Code

The term code indicates a "duplication rule" which allows the correlation of every entity within its area of observation with a corresponding entity within the system. This applies in the first instance to the code of →*language* which allows the correlation of every positive formulation with a corresponding negative formulation. That is, the positive statement "it will rain today" can be understood as the negation of the negative statement "it will not rain today." With language at their base, this also holds for the codes of different functional systems [→*Differentiation of Society*], which are always based on a binary schematization.

Binary schematizations are particular forms of distinctions [→*Identity/Difference*] characterized by a rigid binarity that excludes third values. This binarity is expressed in logic through the principle of excluded middle (tertium non datur): a scientific communication is either true or false, and no other option exists; an organism is either alive or not, and cannot be "only a little bit alive." Binarity implies a drastic reduction, restricting the infinite range of possibilities to just two options connected through a negation. Distinctions that fulfill this condition are called "technicized," where technique signifies the simplification in the information processing that results from not taking into account all implied meaning references.

Binarity offers specific advantages. It facilitates the transition from one value of the distinction to the countervalue. Once third values are excluded, one negation is sufficient to move from one side of the distinction to the other: to get to the illegal, it is enough to negate the legal; to get to the untrue, to negate the true. The connection to the countervalue is more direct than that to the values of other distinctions. Thus, the true is connected more directly with the untrue than it is with the legal, the beautiful, or anything else.

In this way, the completeness of the code is secured, meaning its ability to identify for each entity a correlating entity—one negation suffices. Binary dis-

tinctions are universally valid in their field of application: they are responsible for every possible communication. For instance, communication can be defined as true or untrue. At the same time, contingency [→*Double Contingency*] is generalized because every communication based on the code refers unavoidably to the possibility of being different (i.e., to the countervalue): what is true is not untrue. Truth cannot be posited without alternatives; it emerges in relation to the discarded possibility of untruth.

Thus, the capacity for gathering →*information* is also generalized. Information is generated within the system as a distinction that produces further distinctions. Reducing every communication to the form of a distinction between a negative and a positive value, the code allows the system to process every communication as a distinction (i.e., as information).

However, binary schematizations also create specific difficulties; above all, the artificial exclusion of third values brings with it the ineradicable presence of latent or non-latent →*paradoxes*. A code always generates a paradox when it is applied to itself: with the code true/untrue, it is impossible to decide whether the distinction between true and untrue is itself true or untrue (thereby leading to Epimenides' paradox: is the utterance "I'm lying" true or untrue?). Equally, it is not possible to use the distinction between legal and illegal to discern whether the distinction itself is on the side of the legal or the illegal. The code only has two values and must assign one of them to every communication: the code true/untrue cannot maintain its binarity and claim that the utterance "I'm lying" is meaningless ("meaningless" would be a third value).

When operative closure [→*Autopoiesis*] is added to binarity, it can lead to the differentiation of an autopoietic system. In the case of the scientific system, for instance, this is expressed in the condition of limitationality [→*Science*]. Limitationality means that the field of possible options is reduced in such a way that a code-related definition restricts the area of what is possible: the discovery of a falsehood is not only a negative fact that would yield no information in a further search for truths; it is, at the same time, positive information about the range of truths that are still possible. Under these conditions, every code-oriented operation contributes to define the boundaries of the system with the outside, and to specify its internal connections. Thus, a network of interconnected communications is created that develops a form of independence from the remaining parts of society. Scientific communication differentiates itself in society, for instance, through its orientation towards the code true/untrue. It constitutes an autopoietic system, whose operations

refer to earlier operations oriented to the code true/untrue (because these define the conditions and possibilities of further truths) and to later communications (because these, in the same way, specify the area of future operations).

Codes, therefore, are distinctions through which a system observes its own operations; they determine the unity of the system. They allow the system to recognize which operations contribute to its reproduction and which do not. For instance, all and only those communications oriented to the code true/untrue belong to the system of science; only those oriented to the code legal/illegal belong to the legal system. Every system processes all its communications exclusively through the values of its code: the legal judgment or the aesthetic beauty of a communication is irrelevant for its scientific truth and vice versa. Every operation oriented to a code draws a boundary between inside and outside (thereby the distinction between self-reference and other-reference). This yields the differentiation of coding problems and reference problems [→*Constructivism*].

A functional system processes every possible object through its code, including the communications that belong to other functional systems. A legal communication oriented to the code legal/illegal is, for instance, processed by science according to the distinction true/untrue. Using an expression proposed by Gotthard Günther, Luhmann claims that the code of every functional system operates as a *rejection value* towards the binarity that orients another system. Thus through the rejection value, it is possible to refuse the binary schematization of that communication and to deal with it from another perspective. Society as a whole is thus defined as polycontextural, this mean that it includes many "contextures," each oriented to a different distinction.

Binarity is essential for the functioning of the code, which must process its values symmetrically: an institutionalized preference for positive values (e.g., the beautiful or the legal or the true) would make the reversibility between positive and negative values more difficult and partially destroy the benefits of binarity. The code itself produces no criteria for action and sets no preferences. However, within operations oriented to the code, choosing one value over the other has different consequences. True, legal, ownership (the positive values) represent the connection capability of the operations and their compactness (different truths confirm each other), while the negative side of the codes stand for reflective values (an untruth leads to the revision of earlier truths). The form of asymmetry thereby introduced in the strict symmetry of the code leads to the issue of →*programs*, which translate codes into directions for action. *[E.E.]*

Distinctions directrices. Über Codierung von Semantiken und Systemen (1986); Die Codierung des Rechtssystems (1986); Die Wissenschaft der Gesellschaft (1990: 173 ff., 194 ff.).