal sphere towards which Luhmann kept his distance was the mass media. He rarely appeared in the mass media and never became a public intellectual. He sometimes advised his students not to spend their time with newspapers and personally never owned a TV. But this did not hinder him in understanding the social power of mass media. The sentence with which he opens his *The Reality of the Mass Media* (1996b, p. 9) is among the most famous sentences he ever wrote: “Everything we know about our society, even the world in which we live, we know from the mass media”.

In his last fifteen years there were two contexts to which Luhmann conceded a certain influence on his theory. The first are ecological concerns. Luhmann was impressed by arguments regarding the ecological self-endangerment of mankind, and he early on reacted with a book called *Ecological Communication* (1986) which is often and rightly recommended as a good elementary introduction to systems theory, but which is at the same time a rather pessimistic diagnosis of a society which has to decompose any problem situation into diverging functional perspectives and therefore will never deal with ecological concerns in the concerted way which might be necessary.

The other case regards inequality. Through travel Luhmann came to know cases of extreme societal inequality especially in slums and ghettos in third world metropolises. He focused especially on the seemingly complete separation of whole city quarters which are “in” the metropolis but otherwise completely disconnected from it in terms of chances of participating in the options and life chances of a modern society. Luhmann called this phenomenon ‘exclusion’ in consonance with usages to be found in Parsons and Foucault among others (Luhmann 1995b, Ch. 13). He formulated a very general hypothesis which thematized ‘inclusion’ and ‘exclusion’ as a kind of metadifference which effects separations before the functional differentiation characteristic of the regions of inclusion begins its work. This hypothesis by the late Niklas Luhmann, in a way untypical for Luhmann, directly transfers visual evidences he believed to have seen (for example in ‘favelas’ in Brazilian cities) into very general hypotheses. In some sentences he wrote about these observations one gets the impression not primarily to listen to a scientist who analyzes variants of coupling and uncoupling of slums towards the function systems of world society, but more to hear the voice of a visitor who experiences danger and fear.

The Intellectual Context

We do not know much about early intellectual influences on Luhmann’s thinking. A relevant circumstance is the fact that he was a private scholar for a number of years between the end of his

law studies (1949) and the onset of his academic work (ca. 1956-7). Today this is unusual for someone who later becomes a famous scientist. It will be possible to reconstruct this period of Luhmann's intellectual biography as it is probably well documented in Luhmann's file-card box. But this file-card box will only become available in the next few years (after years of litigation a Niklas-Luhmann-Archive is going to be established at the University of Bielefeld). What we will surely learn from this is that the intellectual education of Luhmann was much broader than it usually is the case even for extraordinary scientists. From brief forays we know about some of his readings: Camus, Dostoevsky, Hölderlin, Jean Paul, Thomas Mann, and many more names will have to be added to this. For some years he had no plausible reason to become a disciplinary specialist.

But in reconstructing this intellectual education there will also appear the names of those who have had lasting significance for the genesis and structure of Niklas Luhmann's theories. Two of them will stand out: Edmund Husserl (1859 – 1938) and Talcott Parsons (1902 – 1978). Both of them, as soon as Luhmann got to know their writings, induced a cognitive shift in his plans, both of them via key concepts deeply embedded in the structures of the theories Luhmann built. It is an interesting indicator that Luhmann who had a strong tendency to relativize the relevance of persons and names and not to give much weight in intellectual reconstructions to persons (he regularly maintained "it is only by accident that a person has a theory" and, of course, he included himself in this diagnosis) made two exceptions. Husserl and Parsons were the only two authors on whom he sometimes offered lectures: only in these two cases he made use of the construct of a person to systematize ideas. From this dual influence arose the synthesis of phenomenology and systems theory which is historically unique: From Husserl Luhmann took the strict separation of psychic systems (consciousness) and social systems (communication) which he radicalized in a way nobody had done before. He further received from Husserl the core mechanism of which is made use on both sides of the gulf of psychic and social systems: Meaning as a mode of selectivity which builds complexity by remembering even those possibilities which were not chosen. Such a system built on meaning as its way of dealing with selections will incessantly oscillate between references towards its own states

and references towards things external to it, a distinction which is akin to the Husserlian concept of intentionality.

From these few examples we can infer the originality of the strategy. On the one hand the distinction psychic/social is radicalized which implies a negation of inter-subjectivity, as subjectivity is a concept suitable only for psychic systems. On the other hand – as meaning is used in social systems, too - the rich vocabulary of the European philosophy of consciousness becomes instructive for the understanding of mechanisms and structures of social systems. This is what Luhmann was finally interested in: To develop an ever more differentiated vocabulary for the description and analysis of social systems.

The concept of social system is taken from Talcott Parsons and this process of taking stock of Parsons and reintegrating his conceptual structures into a completely reformulated systems theory is a still more influential cognitive undertaking than the interdisciplinary discourse with Husserl. The logic in Luhmann's way of dealing with Parsons consists in making use of nearly everything Parsons invented and in doing this to recontextualize every concept, a strategy which maximizes as well integrative continuity as it favors building completely new conceptual structures. As this was the core process of what Luhmann did for decades it will only become sufficiently visible in the presentation of his theories.

There are many more authors and thinkers who have to be included as important parts of the intellectual context of Luhmann's writings. I already mentioned Herbert Simon, the earliest influence on Luhmann's organization theory and near to Luhmann's preferences especially in his writings on bounded rationality (Simon 1983). There is an early and extensive reception of the many authors of General Systems Theory. Among others Ludwig von Bertalanffy and Ross Ashby were important for Luhmann on the prominence of the system/environment distinction respectively the law of requisite variety which relates the complexity of a system to the turbulence of the successive states in the environment. To this one can add a long list of authors who contributed significant

insights which Luhmann made use of for decades: Kenneth Burke (“perspective by incongruity”), Gaston Bachelard (“obstacles épistémologiques”), Robert K. Merton (“functional equivalents”), Donald T. Campbell (“variation, selection, retention”), Reinhart Koselleck (“historical semantics”), Erving Goffman (“interaction order”), Humberto Maturana (“autopoiesis”), Henri Atlan (“order from noise”), Gregory Bateson (“difference that makes a difference”), George Spencer Brown (“distinction and indication”), Franz Heider (“medium and form”), and many others.

There are patterns to be observed in these ways of absorbing influences. Luhmann had encyclopedic reading interests which were not limited by likes and dislikes towards specific other disciplines. Whereas even in intelligent sociologists you sometimes find a kind of disapproval towards economics which hinders them to learn from this neighboring discipline, such a kind of judgment would have been very improbable from Luhmann. His main dislike applied to authors who were stronger in normative than in cognitive arguments. Luhmann had no preference for establishment figures. Even in other disciplines he was willing to be inspired by outsiders. What in legal discourse is called the ‘prevailing opinion’ did not impress him. And he liked very much to raise nearly forgotten authors from obscurity and to attribute to them a central role in theory building (as an example Luhmann 1981a, Ch. 7, on Vauvenargues and action theory). Furthermore and perhaps most important, Luhmann had an uncanny talent for finding just the right and promising interpretation for strange ideas from other disciplines. There were numerous social scientists who experimented with applications of Maturana’s concept of ‘autopoiesis’ on the analysis of social systems. But only Luhmann’s interpretation did the trick and did it in a way such that it is the only one that survives today.

The Theory

Systems Theory

From his beginnings in the early 1960s Luhmann called his contribution to sociological theorizing 'Systems Theory' (early papers in Luhmann 1970). By this he formulated the continuity to General Systems Theory and to Talcott Parsons, and in the decades since there never arose a need to change this theory name. Systems theory is still one of the most influential paradigms of sociological thinking and research with a global community of participants ('Soziale Systeme. Zeitschrift für soziologische Theorie" is probably besides cybernetics journals the core sociological journal for systems theory), and it is held together by the fact that the concept of social system which is used in an informal way in most sociologies, for this paradigm functions as *the core concept* which is in itself the object of incessant reformulation and interdisciplinary renewal.

Function and Causality

There was one alternative self-designation Luhmann made use of in the sixties. That was 'functional-structural theory' which was meant as an inversion and as an alternative to the Parsonian 'structural-functional theory'. By this Luhmann intended to say that his theorizing does not start with given social structures which are subsequently analyzed in their functionality (a *modus operandi* he attributed to Parsons). Instead the sociologist is supposed to begin with social problems which are understood as functional references – e.g.: How to ensure future need fulfillment by present action? How to ensure interpersonal consistency in experiencing the world? – and real social structures are analyzed in their capability to contribute to the resolution of these problems. In the next step one will then compare alternative social structures in their problem-solving capabilities and in such a comparison what matters is that they are functional equivalents towards one another regarding a specific functional reference problem. What becomes visible here is Luhmann's preference for a historical and comparative functionalism which always compares alternative structural or institutional patterns in their ability to contribute to the solution of relevant social problems. This is near to Darwinian evolutionary biology or to certain types of evolutionary economic institutionalism (the Veblenian tradition) and articulates a preference for comparative studies against a conventional preference for the causal reduction of observed events. The methodology of this kind of equivalence

functionalism was the subject of Luhmann's first extended sociological essay (Luhmann 1970, Ch. 1), and he always remained true to this comparative and evolutionary interpretation of the methodological tendencies of sociological systems theory although he did not write much about functionalism in later years.

System and Environment

As soon as the differentiation from Parsons lost its symbolic relevance, Luhmann only occasionally used 'functional-structural theory' as a self-description of the theory. Then and afterwards 'systems theory' was the only adequate term. In the early years 'cybernetic' was sometimes added by Luhmann to the words 'systems theory' (Luhmann 1970, 132, n. 16), and 'cybernetic' here means selectivity of the relations of the system to its environments. There are three interesting implications in such a definition. Firstly, selectivity becomes a universal attribute of any event which ever happens in a system. Secondly, the environment becomes relevant as a circumstance which impacts on any selection event in the system. And, thirdly, in choosing *its* selection events and observing *its* environments the system acquires a self-referential character. Therefore Luhmannian systems theory is emphatically a system/environment theory, but as such it is from its beginnings specified by its cybernetic (i.e. self-referential selectivity) character. From the relevance of the concept of 'environment' follows one more methodological postulate for systems theory. Systems theory not only needs to be comparative in all its cognitive operations; it must also, in observing alternative strategies and trajectories of social systems, explain these operations on the basis of the system's observation of its environments.

Another central term for the analysis of a system and its environments is complexity. A system consists of certain elements and realizes in a selective way relations among them. Luhmann called this property of a system 'complexity'. The complexity of a system seems to be related to the demands its environments place on it. Ross Ashby coined for this interrelation of system complexity and environmental demands the term 'requisite variety' (Ashby 1952). Luhmann added the formula

'reduction of complexity' and by this he claimed reductive relations towards multiple environmental concerns as the basis of system autonomy. Luhmann later realized that one should not call this achievement a 'reduction of complexity' as only a system can be complex (we only find elements and relations among elements in a system) and its environments consist in unspecified demands. As a result it is better to call it a 'constitution of complexity' which is to be observed in the process of the formation of a system.

Meaning and Social Systems

Up to this point we have not specified which kind of system we are speaking about. In the case of Luhmann the primacy of social systems is very obvious. As much as Luhmann was an interdisciplinary thinker with broad interests in cybernetics, biological theory and numerous other disciplines, there was no doubt that he only intended to contribute to the theory of social systems.

What is the basis of the specificity of social systems? The answer Luhmann proposed is 'meaning' (Luhmann 1971a). Meaning can be described as a special case of a theorem in General Systems Theory which says that in any system one observes a production of surplus possibilities and mechanisms reducing these surpluses. Meaning is that way of dealing with surpluses in which the possibilities not chosen are not eliminated but are remembered and virtualized and thereby stored for future use. It is easy to see that meaning systems which consist of a mix of realities (realized possibilities) and virtualities (as yet unrealized possibilities) need more sophisticated mechanisms for dealing with the kind of complexity they produce. All of them are historical systems, remembering their choices, and being able to come back on earlier decisions by reactivating virtualized possibilities.

Social Systems and Psychic Systems

Meaning allows us to distinguish social systems from biological systems, physiochemical systems and machines, all of which are not able to produce and to process meaning. But there is one further type of systems – psychic systems – for which meaning is constitutive of its operations.

As it already was the case in Parsons, social and psychic systems are conceived by Luhmann as two different types of systems, separate from one another but coupled via media such as meaning and language. In Parsons this separation was less visible, as the distinction of social and psychic systems was introduced on the level which was called 'action frame of reference'. On this level they represent two of the four types of action systems which contribute to the emergence of action as a phenomenon constitutive of the human condition. Therefore besides the separation of two types of systems their cooperation in the production of action is emphasized. In Luhmann we have a different constellation. All the hierarchical levels we have in Parsons, of systems always being subsystems of higher levels of the emergence of action, disappear in the strictly non-hierarchical theory of Luhmann. Instead we have a clear disjunction of social and psychic systems, both of them being environments for the other type of system. This way it is articulated much more explicitly that persons and their psychic systems are *only* environments of social systems (and social systems *only* environments of psychic systems). This diagnosis in its clarity was perceived as anti-humanist by some observers and therefore aroused numerous controversies with arguments to be heard even today. Luhmann liked to turn these arguments around and to insist that for a person the autonomy from the structures of social systems is a kind of freedom.

But how is this strict separation of two system types both of which operate on the basis of 'meaning' and which are connected by language towards one another to be explained? Luhmann developed a theory which postulates the emergence of a system by the self-specification of the elements which are constitutive of the system. The differentiation of social and psychic systems is then explained by the differentiation of elements characteristic of these two systems.

In looking at psychic systems Luhmann developed a conception akin to Edmund Husserl. Psychic systems consist of thoughts as their elementary basis. Thoughts are obviously connected with one another, referring to earlier thoughts and preparing ongoing considerations (Luhmann 1995b, Ch. 1-4). Conceived in this way, Luhmann calls psychic systems systems of consciousness. From this follows the implication that in his theory there is no systematic place for a concept of the

unconscious, except in an understanding which postulates an observer who ascribes latencies to a psychic system which are unobservable for the system itself. There are other formulations in which Luhmann seems to perceive the identification of psychic systems with thought processes as too restrictive. He looks at other elementary constituents such as feelings, acts of will, perceptions – and then proposes ‘intentional acts’ as a name for the elements of consciousness.

Action and Experience

What are the elementary constituents of social systems? In a classical sociological understanding one probably would have opted for ‘actions’, e.g. the ‘unit acts’ of Talcott Parsons, and for some years Luhmann described the basic social elements in this way, making use of terms such as ‘communicative action’. But he complicated the understanding of action by introducing a distinction between ‘action’ and ‘experience’ for which there were no antecedents in the sociological tradition (Luhmann 1981a, Ch. 5). Social systems are thought to process selections for which there exist two alternatives: They are either causally attributed to one of the social systems involved and then they are thought to be one of the actions of the system. Alternatively the selections are seen as representing objective circumstances in the world which implies that one only ‘experiences’ these selective events and is unable to influence them in the present situation. This distinction of action and experience is not an ontological distinction which identifies ontological properties of the selection events. It is only based on attributions which are produced by the social systems and which can be disputed and reversed. Once more this argument demonstrates how much social systems exist in a social world entirely produced by themselves and how much objectivity (information about states of the world) and subjectivity (selections for which actors can be held responsible) can reverse their roles. But what does this say about the constitutive element of social systems? We can’t point to ‘selection’ as a candidate since selection is a much more general phenomenon which is at the basis of natural as well as social systems. And there is a clear argument against ‘action’, since the concept of ‘action’ is one part of the distinction of action and experience both sides of which are in

the realm of the social. Therefore we have to look for another concept which allows us to identify the boundaries of the social domain.

Communication and Action

Until the late seventies Luhmann sometimes said that he hesitated about whether he should designate 'actions' or 'communications' as the most elementary constituents of social systems. One could perceive a rhetorical component in these remarks as Luhmann had already established the thesis that in social systems only some selections are attributed to a social system as its actions and therefore the concept of social action can't claim the universal status needed for *the* constitutive element of a social system.

The other candidate for elemental status is obviously communication, a concept which until that point sociologists mainly used casually. For example, among others one can study this in Parsons in whose writings one frequently finds the concept of communication but who never formulated a theory of communication. On the other hand, since the information theory of the 1940s, in for example Norbert Wiener (1948), or Claude E. Shannon and Warren Weaver (1949), communication was a probable candidate for a general sociological theory. For any social theory that would try to understand the fundamental character of information transfer in social processes the concept of social action always would have been a counterintuitive choice. Already in 1951 there was a book by Jürgen Ruesch and Gregory Bateson *Communication: The Social Matrix of Psychiatry* which gave a good idea of how to base a social science discipline on the concept of communication.

For these reasons one should not be surprised that Luhmann in the theoretical treatise he finally published in 1984 resolutely established his theory of social systems as a theory of communication systems (Luhmann, 1984, Ch. 4). Communication is the foundational element of social systems and as such it even constitutes the boundaries of social systems. Social systems only consist of communications and there is no communication outside of social systems which means

there is a sharp boundary separating social systems from those environments which do not consist of communications.

In his theory of communication Luhmann regards communication not as *one* specific type of selection. Instead communication is based on three selections which are indispensable components of any communication and are necessarily intertwined. These three selections are called 'information', 'utterance' and 'understanding'. Information can be interpreted and has often been interpreted by Luhmann himself in the way Bateson proposed. An information is "a difference which makes a difference" (Bateson 1973). For this concept of information, already, one needs a kind of minimum sociality. There must be an entity at which the first difference occurs (as a change of one of its states). And there is a second entity which registers or observes the first difference and attributes informative relevance to it. Of course, the first and the second entity can be identical (I observe the change of my bodily states and ascribe informative relevance to them). But even in this interpretation there exists a kind of internal division in the entity which establishes some 'internal sociality'. It is easily seen that information in the interpretation given to it here is not at all communication. There is a kind of subjectivity involved. This is caused by the second system which by its own states infers the informative relevance of the differences to be observed. But for communication to arise there must be further components in the communication process. There always has to be a system which explicitly decides to *utter* the informative difference. In other words it needs a communicative intention which is not yet there as long we only presuppose a system which produces information by the observation of state changes. Besides these intentional utterances we can concede the possibility of utterances not completely controlled – and therefore being non-intentional – by the system to which they are ascribed as its utterances. For example, I may change my clothing or other aspects of my behavior in a way which is perceived by others as a kind of utterance which informs them about changes of my mind. In any case this second component in a communication process, the utterance, may be called the action component since there always will be an attribution which classifies the utterance as the action of a specific system. Information

and utterance still do not suffice to produce an elementary communication. To realize a communication one finally needs *a second system which understands the information uttered by the first system*. Therefore the third component is called by Luhmann 'understanding'. The concept of understanding presupposed here is a rather formal one which does not demand that 'understanding' is a correct or good understanding. It includes the possibility of 'misunderstanding' as a case of understanding. Even if I grin in listening to sad news it is obvious that this counts as indicator for understanding, and my grin, surprising and irritating as it may be to other participants and probably pointing to the acceptance or rejection of the news (perhaps I don't believe the news or for me it is good news or I am simply sardonic), has to be seen as a fourth component of communication and at the same time as an utterance which already is part of the next elementary communication.

Communication Theory and Double Contingency

The three-component theory of communication invented by Luhmann is related to theories proposed by Karl Bühler (1934) and John Searle (1971). It is important to bring to mind the most important sociological understandings assumed by Luhmann's theory: 1. Communication is not dependent on the intention to communicate. Utterances can be intentional; but they need not be. There are always two systems (processors) involved; for communication it suffices that the second system observes a difference of information and utterance. 2. Communication can be realized on the basis of language as its medium. But communication can also occur as nonverbal communication; in this case what can be done with it obviously differs (on this difference see Tomasello 2008). 3. For the competition between 'action' and 'communication' Luhmann found an elegant solution. The primacy of communication is obvious. But among the components of elementary communications there is one – the utterance – which functions as the action component in each communication. This allows a more general understanding regarding the concept of action. Actions are always constituted by attributions. If for a selection one looks for someone whose responsibility for this selection one wants to claim one will attribute this selection to this system as its action. 4. As we already saw, understanding as the third component of an elementary communication can immediately pass into

the fourth component acceptance/rejection which is already part of the next communication. This argument makes visible communication as a flow, the recursivity built into this flow of communications, and the possibilities of the formation of new system/environment-distinctions always implied in recursive communications, that is communications coming back to or referring to earlier communications. 5. A precondition of any communication is that at least two systems or processors (or 'alter' and 'ego' in the terminology taken from phenomenology) participate in it. Parsons as well as Luhmann thematize this condition in terms of a theory of 'double contingency' which Parsons invented in *Toward a General Theory of Action* (Parsons/Shils 1951, 16). Double Contingency means the paradoxical reciprocity of both systems being oriented in their actions and expectations towards what the other system is probably going to do (Luhmann 1984, Ch. 3). Furthermore it means the uncertainty arising from this situation. Double Contingency points to the improbability of communication and the improbability of order in a situation in which each of the participants might be disposed to wait for the decisions of the other one. Theories of double contingency then have to demonstrate – and both Parsons and Luhmann tried to solve this problem – how communication, order and system-formation happen to arise in a situation in which at the beginning a reciprocal blockade seems the most probable outcome.

Communication Elements as Events and Operations

Are there plausible arguments against the status of communications as elementary constituents of social systems? One should not adduce the complex character of communications – their three-component structure – as an objection. The same objection would be valid against unit-acts or atoms as elements, too. All of them have a complex internal structure. But as elements communications do not seem to possess the internal (temporal) stability which one might demand as a condition for element status. Some years before he adopted communication theory Luhmann was already beginning work on the specific temporality of the elements of social systems. This is a question Parsons never asked. In one of his most fascinating essays, *Time and Action – A Forgotten*

Theory from 1979, Luhmann proposed a solution he attributed to the French moralist and enlightenment philosopher Vauvenargues (1715 – 1747) (Luhmann 1981a, Ch. 7).

The elements of social systems – in this essay Luhmann still theorized about actions, but the same is true regarding communications – are ‘events’. An event is something which has only vanishing duration. As soon as they appear they are gone again. From this condition derives for any social system the imperative to produce incessantly new events which connect to earlier events which are just vanishing. Otherwise the system might come to an end, simply for the reason that nothing happens anymore. This is a remarkable interpretation which is separated by a gulf from the equilibrium and stability postulates of social theory in the 1950s.

Luhmann adds one more concept. This is the ‘reproduction of event-based elements’. Reproduction is not to be understood as identical reproduction but means the circumstance that new event-based elements have to relate to earlier elements in the system and that their constructive freedom is restricted by the history of the system. For this phenomenon of the reproduction of event-based elements Luhmann now proposes the name ‘operation’. This is a far-reaching change in social theory which I will illustrate with a relevant quote from Luhmann:

“To accentuate it as clearly as possible that we do not speak about an unchanged maintenance of a system but an occurrence on the level of system elements which is indispensable as well for the maintenance of the system as for its change we will call the reproduction of the event-based elements an operation.” (1984, 79).

This operative reformulation of sociological theory necessitates significant changes in systems theory. For example, one can no longer speak about complexity in the way Luhmann introduced this concept in the late 1960s: Complexity as selectivity in the relations between the elements of a system. Now the same structure arises in each individual operation of a system which means that already on the level of the elements the demands are fulfilled which in earlier systems theory were seen as macro-properties of whole systems. This is clearly said in *The Society of Society*:

“In principle the classical concept of complexity is sabotaged by the concept of operation as it transforms the distinction of element and relation into one unitary concept (Operation = selective relating of elements)” (1997, 139, n. 181).

Self-reference, Autopoiesis, Operational Closure

Coordinated with this change-over to an operative understanding of social systems a number of far-reaching rearrangements take place. The first of them, prepared over two decades, is the increasing importance of the concept of ‘self-reference’. This concept is already there in the idea of a cybernetic systems theory. Selectivity in the relations of a system to its environments in cybernetic systems theory means a ‘self-determined selectivity’. From environmental perturbations the system selects those which it needs to stabilize or optimize its *Eigenstates*. The same principle of self-referential control is valid for the reproduction of the event-based elements of the system. This immediately connects to the concept of ‘autopoiesis’ which Luhmann borrowed in the early eighties from Humberto Maturana and Francisco Varela (Maturana/Varela 1980). Autopoiesis only means that everything which functions as a unity in a system – element, operation, structure, boundary – is due to the production processes of the system itself. It follows that on this level of the production of the unities constitutive of a system no external elements can be imported and insofar the system has to be conceived as an operationally closed system. One can interpret autopoiesis as a rather formal description of a specific type of systems without conceding to the theory explanatory power regarding the conditions of the realization of autopoiesis (this point is made in Luhmann 1993 and 1997).

Immediately related to the hypothesis of the self-referential closure of autopoietic systems is the idea of the ‘operative’ and ‘structural coupling of autopoietic systems’ which we find once more in Maturana. Operative coupling refers to the fact that an observer can get the impression that a certain individual event (which for the observer is the ‘same’ event) seems to belong to two different autopoietic systems at the same time and that it therefore somehow merges these two systems

exactly for the duration of this event. Already in *their* next events these two systems separate again as each system connects to the first event according to its own observation perspectives and thereby incorporates this first event completely in its own system process. Structural coupling on the other hand is not the fusion of the structures of two systems. Instead the concept signifies that the structures of one system are formed in contact with the structures of another system, something for which coevolution is another term regularly used in science. The development of the structures of a psychic system coupled to socializing social systems is a case in point.

Operation and Observation

A last important addition to the theory of social systems regards the concept of operation. We take from the theory of meaning and from information theory the insight that operations are always based on differences. Operations choose a certain option and they discard other possibilities. That is, there is always a distinction which functions as the basis of the operation. It is known that in social systems or in psychic systems it is often the case that both sides of the distinction are represented. An operation for which this is true Luhmann calls an observation. Under these conditions one can say that each observation is an operation as it depends on its operative performance. On the other hand in social systems there are many operations one could not call an observation as they simply happen without the differences on which they are based being represented.

As with many contemporary social theorists from Harold Garfinkel to Anthony Giddens, Luhmann postulates that modern social systems are based in acts of observation and self-observation. Luhmann gives a more precise version which uses a term introduced by Heinz von Foerster (1993): Observation in modern social systems, especially in function systems is always 'second order observation'. Through this term he postulates that observers do not have direct access to realities. Rather, they observe other observers and on the basis of these observations of observations decide with which observations they want to connect, and from which they are going to

dissociate their understandings. Modern science, which in all its cognitive operations always refers to observations by other scientists already published before, is a good example of this indirectness that is characteristic of the function systems of modern society.

Luhmann's theory of observation is supplemented by a calculus invented by the English logician George Spencer Brown (1972). Luhmann does not use it as a calculus but as a conceptual structure which explicates the logic of distinctions. Observations are based on distinctions which separate two sides of the distinction of which only one can be indicated. Such distinctions are called 'forms' in Spencer Brown and in Luhmann. What is important is the unity of distinction and indication. Spencer Brown postulated that making a distinction and indicating one of the two sides of this distinction is something which always happens *uno actu*. This means that the indication does not remain indistinct but is always implemented in making a distinction. A further consequence is that one can't at the same time make use of a distinction and observe this distinction via another distinction. In this respect observation is 'blind' to the distinction that it makes use of. This is an irrefutable latency which allows the reconstruction of classical figures of functional analysis. And only in the next step the observer may be able to observe the distinction just made use of via another distinction.

A last addendum is called 'reentry'. A distinction may be used for the further internal differentiation of a social space which has been created by the application of the same distinction. As such it 'reenters' the social space it has demarcated in the first place. This is another type of recursivity and Luhmann connects it to the concept of rationality. The ability to make use of reentries is one indicator of the rationality of a system.

Theory of Society

The theory of social systems presented up to this point is, in Luhmann's view, the most general social theory sociology can produce. It has a formal similarity to the status of the 'action

frame of reference' in the Parsonian *oeuvre*. From at least the early 1970s Luhmann planned this theory as one of two core projects in his research agenda. The other theoretical core project was to conceive a theory of society, society being understood as the most extensive social system including all communications and actions. There is again a formal similarity to the status of the theory of social systems (one of the four boxes in the 'action frame of reference') in Parsons.

Interaction, Organization, Society

To understand the theory of society one has to know that among the immeasurable multitude of social systems there are three types or – as Luhmann calls it – three levels of system formation to which he ascribes special prominence. Luhmann speaks of 'interaction', 'organization' and 'society'.

In the case of interaction Luhmann's theory is very close to Erving Goffman's theory of the interaction order (Goffman 1983; Luhmann 1975a, Ch. 2). Interaction systems only demand physical presence of the participants and a reciprocity of perception. If these conditions are fulfilled a social system among attendant persons will necessarily arise as under these conditions as Watzlawick (1967) demonstrated it is impossible not to communicate. Interaction systems are limited in what they can do and in their duration. They can only process one subject-matter at a time and when the co-presence of participants ends the interaction systems ends, too. But they are very common, they are repetitive and this way crystallize social forms. They account for a significant part of our everyday experience.

Organizations, Luhmann called them formal organizations, define an intermediary level of system formation (Luhmann 1964 and 2000a). They are membership organizations which are based on formalized conditions for entry and exit. As a member, one is bound to the rules of an organization. As autopoietic systems organizations are operationally closed on the level of decisions. At the end everything that happens in an organization comes from a decision or leads to decisions and these decisions have to be attributed to the organization itself.

Society is the most extensive social system, including all interactions and organizations in its purview. Luhmann defines society via communicative attainability and on this basis comes to the conclusion that today there is only one societal system on earth which he calls 'World Society'. That was a provocative thesis, already published in 1971 (Luhmann 1975a, Ch. 4) which for some time neither found much notice nor much disagreement. One may even say that in Luhmann's work despite its early centrality it is somehow underdeveloped (Stichweh 2000 and 2010).

What does the theory of society Luhmann finally published in the year before his death (1997) look like? Over decades Luhmann developed this theory in four big threads. The youngest of these threads which has not primarily been articulated in theoretical terms is related to the subject of self-reference. Society is understood as a system incessantly producing self-observations and self-descriptions. Luhmann has mainly looked at this subject in case studies on the historical semantics of modern society (Luhmann 1980 – 1995 and 1997, Ch. 5).

The other three threads are closely related to Luhmann's theory of meaning (1971). In this theory Luhmann distinguished a social, a temporal and a material dimension of meaning. To these three dimensions are connected the theory of symbolically generalized media of communication (social dimension), the theory of sociocultural evolution (temporal dimension) and the differentiation theory (material dimension).

Theory of Symbolically Generalized Media of Communication

Regarding the social dimension of meaning the most important question seems to be how it is possible to bridge differences of opinion and of interest among participants and on this basis not to aim for consensus but to achieve an acceptance of selections which means at least non-intervention and tolerance. Language, especially language which is made use of in an effective way, is a medium of communication which promises to achieve this. Since Greek and Roman antiquity this was supported by rhetoric as an art, that is as a technique for improving the effectiveness of those intentions which one pursues in communication. The same social function (effectiveness in

communication) was reinvented in modern society several times by symbolically generalized media of communication (Luhmann 1997, Ch. 2).

This is a theory which resumes the theory of exchange media by Talcott Parsons (Parsons 1969, Pt. III). In contrast to Parsons who ascribes to exchange media a special function for mediating input/output-processes between systems, Luhmann analyzes symbolically generalized communication media as mechanisms internal to systems. Such mechanisms arise primarily in situations where you need additional mechanisms of motivation for especially improbable demands to adopt selections. Why, for example, should I accept that another person buys goods which I would like to have myself. Luhmann gave the following answer: In the economy there is the symbolically generalized medium of money. The buyer of much sought-after goods has to hand over a significant amount of money in return. And this functions as a symbol which signals to all other owners of money that their money gives them, too, the freedom to buy at points of time they choose, goods which are still unspecified and which need not be specified yet as money in its generality can be exchanged against any goods. In a similar way but with changing motivational constellations of the participants Luhmann analyzes the other media: Love – I am motivated by being wholly oriented towards the experienced life-world of another person which allows me improbable kinds of attention; Power – I am motivated by the negative sanctions a power-holder controls and which I want to evade; Truth – I am motivated by reliable ways of experiencing the world which science promises and of which I know that others have to share them. This is the basic argumentative figure which is supplemented in Luhmann by a long catalogue of media properties: *binary code structures in media* (beautiful/ugly, true/wrong, lawful/unlawful); *probabilities of inflation and deflation of media symbols*; *mechanisms which connect the media with body perceptions of participants* (sexuality, physical force, physical needs). There are numerous other properties (Luhmann 1975a). It is easily observed that in this theory, handled as a comparative theory of very different media constellations, there is a significant wealth of analytical possibilities, and it should be added that this theory which

Parsons invented is one of the rare cases of radical innovation in social science as this theory is an innovation for which it is difficult to name precursors in classical sociology.

Theory of Sociocultural Evolution

The second significant part of the theory of society looks at *changes of social structures in long-term perspective*. Luhmann does not opt for 'modernisation', 'social change' or 'development' as relevant theoretical paradigms (1997, Ch.3). Instead he early on pleaded for a neodarwinist evolutionary theory. In terms of intellectual history this has been a surprising choice as 'evolution' was for a long time a discredited position in social theory. Donald T. Campbell, an American psychologist and methodologist, was one of the few who since the 1950s persistently tried to revivify evolutionary interpretations of social science problems (Campbell 1988). For Luhmann's approach two factors are important. Firstly, he was fascinated by the idea that chance events can become productive for the formation of social structures. He perceived this idea as the conceptual core of evolutionary theories and it is well adapted to other aspects of his theorizing, especially the centrality of the concept of 'contingency' (which Luhmann interpreted by going back to Scholasticism as double negation of chance and necessity). Secondly, Luhmann saw the main task of an evolutionary research program in a theory of evolutionary mechanisms. This resulted in other problems becoming less prominent in his evolutionary theorizing, especially the question, disquieting for many authors, of whether there exists such a thing as a replication (i.e. identical reproduction) of the elements of social systems (see Sperber 1996 for whom his negative answer becomes the main argument against Neodarwinism). The catalogue of evolutionary mechanisms – variation, selection, stabilization/retention – and the idea of their conceptual centrality Luhmann took from Campbell. His main questions then aimed at the identification of the three mechanisms in different social systems and their sequential interlocking and on the other hand their separation in systems.

On the macrolevel of the theory of society Luhmann locates the variation mechanism in the possibility to say *no* which is given in any communicative situation and which if it is used always

implies the possibility of changed impulses in a system. The selection mechanism consists, according to Luhmann, in the binary codes of the media of communication to which he ascribes the role to sort new meaning elements arising on the basis of negations. The stabilization of selected meaning complexes happens via system formation that is by the differentiation of a (new) system which specializes on the material dimensions of meaning becoming prominent in the selection processes. The stabilization of a system has at the same time the effect that it becomes easier to see where further possibilities of negation and change are located in the reorganized system. This retroactive effect from stabilization to variation demonstrates a circular connectedness of the three evolutionary mechanisms (cf. Weick 1979). In looking at this theoretical construction one perceives that in the internal structural of this evolutionary theory there is an internal representation of the main distinctions of the theory of society. There is one mechanism that stands for the probability of chance, a second mechanism focused on improbable meaning demands, and a third mechanism which reorganizes the material complexity of the world by differentiation processes.

Differentiation Theory

Looking at differentiation theory, the third prominent part of the theory of society, we are near the core of the sociological tradition (1997, Ch.4). The main innovation Luhmann adds to differentiation theory is that he interprets it as a theory of *system formation*. Differentiation processes always produce new system/environment-differences. This differs from the binary logic of splitting up in two new systems which was the Parsonian paradigm. And there is no longer any AGIL-logic which for Parsons provided the guarantee that in differentiation there will always arise exactly four systems which fulfill the four functional imperatives the theory stipulated. For this theorem Luhmann substituted the idea that for the formation of systems in systems there exists only a limited number of forms. Therefore the problem of *changing forms of systems differentiation* becomes the conceptual core of his differentiation theory.

There is first of all *segmentary differentiation*. Segments are to be identified by the sameness of their internal structures and by the equality of their societal importance and rank (kinship groups in a tribal society are an example for this kind of structure). As Durkheim's famous argument postulated in a segmentary differentiated society one can add or take away segments without effecting significant changes in the structure of society.

A second form of societal differentiation which Luhmann added as a result of extensive historical and sociological research having been published is the *differentiation of centre and periphery*. A classical illustration of this form of differentiation is the differentiation of city and country which postulates systematical and institutionalized differences in the control of resources and information. The exact place of this form of differentiation in the systematics of differentiation theory is not entirely clear in Luhmann. It would be difficult to make the argument that centre/periphery is an autonomous form of system formation which brings about new systems with a system/environment-difference of their own. It would be more convincing that centre/periphery functions as an internal structuring in an existent system or a form of interconnectedness among systems which remain separate otherwise. Both interpretations support doubts that centre/periphery is a differentiation form of its own and perhaps reinforce the conjecture *that centre/periphery-differences mainly organize historical transfers between forms of differentiation and/or bridge regions of the world which are characterized by the primacy of different forms of differentiation*.

The third form of differentiation is called *hierarchical differentiation or stratification*. It divides society into social systems (estates, castes, strata) which are distinguished by the inequality of rank. Each of these systems defines for its members a complete life form which does not need other contexts of participation. Of course, there are contacts with members of other strata. All of the traditional high cultures of human history were stratified societies which gives an impression of the historical importance of this differentiation form.

Functional differentiation is by Luhmann postulated as the differentiation form of modern world society. This implies the hypothesis that society today consists of macrosystems for economic relations, politics, law, religion, science and numerous other functional contexts. All of these are global macrosystems of worldwide communicative extension. Among one another they are characterized by extreme social and cultural diversity which excludes any possibility of a rank order among them. What differs from segmentary structures is that all these function systems are indispensable. In one formulation Luhmann called them *self-substitutive orders*. That is if a deficit of money or power or any other functional resource arises in society this can't be substituted for by more religious beliefs or legal decisions. As the hypothesis of the 'functional differentiation of world society' is the central empirical hypothesis of Luhmann's theory of society the future impact of this theory will to a considerable amount be dependent on the influence this hypothesis will have on global sociological theorizing and research.

Impact and Assessment

When Niklas Luhmann started publishing in the 1960s the separation and isolation of sociological schools was not as prevalent as it is today. Therefore there arose an immediate early reception by experts who realized that Luhmann was a new voice with an unusual independence and authority. From the first publications there became visible a breadth of interdisciplinary knowledge and an overview of disparate literatures which nobody else had mastered at this time. And Münster, his first university, was in the midst of the 1960s an excellent place to which the careers of figures as diverse as Niklas Luhmann, Norbert Elias, Hans Blumenberg and of numerous others were tied in significant ways.

In 1971 Luhmann published together with Jürgen Habermas 'Theorie der Gesellschaft oder Sozialtechnologie'. Strangely, this book is still not translated into English, but without doubt it is one of the most important books published in German in the last 50 years. Ever since this book appeared

Luhmann became famous in German speaking countries and his very broad theoretical canvas was attractive to sensibilities very common in Germany. His appeal until today has much to do with the fact that nobody could ever assign him to the political 'right' or the political 'left'. Luhmann's career is a good case study to demonstrate how important this kind of incalculability is for a scholar.

The international reception of Luhmann's writings began after 1971. One can distinguish between Luhmann the sociological theorist and Luhmann the legal scholar. Early on it was often the legal scholar who became well known in other countries, rather than the sociological theorist. There was an early reception in Italy and Spain and in some Latin American countries (Chile, Mexico, Brazil) and in some Asian countries (Japan, Korea, Taiwan, China). The Scandinavian and the Benelux countries came a little bit later but today one finds in most of them an important influence of sociological systems theory. France proved to be a difficult terrain as the sociology of Pierre Bourdieu was always coupled to a strong territorial imperative. The most interesting case is the delayed reception of Luhmann's writings in England and the United States. The most probable reason for this is that in these countries he was perceived as a late follower of Talcott Parsons, and Parsons was thought to have been refuted decisively. In the early 21st century the situation is changing again. Now we observe a much broader diffusion of systems theory in many countries, even the English speaking ones, and the main factor seems to be the ongoing internationalization of the careers of young social scientists which enhances the diffusion of theories if they are prominent in countries from which a significant number of migrants are recruited. Therefore we are still at the beginning of the global impact of the theories of Niklas Luhmann.

There is no place here for an extensive assessment of Niklas Luhmann's works and perhaps this can only be done in detailed discussions of many research problems. Systems theory such as Luhmann took it from Parsons and the cybernetic tradition and gave it a new twist as a non-hierarchical theoretical landscape in a non-hierarchical society today stands out among sociological paradigms because of its sociological universalism, that is not being tied to specific problem situations but trying to be applicable to the whole range of sociological problems from minuscule

micro-contexts to world society, and from long-term historical interpretations of the evolution of human society to the most recent developments in communication practices and technologies. This universalism which is not achieved via a rigorous simplification of the conceptual apparatus (as may be the case in rational choice sociology) but by an inclusive, interdisciplinary and historically informed network of sociological theories which are only loosely coupled under the umbrella of systems theory is probably the greatest attraction of present-day systems theory.

Reader's guide to Niklas Luhmann:

In English translation, a good introduction to Luhmann's thinking is *Ecological Communication* (1990). Some of his early and classical essays from *Soziologische Aufklärung* have been published in *The Differentiation of Society* (1982). Other introductory works are *A Sociological Theory of Law* (1985) which is an excellent introduction to general sociology from the point of view of sociology of law and *Political Theory in the Welfare State* (1990). The two major formulations of his theory are in *Social Systems* (1995) and in *Die Gesellschaft der Gesellschaft* (1997), for which an English publication is currently in preparation through Stanford U.P. For those interested in Luhmann's later focus on self-reference and observation see *Theories of Distinction* (2002). A complete bibliography until 1998 is provided in the journal *Soziale Systeme* (Volume 4, 1998, 233-263).

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