

■ parrhesia 37 · 2023 · 79-90

an interdisciplinarity without metaphysics

anne-françoise schmid

translated by brynn mc nab, jeremy r. smith and luka stojanovic

Can we speak of an interdisciplinarity without metaphysics? What kind of meaning can we give to this exigency which resembles so many others posed at the beginning of this century? The positivism of that time accompanied a science of laws, in which the main problem was the verification of these laws through the observation of phenomena that they predicted. This positivism told us about facts, observations, phenomena, measurement—all things which have remained meaningful. And yet, we wager that the question of this exigency can change something in our way of thinking about interdisciplinarity.

THE TWO SOURCES OF INTERDISCIPLINARITY

When we speak of interdisciplinarity, we do not only speak of a situation, but also of an imaginary driven by the inevitable projection of disciplinary logic onto interdisciplinarity. This imaginary manifests interdisciplinarity as divided by an unexpected situation. There would be an interdisciplinarity that exists *de facto*, and one that is presented as the aim of scientists researching another scientific practice than what their discipline alone requires.

The first, *de facto* interdisciplinarity, would be what engineers and many scientists practice by industry and State demand. They fix a technological objective, implement an industrial, economic, political, and scientific collaboration—and they realize it. The design of the majority of current technological objects presumes a managed and deliberate interdisciplinarity, one that is more and more integrated, requiring not only a concept of this multiple modeling, but also “metaconcepts” to make it more coherent. As soon as there is agreement between the political and the economic, these objectives can be attained with the collaboration of specialists of very different disciplinary origins, with more or less delays and transformations. Thus, interdisciplinarity is a fact acquired through politics and the economy together. Interdisciplinarity is both an effect and an already banal constituent of technology.

The second interdisciplinarity would result from the will to modify scientific practices considered obsolete and coming from a science of laws, rather than from a modeling that allows for the study of objects other than “ideals.” Monodisciplinary habits remain the majoritarian usage within the scientific community, and this situation is increasingly recognized as harmful to research. Nevertheless, for many researchers, the idea of instituting an interdisciplinarity which modifies the attitude of scientists *vis-à-vis* their discipline and the disciplines of others obviously seems like wishful thinking, even a naive illusion or simple fantasy. Scientific institutions are themselves based on classical disciplinary regularities. They only listen to “interdisciplinary” opinions in terms of the prospect of

prompting the invention of new objects of research, rather than modifying disciplinary structures. This interdisciplinarity is considered the general culture, rather than the bearer of scientific results.

This contrast perverts the debates concerning interdisciplinarity because it extends a ready-made metaphysical conception that opposes the order of *fact* and the order of *dream* as contraries. These oppositions allow all the chiasmata that are possible: for example, the imaginary of science-fiction accompanies the achievements of engineers, while a new kind of “positivism”—a positivism of the terrain rather than verification—inhabits the scientists who turn interdisciplinarity into their ideal. However, we cannot escape from these chiasmata, we cannot undo them, we nuance them indefinitely. This situation is a sign that the question of interdisciplinarity is badly posed and that its importance requires evaluation from another point of view.

IS SCIENCE DISCIPLINARY?

The previous contrast shows us immediately that, from a political perspective, science is dependent on its achievements and that the scientist is attached to the discipline that formed them, and that it is useless to divert them from it. However, this double observation precisely depends on a very narrow idea that one makes of *Science* [la science] as an ensemble of disciplines. Without speaking of the quasi-vicious circle or back-and-forth game [*jeu de renvoi*] between *fact* and *dream* that one such approach presumes, this makes science depend on a historical situation that is too particular to comprehend it, one that always fascinates.

To determine what science is, one habitually seeks the criteria within the classical models of science: physics or mechanics. The main novelties would have been introduced by disciplines that are especially relevant to physics: thermodynamics, relativistic mechanics, and quantum mechanics. Many works concerning science seek to refine the criteria of scientificity within this historical perspective, which is extended by the great epistemological tradition. In parallel, a very lively critique

of “mechanism” (or mechanicism) has been rightly developed. However, it is sometimes overdone: it attributes characteristics that are dependent on our idea of science to mechanism. This results in a fascination for mechanism within science’s very critique, a fascination which one can say makes up a part of the same paradigm.

The history which leads to an awareness [*conscience*] of the necessity of interdisciplinarity is pertinent in itself. This awareness is each time the result of a precise discipline, from an institutional and political history of science practiced in a particular country, etc. All of this is essential to understand the situations. But in our opinion, if our concept of science must be able to take account of this history and evaluate effective situations, it is not necessary that the concept depends on them. It is this dependency that gives rise to the contrasts described above. It is the same dependency that gives rise to metaphysical conceptions of interdisciplinarity. Therefore, we postulate that a concept of science that takes account of disciplines—one that is not dependent on them—is possible, and that this concept of science would allow us to comprehend the question of interdisciplinarity in a less narrow fashion.

EVERYDAY METAPHYSICS AND INTERDISCIPLINARITY

A disciplinary conception of science leads to one of the most classical metaphysical perspectives. We know what metaphysics consists of: transgressing *beyond* a border (as one says in philosophy) to give meaning from *beyond* that which it starts from (that is the meaning of *meta* in metaphysics). This transgression can take on all forms. For example, seeking a reality in-itself *behind* the statements of science, postulating a *thing in-itself* which would be the *cause* of observable phenomena, generalizing a disciplinary perspective into a worldview, or passing from the borders between disciplines to make one among them the explanatory rule of the others.

The question here is not to know if metaphysics is good or bad. The transgression

of a border, the search for a horizon, or for a more fundamental explanation makes up part of the most everyday gestures—it is not exceptional. Common sense is metaphysical as well and lives out its spontaneous philosophy in the form of metaphysics. It is one of the philosopher's duties to seek to distinguish between philosophy and metaphysics, and the philosopher is never certain that the whole technique of a philosophical system ever suffices for that: the history of philosophy demonstrates that numerous philosophies seek to liberate themselves [*se débarrasser*] from metaphysics thanks to their philosophical technique, but metaphysics reappears from another perspective.

However, when transferred to the question of interdisciplinarity, this everyday gesture limits interdisciplinarity's significance and scope. What emerges from these passages between contraries that structure our Western culture and our sensibility is the opposition to the interdisciplinary achievements of technological capitalism, and the ideals of scientists who postulate the existence of complex objects. Under these conditions, it is natural that interdisciplinary perspectives have been above all metaphysical perspectives, seeking to generalize particular concepts with systemic value. This has been the most natural path. For example, one can generalize the quantum concept of the *bootstrap* to make an image of disciplinary relations. All of these perspectives have interesting effects, but they derive from spontaneous metaphysical practices which revive oppositions analogous to what we put forward. They are a way of superseding the specialization of the starting discipline to find an interpretation of the relations between disciplines which compensates for this specialization. Here, science is seen within its disciplinary superseding, which nevertheless always still depends on the original disciplinary conception that we feel entitled to apply to other disciplines.

THE DISAPPEARANCE OF SCIENCE?

This discussion has a particular scope today. The whole epistemological tradition is founded on one disciplinary conception because its problem was to find a status

for the physical disciplines which no longer seems to be reducible to the principles of mechanics. The term *epistemology* appeared at this moment in the history of the sciences, in the middle of the [19th] century in English and at the beginning of this [20th] century in French. Epistemology is a discipline which seeks to determine what would make an advancement, a method, a theory, an experimentation, etc., “scientific.” It can be defined as a study of methods and the advancements of the sciences, engineering and relations between sciences, societies and ethics. Since the middle of the [20th] century, epistemology also dealt with technology and modeling, and it is currently leaning towards becoming a study of disciplinary interfaces, giving meaning to the title of this text. The governing question of epistemology was to attempt to establish the criteria of scientificity, provided that mechanical theory could no longer be comprised as a universal image of the world. The broader public above all knows the names of Popper, Lakatos, Kuhn, and Feyerabend, but regardless of their respective importance, their works are but a fragment of a complex tradition.

However, the research into these criteria has never succeeded, except through a war between criteria for which no referee has been found. Nothing allows us to affirm that we have the technical, philosophical or scientific means to know that a discourse is scientific and that it is thereby distinguished from other discourses of culture, Western or otherwise. At the end of the 20th century, the idea that we no longer have criteria for scientificity predominates. Only a little while ago was it the most advanced point of view. What followed was that the epistemologists most aware of this situation renounced the concept of science to the extent that they turned it into the sole effect of the political and economic strategies of technology. They strictly reversed the situation to make us see at which point it is not science that thinks its object, but an even broader strategy that produces science as an effect where it is difficult to distinguish the two (strategy and science). Every experimentation, achievement, and technological network that rendered the political immanent to the scientific, currently seem to replace the classical and the very theoretical concept of science. One of the sharper epistemological signs

of this is the progressive substitution of an image of science as the research of laws with the image of a science that is constructive of models. No concept remains comprehensible within the single discipline in which it was born: technology brings about a nomadism and a cultural hybridization [*métissage*] which tends to destroy the most grossly metaphysical aspects of science, but not its disciplinary origins.

THE IDENTITY OF SCIENCE

We adhere to these views to the extent that we think we can only observe the blends of scientific rigour, metaphysical project, philosophical conception, ethical utopia, etc., within the effectiveness of the research or in the history of the sciences. In the face of a current or past situation of research, nothing allows us to isolate a pure case of science or philosophy: there are always blends and mixtures, and the search for criteria of decision between science, philosophy, and metaphysics seems illusory insofar as it would want to be univocal and dogmatic. We are only dealing with complex situations that cannot be explained by a single principle. But we do not accept that contemporary relativism (which puts classically distinct discourses on the same level) would be the only way to interpret and understand this phenomenon. This makes the human the product of their technologies, whether discursive or not, and this point of view is only partial according to ethical or scientific categories. Nothing obliges us to consider these ideological consequences as the only possible paths.

Rather than seeing the epistemological tradition as a failure, we assume that its so-called criteria, even contradictory ones, are partial descriptions of science, all of which have a value in principle and can obviously vary according to empirical conjunctures. Depending on the case, it may be better to insist on one means of description rather than another, but at the level of principle, we posit the equivalence of criteria. This is possible because no particular method can lead to the identification of science. None of the old criteria should be ruled out from the point of view of the description, but their value as criteria is illusory. The

epistemological war to know what science is no longer has a reality as a war, even if some disciplines are at war with each other. But for that, it is necessary to reverse the usual point of view and no longer consider epistemology and philosophy as surveying [*survolant*] science through their generality, but as discursive traditions to be treated as materials from which we can extract hypotheses. These will implement partial descriptions that will be all the more interesting insofar as they will be multiple.

If what we observe is a blend—a blend of disciplines, for example—this carries with it an obligation for an explanation through blends. We are free to make hypotheses, provided that these do not, on the basis of one disciplinary principle, exclude facts and research studies. We do not rule out what does not look like *physics*, what does not look like a science of *laws*, a hypothetico-deductive theory, or a *monodisciplinary* approach. But in our opinion, it is not enough to accept relativism and blends to maintain one such attitude that does not want to restrict research. The attitude that we propose therefore supposes that it is possible to practice [*faire*] epistemology from hypotheses.

This requires a theoretical modesty, this time of principle rather than a psychological one because none of the hypotheses have the value of a criterion, a law, or a definitive principle that would determine what we can call *truth*. This is an approach contrary to that of philosophy because the latter always supposes, at one point (however small), that it directly touches something real and that it is affected by it in a circular way; that it masters a relation to the real and that it knows how this relation is made. Philosophy thus builds the real, but, in return, is affected by it (since it is real), and what could rigorously be presented as its *object* is constantly affected by this relation.

Let us suppose a philosophical attitude that admits everything of philosophy, its concepts, its categories, its theories, its multiplicities, but by renouncing its ontological value: the admitted link between philosophy and reality and thus, the ideological domination of philosophy over other disciplines. The relation

of philosophy to science will no longer need to be hierarchical and, as a result, the hierarchy between scientific disciplines will no longer take place because it depends on metaphysical generalizations of concepts drawn from a particular discipline, preferably from physics. Then we will be able to speak about an interdisciplinarity without metaphysics, and thus without hierarchy. The very concept of this interdisciplinarity does not depend on any particular discipline.

Rather than a science determined by its disciplines, a philosophy governed by its object and affected by it, science and philosophy are attitudes or fundamental postures that we try to describe in a minimal way based on the materials called science, epistemology, and philosophy. This posture makes the identity of science and, depending on the case, the “coherent-isms,” the “verification-isms,” the “falsification-isms,” can have their meaning in the interpretation of situations where this posture is in play. But they are no longer principles of scientificity.

Science is then characterized as a description of the real, such that it neither affects nor transforms it. This is a minimal hypothesis, an example of what we will term an *order*. An order is never given in a pure way in concrete cases because the historical contexts always reveal blends of science, culture, ethics, philosophy, politics, etc. This characterization is also suggested by the fact that false theories in science mix the conceptual and the real. The scientist describes the real and they do not seek to understand nor do they need an understanding of the relation of their concepts to the real. Such is their posture in front of the real and the order of knowledge that it determines. When the scientist discovers, invents, models, experiments, implements field research or a research-action, they modify the geography of scientific concepts, not the real. There is a positive obscurity of the relations between science and the real which gives science total freedom. Such a characterization of science no longer derives from disciplines and allows us to pose complex objects without making them step out of a hierarchical disciplinary story [*histoire*] where in the beginning we find physics and laws, then biology and singularities, and finally, at the end of the journey, the human sciences and their models, whose status—ideological as much as scientific—does not cease to raise

debate. We no longer need these hierarchies which derive from a metaphysical conception, generalized outside its limits, of the concepts of a particular discipline. This does not mean that the disciplines have no status, but they change their function. Rather than organizers of the cartography of science and knowledge, they become a scientific material from which we can extract the tools necessary to study complex objects.

THE CONCEPT OF SCIENCE AND INTERDISCIPLINARITY

This hypothesis allows us to undo many prejudices about interdisciplinary work. We like to say that the habits of the scholar more or less force them to return to their discipline, even if some collaboration (technological, for example) has made them leave it temporarily, or at least made them walk along some border. From the disciplinary point of view this is true, but already too historically determined. We should rather say, as Jean-Marie Legay suggested in a conversation, that the scientist always returns to their object rather than to their discipline, the first object that they worked on and which they understand better than all others. Let us interpret here the object, not in its habitual metaphysical conception of given / constructed, real / modelled, but quite simply, in a much more minimal way, as that which the scientist works on. They think that their object exists and they construct models to understand it. This approach appears contradictory or metaphysical only from a philosophical point of view which would like to be the governor, the legislator of relations between these models and the real. This approach can only be criticized if one assumes that models are always and must be a representation of the real, thus having an ontological value. There is a positivism necessary for the practice of science, but it is in no way necessary that this positivism be attached to a general or regional ontological distribution that the disciplines suppose. Interdisciplinarity then admits the multiplicity of borders as acquired, even as normal, and no longer seeks to cross them, like a beyond. Scholars whose objects are diverse can collaborate and thus postulate and construct complex objects: their “disciplines” will then be the material from which they can extract the necessary and partial concepts for their description.

The discipline is always there, like the other criteria, but rather than a starting point, it will be thought of as material, a set of methods and concepts that allow the elaboration of certain facets of the complex object.

What then becomes of the paradigmatic opposition from the beginning? It is the illustration of an older point of view and the effect of a disciplinary fantasy. There is no longer any reason to understand interdisciplinarity in the alternative of realization or of wishful thinking. Let us postulate that it exists, that it only has to be exercised, and that from the point of view of science, it does not even have to be defended. Of course, one can describe science as dependent on politics and economics and see science as the effect of a strategy that escapes it and against which science must defend itself to be better accepted by it. However, this is a partial point of view, one that is historically determined though current, as has been the era of disciplines. To extend and generalize this point of view as universal would again be to plunge science into metaphysics, according to the everyday gesture. A particular situation, like that of sciences in politics, is not describable under a single hypothesis: nothing prevents us from making it a complex object, i.e., an object for which no discipline can account in isolation. While those who realize and those who prospect can be on the same field, one is not more or less useful than the other.

THE PASSAGE FROM DISCIPLINES TO ORDERS

This change [*transformation*] of the attitude with regard to the sciences has its equivalent with regard to philosophy, technics, technology, ethics, etc. The search for orders is a form of liberation, whereas the geography of disciplines is a working tool. Orders are also minimal epistemological hypotheses (we spoke above of epistemology from hypotheses) to account for the diversity and complexity of fields of knowledge and not a description of historically given disciplinary blends. As we have seen, the latter leads to a hierarchical conception in function of the chosen disciplinary model. A transformation of epistemology, so that the characterizations of the essential human postures would also be

minimal hypotheses, would allow for all the effective blends without relativism and without flattening problems. The identity of postures does not seek cultural hybridization and the nomadism of the concepts to come, but admits them as they are. We obviously cannot do the work of hypotheses and description that the transcendental distinction of orders supposes. Nevertheless, we can suggest that within philosophy, the abandonment of ontological sufficiency implements a very rich invention without the will to totalization or systematization. This does not seek to rule the other orders, but to favour their relations and let them be without a historically determined hierarchy. For the philosopher, the research of hypotheses and the field, theoretical research and research-action would no longer be sciences that are opposed but sciences that are juxtaposed without totalization. They would be just like ingredients that could coexist in accordance with situations. Interdisciplinarity would no longer be experienced as a practice that adds a supplement to the normal or banal exercise of sciences, but as its most normal modality because it is not organized by a hierarchization of disciplines.

ANNE-FRANÇOISE SCHMID is associate researcher at the Chair of Theory and Methods of Innovative Design, MINES Paristech.