



**TEORIE VĚDY**  
**/ THEORY OF SCIENCE**



**DOES SYSTEMS DIFFERENTIATION PRESENT A RISK  
FOR CONTEMPORARY SOCIETY?**

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***Abstract***

*For Niklas Luhmann modern society is a functionally differentiated society, i. e. it is composed of heterogeneous but equal parts which are relatively independent and are defined as social subsystems. Luhmann's analysis presents contemporary society as a whole differentiated into functionally dependent yet autonomous sub-systems that constitute neighbouring worlds for each other. This raises the question of the existence or non-existence of potential unifying forces or integration mechanisms. In Luhmann's view the main problem is the non-existence of means of "metacommunication". The development of specialised media and codes in the individual sub-systems increases the overall complexity of the social system, but does not entail the metacommunication that would make possible the self-observation and self-reference of the social system as a whole.*

**Keywords:** *systems differentiation; subsystems; self-reference; media; codes; risk; supervision*

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The majority of sociological conceptions are characterized by an understanding of society as a unity, as a whole, which is organized on the basis of some unifying principles.<sup>1</sup> Unlike his predecessor Talcott Parsons, Niklas Luhmann does not foreground the question of systems integration, but the question of differentiation. Developing the idea of social differentiation formulated long ago by Herbert Spencer, he regards the process of system functional differentiation as key for modern society, which he argues is composed of heterogeneous but equal parts that are relatively independent in character and are termed societal partial systems (*Teilsysteme*; subsystems, systems within systems). Luhmann nowhere in his work offers a comprehensive list of these partial systems, but it is clear that there must be at least ten. They include the economy, politics, law, the army, science, arts, religion, the mass media, education, the health system, sport, the family and intimate relations.

The essential thing is that each of these systems has its own peculiar functional specialism for a certain specific field of actions that take place within it (economic behaviour is something other than religion or intimate relations etc; a different meaning and purpose is attributed to each of these kinds of actions). Each of these partial systems contributes in a different way, with regard to its own functional specialisation, to the

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<sup>1</sup> One of the first thinkers to question this idea was Daniel Bell in the book *The Cultural Contradictions of Capitalism* (New York: Basic Books 1976), in which he expressed the view that contemporary society cannot be understood properly in this way. Against the so-called holistic approach Bell opposes his own conception which is established on the idea of a split into societal spheres. In this conception society is more divided than united. It is described as an unstable alloy of three different elements, three different spheres: techno-economical structure (or the economy), political system and culture. The relations among these three spheres are – according to Bell – complicated and they are changing in time. Individual spheres are mutually incompatible; they lie under different axial principles, and have different rhythms of change. Bell claims that disharmony among these three spheres is a source of societal contradictions which are connected with many latent conflicts. In a similar vein, and actually more radical in his thinking about society, is Luhmann.

reproduction of society. Despite their heterogeneity the subsystems are equal in the sense that they are all essential for this reproduction and one might say irreplaceable if society is to maintain its character.

The mutual unity of these subsystems is formed by relations based on the combination of their functional closure and at the same time openness towards the environment. This means that modern society represents a differentiated unity, i. e. a whole composed of functionally dependent (i. e. dependent on the functions of other systems), and at the same time autonomous, partial systems. Autonomy and dependence are here in a mutually potentiated, stepped relationship (partial systems have become independent but the collapse of one may have fatal consequences for the societal system as a whole).

Societal systems are self-referential, which means that in the constitution of their elements, operations and structures they refer and relate to themselves. Although they are systems that are closed in terms of structure and reproduction, this does not mean that they cannot and do not create contacts with their surroundings. Indeed, without these contacts the dynamic of operationally closed systems would cease to exist: for example, a university as a system can exist only against the background of a functioning economy, political system, legal system etc. In no way does the outside world represent some meaningless residual category. On the contrary, for systems the relationship to surroundings is constitutive and systems can only endure in their existence in differentiation from that outside world.

The condition of the existence of social systems is communication. Systems create for themselves mechanisms, the purpose of which is to stabilise communication processes. Luhmann calls these mechanisms media. Luhmann's concept of symbolically generalised communication media cannot be narrowed down to the mass media as generally understood, because it also relates to media such as power, money, laws, faith or knowledge. Luhmann considers one of the main marks of social evolu-

tion to be the differentiation of separate communication fields such as politics, the economy, law, religion, science, but also education, art and intimate relations, together with the communication media corresponding to them.

The communication made possible by these media in the separate subsystems always takes place in a certain binary code (e. g. in the political system: to have power – not to have power, in the economic system: paid – not paid, in the legal system: law – lawlessness, in science: truth – falsehood), in religion: immanence – transcendence). Thanks to these binary codes, which always express a particular type of single leading difference, specific subsystem semantics are created in which the autonomy of the different systems is based on the application of its own system's leading difference. For example, the differentiation of the economy as an autonomous societal subsystem starts with the establishment of a symbolically generalised communication medium – the development of money.<sup>2</sup> The elements of economics (*unit acts*) are payments, the binary code of paid/unpaid, and prices, which condition and programme payments, represent the language.

Overall the logic of the functioning of the different systems is such that it has the character of a narrowed one-sided view based on a highly specialised binary code through which operations in the system concerned are controlled. On the basis of its own observations each partial system creates its own picture of society (what the legal system observes, for example, is nothing other than society but society seen through the application of the distinction: laws – lawlessness). As a result of their accepted binary schematisations, therefore, the individual systems can only see what these schematisations allow them to see, and not what they do not. The unified

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<sup>2</sup> Niklas LUHMANN, *Die Wirtschaft der Gesellschaft*. Frankfurt am Main: Suhrkamp 1988, p. 230.

picture of society fragments into these partial observations and instead of a centrally conceived world a multicentric world emerges.<sup>3</sup>

From the perspective of Luhmann's systems theory we can look at nature, for example as physical, chemical and biological systems and connections the existence of which is a precondition for the functioning of the societal system. Luhmann links the way in which the different social subsystems are able to perceive ecological threat and risk with the expression "resonance", and comes to the conclusion that the problem of contemporary functional differentiation is that what is taking place in surrounding systems has too little resonance. If in the economic system the processing of information is bound to prices that mean that everything is "filtered" by this language and that the economy cannot react to breakdowns that cannot be expressed in this language. This limitation is not necessarily just a disadvantage, for it guarantees that if a problem is expressed in prices then it will be processed in the system.<sup>4</sup> Just as the economy sees its surrounding world selectively – through its own codes and programmes – so too do the other partial systems. As a result all kinds of interactive effects may arise between the different subsystems, which may dampen the resonance but may also disproportionately increase it, and so cause all sorts of social breakdowns. Thus paradoxically there may be too much resonance created in the social system as well as too little. Luhmann demonstrates that we cannot take for granted that the states of and changes in the environment will find adequate resonance in society.

Despite the self-referential communication closure of the different societal subsystems, it is not true to say that these sub-systems operate only in their own worlds and independent of each other. On the contrary, all kinds

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<sup>3</sup> Niklas LUHMANN, *Soziale Systeme: Grundriß einer allgemeinen Theorie*. Frankfurt am Main: Suhrkamp 1984, p. 284.

<sup>4</sup> Niklas LUHMANN, *Ökologische Kommunikation: Kann die moderne Gesellschaft sich auf ökologische Gefährdungen einstellen?* Opladen: Westdeutscher Verlag 1986, p. 122.

of structural bonds (*Kopplungen*) exist between them. At the same time, however, this self-referential closure means that for systems analysis modern polycontextual society can no longer represent a substantially comprehensible unity (as was still the case with Parsons). According to Luhmann the character of contemporary society is created by the existence alongside each other of a range of different subsystems between which all kinds of structural bonds form, but to look for some overall systems integration of the whole societal system in the sense of co-ordination or direction of this complex network from some controlling centre is an empty and unjustified exercise.

Luhmann's multicentric theory of the world surprisingly corresponds with the diagnosis of post-modern thinkers such as Jean-François Lyotard,<sup>5</sup> who is developing Wittgenstein's theory of language games (*Schprachspiele*). According to this theory communication has effect within various kinds of discourses (religion, arts, science...), which are heterogeneous, and mutually untranslatable. There are no universal rules determining which kind of discourse should have priority. It is a situation of radical plurality that cannot be understood and perceived on the grounds of one model.

The affinity between Luhmann's theory and postmodernism is affirmed by Zygmunt Bauman, who points out the need to revise our understanding of the way in which various elements of human community, diverse activities and life processes, or various regulative ideas, conceptions and perceptions, interlock with one another and by which they enter into interaction and cooperative relation. Bauman considers it necessary to admit that "systemness" does not rest on the mutual balancing and adjustment of system elements, on the creation of formulas of such levelling and in effect the elimination of all departures from those formulas, but that it more likely created as a kaleidoscopic picture based on the game of antagonism, strain and ambivalence, arguing and disputes, understanding and mis-

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<sup>5</sup> Jean-François LYOTARD, *O postmodernismu*. (The Postmodern Condition). Praha: Filosofický ústav AV ČR 1993.

understanding. Thus the indefiniteness and ambiguity of communicating elements is not a manifestation of the system illness but the condition of its vitality.<sup>6</sup>

Luhmann's analysis presents contemporary society as a whole differentiated into functionally dependent but autonomous partial systems that represent surrounding worlds for each other. This logically raises the question of the existence or non-existence of possible unifying forces or integrating mechanisms.

The concept of the division of labour dominated the history of the systems approach from Emil Durkheim to Talcott Parsons. According to this tradition different areas co-operate in a common whole, rather as different departments co-operate in a company. If a major deviation or breakdown occurs in one of the co-operating parts, the central regulating mechanisms (whether consciously or as it were instinctually) try to remove the fault and re-establish proportional mutual co-operation between the individual parts. Luhmann, however, sees this problem in a rather different light. He comes to the conclusion that "a functionally differentiated society operates without a top and without a centre".<sup>7</sup> Each subsystem has a tendency to self-realisation combined with a certain "indifference" to what is taking place in the surrounding systems (for example the economic system is orientated towards the economic view regardless of whether it is valuable to it, or beneficial from the point of view of art, health or family).

Here the question logically arises of how social order is possible in conditions where there can be no reliance on general social "solidarity" no shared goal of action, and no inter-system consensus. The German sociologists Georg Kneer and Armin Nassehi interpret Luhmann's standpoint simply as the assumption that order arises spontaneously through social

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<sup>6</sup> Zygmunt BAUMAN, *Úvahy o postmoderní době*. (The Considerations about the Postmodern Time). Praha: Sociologické nakladatelství 1995, p. 20.

<sup>7</sup> Niklas LUHMANN, *Die Gesellschaft der Gesellschaft*. Frankfurt am Main: Suhrkamp 1997, p. 802.



systems operating within the boundaries that they have created. In other words, the different operations of different systems align themselves next to each other and so order is automatically constructed without any shared perspectives or agreement on common goals, norm or values being necessary.<sup>8</sup> The fact that the order comes into being spontaneously does not, however, mean that it is problem-free. Functional differentiation does not mean that the different parts of society no longer have anything to do with each other, but more that they find themselves in a tense relationship.<sup>9</sup>

Conclusions of this kind offer practically no hope of finding an approach to the self-reference of the societal system as a whole, but even today there are theorists who have not given up the enterprise. For many years the German sociologist Richard Münch has been formulating his own systems theory in opposition to Luhmann.<sup>10</sup> Unlike Luhmann he admits the possibility of the mutuality of the subsystems and develops the idea of their intersection. Münch believes that the possibility of solving the problem of their “co-ordination” can be found precisely in the zones of inter-penetration of these systems. For Luhmann this possibility is out of the question because as a result of the differentiation of codes and programmes the individual systems essentially cannot understand and “grasp” each other.

A path away from Luhmann’s theory but different to Münch’s has been advanced by Helmut Willke, who has tried in a striking way to modify earlier ideas on the leading role of the political system. Helmut Willke does not speak of the necessity of integration but of the need for “supervision”.<sup>11</sup> For Helmut Willke contemporary society is above all a “knowledge society”<sup>12</sup>

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<sup>8</sup> Georg KNEER – Armin NASSEHI, *Niklas Luhmanns Theorie sozialer Systeme: Eine Einführung*. München: Wilhelm Fink Verlag 1997, p 149.

<sup>9</sup> Armin PONGS, *V jaké společnosti vlastně žijeme? Společenské koncepce – srovnání*. Svazek 1. (Which Society Are We Living in? I.) Praha: ISV nakladatelství 2000, p. 172.

<sup>10</sup> Richard MÜNCH, *Dialektik der Kommunikationsgesellschaft*. Frankfurt am Main: Suhrkamp 1991.

<sup>11</sup> Helmut WILLKE, *Supervision des States*. Frankfurt am Main: Suhrkamp 1997.

<sup>12</sup> PONGS, *V jaké společnosti vlastně žijeme?*, pp. 243–262.

and a society of processes of globalisation. In line with the conclusions of Luhmann's analysis Wilke argues that society has lost its ordinary form of unity and become a "polycentric" society. For these reasons it does not require integration but "supervision". Wilke has developed his own concept of supervision in critical confrontation with the way in which the term is understood and employed in society. He argues that supervision should not be narrowed in meaning to checking, audit, overseeing or consulting, even though all these elements are contained within it. It is not just some repetition or strengthening of managing processes and neither is it some pure reflexive inspection of these. Wilke associates supervision with what is known as the management of context; he argues that supervision assumes a supervisor, who has "additional perspectives of a second order".<sup>13</sup> The supervisor must be capable of taking the position of an observer of second degree (an observer of observers), from which he can see the criteria by which the observed systems observe themselves, and at the same time he must know how to render visible that which systems, as result of the way in which they select their information, cannot rather than will not see.

Wilke believes that supervision as a particular regime of management corresponds to the current historical epoch of the creation of a knowledge society. He assigns the role of supervision to politics and the role of supervisor to the state as political system. This is not, however, something automatic and to be taken for granted: the state should gradually develop its capacities for the role of supervisor and politics must learn how to operate in contemporary polycentric and decentralised society. As Wilke says, supervision by the state should not be something "coercive" towards its surroundings, but must respect the inner structure of the surrounding systems.

In its capacity to highlight certain problems, the analysis of the functional differentiation of contemporary society has proved an inspiration

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<sup>13</sup> WILLKE, *Supervision des States*, p. 42.

to sociological thought even outside the systems paradigm. One example is Ulrich Beck, who has set this theme in the context of the concept of the risk society. Among the problems that attract Beck's attention is what he calls "organised irresponsibility" (*organisierte Unverantwortlichkeit*).<sup>14</sup> He argues that the roots of this phenomenon lie precisely in the differentiation of the social system into relatively autonomous subsystems with their own closed codes of communication. In Beck's view, what is fatal is above all that the three key subsystems – science, the economy, and politics – are mutually cut off from each other in terms of communication and unable to work together effectively. Actors, who think, decide and act only within the intentions of one particular system, cannot and will not accept responsibility for their results of their actions and decisions outside "their" subsystem. Despite the rationality and organised quality peculiar to these individual systems, and despite all the best efforts, a sense of insecurity and loss of control has been growing.

The risks of modernisation cannot be put down only to science, or to economics or politics: they belong to all these subsystems at the same time, and are "co-productions" of the lack of communication and co-ordination. Beck believes that the systems crisis and its solution require social subsystems to be able to work as both autonomous and co-ordinated subsystems. What is needed is the ability to see and tackle problems from a perspective transcending the individual subsystems and so to get over the state of organised irresponsibility. To achieve this goal a new orientation is needed which Beck characterises as "specialisation in connections".<sup>15</sup> This new orientation can only be reached by overcoming the narrowed self-definitions of science, economics and politics.

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<sup>14</sup> Ulrich BECK, *Gegengifte: Die organisierte Unverantwortlichkeit*. Frankfurt am Main: Suhrkamp 1988, pp. 96–112.

<sup>15</sup> Ulrich BECK, *Riziková společnost: Na cestě k jiné moderně*. (Risk Society: Towards a New Modernity). Praha: Sociologické nakladatelství 2004, pp. 295–297.

The problem of co-operation and communication does not, however, relate only to relations between social subsystems. We meet something similar even within the internally much differentiated system of science. With the progressive differentiation of the separate scientific disciplines there has been a huge increase in specialised findings which science is often incapable of putting together as a basis for understanding risk as a poly-causal, multi-factorial phenomenon. Research in the field of risk is often associated with competitive clashes between different scientific progressions. At the same time a kind of pluralism of supply arises in the interpretation of the problems investigated, which means that every standpoint or judgement can be countered by a different, opposite standpoint or assessment. This produces a tension that hinders co-operation even though the situation demands interdisciplinary collaboration. According to Beck, the sciences must understand the question of risk as a challenge to joint work on solutions..

Ideas on supervision (Willke) and on specialisation in connection (Beck) suggest potential ways out of the difficulties in which contemporary functionally differentiated society finds itself. For orthodox followers of Luhmann's intellectual legacy, however, such ideas are not theoretically acceptable, as is shown for example by the views of Georg Kneer and Armin Nassehi. According to these authors, there can be no way in which the unity of the society may be observed, for there is no such observer position in contemporary functionally differentiated society. In this society there exist no central institutions with society-wide reach that would be capable of transcending all the differences in the systems and environment and linking them up by some common rationale. Modern society is such that it no longer offers any privileged place for a unifying view of the world. The observations of different observers are just observations among many other observations. There is no partial system, structure and symbolic language that would refer to the whole in its relation to the

surroundings. And furthermore there is no explanation for the world as a whole.<sup>16</sup>

Nassehi speaks of the crisis of functionally differentiated world society presented by significant risk and danger. He believes that the risk potential of functional differentiation lies precisely in its success. With the development of functional differentiation “it becomes ever more impossible to imagine a social position from which or in relation to which the functional subsystems of society could be co-ordinated”.<sup>17</sup> This means that disintegration is becoming the normal state of modern socialisation.

Generally then, systems differentiation represents a successfully developing strategy of the modern age which has brought numerous advances in communication but which also has its problematic results. These include a significant curtailment of the possibilities of mutual control between different (but ultimately dependent) functional systems, or the question of the relation of these systems to the environment, but above all (and the focus of this paper) the absence of integration mechanisms. The principles of functional differentiation prevent society reacting to these problems “as a society”; society can react, but always only in a partial, system-specific way. The question of whether individual actors like personnel systems (in relation to the different functional systems of their surroundings) might be able to play a unifying or co-ordinating role, is something that neither Luhmann nor his followers consider. This kind of perspective is foreign to their mode of thought.

Although the view that the solution to problems of this kind is above all a matter of the political direction of society continues to be held by some social scientists, Luhmann rejects this approach. From his point of view the political direction of society in the sense of targeted intervention into other societal subsystems appears impossible. Analogous to other societal subsystems politics too is a self-referential closed communica-

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<sup>16</sup> KNEER – NASSEHI, *Niklas Luhmanns Theorie sozialer Systeme*, p. 142.

<sup>17</sup> PONGS, *V jaké společnosti vlastně žijeme?*, p. 173.

tion circle and what is declared as political direction of society is nothing more than the self-monitoring of politics. If politics considers itself to be the element controlling other social systems, then it is deluding itself, not just creating an illusion but succumbing to it even though it must often notice how its efforts come to nothing. The operation of a political system undoubtedly has a range of demonstrable effects, but because this is an operation taking place on the principal of resonance and structural bonds running across “system boundaries”, there is always a certain shift in communication and distortion. If, for example, politics tries to influence science, then such intervention represents something false, which does not appear from science’s immanent code of scientific truth and falsehood; whereas politics brings such a distorted effect that its intention must be adjusted to fit into the communication context of science (thereby diverting it from its original intention).

Even if the political direction of society appears to be real from the system perspective, nevertheless it is possible to call it ineffectual and apparently even detrimental. As Luhmann in one of his typical lapidary conclusions remarks: “for survival evolution is enough”.<sup>18</sup> The survival which he has in mind is the lasting reproductive capability of modern society together with the hyper complexity given by large number of existing subsystems in parallel and their most various mutual structural bonds. Every “cunning” effort to intervene in this disorganized complexity is, according to Luhmann, necessarily very problematic (because it is not usually complex enough) and repercussions must be taken into account. Luhmann believes that the problem for the modern social state is that it attempts to take responsibility for the whole of society.<sup>19</sup> Due to this ambition, especially the excessive overloading of the political system itself, this effort regularly breaks down. Luhmann responds by recom-

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<sup>18</sup> LUHMANN, *Soziale Systeme*, p. 645.

<sup>19</sup> Niklas LUHMANN, *Political Theory in the Welfare State*. Berlin: de Gruyter 1990.

mending a retreat from of this expansive understanding of politics, which would mean limiting itself to the regulation of social conflicts by fulfilling its duty of collective decision-making without demanding the position of supreme social subsystem.

These lines of argument logically bring us to the question of whether we have any grounds for believing that the functionally differentiated society – as the *de facto* only thinkable form (no alternative) of contemporary society – is itself capably of identifying its own problems and tackling them. Luhmann himself does not explicitly formulate such a question, let alone look for a systematic answer to it. In his conception the future remains open, on principle, to all kinds of possibilities and there is nothing inevitable about the direction of social evolution. One of the theoretical possibilities that can be considered in the framework of systems theory is, for example, the “differentiation out” of new (secondary) social systems, the purpose of which would be to seek to remove the negative consequences of functional differentiation. Some commentators on Luhmann, believe that in the relationship of the social system to its natural environment, existing ecological organisations could be the germ of such a future system, while its code would be orientated to the dichotomy of sustainable and unsustainable.<sup>20</sup> But this remains a mere hypothesis that offers no information on whether such a development would have a real chance of implementation and success.

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<sup>20</sup> Uwe SCHIMANK, “Ökologische Gefährdungen, Anspruchsinflationen und Exklusionsverkettungen – Niklas Luhmanns Beobachtung der Folgeprobleme funktionaler Differenzierung.” In: SCHIMANK, U. – VOLKMANN, U. (eds.), *Soziologische Gegenwartsdiagnosen I*. Opladen: Leske + Budrich 2000, p. 141.

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