2. A Critique of Ordering Power

I begin my analysis of order formation by turning to the authors of the third phase of the explanation-understanding controversy. These authors distinguish between nature and culture, and base the possibility of criticism upon this distinction. This has the advantage, for our purposes, of making explicit a function of the nature/culture distinction that goes beyond its purely methodological significance. Thus Apel's emancipatory cognitive interest is meaningless without the nature/culture distinction, and even those thinkers who try to subvert it at least implicitly hold on to the notion that the social sciences ought to critique established ordering systems. Latour even goes so far as to suggest a solution to the problems diagnosed in his analysis of the modern constitution (Latour [1991] 1993): include things in political representation (Latour [1999] 2004). At the same time, a not insignificant portion of the scholarly criticism of the notion that the nature/culture distinction is contingent posits that such a claim would destroy any possibility of normative criticism of developments in society (Star 1995). Since the possibility of normative criticism is implicitly—or in the case of Boltanski (2011) once again explicitly—significant for much of the work being done in the social sciences, it seems important to me to keep this aspect in mind when questioning the nature/culture distinction. I therefore begin with Apel's intervention into the explanation-understanding controversy from the perspective of transcendental pragmatics before turning to attempts to conceive of the nature/culture distinction as one possible form of order formation among others.

2.1 The transcendental-pragmatic critique of the nature/culture distinction

From the perspective of the explanation-understanding controversy, it quickly becomes clear that the nature/culture distinction was not initially an ontological one. Instead, it emerged from reflections on the possibility of different research perspectives. Since the dispute over the legitimacy of these different perspectives has still not been resolved today, the explanation-understanding controversy continues to be a hot topic in the debates surrounding theory and methodology in the social sciences (Greshoff, Kneer, and Schneider 2008; Mantzavinos 2009; Winch [1958] 2008).

The transcendental-pragmatic critique of the nature/culture distinction was chiefly formulated in the context of the second and third phases of the explanation-understanding controversy. Hempel and Oppenheim (1948) contended that explaining was the only legitimate method in the sciences. The "new dualism" (Landesman 1965) asserted in analytical philosophy positioned itself against this claim, arguing that the two modes of knowledge of "explaining nature" and "understanding human actions" were to be understood as language games in the Wittgensteinian sense. Thus explaining and understanding could not be reduced to one another; they each constituted a different and separate language game and complemented each other. Wright's ([1971] 2009) discussion and further development of these approaches is representative of what Apel ([1979] 1984) referred to as the third phase of the explanation-understanding controversy.

Apel himself critically engaged with Wright's work and sought to develop it further by working out the autonomy of the two epistemological approaches, and, crucially, by demonstrating their internal connection in an attempt to overcome the separation between nature and culture. His transcendental-pragmatic proposal thus contains a double move: it follows the new dualism by demonstrating the irreducibility of both explaining and understanding, while at the same time honing in on this separation and seeking to identify a perspective from which both the separation and the relatedness of explaining and understanding can be grasped. This line of argument is also a criticism of Kant in that it replaces the transcendental subject as the condition of order formation with a discursive community of co-subjects (Apel 1973).

In his demonstration of the legitimacy of understanding, Apel takes up and carries further Wright's interpretation of the way scientific experiments are carried out ([1971] 2009:69ff). Wright argues that in order to be able to grasp the implementation of an experiment, we have to assume that someone has acted in a meaningful, and hence comprehensible, way. There must be an experimenter who set up the experiment in which an effect is caused by certain actions. For Wright, an experiment is a manipulating interference setting in motion a sequence of processes that, excepting the initial trigger, are not influenced by the experimenter. He makes a clear distinction between the causing action and the event it brings about, which in turn leads to subsequent events in the experimental system.[21] The hypothesis suggests how these subsequent events might transpire, and con-

21 Rheinberger (1992a, 1992b, [2006] 2010) later prominently fleshed out the concept of experimental systems, focusing less on the work of meaningfully con-

tains a certain nomological assumption about the world which is either confirmed or refuted in the course of the experiment.

Without purposive actions, it would not be possible to design or functionally construct an experimental system. The rational purposive actions involved serve to construct and carry out experiments which test hypotheses. Without an understanding of the meaning of these actions, the experiment would be meaningless for both the experimenter and the observer. The assumption that an experiment serves to answer a scientific question necessarily presupposes meaningful actions.

Understanding the experimenter's interference, which sets in motion a sequence of natural processes no longer influenced by her, as a sequence of natural events renders meaningless the event of "carrying out an experiment in order to test a hypothesis." The meaningfulness of this event is the condition for the possibility of causal explanations. The construction of causal explanations is predicated upon causal relationships being established, for what is at first a mere sequence of observable events, by making reference to the starting hypothesis. If the meaningful connection between manipulative action and experimental procedure is destroyed by reducing this action to nothing more than a natural event without meaning, the statement that we have here a causal explanation of phenomenon X would also lose its meaning. The process would disintegrate into a sequence of unrelated events, which could only be meaningfully connected by an external observer of the situation labeled "carrying out an experiment." It follows from this that if an experiment were to be regarded exclusively following the deductive-nomological model—that is, without understanding the meaning of the experimenter's actions—there would be no causal explanation for anyone but only a sequence of unconnected events. A causal explanation can only come about if the situation is approached by means of understanding. In other words, a scientific study of experimentation requires its own scientific approach of understanding in order to make the scientific content of experiment implementation, the construction of causal explanations, into its object of study.

The observation that neurobiological, instrumental conditions must be given for the researcher to carry out an action does not call this interpretation into question. While it is true that the execution of an action depends upon, e.g., neurophysiologically measurable control processes, the mean-

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structing experiments than on the way in which experimental systems themselves produce something new in their interaction with technological artifacts and scientific objects of study.

ing of the action cannot be reduced to these measurable events. The fact that a bodily movement is an action cannot be explained by neurobiology (see also the recent discussion in Krüger 2007).[22]

Apel develops this argument further by introducing the a priori of the lived body [*Leib*], according to which human beings are ineluctably tied to the position of their lived bodies by way of a sensory relationship to their environment in the here and now (Apel 1975). At the same time, the position of the lived body can also be regarded from the outside as a physical body [*Körper*]. There is thus always a twofold perspective: the internal perspective of the lived body and the outside perspective on the physical body. An action can only succeed if an actor relates to his environment from the lived-body perspective while at the same time bringing about the conditions of his physical body that are the instrumental prerequisites of his action. Central nervous control must be subjectively applied in such a way for the desired movements to be carried out (Apel [1979] 1984:97).[23] In this process, the lived body itself constitutes the actor's ineluctable anchor in the world, but cannot be captured as such by the objectifying measurements of neurophysiology.

The causal explanation as understood in the context of the deductive-nomological model presupposes an uninvolved, removed observer with a purely theoretical attitude toward her subject. For such an observer, the world does not exhibit coherency of its own accord. Coherency is only brought about by an action positing a starting point whose consequences can then be observed with the aid of a model. The observer has to actively intervene into the world in order to construct a system in which a designated manipulation leads to events ensuing in a particular, repeatable way. The overall context of manipulative interference, ensuing sequence of events, and schematizing observation is the necessary prerequisite for establishing a causal explanation. The notion of understanding, which introduces the perspective of acting co-subjects, thus becomes necessary for grasping the way an experiment works in the deductive-nomological model. The deductive-nomological model cannot comprehend its own func-

22 A close look reveals that even neurobiological experiments are based on an understanding approach to their—both human and non-human—research subjects (Lindemann 2009c).

23 The possibility of subjectively influencing neurological processes can be seen even in experiments with monkeys; see, e.g., Fetz (1969). An analysis of the specific ways in which neurophysiology is necessarily reductive can be found in Lindemann (2005a, 2009c).

tioning—a theoretical claim convincingly supported by research in empirical science and technology studies as well as in the history of science.[24]

Emancipatory cognitive interest

Establishing this relationship between explaining and understanding would have been the end of the matter for Apel if he had not discovered that the deductive-nomological model of explanation can, under certain conditions, also be successfully applied to an analysis of human contexts of action. This important discovery led him to the notion of "emancipatory cognitive interest." While Apel's emphatic version of this kind of cognitive interest has become all but irrelevant, it still bears closer examination, as it characterizes just about every theory favoring an understanding approach, albeit in watered-down and sometimes cryptically encoded form. Once the underlying structure of this kind of cognitive interest has been worked out, traces of it can be found even in the work of such purportedly anti-humanist theorists as Foucault and, in modified form, in actor-network theory.

Apel arrives at the notion of emancipatory cognitive interest by examining the problems that arise when human contexts of action are analyzed using the deductive-nomological model. This model, he argues, can be applied to human contexts that are so firmly institutionalized that they lead to largely fixed behavior or behavioral dispositions. Under such conditions, humans behave as if they were determined by their societally created second nature, and the deductive-nomological model can be used—as long as the possibility of this second nature changing is set aside. These, then, are the practical conditions for research using the explanatory approach. As Apel suggests, this leads, however, to a paradoxical and thus unstable situation.

In order to meaningfully formulate a causal explanation, the researcher must see himself as someone who is acting freely—otherwise he would not be able to come up with a meaningful construction of causality and develop an appropriate study design. The construction of the causal explanation (and sometimes also of the associated experiment) is necessarily oriented toward understanding as the experimenter communicates with other researchers. This group of people claim to be modeling the actions of other

24 For the history of science, see Shapin and Schaffer ([1985] 2018); for science studies, see Fleck ([1935] 2008), Knorr Cetina (1981, [1999] 2003), and Garfinkel, Lynch, and Livingston (1981).

people in terms of a sequence of events that can be described by laws, establishing a subject/object relationship with those being observed. Since there are human beings on both sides of this relationship—on the object as well as on the subject side—the question arises as to how the researchers see themselves in this construct. There are two possibilities: either (1) the researchers see their own practice, including those actions that are geared toward understanding, merely as a phenomenon to be explained; or (2) the researchers see their own behavior as something to be understood, but that of the people on the object side as a natural sequence of events that can be explained and given a causal connection by means of a hypothesis applied to it from the outside.

1. Scientism/self-objectification/self-naturalization: For Apel, the first position is an example of the kind of naïve scientism of which he accuses Skinner, for instance. It amounts to a paradox, he argues, because the construction of a causal explanation necessarily presupposes the existence of actors who manipulate the world expecting a certain event to occur as a result. If the event occurs, their hypothesis of a certain lawful connection is confirmed. If the researchers deny that they were the ones who performed the manipulation, who have expectations, or relate the data to the hypothesis, we must wonder who did. If it was no one, nothing but a sequence of events occurred, but not the testing of a hypothesis about a lawful connection (Apel [1979] 1984:207).
2. Separation between subject and object within the group of subjects: If the researchers think of themselves in terms of the second position, this gives rise to the question of the legitimacy of dividing people into co-subjects one seeks to understand and objects one seeks to explain. For Apel, this permanent separation of human beings into distinct groups is ultimately unjustifiable. All human beings, in principle, are co-subjects who can be understood. The consolidation of specific motives for acting into a second nature that makes explanations possible does not do justice to the true nature of human beings. This true nature, Apel argues, lies in self-determination by way of communicative, understanding-oriented interaction with co-subjects. A division of humans into subjects and objects can thus not be upheld.

These paradoxes lead Apel's transcendental-pragmatic reflections to uncover a third cognitive interest, that of an "emancipatory interest of knowledge" (Apel [1979] 1984:218). The necessity of introducing this kind of cognitive interest arises from the fact that an explanation of human contexts of action requires recourse to human second nature—human "quasi-nature"—as it was created societally, Apel argues. This quasi-nature, how-

ever, is not the same as true human nature. Even under the living conditions of modern industrial societies it is unavoidably the case that institutional contexts determine human behavior in this way, i.e., produce fixed motives for acting, rendering an explanatory approach based on a quasi-nature legitimate. However, research of this kind, Apel cautions, can never be the last word. The aim should rather be to eliminate these unconscious determinations by analyzing them with an understanding approach, thereby creating conditions for a transformation of society. Transcendental pragmatics thus opens up the possibility of giving guidance to emancipatory political practice on a scientific basis. Such practice, however, only remains emancipatory as long as it is willing to subject itself to criticism in the form of discursive control by co-subjects (Apel [1979] 1984:217ff).

Apel's third cognitive interest is aimed at functionally overcoming the opposition between nature and culture by gradually translating the reified second nature of humans, their quasi-nature, into comprehensible, discursive practices of action. Such practices enable societal learning and responsible societal action which either eliminates external constraints or recognizes the necessity of action-limiting norms and thus follows them freely.

While not all hermeneutic social sciences share the emphatic model of societal learning contained in emancipatory cognitive interest, some of the other characteristics of this form of interest do constitute a general trait of these disciplines. In its generally shared, rudimentary form, emancipatory cognitive interest involves—usually implicitly—a criticism of categorical determinations of human beings that turn them into agents of cultural norms. There is an implicit normative and emancipatory assumption here that human beings should, in principle, not be treated as, or only as, objects of knowledge or power practices. Human beings should rather be acknowledged as subjects able to operate and negotiate, if not act. Both Garfinkel's criticism of Parsons, which focuses on the reduction of humans to the implementing organs of cultural values, to "cultural dope[s]" (Garfinkel [1967] 2011), as well as science and technology studies inspired either by ethnomethodology/the sociology of the everyday or by symbolic interactionism place human beings in the position of actors who create order, with all participants conceived of as actively involved in order formation. Foucault's critique of power and discipline draws from this same source. His analysis of the subjection of humans to ordering systems of power and discipline functions automatically as a critique of these systems (Lindemann 2003). The inner logic of these analyses aims at the paradoxes of the subject-object relationships that occur when people try to turn other

people into objects. They thus point, at least indirectly, to emancipatory cognitive interest as their foundation.

The possibility of emancipatory criticism, however, is tied to a consensus on who is considered a subject. Only once this is established can observers and interpreters of societal conditions identify paradoxical subject-object relationships. Positing the sphere of social actors as contingent could thus fundamentally impair the possibility of emancipatory criticism, which has led to a particularly heated debate surrounding this question in science and technology studies (see Collins and Yearley 1992a, 1992b). Susan L. Star (1995) entitled her criticism of the expansion of the sphere of possible subjects to include more than human beings "Why I am not a Nazi." The point being that one can no longer criticize the reifying categorization of humans if one holds non-human beings (cats, technical artifacts, etc.) to be actors as well.

In summary, for action-focused transcendental pragmatics, the subject with the capacity for order represents the communication community formed by co-subjects. And it seems that only living human beings can function as communicating co-subjects.[25] Clearly drawn boundaries of the communication community are the condition for the practical effectivity of an emancipatory cognitive interest. This holds not only for Apel's strong emancipatory cognitive interest aimed at societal learning, but also for the weak or cryptic version of this interest, where it is a matter only of criticizing the fact that human beings are made into objects of societal structures.

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25 As regards the possible expansion of the sphere of entities the social sciences can seek to understand, Apel's work contains a kind of slip, a passage that is difficult to classify: "On the level of natural science, or at least, that of physics […] one must leave archaic magic behind; one has to come to terms with the fact that at least within inorganic nature, an interest in coming to an understanding corresponds to no ontic correlate in acts of knowledge that can be controlled methodologically" (Apel [1979] 1984:205). In the overall context of Apel's line of argument, this is a puzzling passage, as it subverts the clear boundary between nature and culture with the aid of the methodological difference between explaining and understanding. The exclusivity of explanation seems to be limited here to anorganic nature. Apel leaves it open whether communication-oriented cognitive interest geared toward understanding can be meaningfully broadened to include organic nature—he excludes this possibility only for anorganic nature, but does not continue this line of thought. Modifying the scope of the sphere of the entities the social sciences can seek to understand would be of enormous significance for the third form of cognitive interest: it is this interest that is concerned with the paradoxes resulting from entities accessible to understanding—that is, who have the status of subject—being treated as objects.

Conceiving, as Apel does, the agent of criticism as a rational, self-critical communication community raises the question of whether this agent can be simply universalized. In all likelihood, aspiring to rationally criticize existing ordering systems is itself a characteristic of modernity. Universalizing this standard would mean that premodern societies exhibited, at best, undeveloped precursors of this aspiration. By positing the rational self-criticism of modernity as a standard by which other ordering systems in the world are to be measured, the model of a rational critique of knowledge, or of a rational critique of epistemological claims, becomes unable to grasp the equal possibility of different ordering systems.

2.2 *The expanded problem of order in science and technology studies*

Empirical science and technology studies have produced a wealth of empirical and theoretical studies developing, and providing evidence for, the claim that scientific research can only be understood as a process based on action and interaction. Fleck's study *Genesis and Development of a Scientific Fact* ([1935] 2008) is considered a classic work in a field of research that comprehends even the distinction between true and false knowledge as understandable and explainable in terms of contexts of action. Science studies lost this radicalism for a period, until it was attained again in the 1970s (see Heintz 1993a). An important turning point here was Bloor's "strong program" ([1976] 1998). Bloor's approach departed from the sociology of scientists, of the interests and values guiding their actions (Merton [1973] 1988), and called for a sociological study of the cognitive core of science. This approach implied a symmetrical treatment of the distinction between true and false knowledge. Until then, mainstream sociologists of science had regarded the acquisition of true knowledge as a genuinely scientific matter and had only taken social factors into consideration when analyzing knowledge judged to be wrong. Only this latter kind of knowledge was attributed to social causes, while knowledge that was held to be true based on the latest research was regarded as the product of pure science. Treating the distinction between true and false knowledge as an appropriate question for sociology is to ascribe it to social processes (Bloor [1976] 1998). This move also signifies a return to understanding the cognitive core of scientific knowledge as based on action/interaction.[26]

26 The fact that, and the extent to which, scientific action is action that can be understood also becomes clear when we recognize that science takes place in a nor-

Nearly all fields of scientific knowledge, including theoretical physics (Merz and Knorr Cetina 1997) and mathematics (Heintz 2000), have since been examined from this perspective. These studies have increasingly foregrounded the role of things, that is, the role of the entities being studied or of the apparatuses being used in experiments and the inscriptions they generate. Pickering, for instance, investigates these aspects by looking at particle physics and the experimental procedures used in this field. He is particularly interested in the elaborate process of synchronizing measurement methods, apparatuses, and theories in order to arrive at consistent results (Pickering 1993). While philosophical analysis of an experiment makes it seem as if a single manipulative act was followed by events that were not directly caused by that act, empirically it appears that this state of affairs is only the end point of a protracted process of construction. The distinction between the manipulative interference and the events it triggers can only be made because everyday scientific practices have rendered theories, apparatuses, and experimental results compatible with each other (Pickering 1993).

2.2.1 The expanded problem of order as consequence of the broadening of understanding

The turn toward the everyday nitty-gritty of scientific research has led to a greater foregrounding of the role of things, i.e., research apparatuses and objects (Collins 1985; Garfinkel, Lynch, and Livingston1981; Knorr Cetina 1981; Lynch 1988; Woolgar and Latour 1979). The question arises how we can speak of intentional acts when action in the laboratory is determined by material experimental systems, which are modified in a painstaking process that is less a matter of planning than one of trial and error. Furthermore, when scientists describe their own practice, they ascribe actor status to the things themselves (Callon 1986). If things show up in the accounts of scientists as actors, should sociological analysis not expand its definition of actor (Callon and Latour 1992)? Are sociological relationships only between people or is there also such a thing as "sociality with objects," i.e., social relationships with objects (Knorr Cetina 1997)?

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mative context which itself cannot be unambiguously separated from the cognitive core of scientific knowledge. Ethical, legal, and political discourses are not external to the hard core of science but govern the practice of scientific research and thus also shape its results (Hauskeller 2004; Jasanoff 2007).

Problematizing the status of objects and thus extending the subject-object paradox to nonhuman actors touches on the critical point of emancipatory cognitive interest. Methodologically, there are three possible ways of dealing with the problem.

1. Extending understanding to nonhuman entities means that there are only understanding subjects and no objects. It follows from such an extension of emancipatory cognitive interest that it is no longer possible to meaningfully distinguish between nature (= explaining) and culture (= understanding co-subjects). No entity should be objectified; all entities should be included in the communication community in the process of emancipation.

   This perspective does take into account that there are conditions under which entities do not have subject status. As addressed above, Apel had already shown that research performs secondary separations between subjects and objects, although he restricted this to human beings. Some theorists of science and technology extend this idea to all involved entities. They argue that here too the separation between subject and object can only be created in a secondary manner in the form of a purifying cleavage of what is actually a more comprehensive sphere of possible subjects. Like Apel, these theorists make the normative claim that such conditions ought not to be considered as pertaining permanently. It is the task of research guided by emancipatory cognitive interest to analyze given conditions as made and thus as transformable. The goal, however distant and utopian, is to secure the participation of every entity in the communication community of co-subjects.
2. Scientistic dissolution of the subject-object paradox. This solution renounces the assumption that there is such a thing as meaningful action that can be understood. There are no acting subjects but only events that can be externally observed. This corresponds to the position Apel describes as scientistic, above. As has been shown, this renders the notion of action, and thus also causal explanation, meaningless. There would be nothing but observable and describable sequences of events.
3. Transformation of the contradictory subject-object opposition into a polar opposition between natural efficacy and intentional acts/understandable interaction. This leads to a graduated concept that conceives of explaining and understanding in terms of a polar opposition with different gradations. On one end of the continuum we find purely mechanical efficacy and at the other end intentional action or personal interaction/understandable communication. This conception requires the methodology of understanding to be modified and entities or processes

> that until now have been considered natural to be conceived as accessible by understanding. The equation "nature=explanation" thus no longer holds. Distinctions must be made here between different kinds of understanding—e.g., understanding in the context of personal communication must be distinguished from other forms. It remains an open question, however, how to define the sphere of those to be understood in personal terms. Whether emancipatory cognitive interest can be considered universal or not hinges on the answer to this question.

Actor-network theory (ANT) represents a combination of these possibilities, with the first option functioning as the comprehensive frame of reference that allows the other two options to be brought into play. The main point is that each entity has the possibility of speaking for itself or others and thus of being a subject who can be understood (Latour [1984] 1993:160). Likewise, the condition for becoming a member of a collective and thus a subject who can be represented is formulated in terms of a flat concept of action: to act here means to be able to generate an effect in a network (Callon and Latour 1992). This concept of action does not conceive of action or interaction in reference to an intention that can be understood; instead there is only a sequence of events in which each event is deemed an effect of the one that preceded it. Such a reduction of actions to a sequence of observable events without meaningful connection corresponds to the view Apel called the scientistic dissolution of the subject-object paradox. ANT, we can conclude, merely calls for a graduated conception of action, understanding, and effectivity (option 3) without actually delivering one.

Furthermore, the great importance for ANT of the first solution to the problem of the expanded sphere of possible actors leads Latour to confront the expanded problem of order. Latour's characterization of the significance of science studies for what he would later call the general social theory of ANT and develop in *Reassembling the Social* (Latour [2005] 2007) shows how strongly he is driven by emancipatory cognitive interest. In that book he describes the elitism of objectifying sociological research, which seeks from above to enlighten believers, politicians, and other actors about the social causes of their actions. "Thus, in spite of what they often claimed, sociologists had always studied *down*..." (Latour [2005] 2007:97). The researchers claim subject status for themselves and from this vantage

point purport to provide social explanations for the behavior of objects, ignoring the latter's criticism.[27]

According to Latour ([2005] (2007):161ff), this program could not be maintained in science studies, since it was not very feasible to explain scientific knowledge by pointing to social causes. Attributing the recognition of statements as scientific truth to causes found in the social sphere would have elicited objections from those being studied, objections that would have had to be taken seriously—after all, they would have been made in the name of the science of sociology itself. This entangles sociology in a debate with co-subjects about the validity of its research. The subject-to-object relationship to those being studied thus becomes the subject-to-subject relationship of participants in a debate.

At the same time, the new co-subjects, scientists and technicians, give accounts of other entities that should be considered as well: viruses, bacteria, neutrons, electrons, and so forth. Latour argues that these are essential components of science and should therefore be included among those entities constituting its social dimension. Latour refers to this new social dimension as a "collective" (Latour [2005] 2007:247). Latour's/ANT's basic approach is not to specify what entities should be considered actors, that is, co-subjects; instead this "should be left to the actors themselves" (Latour [2005] 2007:23). This fully corresponds to an understanding approach to the world, which does not define the world in advance, but tries to take it as it appears to the actors and to develop interpretations of an interpreted world on this basis (cf. Garfinkel [1967] 2011, 2002; Schütz [1973] 1990c).

Theorists such as Latour ([1984] 1993), Callon (1986), or Law (1986) go one step further, however. They take accounts of the involvement of non-human entities literally, concluding that such entities participate in the execution of societal actions in the same way as do human actors. Consequently, these theorists use concepts such as "translation," "interessement," and "involvement" not only for the relationships between human actors but also for those between human and non-human actors. Callon's (1986) study of scallop restocking in a region on the French Atlantic coast treats scientists, fishermen, scallops, ocean currents, and other nonhuman beings

27 Latour's use of the word "explain" in this context is somewhat unfortunate. His target is research that may cite causes for particular phenomena, but not explanations in the sense of the deductive-nomological model. Science and technology studies, which Latour is criticizing here, in fact approach their scientific research practices in terms of understanding—which is precisely why they do not take technical artifacts into consideration.

as equal entities. It can never be decided in advance what entities are involved as actors in a network. What matters is whether an actor is able to interest another actor.

Callon (1986:207ff) describes "interessement" as a triangle: entity A forms and consolidates a connection to B and at the same time tries to weaken B's connection to other entities C. The connection between A, B, and C makes up the "triangle of interessement" (Callon 1986:208). A's success is based on a successful "translation." This means, for instance, that scientists who want to restock a particular kind of scallop along the French coast have to be able to translate their research interests into the interests of the scallops and the interests of the local fishermen. Only in this way can these entities be permanently integrated into a network. Latour uses the same analytical vocabulary in his description of a nuclear scientist having to translate his research interests into the interest of politicians in a powerful weapon in order to convince them to make the funds available to build a research reactor (Latour 1999:chap. 3).

This understanding of the social as a collective made up of stabilized networks forms the foundation of Latour's criticism of the ordering system of modernity. This system, he argues, does not fundamentally differ from non-modern ordering systems. For both it holds that ordering systems are nothing other than structured associations of human and nonhuman entities. From this it follows that *We Have Never Been Modern* (Latour [1991] 1993). The only thing distinctive about modernity is its claim that there is a strict separation between nature and culture, between human beings and nonhuman entities. This declared separation made it possible for the moderns to endlessly multiply the connections between human beings and nonhumans. The foundation of technical power characterizing modernity thus results from a kind of false consciousness about the actual process of the formation of associations. This false consciousness can be healed by representing all members of a collective as co-subjects (Latour [1999] 2004).

In order for it to work, the language game of the emancipation of things requires another language game: that of the second solution to Apel's subject-object paradox, scientistic self-objectification. Callon does not claim that an ocean current "acts" in any sophisticated sense; no more does Latour claim that microbes "act" in the sense described by someone like Max Weber. The point instead is that things have effects. In order to be able to take all effects into equal consideration without excluding even the most minimal, Callon and Latour propose using a "symmetric metalanguage" (Callon and Latour 1992:354). In this description language, all entities ca-

pable of having an effect are considered actors or actants. A member of a network is an entity capable of having effects that are important for the coherence of the network. This applies to scallop catchers and scientists as well as to ocean currents—the latter have to be taken into consideration when restocking the scallops. If the currents are too strong, restocking attempts will fail (Callon 1986).

Callon and Latour's rejection of the presupposition that only human beings are capable of intentional action is understandable, but it is not clear why they refuse to conceptually differentiate their notion of action (Callon and Latour 1992). Their aim is probably to avoid any further differentiation endangering the equality of the new co-subjects. The symmetric metalanguage they employ characterizes the world as one in which, conceptually, it is only a matter of effects, and there is no consideration of such a thing as intentional action or meaningful interaction. The language game of acting subjects and that of effective objects is mediated within the framework of the emancipatory language game, which allows for an examination of the always reversible positioning of speakers—and thus of the distribution of subject and object positions. Speakers only exist as part of a network, and every speaker position includes the silencing of others (Latour [1984] 1993:160).

The successful formation of a network, it seems, entails two steps: 1) entities have to affect each other and 2) this nexus has to be described as such. To describe a network is to characterize it as a nexus whose elements relate to each other in a meaningful way. Those who occupy the position of speaker describe the position of all involved entities, thereby silencing at least some of them. The more sophisticated activity of meaningfully describing networks should not be confused, however, with the basic criterion for access to the network, which as a whole should be understood as meaningful. This criterion is merely being able to have an effect, a basic definition that ensures the equality of all participants. It is in this way that things become integrated into the structure of emancipatory cognitive interest and its dissolution of the subject-object paradox.[28]

28 It seems that with this move, ANT anticipated what, in a more narrow sense, is referred to as the cultural turn in network sociology. While Granovetter (1973) merely theorized weak and strong ties, more recent work by White (2008; see also White, Fuhse, Tiemann, and Buchholz 2007) has foregrounded the self-description of networks. Of significance here are the quality of ties such as those between friends and acquaintances and what they mean for the involved actors. See also Fuhse (2009a, 2009b).

This approach has elicited criticism in several regards. Collins and Yearley (1992a:317–322) object that by extending the concept of actor to research objects and equipment, Latour (Latour and Johnson 1988) and Callon (1986) violate Bloor's requirement of symmetry. The authors argue that non-human actors' powers and specific abilities to act can only be identified thanks to the special expertise of technologists/natural scientists, which forces sociologists to return to an acknowledgement of the authority of science/technology. This means having to sacrifice the neutrality demanded by Bloor's requirement of symmetry ([1976] 1998), since the descriptions of technologists/scientists would once again have to be accepted by theorists of science as the ultimate statements about reality (Collins and Yearley 1992a:322).

Lynch (1993:110f, 1996:250) suggests that you would have to "be bewitched" by the structure of grammatical relationships to ascribe a subject position in reality to those who occupy one in a grammatical sense. Such an ascription, he argues, constitutes an illegitimate formal translation of grammatical relationships to the real world. Linguistic utterances should rather be understood indexically. An analysis of linguistic utterances that related them indexically to their expressive context would clearly show that things are not understood to act in the same way as are humans.

Critiques such as these do not take into account the specific impetus of ANT. We must take seriously this approach's aim to subvert the methodologically inspired nature/culture distinction to which some sociologists ascribe veritable ontological dignity (cf. Lynch 1993:110f). The Anglo-American discussion, unfortunately, fails to adequately respond to the fact that ANT is concerned with distancing itself from the modern ordering system of the world.

2.2.2 Effectivity and action as polar opposites

Another line of criticism aims at ANT's flat concept of action, which is limited to mechanical effectivity (see Latour and Johnson 1988). While Callon and Latour (1992:349) claim to understand agency as containing gradations, ANT has not produced a systematic scale of different levels of agency. It seems to me that this is because a conceptually differentiated scale of levels of agency would violate emancipatory cognitive interest. Even just the possibility of assuming conceptually different positions of action strikes Callon and Latour as a fall from grace, as an a priori decision pre-

venting us from perceiving a multiplicity of local distinctions (Callon and Latour 1992:356).

Rammert (2016), Rammert and Schulz-Schaeffer (2002), and I (Lindemann 2002b, 2009c) have criticized this impoverished conceptual approach for its inability to adequately take into consideration more complex forms of agency, such as, for instance, intentionality. Each of us has responded to Callon and Latour's work by developing a differentiated concept of action that accounts for the empirically observable structural diversity of forms of action and effectivity. Rammert and Schulz-Schaeffer (2002) and Rammert (2016) distinguish between intentional action and technical modes of effectivity, while I distinguish between lived body-environment relations of varying degrees of complexity (Lindemann 2009c). The aim is not to establish from the beginning which entities can be considered actors and which mere objects, but to develop a conceptually nuanced description language that makes it possible to determine empirically what kind of effectivity various entities develop.

Rammert and Schulz-Schaeffer look at examples such as flying airplanes or managing the logistics of modern companies. Taken seriously, ANT's flat concept of action proves to be inadequate for the analysis of such complex techno-social processes, they argue, and actor-network theory should thus be replaced by the concept of "distributed action." The notion of distributed action allows for an examination of the different contributions human and nonhuman entities make to a "composite act" (Mead). The contributions of human and nonhuman actors are structurally different, although the degree of complexity of each contribution can only be determined empirically. Rammert and Schulz-Schaeffer distinguish between "transforming effectivity," "being able to act otherwise," and "intentional explanation" (Rammert and Schulz-Schaeffer 2002:49). The first mode roughly corresponds to mechanical effectivity, such as when a large hailstone shatters a plane of glass. The second concerns the effectivity of program-controlled technology, where input does not lead to a predetermined reaction, but rather to a selection from several defined possibilities. This is a requirement for, e.g., machine learning. The mode of intentional explanation implies that there is a choice between different possibilities of action and that it is legitimate to demand justification for the choice made.

It is unclear whether Rammert wants to subvert the nature/culture distinction.[29] His explicit debt to the work of Mead would, in principle, allow

29 Schulz-Schaeffer's more recent works clearly indicate that this is not his goal (Schulz-Schaeffer 2007).

for an expanded concept of meaning and interpretation, according to which the different contributions to a composite act could be distinguished in terms of their perspective-taking structure. Rammert's connection to Mead is not systematically oriented toward the problem of understanding meaning and of perspective-taking, however. His critique points to a marked shortcoming of ANT without fully exhausting its own conceptual possibilities. My own work aims at broadening the sociological concept of understanding and of interpretation—looking not to Mead, however, but to Plessner. The idea is not only to understand the intentional actions of conscious people, but also the simple expressions of life of coma patients (Lindemann 2002a) or of animals (Lindemann 2005a, 2009c).

One can't help suspecting that, upon closer inspection, ANT is a sheep in wolf's clothing. The way it challenges the difference between humans and nonhumans remains superficial. Latour reiterates again and again that what is at stake is reconstructing how scientists and technologists describe what they do. If they believe that other entities also act, then that must be taken seriously. Human actors, in other words, are at the center of this approach, and, true to the Thomas theorem, Latour and Callon insist that we must consider real what human actors consider real. But only human beings are regarded this way, and this is never questioned.

The problem of ANT lies in its unwillingness to reflect on its own position. In all of the publications produced in the name of this theory, there is scarcely any indication of what observer position would allow for an examination of the distinction between human actors and other entities (see also Pels 1996). The ANT authors have the right hunch, but their methodology remains squarely in the modern framework: it is human beings who create a reality and the sociological observers of this practice should not raise themselves above these human actors. Swept along by the pathos of emancipatory cognitive interest, ANT declares liberty, equality, and brotherhood for things (see Lindemann 2009a, 2009e, 2011). I will now turn to theoretical approaches, by contrast, that go to the trouble of reflexively explicating the premises of their challenge to the nature/culture distinction.

2.3 Defining the capacity for order

ANT developed in close discussion with ethnology/anthropology. The term "cosmology" has become established in this field to designate the scientific study of what in modern society diverges into nature and culture. Ordering systems not only refer to human beings and their society/culture,

but to the entirety of relationships to the world. A cosmology includes both the societal order as well as the order of relationships to the world, and necessarily includes a criticism of the nature/culture distinction. Sociological analyses of modernity, by contrast, largely confine themselves to an analysis of society or culture, leaving nature aside. As a result, the ordering system of modernity—including the distinction between nature and culture—is not considered as a whole. Is it possible to take a step back from this approach to the world and to self-reflectively construe an observer position from which the ethnocentric perspective of modernity could be overcome?

2.3.1 The transcendental constitution of the alter ego

As early as 1970, Luckmann (1970) in his article "On the Boundaries of the Social World" argued that we are not obliged to limit the sphere of possible social persons to living human beings. He explicitly refers to the problem of methodological ethnocentrism in this context. As long as the nature/culture distinction is presupposed, he maintains, other "cultures" can only appear as having a distorted approach to nature, in particular because they extend the sphere of possible social persons to include nonhuman beings (Luckmann 1970:74). Presupposing the nature/culture distinction as ontologically valid leads to the question of why some cultures have not yet grasped this insight.

Luckmann explicitly refuses to think of the nature/culture distinction in terms of an ontological principle, which necessarily leads to the expanded problem of order. The question for him is no longer how a social ordering system between human beings is formed, but rather how the basic order formation takes place by means of which the sphere of social actors is limited in different ways. As a reference point for his analysis of the capacity for order, Luckmann cites Husserl's recourse to phenomenological reduction: "Starting with any concrete experience it is possible to distinguish specific, biographically and historically variable components from 'formal' structures without which that and similar experiences are unthinkable" (Luckmann 1970:74). In other words, the ordering experience of the lifeworld exhibits a universal formal structure that underlies all relativity emerging from the accidents of individual biographies or the collective historical situation.

The question, then, is whether it must be considered an attribute of the universal structure of consciousness that only certain entities are perceived

as alter egos. According to Luckmann, the answer is no. "The transcendental reduction carried out by Husserl results in 'the suspending of the natural world, with its things, animals, and humans' and entails the bracketing of 'all individual objectivities which are constituted through the functional activities of consciousness in valuation and in practice.'[30] The empirical and worldly ego is therefore placed within the brackets of the transcendental reduction. What remains is the transcendental 'pure ego'" (Luckmann 1970:76).

Reducing consciousness to something being given to the transcendental pure ego also brackets the fact that consciousness refers to human consciousness.[31] Transcendental consciousness is reduced to a consciousness relating to the world. In the primordial sphere given to this consciousness, objects emerge which have not yet become distinguished as "inanimate bodies (*Körpern*)" or "living bodies (*Leibern*)" (Luckmann 1970:78). Every object standing out for consciousness in the primordial sphere is experienced at first just as consciousness experiences itself: as a not further qualified, functioning lived body. For Luckmann it follows that every entity a transcendental ego encounters appears to it as another I. He refers to this as "universal projection" (Luckmann 1970:79).

Every subsequent differentiation between animated/inanimate, personal/non-personal "is a distinction that emerges from synthetic activities of consciousness in which the 'original' *universal* apperceptive transfer is confirmed, modified or canceled" (Luckmann 1970:78). It is in the process of consciousness's practical involvement with objects that those it has experienced become differentiated into objects and subjects, mere things, living beings, persons, and so forth. Every ordering system is based on a specific kind of involvement of consciousness (practical dealings, perception, confirmation) with the world. This process gives the world its shape and the

30 Luckmann is quoting from (Husserl [1913–1930] 1950:136f), an edition that has not been translated into English and that varies somewhat from the 1931 version. The translation of the latter text (Husserl ([1913] 2014:104) has been adapted here to reflect the 1950 edition (translator's note).

31 This understanding of transcendental reduction is explicitly opposed to Husserl's analysis of intersubjectivity. Luckmann writes that Husserl's line of argument implies that "for a human alter ego to be constituted, the ego in whose consciousness the alter ego is constituted should itself be human" (Luckmann 1970:76). The quality "human," however, belongs to the domain of that which is bracketed by transcendental reduction. Any empirical or worldly qualification of consciousness would therefore have to be omitted. "There is no justification for excluding the humanness of the empirical ego from the operation of the transcendental reduction" (Luckmann 1970:76f).

objects acquire "Dasein" as particular objects for consciousness (Luckmann 1970:78).

Luckmann, then, is interested in developing a research perspective from which to examine the ways in which an ordering system with its specific regional typologies and distinctions is established as a whole and what role is played in this by drawing boundaries between the domain of the social and everything else. He starts from the assumption that there is an immanent connection between the practical demands of life, the particular form of social organization, and the specific cosmology in question (Luckmann 1970:80f). The point is not to begin with an analysis of the domain of society in order to then look at the ways in which the societal ordering system is projected onto the cosmos. That would be reductive in the sense of what Latour has criticized as a "purified social sphere," and would sneak in the nature/culture distinction by first examining the particular social organization in order to then explain the group's entire worldview, including its view of nature, in social terms.

Luckmann is suggesting something different: the research perspective he has in mind conceives of the connection between the different levels of a particular historical ordering system as non-arbitrary. What is the ordering system of this particular worldview? Of this social organization? Of this reference to the beyond? It is not a matter of tracing a particular form of ordering back to another, but rather of recognizing that these modes of ordering are, in all probability, internally connected.

When it comes to the boundaries of the social, Luckmann hones in on the logic of exclusion as the problem. He distinguishes between three ideal types of experiences that can lead a consciousness to limit universal projection:

1. The difference between a changing expression and an unvarying physiognomy is given to a consciousness as a formal characteristic, allowing it to distinguish between, e.g., a rock and a tree that grows and blooms. This difference is given to every consciousness. Experiencing the fact that only some objects have a changing expression may, but does not necessarily, lead to "variability of expression" becoming a criterion for limiting the sphere of personal alter egos.
2. In the same way, the difference between stationary entities and objects that can move independently from place to place may become significant.
3. The fact that only some entities make use of symbolic forms of expression and make themselves understood in this way while others do not

> is also something that, according to Luckmann, can be experienced universally in a formal sense.

It depends on the institutionalized order of action and perception as well as on its particular structures of legitimation (see also Berger and Luckmann [1966] 1991) whether such formal differences are seen as relevant to the distinction between persons and other entities.[32] None of these differences themselves "prove" whether an entity is a personal alter ego or not. The distinction between persons and other entities cannot be seen directly but must be extrapolated from their sensory appearance. The necessity of coming to an interpretive understanding of the other means that directly perceived characteristics do not qualify a person. A person is recognized as a person not by directly perceived characteristics; rather the existence of a person is *understood*, construed based on perceived characteristics.[33]

Luckmann's proposal could be characterized as the exclusion perspective. Starting from the assumption of the universal inclusion of every entity encountered (much like ANT), he asks under what conditions particular entities are excluded from the sphere of possible persons. In this view, the phenomenon research should find remarkable is exclusion.

Luckmann's proposal is clear and methodologically consistent. In the end, there is just one point to criticize: he holds on to the possibility of solving the problem of the other I by way of transcendental constitution. Luckmann refers to Sartre ([1936–37] 1991) in this context. But the latter's criticism of the transcendental constitution of the other I ultimately applies to Luckmann's own argument as well. Sartre argues that if it is the transcendental I that constitutes the other I, the same holds for the constituted other I as for the objects constituted by the transcendental I: it is always possible for the transcendental I to doubt that which it has constituted. The transcendental I, then, does not necessarily have to experience the other I; the existence of the other I is secondary in relation to the transcendental ego (see Sartre [1936–37] 1991:103f). Sartre's argument is compelling. Schütz rejected the possibility of a transcendental grounding of intersubjectivity for similar reasons (Lüdtke 2008). The upshot is that Luck-

32 Lüdtke (2015) follows Plessner in his attempt of an overall reinterpretation of Berger and Luckmann's position that avoids a transcendental solution to the problem of the alter ego, and on this basis describes the formation of a purely human society as a matter of historical institutionalization/legitimation.

33 Knoblauch and Schnettler (2004) follow in this tradition and develop it further within the scope of current debates.

mann's own argument fails as a foundation for research in the social sciences, and the question is how to make his insights useful for a different theory of the relationship between ego and alter.

2.3.2 Functioning, embodied consciousness as universal ordering schema

Descola's *Beyond Nature and Culture* ([2005] 2013) is an attempt to create a comprehensive synthesis of historical and ethnological research with the aim of formulating a general theory of the ordering schemas of all ethnological and historical cosmologies examined. In terms of its level of universality and claim to comprehensiveness, Descola's work is comparable with Luckmann's; in terms of its aim of presenting a comprehensive synthesis of historical and ethnological research it is currently peerless.

Descola's objective is to work out the structuring principles of the world's cosmologies. In order to do this, he has to from the beginning also historically situate the ordering structure of modernity, i.e., "the great divide" (Descola [2005] 2013:chap. 1.3) between nature and culture as well as between humans and nonhumans. This involves analyzing how the nature/culture distinction became part of the understanding of his field, ethnology/anthropology. Of the many different possible uses of the concept of culture (see Kroeber and Kluckhohn 1952 [2017]), he focuses on two that have been particularly relevant to the development of ethnology. With the influence of Klemm (Kroeber and Kluckhohn [1952] 2017:10, 25), Tylor brought one of these two concepts of culture to prominence: according to Tylor, culture is a universal dimension of human existence, defined as the "'degree to which cultivation has progressed'" (Kroeber and Kluckhohn [1952] 2017:19). In this view, culture is a synonym of civilization and refers to the complex whole "which includes knowledge, belief, art, law, morals, custom, and any other capabilities and habits acquired by man as a member of society" (Tylor quoted in Kroeber and Kluckhohn [1952] 2017:42). Culture is seen as a collective creation of humankind, "governed by a progressive quest for perfection" (Descola [2005] 2013:72). It is this view, Descola argues, that the evolutionist anthropologists of the last third of the nineteenth century adopted for themselves. These anthropologists studied societies with the aim of determining the degree of increasing perfection exhibited by their cultural institutions.

This conception, which equated culture and civilization, was gradually replaced by the concept of culture that arose out of the debates over the foundation of the humanities. According to this view, culture is not char-

acterized primarily by its opposition to nature, or by a movement away from nature toward a perfection of cultural institutions. The concept of culture that emerged from the controversies surrounding historism is distinguished rather by its focus on the difference between individual cultures. The domain of culture, or of history, is seen as an independent field of scientific research, made possible by a specific kind of cognitive access to the world: that of understanding. As argued above, this raises the question of how this kind of cognitive access to the world can itself be grounded.

According to Descola, the "cultural sciences" (Rickert [1898] 1962) are not interested in discovering universal laws but rather by the values guiding human action. In this view, individual cultures are distinguished by differently structured sets of values whose distinctiveness they strive to maintain. This concept of culture differs from the previous one in that it is no longer understood in the singular as something shared by all human beings, but rather as a multiplicity of cultures of equal value. It is the differences between these cultures that are of interest. This makes the domain of culture self-sufficient, as it were, since it is no longer defined in distinction to nature. Culture now refers to the entirety of the world insofar as it is made into an object of research in a specific way. There is one world that can be made into an object of study in different ways: either in the mode of the natural sciences or in the mode of the cultural sciences. According to Descola, this understanding of culture was defining for American cultural anthropology and for ethnology as a whole. German-educated scholars who emigrated to the United States, such as Boas, were instrumental in this conceptual shift (Descola [2005] 2013:72f).

Descola's aim is to subvert this entrenched form of nature/culture distinction. As his starting point he chooses the concept of schemas as developed in cognitive anthropology. Schemas are "highly schematic interpretations" (d'Andrade [1995] 2003:142) that can be applied in a variety of different situations. Of particular importance are "integrating schemas" which allow for the integration of specialized interpretative schemas tied to particular situations. Descola defines integrating schemas more narrowly by distinguishing them on the one hand from Lévi-Strauss's universal structures and on the other from concrete habitus whose effects are limited to particular situations (Descola [2005] 2013:110). Such schemas integrate practices or situational habitus in such a way that they merge into a consistently ordered/ordering approach to the world.

Reduction to functioning, embodied consciousness

Descola develops a model that distinguishes between four integrating schemas. This model, he argues, allows us to reconstruct every describable approach to the world from animism to politically centralized, advanced civilizations to modernity (Descola [2005] 2013:122). He constructs the schemas based on the principle of identification, which he develops in a thought experiment comparable to phenomenological reduction. Identification as the mechanism of distinction refers to "what Husserl called a prepredicative experience, in that it modulates the general awareness that I may have of the existence of the 'other.' This awareness is formed simply from my own resources—that is to say, my body and my intentionality—when I set aside the world and all that it means for me. ... [T]his is an experience of thought prompted by an abstract subject. ... But it produces definitely concrete effects since it enables me to understand how it is possible to specify indeterminate objects by either ascribing to them or denying them an 'interiority' and a 'physicality' similar to those that I attribute to myself" (Descola [2005] 2013:115f).

Neither the theoretical nor the methodological status of this argument is entirely clear. Is "interiority," which Descola distinguishes from physicality, analogous to transcendental consciousness? Or is he thinking of a "mundane subject" who discovers this difference in herself? How we think the relationship to the other depends upon the answer to this question. Since Descola in the following is concerned with the formation of ideal-type ordering patterns meant to allow for a classification of the results of empirical analyses, I assume that he is thinking in terms of the idealized self-reflection of a mundane subject. This means, however, that his work contains the same aspects Luckmann criticized in Husserl's analysis of the problem of intersubjectivity.

If what we have here is in fact the idealized reflection of a mundane subject, the reflecting I in Descola's argument arrives at an awareness of the other by means of analogy. The I's experience of itself shows it that it is made up of interiority/intentionality and physicality. If these two sides (interiority/physicality) are projected onto the encountering other, the result is a fourfold structure in which sameness and difference are distributed in different ways (Descola [2005] 2013:122). This schema of possible forms of ordering in relation to the other is as follows:

1. Animism (indigenous peoples of the Amazon and of the Arctic Circle):
   a) interiorities are similar
   b) physicalities are different

2. Naturalism (= modernity):
   a) interiorities are different
   b) physicalities are similar
3. Totemism (especially indigenous Australians):
   a) interiorities are similar
   b) physicalities are similar
4. Analogism (e.g., premodern Europe, China, India, ancient Egypt):
   a) interiorities are different
   b) physicalities are different

The following three hundred pages seek to integrate all existing knowledge about the various forms of ordering of all worlds and all times into this structure. Descola makes it clear that the four schemas represent ideal types of ordering. In principle, every human being has access to every one of these schemas at any given time. When observing specific processes of ordering, we will always come across more than one of these schemas. It is only that certain ordering schemas become dominant at certain times and in certain regions.

Functioning consciousness and the other I

Descola claims that his four order-forming integrative schemas cover all possible ordering systems in the world. This claim to comprehensiveness is attached to the personal human body (Descola [2005] 2013:116f, 119) as well as to "an experience of thought prompted by an abstract subject" (Descola [2005] 2013:116). Based on this, Descola develops a model of schematization so powerful that it covers everything. The positively defined center of ordering capacity here is the embodied human subject. This subject is, then, on the one hand an order-forming subject who orders the world analogously to the structural principle determining him, and, on the other, he, like all other beings, is also an object of this process of order formation. It seems to me at the very least questionable whether this absolutizing of the embodied human constitutes a dissociation from modernity. The human being here is the subject-object of the ordering system. This figure of thought corresponds to what Foucault ([1966] 2002:347) called the "empirico-transcendental doublet" and identified as constitutive of modernity.

Apart from its possible attachment to modernity, Descola's figure of thought also contains a problematic logical construction: an abstract human subject reflects on herself and grasps herself as consisting of two parts. This abstract subject uses her insight into her own composition to inter-

pret everything she encounters in analogy to her own makeup. Since the subject consists of two elements and since it is a matter of the relation between the subject and her other (subject or object), the subject can't help but order her approach to the world according to a fourfold structure.

The question of the other is the question of the other I. "The Other Is an 'I'" (Descola [2005] 2013:115) is the unambiguous title of the pertinent section. Descola thus treats the question of the other I as a conclusion by analogy, but the form of the ordering approach to the world he applies here is supposed to be prepredicative. There seems to be a logical problem in the theory's construction.

Descola's argument can be understood in two different ways. If we read it as an explication of the transcendental constitution of the alter ego, the same objections apply as those brought against Luckmann. But even if Descola does not assume a transcendental reduction in the strict sense, his argument remains problematic. Scheler ([1923] 2008:238ff) shows that the experience of the other as another I cannot be grounded in a conclusion by analogy. This holds whether a model's starting point is a transcendental reduction or not. According to Scheler, the other is approached by spontaneously grasping it as expression; i.e., as composed of an interior and an exterior. There is a significant reversal at play here: rather than fathoming the makeup of my own I, it is my encounter with the other that leads me to grasp the difference between interiority and exteriority. If there is an analogy, it would consist in ego realizing that it is constructed just like alter ego. The conclusion by analogy would take place from alter ego to ego and not the other way around.

However, the relationship to the world described by Scheler is prepredicative; the functioning subject does not yet reflect upon itself. A lack of explicit reflection can generally be considered a characteristic of the prepredicative relationship to the world. This leads to a logical problem in the construction of the ordering schema: a reflexive conclusion by analogy has not yet become possible on the prepredicative level, regardless of direction.

Descola ([2005] 2013:115) identifies construing the other I as an operative schema on the level of "prepredicative experience." Prepredicative experience, however, logically excludes the reflection that would underlie a conclusion by analogy. The question, then, is how the reflection is possible that allows ego and alter ego, composed as they are of interiority/exteriority, to experience each other as equal or unequal. Strictly speaking, such a reflection would have to be of the prior-existing relation to the other, in

which this other is experienced as being composed of interiority and exteriority.

Descola, however, explicitly rejects defining "modes of identification starting from relational processes" (Descola [2005] 2013:124) for fear of lapsing into sociologism. Defining modes of identification in terms of relational process for him means "that they were expressed by institutions" (Descola 2005 2013:124). This would amount to a sociologistic conception of the I's relationship to the world as being exclusively defined by social ordering patterns. According to Descola, this is Durkheim's approach ([1912] 2008): first there is an examination of human social organization and its structures, followed by an investigation of whether the patterns of the social relationships also appear in human relationships to the nonhuman environment. If similar relational patterns can be identified, social relational patterns are seen to have a causal bearing on the relational patterns of humans to the nonhuman environment. This has the effect of reducing the overall ordering system to the human social order. Descola is not the first ethnologist to have criticized this kind of projection of the societal order onto nature (Ingold [2000] 2011:42ff; see Viveiros de Castro 1998:474). The existence of similar relational patterns, according to these critics, does not mean that the human-social domain can be seen as the foundation for the entire ordering system.

Two different conclusions can be drawn from this critique. The first would be to take embodied sociality, i.e., embodied relationality, as our conceptual starting point without limiting it from the beginning to particular entities. The social in that case would initially be nothing other than an undetermined relationality, whose elements organize themselves into an ordering system in which certain distinctions pertain. The other would be to replace society with embodied consciousness as the starting point for the construction of order—this is Descola's move. Both of these options avoid the trap of Durkheimian sociologism in its presupposition of a distinction between society and non-society, which is then followed by an analysis of the ordering system of society, which in turn functions as the standard against which the ordering system of non-society is measured.

Descola makes a clear argument for the second conclusion, taking embodied consciousness as the starting point for his analysis of the construction of order. Ingold ([2000] 2011:41ff) seems to prefer the first option of an undetermined sociality as his starting point, although he does not present a systematic argument in its support. Scheler's proposal suggests that it could be advantageous to start from an undetermined relationality that reflexively becomes part of an ordering system, which in turn deter-

mines which entities can enter into social relations with each other. Plessner's theory of the shared world makes it possible to develop just such a position.

A final point in conclusion: both Luckmann and Descola reduce the possibility of normative criticism to positing the equal value of different order formations that limit the sphere of possible actors in different ways. Neither engages in normative criticism of beings that are actually actors being made into objects. At most they concede the possibility of a field observation of a competition between different boundaries: if, for instance, the schema of naturalism is dominant while at the same time other schemas are activated as well, the dominant schema can be criticized from the perspective of the minoritarian schema. Since from the observer perspective all schemas are equally possible, Descola should have no reason to intervene into this conflict. Implicitly, however, Descola's study can be read as a kind of advocacy for empirically insignificant minoritarian ordering schemas. It is time to become aware of how varied the world can be, seems to be the message.

2.4 Ordering power as an open question

The pivotal point in the methodology of both Luckmann and Descola is a focus on the capacity for order itself, on the basis of which it should be possible to reconstruct all existing ordering systems. The critique of ordering power in their work takes place in the form of an examination of the ordering entity's formal and universal characteristics, thereby giving it a positive definition. For both of them, these attempts at defining the ordering entity run into conceptual problems, from which I conclude that the alternative must be to start from an undefined relationality which, by its reflexive reference to its own execution, becomes part of an ordering system.

At the same time, the advantage of the cosmological perspective in ethnology is that it does not reduce cosmologies to a cultural understanding of nature. This puts non-modern and modern cosmologies on an equal footing. The modern cosmology, which is characterized by its distinction between nature and culture and a limitation of the sphere of possible persons to living human beings becomes one cosmology among others. Other cosmologies, i.e., other ordering systems, exhibit other key distinctions.

The question now is how these productive aspects can be methodologically combined into one theory. Plessner put forward a proposal along

these lines in the context of the first phase of the explanation/understanding controversy, and it is this proposal that turns out, avant la lettre, to provide a way out of the problems into which the key authors of the fourth phase of this controversy have gotten themselves into.

Plessner's proposal brings together two key aspects of the theoretical approaches presented thus far:

1. Starting from a criticism of the modern ordering system and taking up the productive elements of the cosmological perspective, Plessner works out a general perspective in which the various ordering systems are understood as being on an equal footing with each other. He does not, however, positively define ordering power.
2. Plessner's criticism of the anthropological ordering schema of modernity emerges from his general concept of the understanding of meaning, which aims to encompass the domain of nature as well. On this basis he develops a model of graduated expressive contexts with the potential to be understood. The understanding of meaning is thus not limited to the domain of culture or of personal interaction or expression.

2.4.1 Historicizing the matrix of modernity

In line with the general consensus, Plessner understands the modern ordering system in terms of two key features: European/North American modernity is characterized 1) by the distinction between nature, which functions according to universal laws independently of culture, and the diversity of different cultures, and 2) by the separation between humans and other animals, with humans understood not only as natural creatures but also as creators of culture and as moral subjects. It follows from this that modern anthropology cannot unambiguously determine the human, who is characterized by a twofold classification as both natural and cultural/moral being. For Plessner, this means that the human requires a more precise determination, to be worked out in a twofold comparison: vertically with other organic beings and horizontally between humans as the producers of different cultural and moral ordering systems.

The vertical comparison conceives of the human as a natural being; i.e., as part of universal, uniform nature, and compares him with other life forms in order to work out the distinctiveness of the human life form. The horizontal comparison conceives of the human as the creator of cultures who is determined by his own products. Here the different subject forms the human adopts in the context of different cultural/moral ordering sys-

tems are compared with each other. These different cultures should be regarded as having equal value, for Plessner, as they can all be equally traced back to the human as their foundation. Viveiros de Castro would later conceptualize this matrix as "mononaturalism and multiculturalism."

Plessner's *Levels of Organic Life and the Human* develops the vertical comparison, while his *Political Anthropology* sets forth the horizontal comparison. In his analysis of the modern matrix, Plessner is concerned with portraying the complex balance of the modern ordering system and with opposing one-sided conceptions of this system that cast it as either purely societal or purely natural.[34]

Plessner's ([1928] 2019, [1931] 2018) elaboration of the anthropological ordering system of modernity does not substantively differ from Viveiros de Castro's (1998) succinct characterization or from Descola's ([2005] 2013) precise sketch. Plessner understands the anthropological ordering system he describes with its nature/culture distinction as the order-forming principle of modernity. If this characterizes the modern ordering system, that means that other systems are also possible.

Plessner develops the possibility of other ordering systems and their associated power of order formation in a two-step process. The first consists in understanding these systems from the perspective of the human as creative subject. "From this experiential position, in the universal aspect of the nations covering the planet, 'their' gods and cults, states and arts, legal concepts and morals become relative. The space of nature, which for 'our' aspect comprehends them all, becomes relative to our Western humankind and opens up the possibility of other natures" (Plessner [1931] 2018:14). Everything is thought in relation to the human as creative subject. Even universal and uniform nature is understood here as the result of the creative power of the human and can thus be thought in relation to a particular "humankind," that of the West. In other words, the human not only forms herself into a particular humankind, but by doing so, also forms a nature that surrounds this humankind.

This argument seems to be similar to Descola's, in that the human is understood as a universal subject who forms herself and the ordering system surrounding her. It is in this sense that the human is a "principle that opens up history." Plessner, however, goes a step further in that he thinks

34 The secondary literature contains frequent misinterpretations of Plessner's analysis of the matrix of modernity as a universal anthropology (Fischer 2000, 2006, 2008, 2009). Mitscherlich's work (2007) is not devoid of this misunderstanding either.

the human not only as a principle that opens up history, as creative origin of a multiplicity of natures and cultures, but also as a historically constituted principle of making the world accessible. Thus Plessner does not stop at a "human condition" as that which enables a variety of approaches to the world, but understands this condition itself as a historically constituted form of making the world accessible. He argues "that the self-conception of the human as a conception of the self by the self, as human in the sense of an ethnically and historically variable 'idea,' is itself a product of its history, that the ideas *human, human-ness* are conceptions conquered by 'humans' for which is reserved the fate of everything that is created: to be able to perish—and not just to get lost from sight" (Plessner [1931] 2018:27).[35] The reflexivity inherent in modernity leads to the human "who knows that the principle that opens up history has itself historically become, who knows that the human is itself an origin that has become" (Plessner [1931] 2018:28). The human understands herself as a historically constituted origin of the modern ordering system. If the human conceives of herself as an evolved origin, this implies that she is able to distance herself from herself as the origin of historical orders. Self-reflective awareness of the modern ordering system opens up the possibility of the existence of other origins. If it is conceivable that there are other ordering systems in which the human as natural/cultural being is not the subject, this opens up the possibility of other ordering systems with their own histories. By seeing herself as one among other possible ordering systems with other order-forming principles, the human relativizes her own position as order-forming principle.

Plessner does not claim that his analysis of modernity's constructive capacity for order constitutes an assertion about ordering power in general, nor is he interested in establishing a universal anthropology. He rather heightens the self-reflection he identified as characteristic of modernity until it reveals the human as historically constituted origin. Plessner understands the human as ability, as the entity able to create different ordering systems. At the same time, he reflexively grasps this understanding of the human itself, thereby historicizing it. Pointing to the historical situatedness of the idea that every ordering system is of human origin only makes sense if other order-forming principles exist as well.

35 Approximately thirty years later Foucault ([1966] 2002) will repeat this assertion about the possible demise or death of the human, and be severely criticized for it, particularly in Germany. His German critics seem to be completely unaware that this idea had already been formulated in almost exactly the same way by Plessner in 1931.

Such different ordering systems would be self-contained units if they were not at the same time related to a general ability to form ordering systems. That is to say, a specific ordering system is to be understood on the one hand according to its order-forming principle, the specific structure of its order formation, and, on the other, as the realization of a general ability to form order, which, however, cannot be positively determined. The undetermined power to order functions as the general condition of the possibility of order. This is to posit an undetermined, general basis of all forms of making the world accessible. This general condition of emergence shared by all orders makes it possible for them to understand each other.

There is no definable, general foundation from which to understand different order formations but only an undetermined general ordering power that serves as the condition of the possibility of different historical order formations and allows them to be compared to each other.

Figure 1 Ordering power as an open question

The general capacity for order is the condition of the possibility of different positive ordering systems. This also means, however, that since the

ability to create order can itself not be positively determined, there is no positive unity of different positive ordering systems.

Plessner himself did not make any detailed suggestions for how to analyze different approaches to the world. In order to do empirical research on different relationships to the world, however, we need an analytical framework. Such a framework includes a preconception of the object of research, without which it would be impossible to even begin. From a sociological perspective, this is where a general social theory comes in. As noted above, I retain the term, although with a new meaning: in order to self-reflexively relate this preconception to the specific ordering principles of modernity, I make use of Plessner's anthropological analysis as I work out the assumptions of my social theory. Proceeding this way has the advantage of explicating the relationship of this social theory to modern rationality. Plessner explicitly places himself in the tradition of Kant's critique of rationality, based upon which he develops his principle of the "open question." The purpose of this question is to reveal the possibility of different approaches to the world, and also to describe the modern interpretation of the world through, e.g., art and science as one possibility of approaching the world among others (Plessner [1931] 2018:42ff).

2.4.2 Expanded understanding

Plessner's intervention took place in the context of the first phase of the explanation-understanding controversy, as noted above.[36] His *Political Anthropology* combines figures of thought derived from Cohen's Neo-Kantian Marburg School,[37] as well as key elements of Husserl's phenomenology

36 Plessner does not explicitly refer to Dilthey very often. More important for him was his contemporary Georg Misch's reading of Dilthey ([1924] 1984, [1931] 1967). Schürmann (1999) provides a thorough assessment of Plessner's treatment and further development of the ideas of Dilthey and Misch. For a more general contextualization of Plessner's hermeneutics in the subsequent hermeneutics debate, in which Heidegger ([1927] 2010) and Gadamer ([1960] 2013) played a dominant role, see Kämpf (2003). Krüger (2001) situates Plessner's philosophy in relationship to American pragmatism.

37 Another figure of importance in this context is Ernst Cassirer. Völmicke (1994) provides a detailed analysis of Plessner's relationship to the Marburg School, emphasizing in particular the similarity between Plessner's and the School's understanding of methodology as derived from Kant.

([1913] 1982).[38] From a methodological perspective, the main idea of this work is that it is not the object of research that determines whether an understanding or an explanatory approach is appropriate. Rather science's access to its object of inquiry itself has a constructive character. The way questions are asked in the research process makes basic assumptions from the beginning, of which three are of particular importance for my argument. Research questions predetermine 1) the relationship between knowing subject and object of knowledge, 2) what in this epistemic relationship can even be recognized as an object having certain characteristics, and 3) whether an explanatory or an understanding approach to the object is appropriate in this particular epistemic relationship. Scientific knowing is a kind of knowing that constructs the epistemic relationship according to a procedural principle. It is thanks to this principle that the scientific procedure itself as well as the results that emerge from it can be subjected to rational criticism. Lakatos (1978) shows that a scientific assertion about an object is only ever valid within the framework of a theory about that object. Such a theory is comprised of a theory about how the object became an object (theory of observation) as well as the practical possibilities of making this object into an object of research. Furthermore, a scientific study must contain a statement about how its results relate to its theory about its object of inquiry (theory of interpretation) (see Lakatos 1978).

The concept of understanding I develop in the following in the tradition of Plessner is informed by such a procedural understanding of science. The necessity of either understanding or explaining an object is not due to the specific constitution of the object, but to the form of questioning with which it is approached. The difference between explaining and understanding derives from two methodologically divergent principles for examining objects—the principles of the closed and of the open question (see Plessner [1931] 2018:65ff). The principle of the closed question makes explanations possible, while the principle of the open question makes understanding the appropriate way to approach the object.

38 Pietrowicz (1992) was the first to point out that Plessner's approach integrates three theoretical traditions: Kant's rational, critical grounding of knowledge, hermeneutics in the tradition of Dilthey and Misch, and Husserl's phenomenology. See also Beaufort (2000). The importance of Kant for Plessner's work was given scant attention prior to these publications (cf., e.g., Asemissen 1973).

The principle of the closed question

When the construction of the epistemic relationship is based on the principle of the closed question, the question contains a projection of the problem, which includes a projection of the nature of the object. This constitutively determines how an object to be studied can appear and how it can answer the research question. In a physics study, for instance, light can appear as a measurable light wave and as a quantum. Since the question determines how something can appear, Plessner—following Kant—refers to things being furnished with an a priori. A question containing a closed projection of the problem in this way is characterized in a threefold manner:

1. The question contains a projection of the nature of the matter being investigated.
2. The projection is such that the question contains a guarantee of answerability, that is, the question ensures that the matter being investigated can answer it.
3. The projection is such that the question contains a guarantee of an answer, that is, the question determines how it can be answered; to be precise, it determines by means of what phenomenon, of what datum set forth in the question, the matter being investigated can answer it.

Research performed according to the principle of the closed question requires the knowing subject to exert maximum control over the object of knowledge. Plessner identifies two levels upon which this control is exercised in a functionally effective way: the incorporation of the object into an experimental setup and the exclusion of all non-mathematizable data (see Plessner [1931] 2018:42f).

Knowledge attained by the natural sciences is the result of a theoretical and techno-practical construction method, without which it would not have the status of true knowledge. It is only within the framework of a construction method of this kind that it can be stated with certainty which phenomenon regularly follows another and whether and in what way the one phenomenon is the cause of the appearance of the other. In other words: unambiguous explanations of causality based on measurable relationships are tied to the recognized validity of a theoretical and practical

construction method.[39] The deductive-nomological model is a currently valid form of the closed question.

The principle of the open question

The principle of the open question, which grounds understanding, resembles the principle of the closed question in that both operate within the framework of a theoretically constructed projected problem. The difference lies in the fact that the open question does not determine how the object will answer the question. The open question also contains a projection of its object—it is only thus that it can guarantee its own answerability. But it does not guarantee an answer. In terms of the three points listed above, the open question resembles and differs from the closed question in the following ways:

1. It contains a projection of the nature of the matter being investigated. Anything else would be a reversion to a pre-critical understanding of science. It is not the object that takes the lead in a scientific procedure, but the projection contained in the question (see Plessner [1931] 2018:43f).
2. The projection is such that the question contains a guarantee of answerability, that is, the question ensures that the matter being investigated can answer it.
3. The projection, however, is not such that the question already contains a guarantee of an answer, that is, the question does not predefine a phenomenon whose appearance must be understood as an answer to the question. It is here where interpretation becomes significant. The possibility of showing itself of its own accord is conceded to the object, and it is the task of the knowing subject to see how the object shows itself in the observed phenomenon. If a research endeavor is guided by the principle of the open question, it must then enter into an interpretative and interactive relationship with its object, which can no longer be fully controlled by the researcher's methods.

The principle of the open question thus differs in its construction of the epistemic relationship on one crucial point: the control that made the experiment possible in the first place is intentionally relinquished, while at

39 The findings of empirical science studies can be considered late empirical evidence of the validity of these assumptions. See Pickering's analyses of experimental physics (1993) or Lindemann (2005a, 2009c).

the same time, phenomena are no longer reduced to measurable and hence mathematizable data. This amounts to incorporating into the epistemic relationship a specific open space for the object, which is afforded the possibility of expressing itself, of giving shape to its own appearance. A new factor comes into play here, in that the observed phenomenon is now no longer only a datum that can be integrated into a theoretical projection, but rather a datum that refers to something that does not itself appear directly, but that shows itself through this datum. That which shows itself in the phenomenon may no longer simply be observed, but must also be understood (see Plessner [1931] 2018:43f)).

As regards the three points listed at the beginning of this section, we can thus conclude the following: open and closed questions participate in differently structured epistemic relationships. Second, the intentional relinquishment of control in the open question leads to fundamental differences in terms of what the object can appear as and how it can answer the question. This in turn makes it clear, third, why an explanatory approach is appropriate and possible in the case of a closed question, and an understanding approach in the case of an open one.

The social theory I work out in the following chapters starts here: the hypothesis of expanded openness to the world leads to the hypothesis of an undetermined ordering power, which cannot be positively defined. Any definition of the ordering power would necessarily contain characteristics of the order it generates. The modern order assumes two different order-generating powers: nature and the morally acting, culture-creating human. This form of order generation is not, however, universally valid but is one possible realization of an ordering power that itself remains undefined. Other ordering systems presumably have other order-generating powers.

Starting from a general and undetermined ordering power allows us to take a step back from the nature/culture distinction and to see it as one possible way among others of structuring an approach to the world. Order formation thus not only concerns the social dimension, the formation of social order, but ought to be generally understood as the structuring of approaches to the world. This calls for an identification of the different dimensions of order formation. The social theory I set out in the following distinguishes between five dimensions or aspects of order formation: the social dimension, the dimensions of space and time, as well as the symbolic and substantive dimensions.

For the social dimension, the hypothesis of expanded openness to the world and of an undetermined ordering power means that it is not decided from the beginning who can be considered a social actor. When analyz-

ing the boundaries of the sphere of possible actors, it is problematic to assume, as do Descola and Luckmann, that the individual subject is self-reflexive. A possible alternative is to think in terms of an undetermined relationality reflexively organizing itself.

This is both my systematic starting point for the development of a social theory as well as an indication of where this theory is situated historically. I am positing a heuristic a priori for the operative analysis of order formation. Since it is impossible to positively define the ordering power, every operative theory must start from the possibility that it is in error, which is why the a priori is necessarily heuristic. A heuristic a priori hypothesis can be challenged by empirical research, and yet it is necessary, for without a projection of the object and a methodology, rational questioning would not be possible.

The heuristic a priori that is my starting point takes up Plessner's radicalization of the reflexivity of modernity. The cosmology of modernity is made up of three elements: 1) an ordering system of nature, which is independent of humans and includes the human as a natural being; this ordering system is studied by the natural sciences; 2) the cultures created by humans; 3) the human as moral being, whose norms are either thought to hold universally for all human beings, or as human-generated and thus historically contingent. Plessner follows this threefold structure, initially positing that all order formation is human order formation. Building on the arguments of historism, he also affirms that the modern understanding of nature and all normative positions are human-made. The human is thus seen as a general order-forming power, from which follows that all human ordering systems of nature and culture are of equal value by virtue of having been created by human beings. This idea is remarkable in and of itself for the early twentieth century. We can read it as postcolonial criticism put forward at a time when the European sense of its colonialist mission was at its peak.

What is essential about Plessner's approach, however, is that he also historically situates this special status of the human as order-forming power as a modern idea. It is only this move that allows us to see that different historical ordering systems can be traced back to different order-forming powers. Indeed, it is only by historicizing the special status of the human that Plessner establishes the equal value of different order formations. His historicizing argument replaces the human as general order-forming power with the notion of an undefined ordering power in relation to which modernity, as well as every other historical ordering system, is relative. This opens up the possibility of taking expanded world-openness, that is,

the indeterminacy of the social dimension, as the methodological starting point of a research program. A social theory developed on this basis is historically situated in modernity.