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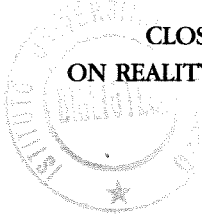
CLOSURE AND OPENNESS:
ON REALITY IN THE WORLD OF LAW *

by

Niklas LUHMANN

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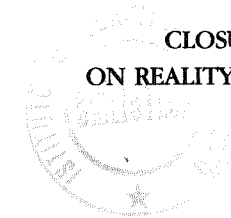EUROPEAN UNIVERSITY INSTITUTE, FLORENCE

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Autopoiesis in Law and Society (ed.) G. Teubner.

BADIA FIESOLANA, SAN DOMENICO (FI)

CLOSURE AND OPENNESS: ON REALITY IN THE WORLD OF LAW*

NIKLAS LUHMANN

I.

The debates about law as an autopoietic system show up a number of difficulties that arise when a general theory is transferred too directly to a limited special field. The general theory may be allowed simplifications, which need not be given up for more concrete applications, but do have to be modified. This is true even when, as in the case of the theory of autopoietic systems, one has to do with a particularly rich theory. The gain in wealth of ideas for very heterogeneous fields can be attained only through abstraction. This abstraction must be kept to in all applications; to do otherwise would be to abandon the theory. Nevertheless, possibilities must be found at the same time of taking account of aspects that are not susceptible of generalization.

When one starts from systems theory viewpoints, this general problem takes on special outlines. The theory speaks of system and environment as if there were only one type of case.

True, the distinction between system and environment makes it
clear that a solipsist position is being avoided. A system can
reproduce itself only in an environment. If it were not
continually irritated, stimulated, disturbed and faced with
changes in the environment, it would after a short time terminate
its own operations, stop its autopoiesis. But all that does is to
remove a classical objection that even Kant no longer took too
seriously. The question remains how the environment impinges on
the system, and what relevance this has for the system's self-
reproduction, for the continuation of its own operations.

If the theory of autopoietic systems speaks about self-
production or self-reproduction, this does not therefore mean that
the system controls the totality of all causes. On the contrary,
such a supposition would nullify the concept of production.
Empiricists aiming at unambiguous assignments of causes may
therefore find the statement that system and environment always
interact causally "spongy". Thus, e.g., Rottleuthner, this
volume: ***. On the other hand, the voluminous empirical research
on causal attribution teaches us that in the matter of causality
there is no way of avoiding selective judgement, and this shifts
the question of the "essential" causes (system or environment)
into the question of the structural conditions of the causal plan
used.

In this respect too the general theory of autopoietic
systemsstill gives perceptible guidance. It first of all

disregards causal attributions, since this is a matter for the
observer and can accordingly be handled differently according to
the structure and the autopoiesis of the system being observed.
Autopoietic closure therefore does not mean isolation; nor even
that internal causes are more important than external ones. Such
evaluations are left for observation of the system - and here
external observations may differ from each other and from internal
ones. The mere fact that the question cannot be put precisely -
what, after all, does "more important" mean? - confirms this
thesis.

The concept of autopoietic closure therefore initially says
only that the recursive application of its own operations to the
results of its own operations is an indispensable aspect of the
system's reproduction and that this defines the unity and autonomy
of the system. How large this own share is, from the causal point
of view, is not prejudged thereby. The theory's direction of
attack is towards quite other questions.

First of all, with a comparable theoretical approach, it
replaces Kantian premises. This has chiefly affected
epistemological questions. Autopoietic systems need not be
transparent to themselves. They find nothing in themselves that
could be regarded as an undeniable fact of consciousness and
applied as an epistemological a priori. The assumption of an a
priori is replaced by recursivity itself. Danilo Zolo, in this
volume: *** rightly points out that for this idea of recusiveness,

there are so far only biological (and one ought to add
mathematical) descriptions, that cannot be transferred to
rationally operating mental and social systems. This cannot
however, rule out the search for equivalent forms in the area of
systems of meaning, and precisely in the theory of science it is
very easy to find countless examples of recusiveness. Scientific
methodology is specialized specifically in exposing observation to
observation, and eliminating whatever cannot in this sense stand
up to an observation of observations. It may be that the
continuing application of the operations available to the system
to the results of precisely those operations produces stable
states (which means states that repeat themselves in further
operations, so-called "eigenstates"), or it may not, and depending
on the type of operation, many, or few, or only one of these self-
referentially stable states may exist. How far the system itself
possesses reflexive capacity to observe its own states and see its
own "identity" in them is another question.

Another starting point is that structures of the system can
be built up only by operations of the system. This too must take
place in such a way as to be compatible with the system's
autopoiesis; in the case of social systems, for instance, with
communication. There is accordingly no input and no output of
structures or operations of the system, and at this level, there
are no exchange relationships with the environment. All
structures are operationally self-specified structures of the
system, which orients its operations to these structures. In this

respect too, the system is a recursively closed system. As
presumably no one who accepts the distinction between system and
environment will deny, it cannot operate outside its boundaries,
in its environment; which undeniably means that the relationships
between system and environment, as an observer can see them,
cannot be actualized as operations of the system. The system may
produce ideas of its own or communications of its own about its
environment, but can never grasp and reprocess thereby everything
that it itself presupposes as environment. (Not least for this
reason, the environment appears to the system as a "horizon").

Epistemological "constructivism" concludes from this that
what the system, at the level of its operations, regards as
reality is a construct of the system itself. Reality assumptions
are structures of the system that uses them. This can be
clarified once more using the concept of recursiveness. The
system keeps a check on the environment, operationally
inaccessible to it, by verifying the consistency of its own
operations, using for this a binary scheme which can record
agreement or non-agreement. Without this form of consistency
control, no memory could arise, and without memory there can be no
reality (1).

These assumptions meet with considerable resistance,
because they contradict the reality assumptions of everyday life.
But even disregarding this and allowing science to have its own
peculiar theoretical formations, a theory at this level of

generality is not sufficient to explain the actual restrictions of the mode of operation of particular systems. It suggests, for instance, that autopoietic systems transform chaos into order (order from noise), whereas such chaos is in fact nowhere to be found. Even modifying this into "order from order plus noise", the statement remains so unspecific that not much can be done with it. Clearly, the obvious and trivial fact that the system cannot carry out any operations outside itself cannot be understood in such a way that the environment is a chaos for the system.

Taking a lead from the neo-Darwinist objections to Darwin, this objection may also be formulated in terms of evolutionary theory: a system that had to start from purely random relationships to its environment and wait for noise or irritation would take much too much time to build up its own order for it to be capable of evolution. The rate at which complex structures are built up cannot be explained in this way.

The thesis of self-referentially closed systems thus leads to a dilemma. On the one hand, it underlines the scarcely deniable fact that no system is capable of carrying out operations in the system's environment. Taken seriously, this explodes the traditional idea that the system might have some kind of access to a reality outside it or that the environment might be able to specify the structures of the system. This would call for special operations (e.g. in the sense of the classical distinction between sensation and reflection) which cannot be found even at the

neurophysiological level. On the other hand, the rate at which structures of complex systems are built up requires the assumption of a non-random, structured environment that confines the system. A theory of knowledge based on the theory of self-referential systems must be capable of resolving this dilemma and satisfying both requirements.

II.

All systems form in a presupposed material of continuum, which Maturana calls medium. For example, they presuppose a structure of matter rooted in atoms, just as the formation of atoms obviously presupposes energy capable of being bound. In the formation of systems, then, there is never any kind of recreation of the world in each individual case. This material of continuum which has in each case to be presupposed takes no heed of the system boundaries of the differentiating system; it is both inside and outside the system. It nevertheless limits the possibilities of system formation, since only such systems are possible as are compatible with the material of continuum.

The formation of rationally operating social systems already presupposes a multiplicity of such material of continua, and is correspondingly improbable. The physico-chemical structure of matter must have life added, moreover in highly organized forms, in order to make communication possible. None of this is

questioned by a constructivist theory of knowledge (or only if it is misunderstood). On the contrary, it is only from this that the physical limitations on the physicist's efforts at knowledge, the living limitations of all human knowledge, etc., emerge, on which more recent materialist or biological epistemologists lay so much value.

The thesis of operative closure says merely that for any system, only what is accessible for its own operations is accessible; that, therefore, for any system, only what can be formed as a unity through these operations can be a unity. This is because of the high complexity of the material of continuum and the necessary selectivity of all system operations. Thus, for instance, the human body is not a unit of life, but a unit of conscious perception or of communication. The individual cell would not, as a closed autopoietic system, be able to observe any unity of the body, apart from the unity of the genetic reproductive context, for which the organism is only a transitional stage in reproduction. Similarly, a person is a unit formed only for purposes of communication, merely a point of allocation and address; it is that consciousness forms its own autopoietic unity (not as person) (which does not exclude the possibility of its imagining that it is a person).

Corporality and personality are therefore complexity reductions and unity syntheses, used in higher order systems in order to observe aspects of their material of continuum. They have

to do with structures of other autopoietic systems than the ones denoted thereby. In this sense it is quite permissible, indeed necessary, to put it that bodies, or persons, are what they are not in themselves but through observation, in accordance with the "laws of form" (Spencer Brown).

For post-ontological theory formation, it is quite possible to assert that everything that "is" is formed through complexity reduction, and that the autopoietic systems in consequence form everything that acts as a unit for them through their own operations; for this in no way denies that for every system (and for all of them together) this complexity of their material of continuum exists, and to it distinctions and denotations, identifications and negations can be applied.

III.

Even these considerations are, whatever contribution they may be able to make towards clarifying the reality of the world of law, still couched very abstractly; and one is well advised always to abstract theoretical decisions as far as possible, in order to widen their sphere of application (2). Above all, we have still kept to speaking of a system in relation to which something is environment, or is material of continuum. We shall not now abandon this restriction, but we shall modify it, for in the case of law, system differentiation has to be included in the picture.

The legal system is a subsystem of the social system. Two system references therefore always come into play: that of society as a whole and that of law.

Since law is possible only in society, every autopoietic operation of the legal system is always also a continuation of society's autopoiesis. Any transfer of normative qualifications from one operation to a further one is always also communication. The law can use neither chemical nor even merely conceptual modes of operation (which of course does not exclude its having chemical or conceptual consequences). This means on the one hand that it must fit in with the social limitations on possible communication, and therefore for instance use language correctly, or at least comprehensibly. On the other hand, communication is also the way in which society's construction of reality is mediated to the law. The law need not and cannot concern itself with whether particular words like "woman", "cylinder capacity", "inhabitant", "thallium", are used with sufficient consistency inside and outside the law. To that extent, it is supported by the network of social reproduction of communication by communication. Should questions such as whether women, etc., really exist arise, they can be turned aside or referred to philosophy.

To be sure, the general physical/chemical/biological material of continuum must be distinguished from the special effects of social system differentiation (3). System differentiation, however, strengthens still more the assumption of

a continuous reality not bound up with the boundaries (in this case internal boundaries) of the system, which cannot be arrived at as a result of information processing. In this sense, the law participates in society's already achieved construction of reality, whithout having to work it out itself. It makes use of language and of a more or less consistent use of words inside and outside the legal system.

Nevertheless, the law differentiates out within society as an autopoietic system on its own, by setting up a network of function-specific communication which in part gives words a narrower sense, in part a sense incomprehensible for non-legal communication, in part adding coinages of its own (for instance liability, testement), in order to make the transformations needed by law communicable. Whether thallium is necessary in the production of cement and what consequences that has is not a specifically legal question. It may however be the case (or else not) that an environmental law develops that gives this question additional legal relevance. Should new findings emerge in this area, they may have legal relevance or not - irrespective of their chemical or economic relevance. It is only once the legal system is differentiated as an operationally closed system that structures emerge, through the operations of this system, which allow and compel independent selection of aspects of the environment.

Accordingly, the fact that the legal system is dependent on the operational mode of communication and therefore willy-nilly takes on social preconceptions and links them up with society's construction of reality must be distinguished from the law's special cognitive operations which prepare legal decisions or process other legal expectations. The law can of course not cognitively verify all implications of its continuous communication, or even merely qualify them as cognition. In this respect, it may remain ill-defined, but presupposes that any communicatively processed assumption can be an object of cognitive verification, as soon as the autopoiesis of law, the processing of normative expectations, so requires. Whether electricity is a moveable within the meaning of the law becomes relevant and is verified when someone claims that someone else has "stolen" electricity. In any case, the scheme is used normatively and cognitively within the legal system and does not, without further ado, represent within the system the difference between system and environment too; and very frequently this schema refers the law back, even in cognitive questions, not to the environment, but to itself, and to the intended meaning of hitherto usual formulations. What did the system mean, or seek to exclude, in the formulation "moveable property of another"?

It nevertheless remains correct to say that the cognitive operations guarantee the system's oppenness to the environement (not its relations with the environment!); and likewise, that as regards the function and code of the system, cognitively oriented

operations are secondary by comparison with the system's recursively closed autopoiesis. It may always be that legal norms or other previous decisions on which an effort at a finding is based prove invalid, or that other constructions of legal dogma change the approach to the issue; and then the cognitive operation, with its willingness to learn, immediately stops too, because the changing of findings (learning) would then no longer have any function within the system.

Entering into this primacy of the law's normative autopoiesis by comparison with all claims to meaning of daily life is something one learns in the course of legal studies. Other things connected with this are the principle of the brevity of legal argumentation and justification of decisions, and the often dominating preoccupation with what has nothing to do with the case.

IV.

Further consideration of the law's reference to reality presupposes that there are systems that consist of nothing but events, that have no duration in which they can change, but disappear immediately on their emergence (4). Such systems consist, then, of unstable elements that acquire duration only by continually replacing disappearing elements by other ones; and by contrast with biological replication, these need not be the same

elements, but can be of a different type. A communication cannot be followed by the same communication, but only by a suitable different one.

Since the social system (and the legal system within it) consists of nothing but communications, it belongs to this type of system that consists of events. In such cases, then, autopoiesis does not mean reproduction despite threat from without or despite natural decay of the elements. Instead, the elements are produced in order to end immediately, the system continually disintegrates itself. And the autopoiesis stops at every moment - unless continued.

As far as reality references are concerned, this peculiar, devious system structure, oriented towards almost simultaneous dissolution and recreation, has a particular advantage. It can allow events to act simultaneously on several systems, as long as only their selectivity and their self-referential interweaving with other events always belong to different systems. Thus, communications are always also events in the consciousness of the participants (5). Nevertheless, the systems remain separate, because the events (which can be identified by an observer as one event of conscious communication) select in each case from different systems in relation to different other possibilities; this constitutes the meaning of the event in each case. That the elementary operations have the character of events can guarantee a high degree of interpenetration of the various systems,

preventing, through the disappearence of the events, the systems from becoming stuck to one another. Thus, albeit in extremely precarious form, especially close relationships between system and environment can be produced. The transience of the "material" is exploited in two ways; for the reproduction of the system and for the interpenetration of system and environment.

While this type of linkage between system and environment is brought about almost obligatorily in the relationship between social system and consciousness, the twofold membership of events in various systems can also exist within society, albeit more occasionally. An act of payment is economically relevant, but may also take place in fulfilment of a legal obligation. An act of legislation has political meaning, and if legally valid, simultaneously brings about a structural change in the legal system. Here again it is true that any system can constitute the event as an element of its own through self-referential reference to other operations of its own system; at the same time, an observer uninterested in the sharper distinctions can in each case see an event of economic law or political law respectively. The networks of communication and the selective pattern of the definition of the elements in each case remain different; at the same time, however, on the basis of the participation on all sides in social communication, it is clear that the legal system could not treat a payment as a payment, were it not a payment in the economic system; just as the political system could not see a law as proof of success of political activity, or combat it as an

opposition, if the legal system were to treat the law not as a law, but, say, as a legally irrelevant expression of opinion by certain politicians.

One might go on to imagine examples of a much looser linkage, in which even an external observer would have trouble in relating the twofold membership to a definable event. Attendance at school is compliance with the legal obligation, but learning cannot be legally required. The purchase of Christmas presents may be an event within the system of the family that is not perceivable as such in the shop, and only rarely throws up legal problems - if, for instance, the present has been chosen in such a way as to amount to grounds for divorce.

In any case, whether tightly or loosely coupled, this reality mediation through events has to be distinguished from what the systems involved process as information. Information is always selection exclusively within the system - conditioned by the selective approach used within the system. It is therefore neither possible nor necessary for the simultaneous presence of events in several systems to be used by the latter as information. Correspondingly, the surprise value of one and the same event differs in different systems. The now notorious practice of party contributions was a surprise only for the legal system, while the political system was surprised only by the fact that the legal system was surprised thereby and the economy continues to attribute no significant informational value to such slight sums.

As long as it is a case of information, i.e. of selection from a range of equally possible other events or non-events, every system is dependent on itself, and this is true for the informational value of operations carried out by itself as it is for that attached by the system to events that it assigns not to itself but to the environment. For information is nothing other than a component of communication, and thus an aspect of internal autopoietic operation, and its cognitive structures are based on the internal representation of this difference between system and environment within the system.

The distinction offered here between linkage to environment through material of continua and through simultaneous presence of events, on the one hand, and information processing on the other, solves a problem that has been exercising minds since the age of scepticism. On the one hand, the system his available only its own mode of operation and only information processing using its own operations. Everything the system determines about reality in this way remains subject to its own operations and therefore negatable. In the system, therefore, certainty as to reality can be reached only through recursive application of its own operations to the results of its own operations, i.e. only by second-order cybernetics, and by eigenstates in Heinz von Foerster's sense. On the other hand, the system has to be supported in carrying out its own operations by material of continua. It does not have sufficient "requisite variety" to be able to reconstruct everything that exists within itself as

information (6). The legal system especially must be able to base itself on the general possibilities of communicative interaction (and therefore on its own sociality) as well as on multiple membership of events in systems; since otherwise it would go from hundredths to thousandths and ultimately have to treat every event as a selection of one world-state from all other possible world-states.

Scepticism was right in its view that the certainty of living in a really existing world could never be expected as the result of information processing. The equally well-known counterargument that this view cannot be consistently advocated does not, however, lead back to pre-scepticism certainty of reality. It only indicates that consistency checks within the the system, whereby its own operations are referred to the results of its own operations, are used within the system as a reality indicator, and that this is enough if the system also possesses the distinction between self-reference and outside reference and is thereby able to differentiate the consistency checks according to whether it assigns the selection of information to itself or to the environment.

That this procedure already presupposes reality is easy to see for an observer; but the autopoiesis of the observing system operates under precisely the same restrictions, thus likewise processes only its own information. For the system itself the same state of affairs appears, quite marginally and as it were out

of the corner of an eye, from the fact that any information processing presupposes a reduction of complexity. Thus, the legal system may treat a payment, according to the circumstances, as fulfilment of contract, tax evasion, bankruptcy offence etc. - but not as wearing out banknotes or as power consumption by a computer, nor as fictional dealing with a reality invented by the economic system. Communicatively and as far as events are concerned, it can take the payment for granted as "what is understood thereby".

V.

If all this is presupposed, the concept of autonomy of the system can be freed from traditional assumptions and redefined. Autonomy then, does not mean having a large share in the causes of one's own operations or of the continued existence of the system - an idea that would compel weakening the concept in the direction of "relative autonomy" and obscure any clear boundary between autonomy and non-autonomy (7).

But autonomy does not, either, simply mean self-regulation or self-organization with given interdependencies of system and environment. This may of course be accepted as a provisional conceptualization, more useful than the one concentrating on causality; but it neglects the fact that the system has, in order to regulate its operations, to use precisely the type of

operations that regulate it. Law-making and law applying operations cannot be distinguished in principle, even if the sytem itself has institutionalized this difference. Autonomy in the sense of self-regulation would, then, mean nothing other than institutionalization of the difference between rule-formation and rule-application in the system. However, this merely leads back to the question how the system is then in a position to set up such a difference. This question can be answered using the concept of operational autonomy.

From the genetic point of view, autonomy is thereby to be reduced to the fact that operations can be linked with operations only selectively, and that recusive applications of operations to results of operations therefore inevitably, if they occur, lead to the differentiation of systems. Such systems are then autonomous at a basal level, since they can reach forwards or backwards to operations of their own in order to produce operations of their own.

The obverse of this autonomy is that the corresponding conditions can neither be taken from the environment as input or given to it as output, i.e. cannot be exchanged. Thus, the legal quality (whether validity or invalidity) of claims and decisions can be derived only from other operations of the same system (for instance, by reference to statutes or to precedents or to such dubious recourses as "prevailing opinion"); it cannot be supplied from external sources like religion or politics or the economy;

and if in the legal system such references to external sources can be found, then these references are in turn already legal norms, which _legally_ legitimate block acceptance of external norms or decisions (of good morals, say, or sound management, or the majority decisions of political processes). Any other view would have the problem of explaining how law and morals, rules of sound management, etc. could then be distinguished.

While for the emergence of the autonomy of the social system it is enough to have communication that is ultimately constituted by the distinction of information and communication of information (8), functional systems like the legal system are dependent on particular codings (9). Accordingly, law emerges only if, and only in so far as, the need is communicated to distinguish between (legal) right and wrong. It is only under this condition of split self-reference that operational recursivity takes on the form of right -> not wrong -> right (instead of : right -> right -> right). It is only this that equips the legal system for internal consistency checking; and it is only in that way that wrong conclusions from right to right (e.g. from the lawful purchase of a car to permission to drive) can be avoided. Only this intermediate check of whether right need not perhaps be wrong prevents the law from legitimating too many expectations which cannot then any longer be brought into a complementary order.

As for autopoiesis in general, it can also be said about autonomy that it either exists or does not. It cannot be realized a little bit, or only relatively (compared with what?). All that is relativizable is the degree of differentiation of the system according to the quantity and nature of the operations that it can carry out. The struggles for "autonomy" of the law against theological and political tutelage, against the non-justiciability of church matters, against the linking of legal dogma to theological appropriateness, against royal interference etc. are (in so far as this is all not just liberal legend-making) to be understood as processes of the law's increased differentiation, i.e. as aspects of the historical transition to a functional differentiation of the social system, ending ultimately in the universality of the legal system's functional competence.

It has just as little sense to fear a loss of the law's autonomy if political forces, or economic interests, are impinging more on the law. The instruments of this influence - parliamentary legislation and contractual freedom - were, not by chance, created at a time at which the desirability and the reality of the law's autonomy were beyond question. This historical connection between the law's differentiation and the instrumentalization of the possibilities of using it shows sufficiently clearly that the point is an increase in the law's autonomy and dependency in relation to its social environment, i.e., its differentiation. Seen as social implementation of a claim for autonomy, the process would be paradoxical; for that

would mean that the autonomy was to be guaranteed by surrendering the arbitrary power of restricting it.

The law's autonomy is in danger only when the code itself is in danger - for instance when decisions are taken in the legal system itself increasingly according to the difference between beneficial and harmful rather than the difference between right and wrong. Tendencies of this nature can be found. They have been promoted by interest-group case law and by "social engineering" doctrines. In limiting cases one may reach the point when the anti-trust courts can no longer be distinguished from the anti-trust office, or youth courts from the youth welfare office itself (or only as part of an organizational sequence of proceedings). It is precisely when one wishes to observe and describe such developments that crystal-clear conceptualization is important. And precisely in practical questions, it will be of little use concentrating on more or less influence, and defining the bottle as half full or half empty according to one's initial expectations.

VI.

All this does not yet answer the question of how correct the theory of autopoietic systems is to take it that its assumption that there are autopoietic systems corresponds to reality. Danilo Zolo even thinks that he has discovered a crass

contradiction here, namely the introduction of "metaphysical" premises into constructavist theory (10). This is, however, a misunderstanding, and again a crass one, of the whole theoretical position; and the misunderstanding shows how hard it is really to apply the idea of self-reference as fundamental and to stick to that decision.

If social systems as such, and therefore science also as a social system, are autopoietic systems, then all the assumptions developed for law, society and other social systems apply also to science, to sociology and to the communicative context of a theory of autopoietic systems. The discoveries of this theories must be applied to the theory itself, and they can be applied to the theory. The theory would indeed contradict itself were it to claim for itself an exceptional position, with privileged access to "external reality". This is, however, neither meaningful nor needful. The constructions of the theory are applied in all consistency to the theory and to its communicative context too. The statement that "there exist autopoietic systems" then means nothing other than that the reality construction of the theory of autopoietic systems takes off from this assumption. It does not form "merely analytical" concepts which bring in a difference between analytical and real situations, but through its constructs deals directly with what is reality for it. And the test lies ultimately in the recursiveness (doubted by Zolo), namely in the insight that this works even though the theory itself compels self-reference.

Perhaps this is "meta"-physics, at any rate a universalistic position that allows no exception. But the point is no longer ontology, since it is no longer assumed that there exist in the world (or outside the world) positions from which the world can be correctly (or perhaps falsely) described as it is. Such positions consistently end up with cancelling out the observer; for if he observes correctly he sees only what is the case, and therefore adds nothing of his own, and if he observes wrongly, his observation is worthless for that reason alone (11). The new natural (or material, biological, sociological or in any case empirical) epistemologies differ in principle from traditional epistemologies by presupposing the observer's own contribution, inseparably bound up with his system structures, his autopoiesis, his instrumentation as a condition of knowledge. The thesis of the recursive closure of all cognition draws a radical consequence from this (already widespread) post-ontological epistemology. If it is rejected as untenable, then the question arises whether an observer's own contribution can be construed otherwise (and perhaps better) - or whether the assertion is ventured that there is after all a privileged (and therefore negative!) place for observing the world. And that would have to be the place of the person making that assertion.

NOTES

1.   Heinz von Foerster further shows that memory is nothing but this consistency check, and is therefore to be understood as an undistinguishable aspect of all cognitive operations (and not, say, as a kind of "store", where with a bit of luck something may be found). See: What is Memory that it May have Hindsight and Foresight as well?, in: Samuel Bogoch (ed.), The Future of the Brain Sciences, New York, 1969: 19-64, and specifically, on the need for binarization: "Self-reference enters the system through two channels, one via a priori established "good" or "bad" signals (+) (-) that report the consequences of an action; the other one via the loop (A) -> (A+) -> A or, mutatis mutandis, via corresponding other loops that report the state of its own actions" (p. 35). On this cf. also Ladeur in this volume, ***.

2.   As can be easily seen, this rule clashes with the usage of applying theories in a manner specific to a discipline, and meeting any analogy to situations outside the system with mistrust.

3.   This was pointed out to me (orally) by Gunther Teubner. (See also Social order from Legislative Noise? :***). I have not however followed his suggestion to stop, for that reason, calling

the densified connections within differentiated systems "material of continuum".

4.   There is no intention to deny that this takes a certain time and to that extent presupposes duration in the sense of a "specious present". The decisive point is that the event has no duration in which it could change, since this would amount to breaking up the event into smaller events.

5.   Not always of all participants. It may very well be that one of them experiences as communication something that the other did not mean as communication.

6.   If this is true, it is hard to see how systems of interaction between autopoietic systems can emerge to which the same limitation of requisite variety does not apply equally or even more narrowly. Systems formed among systems can (precisely because of their extremely limited capacity) be important for handling conflict, but not as a way of confrontation of systems with reality. On this cf. also Gunther Teubner, Social Order from Legislative Noise?, ***, and Michael Hutter, How the Economy Talks the Law into "Co-Evolution", ***, on "conversation circles".

7.   If this concept is recommended by Richard Lempert (this volume ***) as especially suitable for empirical research, this unclarity as to "how much" would have to be removed by further indications; and considering the well-known problems of causal attribution, it is hard to see immediately how this can be done.

8.   For more detail see Niklas Luhmann, Soziale Systeme: Grundriī einer allgemeinen Theorie, Frankfurt, 1984: ***.

9.   The fundamental importance of binarization of self-reference for the differentiation of systems arises from the need for discriminiative capacity in the linkage of operations. Binarity is the simplest, quickest and therefore evolutionarily the fittest form for this; see also Note 1. above.

10.   Lo statuto epistemolgico ... in this volume ***.

11.   Thus, e.g. Maurice Merleau-Ponty, Le visible et l'invisible,, Paris, 1964, who, starting from these considerations and taking up from Husserl's late philosophy, puts the human body in the position of an epistemological a priori; also, with remarkable coincidences in the formal analysis, Gotthard Gēnther, Beiträge zur Grundlegung einer operationsfähigen Dialektik, 3 Vols., Hamburg, 1976: 80.