



OXFORD JOURNALS  
OXFORD UNIVERSITY PRESS

---

Insistence on Systems Theory: Perspectives from Germany—An Essay

Author(s): Niklas Luhmann

Source: *Social Forces*, Vol. 61, No. 4 (Jun., 1983), pp. 987–998

Published by: [Oxford University Press](#)

Stable URL: <http://www.jstor.org/stable/2578274>

Accessed: 15/06/2014 10:24

---

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at  
<http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Oxford University Press is collaborating with JSTOR to digitize, preserve and extend access to *Social Forces*.

<http://www.jstor.org>

# Insistence on Systems Theory: Perspectives from Germany—An Essay\*

NIKLAS LUHMANN, *Universität Bielefeld*

---

Germany is not an isolated country, nor is social research in Germany a self-insulating process. Especially after World War II, there has been a strong influx of Western thought, Western methods, Western outlooks. What is fashionable world-wide becomes fashionable in Germany as well. This densely woven net of interchanges makes it difficult to portray German sociology as such. An attempt to do so would result in an artificial abstraction.

Germany, too, has adapted to the post-Parsonian and post-neo-Marxist world by underemphasizing grand theory. Given German traditions, however, this attitude cannot result in simple neglect. Without universalistic theories or general frameworks, sociology will never be fully accepted. Instead it is found to be in a deplorable state. "Pluralism" is the sole formula which integrates. It does not unify the discipline, but at least it pacifies University departments. It remains a white lie.

This general situation makes it difficult to report on German sociology. In fact, Germans realize that the distinct cultural traditions of European nations are on the wane (Tenbruck, a). However, a report from Germany is still possible. Given the widespread feeling that general theory is both essential and unattainable, I shall focus my report, as well as my suggestions, on general theory.

It is only a slight exaggeration to say that those interested in theory avoid theory and turn instead toward the work of authors who have already produced theories. Theory, then, is not seen as something you invent or produce yourself; it is something already available which only needs interpretation and refinement. In Germany at present there is a strong interest in the sociological classics.<sup>1</sup> Sometimes it is a rediscovered Marx or Max Weber, but it may also be Schutz, Mead, to some extent Durkheim and Simmel and now, of course, Parsons. Marx is no longer the dominant figure, if he ever was. But since Marx has his partisans, the other classics must have theirs as well. And since the literature about classics and

\*Revised version of a paper presented at the 1981 meetings of the American Sociological Association.

© 1983 The University of North Carolina Press

the literature about the literature about classics abounds, the situation promotes a new kind of specialization: the specialization in names. The ship of theory is no longer navigated with the aid of a compass, but rather by looking at the figurehead.

The most impressive criticism of this exploitation of authors by authors came from England and found vivid resonance on the continent, particularly in Germany. It is, however, more than 200 years old. And who nowadays reads Edward Young?<sup>2</sup> Today, once again, the brilliance and ambiguity of our classics offer an insurance policy against a lack of work and a lack of ideas. You can do serious scientific work on them, traveling the long and difficult road from Marx to Marx or from Weber to Weber. But this kind of research also has serious drawbacks. It leads to an overestimation of the difference between classical theories, between labels such as action theory, systems theory, functionalism, phenomenology, and between names. But the difference between Karl Marx and Max Weber is, of course, not simply a difference of theoretical conceptions. As a consequence, it offers very little help for theoretical information processing. If we define information, following Gregory Bateson, as a "difference that makes a difference" (315), does this difference between Marx and Weber really make a difference? And what sort of theoretical work can be expected if we start with nothing else but such a difference of names and labels?

The reverse program is not much better. You may look for sameness or conformity in different theories or you may inject liquid elements drawn from other theories into your favorite one: elements from systems theory into Marxism, as is now fashionable in Germany, or elements from Habermas and Parsons into the historical sociology of Max Weber, as Wolfgang Schluchter (a) tries to do.<sup>3</sup> You acquire a larger estate by buying up contiguous fields. Theories, then, can be rewritten in more general terms. But this is only one of several styles of generalization. An alternative, and this is my preference, would be nomadic behavior, searching all fields for deep sources.

Textbooks and university courses generally use the names and the works of classic authors to represent the history of the discipline. And to a large extent they use history to represent theory. This approach reduces complexity in a highly misleading way. History can regain life not as a history of names, but only as a history of distinctions, such as, for example, community/society, cooperation/competition, technical/practical action, formal/substantive rationality, system/environment, variation/selection. Distinctions may be used to look for a common *Problemstellung*, e.g., the famous Hobbesian problem of social order. Problems orient functional analysis. Starting with names leads to largely futile exegetical exercises. Starting with distinctions just might lead to the abstraction of theory.

## I

## THREE PATHS OF INQUIRY

Now, given the predominant mode of working with theories in Germany, what are the identifiable results? I shall limit my report to three points: (1) the theory of sociocultural evolution, (2) the interpretation of phenomenology as a science of everyday life, including the everyday life of science, and (3) the action/system complex.

*The Theory of Sociocultural Evolution*

There is an increasing interest in *historical sociology* and the theoretical focus has been on what is called evolution.<sup>4</sup> The concept of sociocultural evolution has not been developed within the framework of sociobiology. Thus, society and culture are not seen simply as adaptive devices of the human animal. They are not taken to be one late *branch* of the general evolution of organisms, but are seen as evolving on a different *level*.<sup>5</sup> The question of how to conceive of this level remains open. Habermas would describe it as a reality *sui generis*, as culture, as the realm of self-realization of the human being; and he hopes to be able to show that rules of human development also apply to this level. I myself would rather use systems theory and describe the system of society as evolving from the noise human beings produce when trying to communicate.<sup>6</sup> A further choice would be whether to apply a kind of developmental logic in the sense of Piaget and Kohlberg or to use a neo-Darwinian framework, distinguishing variation, selection, and retention, filling in cybernetic ideas of morphogenesis and self-organization. The final test, of course, will be which kind of conceptual design offers better access to historical facts and, in particular, to the history of ideas.

*Phenomenology as a Science of Everyday Life*

My second point: *Phenomenology* has been reimported from the United States. These wanderings from Germany to the United States and back again have completely changed the content of this scientific approach. It no longer teaches us about the appearance of the spirit within the world (Hegel) or about the appearance of the world within the consciousness of the subject (Husserl). It has become instead a science of everyday life, emphasizing subjective perceptions, articulations, and formulations in normal interactions (see Bergmann; Hammerich and Klein). This is more than merely a deplorable misunderstanding. The topic of everyday life itself has a long tradition, pointing to presuppositions underlying semantic differences or artificial distinctions. You might have a look at the letter Descartes wrote to Princess Elisabeth on 28 June 1643 concerning the way to conceive of the difference of mind and body in philosophy and in everyday life.<sup>7</sup> In

the eighteenth century, starting with Claude Buffier in France and with the Scottish moral philosophers, attempts were made to solve the riddles of a theory of cognition by recourse to common sense and to the evidence of everyday life (see Grave). This was never anything like phenomenology. What we can observe today, as a result, is a fusion of two quite distinct traditions.<sup>8</sup> Both of these traditions are highly critical of the artificial abstractions of modern life, which nevertheless happen to be precisely the structures that support and reproduce the modernity of modern society. Apparently, there is a hidden question behind this phenomenology of everyday life. It asks how the semantic and social structures of modern life are possible as facts of everyday behavior. There are several ways to state this difference of modern conditions and everyday life—the difference, for example between science and life-world. There is no way to answer this question—except by recourse to a theory of evolution which tries to explain how a highly improbable order becomes possible.

#### *Action and Systems Theory*

My third and last case relates to the *distinction of action and systems*. Whereas Parsons had good reasons to claim that the concepts of action and system should and could be integrated within the framework of a general theory of action systems, recent developments fall back on just this distinction of action and systems, trying again to focus on different theories, resuscitating controversies, reviving classical authors without being able to understand the intricacies of the Parsonsian theory design. This trend can hardly count as progress. It is rather a regression from complex to simple theories. Most protagonists of action theory assert that the concept of action relates to a subjective point of view, to the intended meaning of action. They think of systems, on the other hand, as objective constraints on action, as limits to freedom. The issue is reduced to the distinction of subject and object without attention being given to the fact that every serious theoretical approach (including phenomenology) tries to overcome just this distinction. A recent discussion seems to replace the difference of subject and object by the difference of action and structure.<sup>9</sup> This means de-individualizing (and de-Weberizing) the concept of action. It remains an open question how the unit of action can be defined, if not by referring to the intention of the actor. Using attribution theory would be one possibility, using event-structure approaches (Floyd Allport, Whitehead) would be another one. Neither has found its way into German sociology.

These three foci of discussion offer quite different degrees of access to one of the traditional tasks of sociology, the interpretation of modern society. Action theory and the phenomenology of everyday life tend to use microsociological conceptualizations. We can observe an increasing awareness—and even denial—of this limitation (see Opp); and it certainly serves as a strong motive for the new mixed theory games. Only the theory of

evolution has a natural inclination to provide concepts suitable for understanding modernity. It lacks, however, predictive power. It suffers from an unclear relation to planning and from dissatisfaction with modernization theories. In a way, the situation could be described as waiting for Marx. But, of course, the conditions of historical successes do not recur.

The situation does not look very encouraging if we stay at this level of theoretical reasoning. But before trying to indicate larger and more promising perspectives, I wish to deliver a second report, looking at sociology as a system within a system, as a subsystem of science.

#### THE PROBLEM OF CLOSURE AND OPENNESS

Germans use the concept of science (*Wissenschaft*) in a very broad sense. It includes the humanities, education, history, law, theology and so on. Within this general field, which comprises everything that is taught at the Universities, we find a kind of interdisciplinary commerce. Ideas are imported and exported and reimported. Concepts in one science become metaphors in another. The mathematical notion of catastrophe, for example, seems to have a special appeal for political scientists and sociologists. Serious work in one discipline feeds inflationary trends in others. There are underdeveloped areas like pedagogy which nourish themselves from foreign sources, and there are others whose resources are used and misused without sufficient control.

In this kind of business, sociology gives more than it accepts; it gives even more than it has; it exports on credit. The language of sociology seems to compensate for theoretical weaknesses in other disciplines. It gains influence on education, law, history, and even theology, philosophy, and the theory of science.<sup>10</sup> In what we call legal science, we can observe a strong movement called "alternative jurisprudence." A social science bias is its distinguishing mark. Some sociologists—or rather antisociologists like Helmut Schelsky and Friedrich Tenbruck (b)—see this situation as the result of the expansive politics and unfounded pretensions of sociology itself. To them, sociology seizes on the role of defining social reality for society. The sociological community, in general, rejects such contentions as unfounded<sup>11</sup> and, in fact, the increasing inclination to do research on its own classics is a symptom of withdrawal and self-reference rather than of an imperialist tendency to dominate others.

However, the problem is not so much whether sociology tries to influence other disciplines. The really upsetting question is, rather, why sociology is unable to learn from others. When at the beginning of this century sociology was fighting for independence and autonomy, it was useful to draw distinctions, to mark off a proper field of research, to maintain that social facts are special objects of research, and so on. Social philosophy as well as biology and psychology were labeled off limits. But

this is no longer our situation. Today there seems to be a rather stable correlation between a paucity of theory and the self-referential closure in our discipline. Other disciplines may feel inclined to use and misuse sociological terminology, but sociologists themselves are not able to translate and incorporate theoretical designs from other disciplines. Recent and exciting developments in microbiology, the theory of evolution, cybernetics, the theory of information, all of which develop many cross-references and seem to attain a high degree of integration, go unnoticed. We talk of human subjects as if there were no theory of self-referential systems, of autopoiesis, of autonomy. We use the idea of causal relations as if there were no attribution research. We relate meaning to subjects as if there were no theory of information.

It is interesting to see how Parsons was able to handle suggestions from biology, psychoanalysis, linguistics, and cybernetics within his own theoretical framework. There is no other such example, and the decline of Parsonsianism means, for sociology, also the loss of this particular balance of theoretical closure and interdisciplinary openness. The revival of classics can be of no help in this situation. On the contrary, it makes it worse. It provides *closure without theory* and therefore *without openness*. We need general theory to combine self-referential closure in our discipline with a sensibility for information and a capacity for vicarious, secondhand learning. So far as I can see, systems theory is the only serious candidate.

## II

Looking back at the past few decades, we find within general systems theory two important changes of leading paradigms. First, the distinction of the whole and its parts was replaced by the *distinction of system and environment*. Second, the concept of *self-referential systems* was used to replace the older input/output analysis of so-called open systems.

In both cases the new paradigm was meant to incorporate the old one. The distinction between system and environment reconstructs the outdated distinction of the whole and its parts using a theory of system differentiation. System differentiation, then, means *creating an internal environment* for further system building. The concept of a self-referential system reconstructs the difference between system and environment as part of the internal processes of self-reference. The system continually refers to itself by distinguishing itself from the environment. This is done not only by drawing and maintaining boundaries which can be crossed occasionally. The self-referential system is a self-reproducing or "autopoietic" unit, itself producing the elements which compose the system, and this requires the capacity to distinguish elements which belong to the system from elements which belong to the environment of the system. The distinction

between system and environment is, therefore, constitutive for whatever functions as an element in a system. It is not the actor who produces the action. The meaning of the action and therefore the action itself is due to the difference between systems and environment.<sup>12</sup> If we think of actions as elements, the relevance of this general theory for action systems and for social system will be easy to guess.

This concept of autopoietic social systems solves the problem of de-individualizing action. Actions are not produced by subjective motives or intentions. They are produced by the system of cross-references between these actions themselves. Actions are events. They begin to vanish as soon as they emerge. If they give no sufficient cues to further actions the system ceases to exist. It is the patterned arrangement of possible combinations and possible perturbations that makes it possible to reproduce the system by linking action to action, by replacing the vanishing action-events by others which seem to fit the constellation. And it is only in case of doubts or questions of responsibility or control that we have to look for motives or intentions (whatever the corresponding psychic realities may be).

A second theoretical development uses and redefines the notions of *complexity* and *meaning*. The term complexity is left undefined by many authors.<sup>13</sup> By others it is used as a measure of our incapacity to know what is going on (see Atlan; Löfgren; Pardi and Lanzara). I propose to define complexity as a measure of the incapacity of a system to relate each element to every other one, be it in the system itself (system complexity) or in its environment (environmental complexity) (see Luhmann, a). Given this usage, the term complexity points to the internal selectivity of all relational combinations of elements. Complexity means the necessity of selective relations and, since relations specify what elements are possible within the system, complexity also means contingent elements. The analysis of complexity leads back to the notion of self-referential, self-organizing systems.

Enforced selectivity—this is the meaning of meaning too. The core content of what comes to be experienced as meaning consists of an actually given focus which radiates—Husserl would say: shades off—into further possibilities of experience and action. This can be shown—I would even say, can be proved—by phenomenological analysis. Meaning is this difference of actuality and potentiality. And only because this difference can make a difference does information processing become possible. We can, however, never pursue all the possibilities indicated. We have to select what to think, what to see, what to do next. We can retain and reproduce actualized meaning only through selection. This is the fundamental fact which, surrounded by noise, tends to stimulate morphogenetic processes, developing structured systems.

Since complexity and meaning converge on the fact of unavoidable selectivity we are able to integrate both theoretical frameworks. *Complexity* (the core problem of the *technical sciences* including the theory of decision-

making, the theory of planning and systems engineering) and *meaning* (the core problem of *humanistic sciences and hermeneutic methods*) are only different expressions of the same fundamental problem of order. Solving this problem requires a continuous organization of selective processes. Meaning, then, can be conceived as representation of complexity on the higher levels of evolution, as an evolutionary universal. Systems like persons and social systems which rely on meaning for coping with complexity become by this very fact hypercomplex systems because they introduce into complex systems a representation of their own complexity.

Such a proposal is not needed for putting an end to the controversies between positivists and dialecticians, or between scientists and humanists in sociology. These big controversies, which have been so characteristic of German sociology, are fading anyway. Perhaps internal conflicts are no longer a convincing substitute for societal relevance. Perhaps the traditional resources are exhausted. Perhaps an increasing input of analytical reasoning increases the complexity of these issues. However, it may not be unimportant who delivers the coup de grâce and how. Without integrating perspectives, without *Aufhebung* in the Hegelian sense, the problems will be dropped but not developed.

The theoretical developments which I have sketched here may change the relationship between general systems theory and sociology. The turn towards a theory of self-referential systems shifts the focus of systems theory from control to autonomy (see Varela). The guiding interest is no longer how to control systems, how to plan and implement changes, or how to overcome resistance. The main problem is rather to understand how a system can manage its own reproduction within an environment which is not in itself attuned to the requirements of the system; or in other words, how a system can transform noise into information which keeps in motion the self-referential network of internal processes. The link between the problem of complexity and the problem of meaning likewise contributes to an elimination of the technological bias of systems theory. Unlike Parsonsian theory, it attempts to include the theory of action as a special case, based on a special type of element, within the general framework of systems theory.

These are, of course, only highly abstract preconditions for tackling the special problems of social systems. The genesis of social systems requires a special kind of complexity which has been called "double contingency." This means, to quote Parsons, "that each actor is *both* acting agent and object of orientation *both* to himself and to the others" (b, 436). We can again use more general terms to reconstruct this notion. All self-referential systems require elements which refer to themselves by choosing the way in which they relate to others. They require a multitude of elements with recursive capacities. In this sense, we can, following Stein Bråten, speak of "mutualistic" constitution as the basic self-referential

process (658). Social systems arise if actions of different persons relate to themselves through others, taking the difference between ego and alter as the difference that offers the possibility of perceiving and processing information.

It is not possible, at this point, to start tracing the outlines of a general theory of social systems. I have reasons to feel rather optimistic, but I cannot present sufficient arguments on this occasion.<sup>14</sup> I will conclude, however, with a few remarks concerning epistemological foundations. The question is: should sociology, in doing its own research, follow the rules of science? We are inclined to say: of course. But who establishes these rules if not sociology itself, since science itself is a social system?

Here again, remarkable changes are taking place and are transforming the intellectual foundations of the theory of science and of what has come to be called the theory of cognition, or epistemology. We can observe in different disciplines a shift from transcendental or aprioristic to empirical or inductive foundations. Epistemology is becoming "naturalized," so to speak (see Varela, 261). This change does not result from philosophic speculation. It is an unavoidable consequence of the scientific theories now in use. We cannot use a theory of evolution and deny the fact that this theory applies to science itself. We cannot use a theory of social systems without becoming aware of the fact that in terms of this theory science itself is a social system. What we do reappears then as one of the many objects of our doing. Biology, neurophysiology, and cybernetics have also noticed this kind of self-reference (see, for example, Campbell; Knorr; Luhmann, d; McCulloch; Maturana; von Foerster). The phenomenological concept of "life world" means nothing else.

This increasing recognition of self-implication should not be confused with the well-known possibility of doing sociological research about sociology. The problem of self-reference is no longer limited to a special field and the issue at stake is not only the difficulty of retaining distance, neutrality, and objectivity while examining our own discipline. It is not at all a question of choosing or avoiding this rather touchy subject. We are faced with an unavoidable consequence of using universal theories. These theories reappear as objects within their own domain. We can, of course, avoid the formulation of universal theories, but this would mean that we abandon the idea of the unity of our discipline.

Biologists with an interest in life, psychologists with an interest in consciousness, sociologists with an interest in social order, are at present and will perhaps remain exceptions rather than the rule. But they at least have to accept, despite many logical and methodological warnings, types of theory which imply self-reference. This leads to the construction of self-referential objects and commits them to seeing reality in terms of self-reference.

This is not meant as a demonstration of German profundity. The

research to which I refer is in the main not German. The intellectual climate in Germany, however, remains open for the discussion of problems of general theory. At least, such an interest is preserved as a recognized speciality. It has lost much of its earlier reputation. However, it does not have to surmount anything like an anti-Parsonian stance. I was able to observe Parsons during the last days of his life in Germany participating in a seminar on sociological theory. (The papers of this seminar are published in Schluchter, b.) He seemed to enjoy this openness and this interest. "Strenuous but rewarding" was his comment. And I think we can generalize this comment to characterize work on problems of general theory: strenuous but rewarding.

## Notes

1. And not only in Germany! The "contemporization" of the founding fathers seem to be a general phenomenon (see Robertson, 4).
2. For Young's influence on German literature see Kind (11ff.). In adapting these ideas to our times, of course, we have to replace the original relation to *nature* with an original relation to *problems*.
3. In fact, the tendency to mix and combine theories of different origins is rather common in Germany and seems to be an easy way to innovation. Hondrich gives further examples.
4. The theoretical discussion at the Kassel meeting of the Deutsche Gesellschaft für Soziologie, centered on the idea of evolution as a focus for the comparison of different brands of theory. See Lepsius. Further works: Habermas; Lau; Luhmann (b, c).
5. In the United States this seems to be an open question. See Parsons (a, c) on the one hand and, for example, Alexander, on the other.
6. For a discussion of these points see the contributions of Habermas and myself.
7. "... c'est en usant seulement de la vie et des conversations ordinaires, et en s'abstenant de méditer et d'étudier aux choses qui exercent l'imagination, qu'on apprend à concevoir l'union de l'âme et du corps."
8. Philosophers, of course, remain aware of this difference (see Sommer).
9. Consider the papers of Joas and Prewé in Schulte (3–19).
10. For a discussion of this influence see Bellebaum.
11. See, on an important occasion, Matthes.
12. See Parsons' decomposition of the unit act into actor and situation (cf. Lidz).
13. For a brief overview and comments on different versions of this concept see Sahal.
14. For some preliminary work see Luhmann (c).

## References

- Alexander, Richard D. 1979. *Darwinism and Human Affairs*. Seattle: University of Washington Press.
- Atlan, Henri. 1979. *Entre le cristal et la fumée: Essai sur l'organisation du vivant*. Paris.
- Bateson, Gregory. 1972. *Steps to an Ecology of Mind*. San Francisco: Chandler.
- Bellebaum, Alfred. 1981. "Soziologische Aufklärung?" In *Soziologie: Mitteilungsblatt der Deutschen Gesellschaft für Soziologie* (1).
- Bergmann, Werner. 1981. "Lebenswelt, Lebenswelt des Alltags oder Alltagswelt." *Kölner Zeitschrift für Soziologie und Sozialpsychologie* (33):50–72.
- Bråten, Stein. 1978. "Systems Research and Social Systems." In Georg J. Klir (ed.), *Applied General Systems Research: Recent Developments and Trends*. New York: Plenum Press.

- Buffier, Claude. 1724. *Traité des premières vérités et de la source de nos jugements*. Paris: Mauge.
- Campbell, Donald T. 1974. "Evolutionary Epistemology." In Paul Arthur Schilpp (ed.), *The Philosophy of Karl Popper*. Vol. 1. La Salle: Open Court.
- Descartes, René. 1952. *Œuvres et lettres*. Paris: Gallimard.
- Foerster von, Heinz. 1977. "The Curious Behavior of Complex Systems: Lessons From Biology." In Harold A. Linstone and W. H. Clive Simmonds (eds.), *Futures Research: New Directions*. Reading: Addison-Wesley.
- Grave, R. S. A. 1960. *The Scottish Philosophy of Common Sense*. Oxford: Clarendon.
- Habermas, Jürgen. 1979. *Communication and the Evolution of Society*. Boston: Beacon Press.
- Habermas, Jürgen, and Niklas Luhmann. 1976. "Evolution und Geschichte." *Geschichte und Gesellschaft* (2):284–357.
- Hammerich, Kurt, and Michael Klein (eds.), 1978. *Materialien zur Soziologie des Alltags*. Special Issue 20 of *Kölner Zeitschrift für Soziologie und Sozialpsychologie*. Opladen: Westdeutscher Verlag.
- Hondrich, Karl Otto. 1979. "Thesen zur soziologischen Theorie in der Bundesrepublik seit 1975." In Günter Lüschen (ed.), *Deutsche Soziologie seit 1945*. Special Issue 21 of *Kölner Zeitschrift für Soziologie und Sozialpsychologie*. Opladen: Westdeutscher Verlag.
- Kind, John L. 1966. *Edward Young in Germany*. New York: AMS Press.
- Knorr, Karin. 1981. *The Manufacture of Knowledge*. Oxford: Pergamon.
- Lau, Christoph. 1981. *Gesellschaftliche Evolution als kollektiver Lernprozeß*. Berlin: Duncker & Humblot.
- Lepsius, M. Rainer (ed.). 1976. *Zwischenbilanz der Soziologie, Verhandlungen des 17. Deutschen Soziologentages*. Stuttgart: Emke.
- Lidz, Victor M. 1976. "Introduction." In Jan J. Loubser et al. (eds.), *Explorations in General Theory in Sociology: Essays in Honor of Talcott Parsons*. Vol. 1. New York: Free Press.
- Löfgren, Lars. 1977. "Complexity Descriptions of Systems: A Foundational Study." *International Journal of General Systems* (3):197–214.
- Luhmann, Niklas. a:1975. "Komplexität." *Soziologische Aufklärung*. Vol. 2. Opladen: Westdeutscher Verlag.
- . b:1980/81. *Gesellschaftsstruktur und Semantik*. Vol. 1, 2. Frankfurt: Suhrkamp.
- . c:1981. *Soziologische Aufklärung*. Vol. 3. Opladen: Westdeutscher Verlag.
- . d:1981. "Die Ausdifferenzierung von Erkenntnisgewinn: Zur Genese von Wissenschaft." In Nico Stehr and Volker Meja (eds.), *Wissenssoziologie*. Opladen: Westdeutscher Verlag.
- McCulloch, Warren S. 1965. *Embodiments of Mind*. Cambridge: MIT Press.
- Matthes, Joachim. 1981. "Soziologie: Schlüsselwissenschaft des 20. Jahrhunderts." *Lebenswelt und soziale Probleme: Verhandlungen des 20. Deutschen Soziologentages*. Frankfurt: Campus.
- Maturana, Humberto. 1970. "Neurophysiology of Cognition." In Paul Garvin (ed.), *Cognition: A Multiple View*. New York: Spartan Books.
- Opp, Karl Dieter. 1978. *Theorie sozialer Krisen*. Hamburg: Hoffmann & Campe.
- Pardi, Francesco, and Giovan Francesco Lanzana. 1980. *L'interpretazione della complessità: Metodo sistemico e scienze sociali*.
- Parsons, Talcott. a:1966. *Societies: Evolutionary and Comparative Perspectives*. Englewood Cliffs: Prentice-Hall.
- . b:1968. "Interaction: Social Interaction." In *International Encyclopedia of the Social Sciences*. Vol. 7. New York: Macmillan.
- . c:1971. *The System of Modern Societies*. Englewood Cliffs: Prentice-Hall.
- Robertson, Roland. 1978. *Meaning and Change: Explorations in the Cultural Sociology of Modern Society*. Oxford: Blackwell.
- Sahal, Devendra. 1976. "Elements of an Emerging Theory of Complexity per se." *Cybernetica* (19):5–38.
- Schelsky, Helmut. 1975. *Die Arbeit tun die anderen: Klassenkampf und Priesterherrschaft der Intellektuellen*. Opladen: Westdeutscher Verlag.

- Schluchter, Wolfgang. a:1979. *Die Entwicklung des okzidentalen Rationalismus*. Tübingen: Mohr (Siebeck).
- . (ed.). b:1980. *Verhalten, Handeln und System: Talcott Parsons' Beitrag zur Entwicklung der Sozialwissenschaften*, Frankfurt: Suhrkamp.
- Schulte, Werner (ed.). 1981. *Soziologie in der Gesellschaft*. Referate der Sektionsveranstaltungen des 20. Deutschen Soziologentags Bremen 1980. Bremen: Universität.
- Sommer, Manfred. 1980. "Der Alltagsbegriff in der Phänomenologie." In Dieter Lenzen (ed.), *Pädagogik und Alltag*. Stuttgart: Klett-Cotta.
- Tenbruck, Friedrich H. a:1979. "Deutsche Soziologie im internationalen Kontext: Ihre Ideengeschichte und ihr Gesellschaftsbezug." In Günter Lüschen (ed.), *Deutsche Soziologie seit 1945*, Special Issue 21 of *Kölner Zeitschrift für Soziologie und Sozialpsychologie*. Opladen: Westdeutscher Verlag.
- . b:1980. "Die unbewältigten Sozialwissenschaften." *Zeitschrift für Politik* (27):219–30.
- Varela, Francisco J. 1979. *Principles of Biological Autonomy*. New York: North-Holland.
- Young, Edward. 1854. "Conjectures on Original Composition" (1759). In *The Complete Works*. Vol. 2. London: Reprinted Hildesheim (1968) Olms.