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WHY COMMUNICATION?

ON THE THEORETICAL PRINCIPLES AND CONSEQUENCES OF LUHMANN'S SYSTEMS THEORY

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Abstract. This article analyzes the main theoretical principles underlying Niklas Luhmann's contribution to social systems theory. First, the reasons behind the attempt to adopt certain developments within the general theory of systems in sociological theory are clarified. Following this approach, social systems are conceptualized as entities differentiated from their environment on the basis of the specific operation of communication. Second, the internal differentiation of social systems is examined, focusing on the functional specifications responsible for the emergence of a plurality of autonomous subsystems such as modern law, modern politics, and modern economy. Finally, an overview of the investigation of the main mechanisms related to social evolution is provided. Relying on a neo-evolutionary perspective, the theory examines processes of variation, selection, and stabilization for functional subsystems of modern society, as well as specific devices, called structural couplings, that reciprocally coordinate those subsystems.

Keywords: communication, functional differentiation, structural coupling, symbolically generalized communication media, systems theory.

Résumé. Cet article examine les fondements de la théorie luhmannienne des systèmes sociaux. On s'attachera d'abord à éclaircir la raison de l'intérêt de la théorie sociologique pour la théorie générale des systèmes. Elle consiste dans le fait que cette théorie permet de concevoir les systèmes sociaux comme étant des entités distinctes de leur environnement et interréliées par des processus de communication. On se penchera ensuite sur la différenciation interne des systèmes sociaux en soulignant les propriétés fonctionnelles responsables de l'émergence d'une pluralité de sous-systèmes autonomes, tels les systèmes légal, politique et économique modernes. Enfin, on donnera une vue d'ensemble de l'enquête sur les principaux mécanismes en jeu dans l'évolution sociale. Dans une perspective néo-évolutionniste, la théorie des systèmes sociaux permet de rendre compte des processus de variation, sélection et stabilisation des sous-systèmes de la société moderne ainsi que des dispositifs spécifiques, dits couplages structurels, qui les coordonnent de manière réciproque.

Mots-clés: communication, couplage structurel, différenciation fonctionnelle, média de communication symboliquement généralisé.

INTRODUCTION

This paper examines the main theoretical reasons underlying the paradigm shift in social systems theory following Niklas Luhmann's analysis of society as a system of communications. Generally speaking, a system may be defined as a chain of operations whose dynamics engender a *sui generis* entity, which should be distinguished from other portions of reality, according to the conceptual distinction between system(s) and environment(s).

As for modern systems theory, three phases should be noted. Between the 1950s and 1960s, the contributions of Ludwig von Bertanlanffy (1968) formed the seminal work in the field. The central interest of this phase was the exchanges between systems and their environment. *Systems were conceived of as open processes*, which based their continuance on specific resources derived from their environment. The latter provides certain elements (inputs) that are transformed following systems' internal criteria, the results of which (output) will affect the environment to some extent.

Between the 1960s and 1970s, systems theory was influenced by Heinz von Foerster's principle of undifferentiated encoding (1982), according to which *cognitive processes are contingent on autonomous activities* within nervous systems. For this reason, systems are critically marked by the differences between them and the external reality modeled by their environment. All contacts between the former and latter are inevitably driven by *selective* processes depending on a specific system's structures (or programs).

The more recent advances in systems theory, which had a considerable impact on Luhmann's works, were developed in the 1970s. Humberto Maturana and Francisco Varela (1981) played a crucial role in the paradigm shift at the core of Luhmann's main conceptual elaborations. They use the term *autopoiesis* (or operative closure) to describe living systems as *entities capable of (re)producing all of their components*. Thus, systems exist that are autonomous not only at the level of their structures, but also at the level of their operations. Luhmann (1990a, Chapter 1; see also 2013a [2002], Chapter 4) adopted this approach by extending it to a plurality of systems: not only living

systems, but also psychic and social systems. This relies on the possibility of identifying *distinctive operations* for all of these systems: chemical syntheses in the case of living systems; cognitive processes in the case of psychic systems; and *communications* in the case of social systems.

In the following sections, I focus on social systems as communication systems and on the consequences of this kind of conceptualization on the building blocks of sociological theory. More precisely, three main aspects of Luhmann's contributions are taken into account, in which the German thinker deals with corresponding, crucial areas of sociology. The first aspect (section 1) concerns the central issue of the nature of social reality and consists of clarifying the specificity of social systems with respect to other entities, namely the basic properties which account for differentiation of such systems from their environment. I pay attention to the features of the operation of communication, which gives rise to the emergence of social systems.

The second aspect (section 2) has to do with the classical questions related to the structure of societies we can observe historically, particularly modern and contemporary society. From a systemic approach, such questions are dealt with by analyzing the main forms associated with the internal differentiation of social systems. Within this framework, I examine the conceptualization of modern and contemporary society as an encompassing system organized on the basis of a plurality of functional subsystems such as modern law, modern politics, and modern economy. To illustrate their features, I rely on the example of the legal system.

The third aspect (section 3) refers to the fundamental topic of the processes underlying social change. Here, the theory identifies, on the one hand, the main mechanisms (variation, selection and stabilization) responsible for the evolution of society and its subsystems and, on the other, certain evolutionary achievements, called structural couplings, that make possible the reciprocal coordination of the subsystems themselves. As with the previous aspect, I discuss both themes by the examples of the evolution of the legal system and the constitution, viewed as the specific structural coupling involving the legal system and political system.

1. MEANING AND COMMUNICATION IN SOCIAL SYSTEMS

The social reality consists of a plurality of systemic processes whose distinctive feature is the basic operation that reproduces their respective operative closure (*operative Schließerung*) and their consequent differentiation (*Ausdifferenzierung*) from other realities. The operation in question is communication (Luhmann, 1990a, Chapter 1; 1995 [1984], Chapter 4; 2012 [1997], Chapter 1). *Social systems are formed by sequences of communications referring to and generated on the basis of other communications*. Each communication requires at least two co-acting psychic systems, which is by no means tantamount to the transfer (input) of psychological states into communicative processes. Indeed, social systems and psychic systems correspond to two different kinds of operative closures. However, *they are not causally isolated*, in that both systemic units develop within the same medium of meaning and use the medium of language to affect each other. Ultimately, each operation of psychic systems (cognitive process) and social systems (communication) is selected on the basis of their proper, respective chains of internal operations.

Here, the concept of *medium*, which derives from the contribution of neurophysiology (Heider, 2005 [1927]; see also Luhmann, 2000a [1995], Chapter 3; 2012 [1997], Chapter 2), refers to *a set of elements* whose combinations generated specific *forms*, such as the empirical case of images within a nervous system reproduced on the basis of light waves. Social systems theory identifies two main kinds of media: the physical-chemical medium of *life* and the symbolic medium of *meaning*, which give rise to corresponding forms within biological systems and nervous systems, on the one hand, and psychic systems and social systems, on the other (Luhmann, 1990a, Chapter 1; 2013a [2002], Chapter 5). The medium of meaning embraces *all potential references to symbolic contents* that both psychic systems and social systems can actualize in their operations (*i.e.* cognitive processes and communications). The actual processes of both systems are tantamount to specific combinations (forms) derived from potential symbolic contents (medium). The medium of meaning is articulated in three dimensions: factual (*Sachdimension*), social (*Sozialdimension*), and temporal (*Zeitdimension*). They consist of references, respectively, to certain identities, ego's social perspectives, and certain

points in time, which are drawn from non-actualized (potential) identities, non-actualized (potential) perspectives, and non-actualized (potential) instants (Luhmann, 1990a: Chapter 2; 1995 [1984], Chapter 2; 2013a [2002], Chapter 4).

Language can also be analyzed as a medium. Its elements are signs of a different nature (*e.g.* sounds in oral communication, and letters in the case of writing) and endowed with meanings, which combine and bring about forms such as words, sentences, and texts. Though psychic systems *can* use language within the more enveloping processes of consciousness, social systems *have to* use language to reproduce their differentiation (*i.e.* operative closure). Under these circumstances, language functions as a mechanism for reciprocally channeling stimuli between the co-evolving systems of psychic processes and communications. This justifies describing all linguistic devices as a particular case of the general concept of structural coupling (*strukturelle Kopplung*). All structural couplings make possible coordination and mutual influence between two systemic units alongside (and in spite of) the maintenance of their respective operative closure. In the case of language, the two systemic units involved are consciousness and social systems (Luhmann 2012 [1997], Chapters 1 and 2; see also Luhmann 2013a [2002], Chapter 2).

The consciousness itself is one type of system that constitutes each individual, the other being a specific case of biological system. Both are *non-communicative realities*, in that their operative closure depends on mechanisms other than communications: cognitive processes and chemical syntheses, respectively. Therefore, *individuals as such are conceived of as part of the environment of social systems*, which does not imply the irrelevance of individuals, but the opposite. Indeed, according to this theoretical perspective, the autonomy of each human being is emphatically recognized with respect to a plurality of other systemic processes, including social systems. This is rooted in the operative closures of the organic system associated with each body, on the one hand, and the differentiated neural circuits underlying human consciousness, on the other (Edelman and Tononi, 2000). As stated by Luhmann:

> We are dealing with social, not psychic systems. We assume that social systems are not composed of psychic systems, let alone of bodily human beings. Therefore, psychic systems belong to the environment of social systems. Of course, they are part of the environment that is especially relevant for the formation of social systems. [...] Such environmental relevance for the construction of social systems constrains what is possible, but it does not prevent social systems from forming themselves autonomously and on the basis of their own elemental operations. These are communications—not psychic processes *per se*, and also not the processes of consciousness. [...] [A] theory of self-referential autopoietic social systems provokes the question of psychic systems' self-referential autopoiesis and with it the question of how psychic systems can establish their self-reproduction, the "stream" of their "conscious life", from one moment to the next so that its closure is compatible with an environment of social systems (Luhmann, 1995 [1984], p.255-257).

As with the systemic realities that form human beings, social systems consist of differentiated and emergent syntheses (*i.e.* communications), though they inevitably presuppose the involvement of psychic units and the organic substrate of biological systems, which also means that no system can exist without its environment. Each communication is generated when an alter's observation (termed understanding, *Verstehen*) refers to any gesture, sound, or sign (*i.e.* any utterance, *Mitteilung*), imputing it to an ego and associating it with any meaning, called information (*Information*). To achieve the specific reality of communication, these three components are necessary. Here, the alter's understanding plays a crucial role; it triggers a communicative synthesis by detecting something as a message (*i.e.* the ego's utterance) associated with some meaning (*i.e.* information). This implies that the alter identifies an event that can be traced back to his or her language. In this sense, the medium of a language (shared by both the ego and the alter) represents the basic pre-requisite for the emergence of communication.

No social system comprises only one communication. As with other systems, *social systems come about only if a network (process) unfolds*, connecting a plurality of communicative syntheses on the basis of reciprocal understanding by at least two psychic systems of their utterance/information. At the same time, such a connection can be described as a form of self-observation concerning the internal dyna-

mics of social systems. Indeed, a crucial thesis is that social systems are not only *autopoietic systems*, because of their capacity to trigger communications from other communications, but also *self-observing* (*i.e.* auto-referential) *systems*, in that each communicative synthesis is recognized as such within the same systemic network. This identification is the system's performance and is possible only if a communication implicitly or explicitly refers to the difference between utterance and information resulting from a previous communication.

This kind of reference within the communicative flow is termed basal self-reference (*basale Selbstreferenz*) (Luhmann, 1990a, Chapter 1; 1995 [1984], Chapter 4; 2013a [2002], Chapter 6; see also Esposito, 1993; 1999). Each alter's understanding that co-occurs along with a network of communications constitutes the junction between two directly linked communications where, at the same time, the basal self-reference is actuated by imputing each communicative unit to the ego's utterance. In other words, the proper *self* of social systems derives from a reduction (*concomitant* with the move from one communication to another) of the complexity underlying each communicative synthesis to the punctuated event of the ego's utterance. As argued earlier, the latter is distinguished from and associated with an information, which plays the role of the external reference for the system.

This form of reduction has crucial implications for the conceptualization of social systems. Although all communications involve a specific combination of both the ego and the alter's perspectives—which bring about a *sui generis* entity irreducible to either the alter's understanding or ego's utterance alone—an equally constitutive mechanism accompanies the reproduction of social systems, namely imputation of the highly sophisticated reality of communication to the univocal component of the ego's action (*i.e.* his or her utterance). Such a mechanism, which drives the self-observation of social systems, has the advantage that *actions can be recognized and treated more easily than communications, which makes it simpler to identify the complexity of the latter in the flow of time*. All action theories adapt to and reinforce such a *self-simplification* of social systems, insofar as they tend to characterize the elements of these systems in terms of individual behaviors, ignoring *the specific, interactional dynamics that give rise to communicative processes*.

This crucial epistemological aspect underlying the foundation of social theory is clearly stated since Luhmann's early contributions to a new social systems theory:

> Confronted with the question of elementary units [of social systems], most sociologists would come up with the answer: action. Sometimes "roles" or even human individuals are preferred. Since Max Weber and Talcott Parsons, however, action theory seems to offer the most advanced conceptualization. Communication is introduced as a kind of action—*e.g.* as "kommunikatives Handeln" in the sense of Jürgern Habermas. [...]. For a theory of autopoietic systems, only communication is a serious candidate for the position of the elementary units of the basic self-referential process of social systems. Only communication is necessarily and inherently social; action is not. Moreover, social action implies communication, implies at least the communication of the meaning of the action or the intent of the actor; but it also implies the communication of the definition of the situation, of the expectation of being understood and accepted, and so on and so forth. And above all, communication is not a kind of action because it always contains a far richer meaning than uttering or sending messages alone. [...] [T]he perfection of communication implies understanding, and understanding is not part of the activity of the communicator and cannot be attributed to him. Therefore, the theory of autopoietic social systems requires a conceptual revolution within sociology: the replacement of action theory by communication theory as characterization of the elementary operative level of the system (Luhmann, 1990a, p.6).

In addition to the ego and alter sharing a common language, a second condition for the emergence of communication is the alter's *actual* observation (*i.e.* his or her understanding) of the ego's utterance. The physical co-presence of both ego and alter is certainly the most effective solution, but it reduces the opportunities for communication considerably. More advanced *devices for the transmission of communicative messages* have resulted from the evolution of society, such as writing, the printing press, telephone, the radio, television, and computers. As with language, these devices may be examined as further empirical cases of the concept of medium—one example being writing, whose elements (*i.e.* letters and words) combine to create countless forms with their own meanings. The enormous potential for the re-combination of units of meaning and the spatial and/or temporal separation between utterance and understanding they constitutively entail are both crucial factors responsible for the increasing variety of communication and constant awareness of its contingency.

Finally, a third problem should be mentioned. Once a communicative unit is synthesized on the basis of the transmission of a message and its understanding, *the improbability of the utterance being accepted* is the major obstacle for building any social order. Such an improbability is contingent on the *binary coding (yes/no) of language* and inevitably a source of uncertainty for ego's expectations that his or her communicative messages will be accepted by alter, which, in turn, makes the reproduction of ordered and increasingly advanced social networks (*e.g.* decisions within organizations) problematic. In addition, the risk of ego's utterances being refused by alter would discourage the former's decision to embark on interactions with the latter.

To deal with the improbability of the acceptance of communication, devices termed generalized media of interchange originally by Talcott Parsons (1963a; 1963b; 1968; 1975) or symbolically generalized communication media (*symbolish generalisierte Kommunikationsmedien*) according to Luhmann (1976; 2012 [1997], Chapter 2) have emerged as outcomes of the societal evolution: values (*Werte*), truth (*Wahrheit*), love (*Liebe*), money (*Geld*), art (*Kunst*), power (*Macht*), and legal validity (*Rechtsgeltung*). Considered specifically from a functionalist perspective, all of these media are *functional equivalents or alternatives*, insofar as each of them facilitates the consensus of the alter with respect to several forms of communication (*i.e.* the ego's utterance).

2. INTERNAL DIFFERENTIATION OF SOCIAL SYSTEMS AND MODERN SOCIETY

The concept of internal differentiation (*Differenzierung*) concerns the processes that generate *differences between system and environment within systems themselves*, including social systems. With special reference to the evolution of society, four types of differentiation can be identified historically (Luhmann 2012 [1997], Chapter 4). First, *segmentary differentiation* is the fundamental principle underlying the structures of old societies, which are consequently divided into a series of similar components, such as kinship units, villages, and tribes.

The second type of differentiation is based on the *difference between center and periphery*; for example, the structure of the Roman empire, in which societal communication is modeled by the twofold reference to dominant roles and institutions and those subject to the center's supremacy. Thirdly, *stratification* consists of a hierarchy of strata or classes and is the main mechanism responsible for the societal differentiation between the collapse of the Roman empire and the beginning of the early modern period. Finally, the typical organizational principle of modern and contemporary society is *functional differentiation*, in which various units, called functional subsystems (*e.g.* modern politics centered on the state, a modern economy guided by the market, modern science, and modern art), have achieved their own autonomy (Luhmann, 1998 [1992], Chapter 1). Generally, the consolidation of these subunits within modern society requires the autonomous reproduction of distinctive roles and criteria associated with the fulfillment of their respective social function. Such a requirement is called *functional specification*, which is illustrated by the example of modern law.

Unlike pre-modern instances of normative binding, the law of a functionally differentiated society is tantamount to a network of decisional processes depending exclusively on principles and procedures applied by determinate professionals such as judges, excluding the interference of exogenous normative constraints associated with other social spheres (Luhmann, 1981, Chapters 2 and 4; 2004 [1993], Chapter 2). Stated succinctly, the social function of those decisional processes consists of the stabilization of normative expectations, namely the process of fixing in advance and protecting social expectations that individuals should assume as legitimate (*i.e.* legal). More specifically:

> The hypothesis, which we will set out in detail here, holds that law solves a problem in relation to time. [...] We see the social meaning of law in the fact that there are social consequences if expectations can be secured as stable expectations over time. [...] Time binding prejudices social partiality. [...] In general terms [...] time binding is not be achieved without social costs. [...] Here we conceived of law as a form which is related to the tensions between the temporal and the social dimensions and which makes it possible to cope with them even under conditions of an evolutionary rise of social complexity. [...] Abstractly, law deals with the costs of the time binding of expectations. Concretely, law deals with function of the

> stabilization of normative expectations by regulating how they are generalized in relation to their temporal, factual, and social dimensions (Luhmann, 2004 [1993], p.142-148; see also Teubner, 1993; King and Thornhill, 2003).

Another example is the function of the political system based on the modern state, which is fulfilled by making decisions that are collectively binding (Luhmann, 2000b, Chapter 3). The function of modern science is the establishment of criteria for deciding the truth/falsehood of new knowledge (Luhmann, 1990b, Chapter 5), whereas the system of mass media performs the function of providing a memory for society (Luhmann, 2000c [1995], Chapter 13; see also Esposito, 2002). These and all other functional subsystems (see Luhmann, 2000a [1995]; 2013b [2000]; 2002) have the same relevance to the reproduction of the communicative system of modern society. Instead of a hierarchy of subsystems, their relationships give rise to a *heterarchical and polycentric order* (Luhmann 2012 [1997], Chapter 4]. At the same time, any static, mechanical, and determinist approach to the analysis of social order should be inevitably replaced by paying attention to the proper contingency that affects all functional subsystems and can be viewed as the "modern society's defining attribute" (Luhmann, 1998 [1992], Chapter 3).

The second fundamental requirement for achieving functional differentiation is the existence in each subsystem of *a specific binary coding for all of its internal operations (communications)* (Luhmann, 2012 [1997], Chapters 2 and 4). For example, the binary coding of the legal system is the distinction between legal/illegal (*Recht/Unrecht*) (Luhmann, 2004 [1993], Chapter 4), whereas, with the political system, it is the distinction between power superiority / power inferiority (*Machtüberlegenheit/Machtunterlegenheit*) (Luhmann, 2000b, Chapter 3). The differentiation and autonomy of these and all other subsystems are possible *if all of their respective operations refer to the same question of which side (positive or negative) of the same coding should be applied* while observing a plurality of circumstances (*e.g.* events, behaviors, and other communicative processes) on the basis of each subsystem's interests, such as communications of certain normative expectations in the case of the legal system, or certain theories in the case of the system of science.

More precisely, the application of each binary coding consists of observing whether such circumstances correspond to a series of constraints established in the respective subsystem. As for the example of the legal system, "the positive value is applied if a fact conforms to the norms of the system. The negative value is applied if a fact violates a norm of the system. A 'fact' here is a construction of the system." (Luhmann, 2004 [1993], p.183). This does not mean that the legal code is self-sufficient. On the contrary: "Since the values legal and illegal are not in themselves criteria for decisions between legal and illegal, there must be further points of view that indicate whether or not and how the values of the code are to be allocated *rightly* or *wrongly*" (Luhmann, 2004 [1993], p.192). This implies that, empirically, the allocation of code values depends on specific structures, the programs of law. They always assume the form of *conditional* programming (as opposed to *purpose-specific* programs, which are at work, for example, in the case of decision-making aimed at specific consequences and driven by cost-benefit calculations):

> The conditional programme made it possible to differentiate a binary coded system by assuming the function of regulating the coordination of code-values to cases in that system. Even then the formula "if—then" remained. The conditional programme spells out the conditions on which it depends, whether something is legal or illegal. With these conditions it refers to past facts, which are stated in the present. This can include legal facts, for instance, by means of the question whether a statute has been passed validity and if so when. Here it is crucial that the attribution of the values legal and illegal depends on what can be treated as past at the moment of the decision. In this respect law always operates as an ex-post-facto, tandem-arranged system. [...] What the form of conditional programme does it to prevent any future facts, not accounted for at the time of the decision, from being relevant to a decision concerning legal and illegal. [...] The linkage of the legal system to the form of conditional programme is a consequence of the function of law, namely the stabilization of contra-factual expectations. Expectations are turned into the form of norms in precisely those cases when they are not met. This substitution of certainty (of expectations) for uncertainty (of realization) requires structural compensations. What is more, one cannot make it contingent on the future whether the expectations to which one has to commit oneself now will be legitimate in the future. One needs to know now or at the moment of the decision, and this can only be achieved in the form of a conditional programme (Luhmann, 2004 [1993], p.197-200).

The programs of law include all the principles, statutes, rulings, and legal proceedings presumed as *legally valid* according to decisions referring to the same coding. Programming in a legal way is equivalent to making use of the distinction between legal and illegal on the basis of specific limitations, already stated to be valid. Importantly, any reference to the binary coding legal/illegal inevitably calls for a test based on the programs of law. Put differently, all uses of the legal coding stimulate other communications resorting to the programs of law, which inspect the validity of claims about the legal/illegal nature of certain normative expectations. This creates a network of operations forming the law's autopoiesis or operative closure. Here, *legal validity* can be conceptualized as the proper medium of the legal system, which parallels other symbolically generalized communication media mentioned in the previous section (see Luhmann, 2004 [1993], Chapter 2).

Finally, all functional subsystems develop their own *semantics of self-description*, namely concepts and theories through which their communications aim to formulate representations of themselves (Luhmann, 2012 [1997], Chapter 5). In the case of the legal system, this can be exemplified by the numerous attempts to capture the essence of law by referring to either concepts, such as justice, or connotations, such as natural and constitutional law. By adopting a comparative perspective concerning different stages in the evolution of society, one of the most significant tasks of systems theory is to clarify the *correlations between the semantics and structure* of each respective stage of society and, more specifically, between the semantics and the subsystems of society in which the former is elaborated (Luhmann, 1980).

3. EVOLUTIONARY MECHANISMS AND STRUCTURAL COUPLINGS OF THE FUNCTIONAL SUBSYSTEMS

Generally speaking, the theory of evolution is the area of systems theory concerned with the way systems transform their structures alongside sophisticated interactions between them and their environment. One can speak of evolution if three mechanisms occur: variation, selection, and stabilization (Luhmann, 2012 [1997], Chapter 3). Evolution is possible only if something new is inserted into the system's structures, which requires *variation in the previous reproduction of the system*. Any variation concerns the single elements (operations)

of the system and looks like a proposal to change the normal course of the system's processes, which are guided by its structures. Referring to social systems in general one has to understand that their structures are made up of expectations. Therefore, a variation is observed if communications occur which contrasts with a given set of expectations assumed, for example, within specific interactional or organizational contexts. Comparable mechanisms affect all subsystems of modern society. In the case of the legal system, for example, its own variations consist of communications in favor of norms that oppose those recognized by the law currently in force. Put differently, legal variation is tantamount to the communication of unexpected normative expectations (Luhmann, 2004 [1993], Chapter 6). To give another example, the analogous mechanism of variation in the system of modern science is to communicate theories that contradicts previous statements assumed to be true. Similar mechanisms are also part of the evolution of politics, the economy, art, mass media, education, and religion.

As a variation occurs, an additional mechanism has to determine whether it can be recognized as a binding operation for the subsequent processes of the system. This mechanism is termed selection. In this sense, *selection is concerned with the structures* guiding *(i.e. binding) the development of systems*, namely their programs. As the variation gives rise to new possibilities for modifying systems, the task of selection is to opt for either the insertion of such possibilities into the structures of the system (positive selection) or, conversely, the rejection of such an insertion (negative selection). Considering once again the case of social systems, one can identify selective processes for all functional subsystems of modern society. For example, with regard to the legal system the respective mechanism of selection is made up of the set of legal proceedings and norms of competence related to specific roles (*i.e.* judges, and legislators), which discriminate between normative expectations to be supported and those to be challenged. Similar procedures exist for the system of modern science; they consist of research methods concerning scientific debates within the medium of truth, in which specific theories must be judged to be either verified (*i.e.* not yet confuted) or confuted.

After new programs for system reproduction have been positively selected for transfer into the system's structures, *problems related to internal compatibility or consistency* are always possible between the new and other older programs. Consequently, to achieve the system's evolution effectively, it is necessary to overcome incompatibilities and inconsistencies. This function is fulfilled by the process of (re-)stabilization, which can be understood as being an overall re-organization of systems. Only if this succeeds can one definitively speak of *evolutionary achievements*. Once again, this process can be detected within all subsystems of modern society. In the case of the legal system, for example, this task is performed by the activities of the higher courts together with the elaboration of the doctrine. In terms of the recent consolidation of new kinds of non-economic losses in both civil law and common law, it has been necessary to engage not only positive selection by legal proceedings, such as rulings by certain courts, but also complex analyses of and solution to problems of consistency determined by the tense relations between these new forms of losses and the previous principles of the law of tort. Similar to the legal system and all other subsystems of modern society, science has experienced numerous examples of internal re-organization corresponding to different paradigm changes, such as those described by Thomas Kuhn in his theory of scientific revolutions (1961).

All of these processes presuppose the maintenance of the autonomy of each evolving subsystem as an independent network of communications. However, *functional subsystems should not be viewed as entities causally isolated from each other*. As with all circumstances of the relationship between a system and its environment, and other systems belonging to the environment itself, certain forms of connections—previously referred to as *structural couplings*—may be identified. Considering the examples of the legal system and political system, the constitution might be characterized as the structural coupling specifically responsible for their interactions (Luhmann, 2004 [1993], Chapter 10; see also Thornhill, 2010). Other similar mechanisms determine the relationships between other subsystems of modern society. The property and contracts exemplify forms of structural coupling between the legal system and economic system (Luhmann, 2004 [1993], Chapter 10). As for the structural couplings between the economic system

and political system, it can be seen in the establishment of the reserve bank and in the taxes, which make it possible to constrain to some extent the circulation of money politically (Luhmann, 2012 [1997], Chapter 4).

Each structural coupling is responsible for the exchange of resources and reciprocal influences between the subsystems involved. We know that the subsystems' autonomy associated with functional differentiation gives rise to the pretension to base their decision-making on the internal chains of their communicative processes. However, this approach leads to a paradox, termed the *self-reference problem*, which is exemplified by the case of the constitution as follows (Luhmann, 1990c).

As for the legal system, its self-reference problem derives from its search for the legal (*i.e.* internal) foundation of its decision-making. On the one hand, its autonomy entails that modern law should dispense with resorting to non-legal (*i.e.* external) principles. This constraint generates a paradox once it becomes necessary to justify the legal validity of the ultimate decision supporting and validating all legal decision-making. This would require marking the original and valid distinction between legal and illegal, from which all other decisions draw their validity. Logically, this attempt at the self-foundation of law can be characterized as an application of the binary coding of legal/illegal to itself.

Because of the impracticability of a *regressus ad infinitum* depending on this recursive internal foundation of each legal decision, a certain degree of arbitrariness is inevitable when confronting the question of whether marking certain expectations as legal or illegal is itself legal or illegal—this being particularly apparent for decisions establishing a constitution. In this case, the regress is halted and the arbitrariness is neutralized through reference to some exceptional decision-making, which in turn is legitimized by some unquestionable (paramount) principle, such as the will of the nation or people. In fact, this reference is *no longer a purely legal solution*, but also a political act, which shows how the legal system relies on political resources to overcome its own self-reference problem.

Similar problems affect the political system due to its internal reflection on the sovereignty of political decision-making. As with the legal system, the autonomy of the political system demands reference only to its own binding decisions. A network of systemic operations with a hierarchical structure unfolds, in which any binding decision (qualified as such inside the political system) has power superiority over certain other, subordinated decisions. A corresponding self-reference problem arises if it becomes necessary to establish the power superiority of the political decisions that identify themselves as sovereign over (*i.e.* binding on) all other decisions.

Even this attempt at self-foundation by the political system can be characterized as the application of its binary coding (*i.e.* power superiority / power inferiority) to itself, which entails, as with the legal system, a respective paradox. Also in this case, a *regressus ad infinitum* depending on the internal foundation of each decision is impracticable. For this reason, a certain degree of arbitrariness is inevitable when dealing with the question of whether marking decisions derived from certain political bodies as legitimately or illegitimately sovereign (*i.e.* endowed with or devoid of power superiority) is itself either legitimate or illegitimate. Anyone who had the capacity to establish his or her sovereignty regardless of its legitimacy would have gained the most powerful position (binding all others), though by acting in a purely arbitrary way. Like the move of the legal system towards the political system, such a risk of arbitrariness is neutralized by invoking special prerogatives such as those associated with the classic doctrine of the constituent power, which proves *the need for legal support outside the political system* to solve its own self-reference problem:

> In sum, we can say that the constitution provides political solutions for the problem of the self-reference of the legal system and legal solutions for the problems of the self-reference of the political system. […] The constitution, which constitutes and defines the state, has a correspondingly different meaning in both systems. For the legal system it is a supreme statute, a basic law. For the political system it is an instrument of politics, in the double sense of both instrumental politics (which changes state of affairs) and symbolic politics (which does not). […] What was in practice set in train is the story of the effects of mutual irritations, which in the long term affect the directions

> in which the coupled systems develop by building and removing structures. The political system is subject to self-irritation by the possibility of stimulating a change in law. The positivization of law provides an immense potential for political action, and politics is continuously engaged in the selection of such possibilities. [...] The legal system is likewise exposed to political initiatives with which it has to deal in legislative procedures, administrative regulations, and legal decision-making (including the decision-making of constitutional courts) on an ongoing basis. [...] The legal system exposes itself to political influences by providing the possibilities for legislation. In democratizing, the political system exposes itself to the appeal of bringing the initiatives for a change in law to a head. The self-reference of the system thus takes a detour via the inclusion of the environment in the system (Luhmann, 2004 [1993], p.410-412).

Therefore, as with the stabilization of all structural couplings, the consolidation of any constitution engenders permanent mechanisms of reciprocal influence between the systems involved. On the one hand, the influence of the legal system over the political system consists of the attempt to make political decisions compatible with proceedings and other constraints set up within the legal system itself (an approach embodied by the principle of the rule of law). On the other hand, the influence of politics over the legal system is dependent, to a certain degree, on the power of the former to change legislation on the basis of expectations resulting from the dynamics and decision-making of political parties and other political actors. Analogous mechanisms are also at work in relationships underlying the structural couplings between other subsystems of the modern and contemporary, functionally differentiated society.

CONCLUSION

The article intended to analyze the main theoretical principles concerning Niklas Luhmann's contribution to social systems theory. First, I clarified the reasons underlying the attempt to extend certain elaborations within the general theory of systems (particularly the notion of operative closure) to the social reality. Such an extension is contingent on the idea that social systems are differentiated from their environment, including the biological systems and psychic systems whose combination generates human beings, on the basis of the specific

operation of communication. Certainly, the latter derives from the involvement of psychic systems, but it is not reducible to them. Communication is a *sui generis* synthesis of the ego's utterance and alter's observation (understanding) of the distinction between such an utterance and its reference to some symbolic content (information). The description of social systems as systems of actions is tantamount to reducing the complexity of communication to the first component (the ego's utterance), which is also a typical, internal performance of social systems themselves that make it simpler to identify communication in the flow of time, insofar as actions can be recognized and treated more easily than communications.

In addition, the article discussed two other sets of theoretical principles within systems theory. On the one hand, the internal differentiation of social systems was examined, focusing on a series of forms of differentiation that have historically affected the fundamental structure of society, from the segmentary form and center/periphery differentiation to those based on stratification and, in the more recent evolutionary phase of modernity, the functional specification responsible for the emergence of a plurality of autonomous subsystems, such as modern law, modern science, and modern art. On the other hand, the investigation of the main mechanisms underlying social evolution may be identified among the most important research interests of social systems theory. Following a neo-evolutionary approach, the theory distinguishes processes of variation, selection, and stabilization for all functionally differentiated subsystems of modern society, as well as specific devices, called structural couplings, that reciprocally coordinate those subsystems. The example of the constitution was analyzed as the structural connection between the legal system and political system.

BIBLIOGRAPHY

BERTALANFFY L. von, 1968, *General System Theory*, New York, Braziller.

EDELMAN G. and TONONI G., 2000, *A Universe of Consciousness*, New York, Basic Books.

ESPOSITO E., 1993, *L'Operazione di osservazione*, Milano, Angeli.

–, 1999, "Il concetto di azione nella teoria di Niklas Luhmann", *in* S. Belardinelli (ed.), *Teorie sociologiche dell'azione*, Milano, Angeli, p.235-246.

–, 2002, *Soziales Vergessen. Formen un Medien des Gedächtnisses der Gesellschaft*, Frankfurt/M., Suhrkamp.

FOERSTER H. von, 1982, *Observing Systems*, Seaside, Intersystems Publications.

HEIDER F., 2005 (1927), *Ding und Medium*, Berlin, Kadmos Kulturverlag.

KING M. and THORNHILL Ch., 2003, *Niklas Luhmann's Theory of Politics and Law*, New York, Palgrave.

KUHN Th., 1962, *The Structure of Scientific Revolutions*, Chicago, University of Chicago Press.

LUHMANN N., 1976, "Generalized Media and the Problem of Contingency", *in* J. J. Loubser *et al.* (eds), *Exploration in General Theory in Social Science. Essays in Honor of Talcott Parsons*, New York, The Free Press, p.507-532.

–, 1980, *Gesellschaftstruktur und Semantik: Studien zur Wissenssoziologie der moderne Gesellschaft*, Frankfurt/M., Suhrkamp.

–, 1981, *Ausdifferenzierung des Rechts*, Frankfurt/M., Suhrkamp.

–, 1988, *Die Wirtschaft der Gesellschaft*, Frankfurt/M., Suhrkamp.

–, 1990a, *Essays on Self-Reference*, New York, Colombia University Press.

–, 1990b, *Die Wissenschaft der Gesellschaft*, Frankfurt/M., Suhrkamp.

–, 1990c, "Verfassung als evolutionäre Errungenschaft", *Rechtshistorisches Journal*, 9, p.176-220.

–, 1995 (1984), *Social Systems*, Stanford, Stanford University Press.

–, 1998 (1992), *Observations on Modernity*, Stanford, Stanford University Press.

–, 2000a (1995), *Art as a Social System*, Stanford, Stanford University Press.

–, 2000b, *Die Politik der Gesellschaft*, Frankfurt/M., Suhrkamp.

–, 2000c (1995), *The Reality of the Mass Media*, Stanford, Stanford University Press.

–, 2002, *Das Erziehungssystem der Gesellschaft*, Frankfurt/M., Suhrkamp.

–, 2004 (1993), *Law as a Social System*, Oxford, Oxford University Press.

–, 2012 (1997), *Theory of Society*, Stanford, Stanford University Press.

–, 2013a (2002), *Introduction to Systems Theory*, Cambridge (UK), Polity Press.

–, 2013b (2000), *A Systems Theory of Religion*, Stanford, Stanford University Press.

MATURANA H. and VARELA F., 1981, *Autopoiesis and Cognition*, Dordrecht, Reidel.

PARSONS T., 1963a, "On the Concept of Influence", *Public Opinion Quarterly*, 27, p.37-62.

–, 1963b, "On the Concept of Political Power", *Proceeding of the American Philosophical Society*, 107, p.232-262.

–, 1968, "On the Concept of Value Commitments", *Sociological Inquiry*, 38, p.135-60.

–, 1975, "Social Structure and the Symbolic Media of Interchange", *in* P. Blau (ed.), *Approaches to the Study of Social Structure*, New York, The Free Press, p.94-120.

TEUBNER G., 1993, *Law as an Autopoietic System*, Oxford, Blackwell.

THORNHILL Ch., 2010, "Niklas Luhmann and the Sociology of the Constitution", *Journal of Classical Sociology*, 10, p.315-337.