

*On What It Is:
Perspectives on Metaphilosophy*

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HALLGATÓI ÖN KORMÁNYZAT

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The Overlaps between (Proper) Philosophy and (Actual) Science

Serdal Tümkaya

There are many overlaps between actual science and the best examples of philosophical theorizing. Herein, I argue that the following overlaps in fact do exist and that their existence is good but that their absence is harmful to the success and reputation of philosophical investigation: (i) both of their theories are, or could be, formulated in a testable form; (ii) there should be an easy exchange between them instead of an icy isolation; (iii) both of their theories are full of practical assumptions and background beliefs in addition to explicitly stated propositions or arguments; (iv) both of their theories are full of simplifications, abstractions, and idealizations; (v) both of them are heterogeneous in their methods, subject-matters, and the degree of evidence; (vi) systematic reasoning is *the most basic character* of the best examples of both perspectives.



I. Introduction

Geoffrey Warnock excellently characterizes the nature of *proper* philosophy: “To be clear-headed rather than confused; lucid rather than obscure; rational rather than otherwise; and to be neither more, nor less, sure of things than is justifiable by argument or evidence. That is worth trying for”.¹ The phrase in the main title of this paper refers to that kind of philosophy. *Actual* science refers to all the best examples of the practices of scientists regardless of the subject-matter and techniques used. Thus, here lies the relationship between these two branches of knowledge.² Think about the most interesting philosophical questions posed throughout history. Almost all of them have been about the world; living beings as one of the significant parts of it. Now think about scientific problems. Their primary focus is on the world as well. That is the basic overlap between philosophy and science. This overlap, I call *thematic overlap*. Another overlap is that both of them employ *systematic* reasoning. My overarching purpose throughout this work is to attack the widespread presumption, in academic philosophy, that there is a categorical distinction between philosophy and science and that it is good for philosophy. One might ask whether these general similarities are superficial. Here I argue that these apparent similarities are genuine and *very* significant for philosophical practice. In the first section of this paper, I explain what I precisely mean by philosophical naturalism and the thematic overlap. In the second, I discuss whether philosophical reasoning is actually *systematic*. In the third, I try to capture the current variety of sciences. Following this, I turn to discuss the proper role of philosophy in science and continue on to explain the homonymy fallacy. In the last section (prior to the conclusion) I argue that these similarities are the grounding of the need for a truly *naturalistic* philosophy.

1 Quoted by Shand, see John Shand, *Arguing Well* (New York: Routledge, 2001), v.

2 Hereafter, unless otherwise indicated, I use the short terms for both phrases, philosophy and science, not the long ones, respectively proper philosophy and actual science.

II. Philosophical Naturalism

One of the too many definitions of philosophical naturalism, to which I am most close, says that “philosophy is continuous with science”. This continuity is the continuity of the methods, subject-matters, precision, evidence types, objectivity, fact relevancy, aim, scope, mission, and generality. Firstly in this section, I briefly sketch the frequently ignored subtleties of the arguments of the most influential naturalists of the last century. Secondly, I turn to the discussion of the word “naturalism” and its misperceptions. The latter part of this section is devoted to a discussion of the meaning of being systematic, both for sciences and philosophy.

Quine, a half-century ago, argued powerfully against any kind of metaphysics for science. I fully agree with him in the following quotation:

I see philosophy not as an a priori propaedeutic or groundwork for science, but as continuous with science. I see philosophy and science as in the same boat – a boat which, to revert to Neurath’s figure as I so often do, we can rebuild only at sea while staying afloat in it. There is no external vantage point, no first philosophy. All scientific findings, all scientific conjectures that are at present plausible, are therefore in my view as welcome for use in philosophy as elsewhere.³

Quine, as one of the most pronounced naturalist philosophers of the last century,⁴ claims that in philosophy we should welcome all plausible *scientific* conjectures. But what is a scientific conjecture? For the former question, it can be roughly said that if a conjecture is made by the ways exhibiting the methods of science, then it is scientific. But what are the methods of science? For starters, I believe

3 Quine, W. V. O., “Natural Kinds,” in *Essays in Honor of Carl G. Hempel*, edited by Nicholas Rescher, 5–23 (Dordrecht: Springer Netherlands, 1969), 14.

4 Philosophical naturalism is an umbrella term. Under that umbrella, there are numerous similar yet distinct theories. Though Quine is one of the most famous of all naturalists, in fact, the subsequent philosophers are much more radical and scientifically informed. For a ruthlessly reductive naturalism, see e.g. the first and third chapters of: John Bickle, *Philosophy and Neuroscience: A Ruthlessly Reductive Account* (Dordrecht: Kluwer Academic Publishers, 2003). John Bickle argues that all the philosophical theorizing on the nature and structure of sciences must be guided by the actual practices of the relevant sciences. I largely agree with his claim.

that the word ‘science’ should include natural, behavioral, and social sciences.⁵ Confining the word ‘science’⁶ to natural sciences would be a destructive error.^{7,8} We should not restrain ourselves with the connotations of the word ‘science’ and ‘nature’. Since the courses typically titled “science” in many English-speaking countries are

5 Though this idea seems highly controversial, and indeed it is, in fact it has been defended by many philosophers of science such as Dewey and E. Nagel (cf. Matthew J. Brown, “John Dewey’s Logic of Science,” *HOPOS: The Journal of the International Society for the History of Philosophy of Science*, 2012 (2): 258–306.) or explicitly assumed by some others (cf. Carl G. Hempel, *Aspects of Scientific Explanation and Other Essays in the Philosophy of Science* (New York: The Free Press, 1970), section 7. This section was originally published in 1952.) More recent ones are abound in naturalistic philosophy of science and sociology of science (see e.g. Knorr Cetina in Werner Callebaut ed., *Taking the Naturalistic Turn, Or, How Real Philosophy of Science Is Done* (Chicago: University of Chicago Press, 1993.) Cf. also W. V. O. Quine, *Quintessence: Basic Readings from the Philosophy of W. V. Quine*, edited by Jr. Roger F. Gibson (Cambridge, Massachusetts: Belknap Press of Harvard University Press, 2004), 275; David Papineau, *Philosophical Naturalism* (Cambridge, Massachusetts: Blackwell, 1993), 2; Mario DeCaro and David Macarthur, “Introduction: Science, Naturalism, and the Problem of Normativity,” in *Naturalism and Normativity* (New York: Columbia University Press, 2010), 9.

6 Unfortunately, there is a great problem with this word and its Western connotations. Western school systems typically teach physics, chemistry, and biology under the heading of ‘science’. This might be one of the major reasons people intuitively are resistant to my usage of the word. But we cannot make philosophical theorizing by confining ourselves to the names of the courses taught in primary or secondary schools. On the other hand, I should also add that for example in my native language, *Turkish*, the heading of the analogous courses in primary and secondary schools is ‘fen’. Here is a rough translation of the (*Turkish*) dictionary definition of that word into *English*: “the common name for physics, chemistry, and biology” (“Fen” 2016). However, we also have the word ‘bilim’, which is the most usual translation for the *English* word ‘science’. That is we have two distinct but frequently inter-changeably used words in *Turkish* for the word ‘science’: fen versus bilim. The former is limited to the natural sciences but the latter is much broader.

7 Cf. “In embracing a relaxed naturalism, philosophy can cooperate in a reciprocal fashion not only with the natural sciences but also the arts, humanities, social sciences and other fields.” Daniel D. Hutto, “21st Century Philosophy: In Crisis or New Beginning?”, https://www.academia.edu/19875314/21st_Century_Philosophy_In_Crisis_or_New_Beginning.

8 See this chapter for an extensive discussion of the negative sides of confining science to natural sciences: Paul K. Moser and David Yandell, “Farewell to Philosophical Naturalism,” in *Naturalism a Critical Analysis* (New York: Routledge, 2001), 3–23.

confined to the teaching of physics, chemistry, and biology, most people automatically assume that science is the general name for these natural sciences. Commonsensical usage should not be the drive of our argumentation here. What is important for the argument in this paper is what is meant by science in the philosophical debate on the scope of science. In fact, it is much too ambiguous. It would be wise to elaborate on what I assume to be science, and what is not, to explore the overlaps between philosophy and science.

Objectivity, in the broadest sense, is at the heart of any scientific investigation. I believe that trying to define the necessary and sufficient conditions of this concept is futile. However, some general properties of the concept can be made explicit. First, by objectivity I mean inter-subjectivity, at least. That is, there should be a possibility of strong and community-specific agreement. Thus, the absolute, or Platonic, form of external objectivity is not my concern. It is an ontological issue, to which I attribute no significance. I am rather interested in epistemological inter-subjectivity. The subject of how a particular scientific community reaches an agreement, though a very important topic, is beyond the scope of this paper. I confine myself to saying that in practice, the degree of the agreement within a scientific community varies across the dimensions of subject-matter, geographical location, and time. Nonetheless, we cannot talk about a scientific activity in which there is no possibility of a considerable amount of agreement. In the last edifice, the most critical characteristic of science is “its institutional error-eliminating filters”.⁹ By this way comes agreement.

Then, by defining science in this broader way, it becomes clear that since these sciences have somehow highly different techniques and hugely varying levels-of-certainty in evidence, there is nothing intrinsic and time-independent (i.e. eternal) to scientific method. Different sciences use different methods in gathering evidence and different styles of reasoning. Yet, in whatever fashion, these styles of reasoning are *systematic*. So is philosophical investigation's. There are several philosophical methods such as analytic or hermeneutic.

9 Don Ross, James Ladyman and David Spurrett, “In Defense of Scientism,” in *Every Thing Must Go: Metaphysics Naturalized* (New York: Oxford University Press, 2007), 28–29.

Yet philosophical thinking is *methodical*. Surely, the method is not the same as the methods of empirical sciences. In fact, most philosophers, let alone doing experimental work themselves, do not even *regularly* read the review papers of the experimental sciences. Daniel Nolan nicely sketches the current situation of mainstream Anglo-American analytical philosophers by stating:

Among the a posteriori activities done in the armchair are assembling and evaluating commonplaces; formulating theoretical alternatives; and integrating well-known past a posteriori discoveries. [...] Observe many philosophers at work, and you will see them sit and think, and then write. Philosophers do many other things as well when they research—they talk to each other, they read things others have written after sitting and thinking, and so on. But most of them can rarely be found in a laboratory, nor can they be found out on the streets with surveys. Furthermore, in most cases, they are not regularly reading lab reports or survey results in order to inform their theorizing. Many philosophers give at least the appearance of being cut off from scientific evidence-gathering.¹⁰

This description greatly fits the actual mainstream philosophical theorizing, but not the practice of highly naturalist philosophers such as the Churchlands, Bickle, Bechtel, Ross, Spurrett, or Wimsatt. As the above passage shows, despite that most philosophical practice has nothing to do with the actual practices of the empirical sciences, they should nevertheless be regarded as systematic since they include the following: formulating, integrating, judging, classifying, using conceptual analysis, and giving clarification. All six of these regular philosophical activities are conducted according to well-established criteria. By well-established criteria, I mean the following: your arguments should be inferentially valid, they should also be sound and they should hold importance, at least to other philosophers. I think that is the core set of criteria for a *proper* philosophy: sound argumentation, importance, systematic reasoning, clarity, rationality, and evidence-based justification. The welcoming point is that all of them are also among the basic characteristics of *actual* science. Concerning such a broad level of analysis, philoso-

¹⁰ Daniel Nolan, "The A Posteriori Armchair," *Australasian Journal of Philosophy*, 2014 (2): 211.

phy and science are on an equal footing. All these properties can be grouped under the name of *ordered thinking*. Ordered thinking requires systematic reasoning, which excludes sham reasoning.¹¹

Generally we do not see disordered thinking as an example of good philosophy. Typically a philosopher strives for coherence. Thus, (academic) philosophy is systematic.¹² Non-systematic philosophy is academically not desirable because philosophy is the love for truth so it must be committed to intellectual vigor and honesty. Philosophical reasoning shall not be sham reasoning. Rigorous reasoning is at the very heart of philosophical theorizing. Each of us might be holding conflicting theories of truth and justification. We might be using different methods in analyzing. However, we are all in the pursuit of truth in this sense or in another. Our ways of justifying our philosophical claims might be influenced by the society or might otherwise involve a subjective component. But it is the same with sciences. I am absolutely not trying to argue for the patently false claim that actual or ideal philosophical theorizing is the *same* as the actual or ideal scientific practice. They are surely not *identical*. But we do not have to claim that they are identical to maintain that there are no *categorical* differences between their scopes, levels of generality, or methods. By categorical difference, I mean those differences which are absolute, unconditional and unqualified like a law given by the pure reason. Those kinds of a categorical differences I deny categorically. The most important problem with accepting a categorical difference between philosophy and science is that it blocks the huge benefits that philosophical theoriz-

11 see e.g., Haack, 1998, chap. 2, for Peirce's emphasis on the exclusion of sham reasoning from philosophy

12 One of my teachers at METU asked the following question: if you are right, does it mean that we can *objectively* reconstruct the arguments of great philosophers to the extent that most of us could agree upon that reconstruction? Indeed this is an excellent question because if the answer is mostly negative, then the main thesis of this paper becomes highly dubious. However, my answer to that question is affirmative in the broadest sense. But I am excluding some highly ambiguous philosophical works such as Wittgenstein's *Tractatus* (to see the harsh critique of Frege against the manuscript of *Tractatus* see, Frege 2011, esp. the letters from 1918 to 1920). But we can find similar problems among the life scientists. That kind of examples will be given later in the paper. For the question above, I greatly appreciate Tahir Kocayigit of METU Department of Philosophy.

ing could gain from the findings, concepts, and methods of science. The claim that there is no categorical difference does not entail that there are no practical differences in degree. Of course there are. And some differences in degree indeed might be huge. The point is that sometimes differences between science and philosophy become narrower than the differences within and among the sciences themselves in terms of precision or methods of justification. Then, what is the benefit of maintaining the claim that “science and philosophy are categorically or by their nature different”? Intuitively one might oppose by saying “but science is much more systematic”. Here it would be unnecessary to argue that scientific reasoning is systematic. It is almost a truism. The problem is with characterizing the various forms that systematic thinking does/could take. (We can see differences even among the branches of physics itself: cosmology, astrophysics, engineering mechanics, mathematical physics, or quantum theory). Below I offer a discussion on the various forms of being systematic.

III. What is Science? What is not Science?

There are too many inter-related or distinct meanings of the word science. Many philosophers believe that the extension of the concept of science is limited to natural sciences. For a moment, let us accept that. Then what is the extension of the word *science*? Are they physics, chemistry, and biology? But what is biology: the science of life? But what is life: the living things, organic things, thus also the consciousness? This questioning might seem to be red herring. However, since it cannot be said that each and all philosophers are using the word in the same or in a similar way, we need to pose this question. Let me elaborate on the so-called characteristics of science. Maybe I can list the following characteristics which frequently come to mind when people are talking about science: generalizability of facts expressed in law or law-like statements, methodical study implying that the methods which have been used are trustworthy,¹³

13 The existence of trustworthy methods might be regarded as *the most important* criteria for claiming a branch of knowledge to be science. (Thanks to Berk Yaylım, of METU, for pointing out this point to me.) Indeed, even for Charles Peirce, Frege, and the others truth is something like a product of a reliable method. Since

inter-subjectivity or otherwise objectivity, factuality, observation, falsifiability, productivity, connected body of facts or demonstrated truths, systematic classification, clearly defined technical terms, attempts to represent the existing reality, value-free thinking, all accepted truths are subject to revision in principle, exclusion of theological, teleological, metaphysical, and supernatural explanations or concerns, not contaminated by subjectivity, rational skepticism, respect for evidence, objectivity, and quantitative thinking.¹⁴ Indeed, this list is too long to carefully check all the criteria in order to decide whether all of the so-called sciences meet them. But this difficulty should not stop us to make the necessary explorations. Let me start with biology. I will take one of the most closely associated branches of biology to chemistry, namely molecular genetics. I have chosen this discipline because it seems sufficiently similar to chemistry, of which (natural) scientific status is not questioned by most of the philosophers. Now think about, for example, evolutionary biology. We can immediately see the natural-science-like characteristics of molecular genetics. For example, its subject-matter are genes. These genes can be duplicated artificially by researchers. Genes are physical objects, though some define them as functional units (but functional units are also realized in physical molecules). It is an experimental discipline using very advanced techniques and involves complicated mathematics. There are observed and inter-connected facts in molecular genetics. There is nothing theological, teleological, metaphysical, or supernatural in it. Gene types are systematically classified. All these characteristics suggest that molecular genetics satisfy almost all criteria for being a real science. Furthermore, as easily understood from above, it is highly similar to chemistry, which is indubitably a hard natural science.

On the other hand, we have evolutionary biology or psychology. Some topics of the former are experimentally un-testable, especially the historically unique ones such as the original formation of *Homo sapiens* as a species. For the latter, things are even worse. Even some

these philosophers believed that “the goal of sciences is truth” (Gottlob Frege, “The Thought: A Logical Inquiry,” *Mind* 65 (1956): 289.), science is implicitly equated with having trustworthy method.

14 For the last four properties see P. E. Meehl, “Philosophy of Science – Help or Hindrance,” *Psychological Reports*, 1993 (3): 707–33.

biologists claim that it is just a little more than story-telling.¹⁵ The moral of this is that, even within well-established sciences, not all scientists could agree on whether some theory or method is scientific or just a story. But yet we reasonably talk about evolutionary biology or psychology as scientific disciplines because we rightly assume that “if it is really false, it will turn out to be false in virtue of institutional error-eliminating filters of the scientific community”. In other words, we believe in the institutional structure and intellectual honesty of scientific practice (compared to other ways of knowing). And also we should be able to believe in the institutional structure of philosophy to attain the truth. Otherwise, philosophy becomes worthless. I fully agree with Bernard Williams in claiming: “Quite certainly, no philosophy which is to be worthwhile should lose the sense that there is something to be got right, that it is answerable to argument and that it is in the business of telling the truth”.¹⁶ Williams adds that the task is not to imitate science but cultivating the same intellectual virtues that both philosophy and science share. This is exactly the core of my approach to the relation of, and the overlaps between, worthwhile philosophy and actual science.

Certainly there are significant methodological differences within, and among, scientific disciplines. An obvious question immediately arises at this point: to which sciences is philosophy closer? In fact, there might not be a context-independent answer to this question since there are various ways of doing philosophy. For some philosophical subject-matters, philosophy might be closer to social sciences such as history, whereas for another it might be true for formal disciplines such as logic. To illustrate, what logical positivists were really close to, or aimed to imitate, are the methods of formal dis-

15 Just to mention a few out of many see Steven R. Quartz and Terrence J. Sejnowski, *Liars, Lovers, and Heroes: What the New Brain Science Reveals about How We Become Who We Are* (New York: Quill, 2003); or Richard Lewontin, “The Spandrels Of San Marco Revisited: An Interview With Richard C. Lewontin,” <https://evolution-institute.org/article/the-spandrels-of-san-marco-revisited-an-interview-with-richard-c-lewontin/>

16 Bernard Williams, “Contemporary Philosophy: A Second Look,” in *The Blackwell Companion to Philosophy*, edited by N. Bunnin and E. P. Tsui-James (Oxford: Blackwell Publishing, 2002), 24.

ciplines (e.g. modelled after mathematics). On the other hand, the 2000s style naturalistic philosophy of science (of biology especially) *resembles* to theoretical biology itself. Obviously, philosophical treatises on biology are usually highly general. But there are also many pieces of theoretical biological works that are interested in general questions such as Charles Darwin's great book *On the Origin of Species*. One might say that this book is, for example, full of empirical examples. Thus, it does not resemble to philosophical works. It might be so. The point is not the number of empirical examples found in the books, but the general character of the investigation. If the example changes from evolutionary biology to neuroscience, we can pay attention to the neurophilosopher Patricia Churchland:

The questions, whether asked by philosophers or by neuroscientists, are all part of the same general investigation, with some questions finding a natural home in both philosophy and neuroscience. In any case it is the same curiosity that bids them forth, and it is perhaps best to see them all simply as questions about the brain and the mind – or the mind-brain – rather than as questions for philosophy or for neuroscience or for psychology. Administrative distinctions have a purpose so far as providing office space and salaries is concerned, but they should not dictate methods or constitute impedimenta to easy exchange. This is not to deny that there are divisions of labor- indeed, within neuroscience itself there are divisions of labor- but it is to argue that such divisions neither imply nor justify radical differences in methodology.¹⁷

Churchland acknowledges the division of labor among academic disciplines. So do I. But she also argues that the division should not impede the easy exchange among them. To put the quotation above even more plainly, I state the following: there are differences, but not always radical; there are commonalities which are very important such as the same curiosity; the questions can be considered as the common-land of philosophy and science, thus, there is a thematic overlap; do not chase the formal labels but follow the questions; do not let any difference to dictate a pre-fixed method in philosophy and in science; attack the pre-established impedimenta in order to facilitate easy exchange; do not search for the justification

¹⁷ Patricia Smith Churchland, *Neurophilosophy: Toward a Unified Science of the Mind-Brain* (Cambridge, Massachusetts: MIT Press, 1986), 2.

for seemingly radical differences between philosophy and science in the relative division of labor between them. In fact my summary is half-descriptive and half-prescriptive following Patricia Churchland herself. Now, let me focus on the prescriptive part of my paper. Below is my approach regarding the proper role of worthwhile philosophy in actual science.

IV. The Proper Role of Philosophy in Science

Perhaps what is said at the end of the section above is the real meaning of the claim that “philosophy is continuous with science”. But why do we need to be in an exchange with the scientific world as philosophers? Here is an excellent answer:

For neuroscientists, a sense of how to get a grip on the big questions and of the appropriate overarching framework with which to pursue hands-on research is essential—essential, that is, if neuroscientists are not to lose themselves, sinking blissfully into the sweet, teeming minutiae, or inching with manful dedication down a dead-end warren.¹⁸

The passage above expresses the potential benefits of philosophy to science, especially to neurosciences. Practicing scientists frequently tend to miss the big picture, which is occasionally decisive to having a good solution even to the smallest parts of the picture. Churchland asserts that philosophy has a potential to steer them away from some deadly cliffs. The passage below, on the other hand, strikingly pictures the repercussions of science-ignorant philosophy.

For philosophers, an understanding of what progress has been made in neuroscience is essential to sustain and constrain theories about such things as how representations relate to the world, whether representations are propositional in nature, how organisms learn, whether mental states are emergent with respect to brain states, whether conscious states are a single type of state, and so on. It is essential, that is, if philosophers are not to remain boxed within the narrow canyons of the commonsense conception of the world or to content themselves with heroically plumping up the pillows of decrepit dogma.¹⁹

¹⁸ Churchland, *Neurophilosophy*..., 3.

¹⁹ Churchland, *Neurophilosophy*..., 3.

In this way, both philosophy and science can gain benefit from co-operation. Scientifically uninformed philosophy might remain boxed in a decrepit dogma. Being non-dogmatic is one of the distinguishing marks of philosophical activity and also of science. But is there any scientifically-uninformed philosophy in the 2000s? If it is true that naturalism is “now *the* philosophical orthodoxy within Anglo-American analytic philosophy”,²⁰ then scientifically-uninformed philosophy might be a minority position, at least in Anglo-American analytic philosophy. However, I believe that it is not the case. As Putnam puts it, most scientists are unsympathetic to analytic philosophy since it is regarded as “scientifically-uninformed hairsplitting”.²¹ Anyone who doubts the observation of these scientists should count the number of science articles in the bibliographies of the most-cited analytical philosophy papers. It would certainly become clear that current analytical philosophy is highly uninformed scientifically. Conversely, the naturalistic philosophy articles of the last two decades are full of scientific journals or textbook references. Which leads me to discuss what can be meant by homonymy fallacy in the context of the interaction between science and philosophy.

V. Homonymy Fallacy

Some would say that the continuity claim of philosophical *naturalism* is relevant only to the relationship between philosophy and *natural* science. These critics assert that according to philosophical naturalism, we can only benefit from natural sciences. It is a paradigmatic case of a *homonymy* fallacy. Nature comprises everything that exists. Societies do exist. So do cultures. Both of them are genuine parts of the furniture of our universe. And the relevant sciences which explore their structures are not natural but *social* sciences.

20 Mario DeCaro and David Macarthur, “Introduction: Science, Naturalism, and the Problem of Normativity,” in *Naturalism and Normativity*, edited by Mario DeCaro and David Macarthur (New York: Columbia University Press, 2010), 8–9. Italics are from the original.

21 Hilary Putnam, “Science and Philosophy,” in *Naturalism and Normativity*, edited by Mario DeCaro and David Macarthur (New York: Columbia University Press, 2010), 90.

Thus, the sciences that conduct investigations about *nature* are not only natural sciences but also *human* and *social* sciences. Some may object to my understanding in the following way. She would say that “practically naturalists do mean natural sciences but not social and human sciences since natural sciences are fundamental for all the other sciences”. It is just a pedantic mumpsimus. Neither Quine nor the Churchlands have claimed such a ridiculous limit to what science *is*, but even contrary to it:

The guiding aim of the book is to paint in broad strokes the outlines of a very general framework suited to the development of a unified theory of the mind-brain. Additionally, it aims to bestir a yen for the enrichment and excitement to be had by an interanimation of philosophy, psychology, and neuroscience, or more generally, of top-down and bottom-up research.²²

Philosophy and psychology are not natural sciences. In fact, even neuroscience is *not* incontestably regarded as a natural science, if by natural science only those sciences are meant which are exploring the *physical* world. Thus, nature might be divided into *two* worlds: physical and social ones. It happens that even the Churchlands, who are known to be eliminativist, become socially-oriented naturalists since their attitudes toward the importance of social and human sciences are crystal clear:

My aim here is to explain what is probably true about our social nature, and what that involves in terms of the neural platform for moral behavior. As will become plain, the platform is only the platform; it is not the whole story of human moral values. Social practices, and culture more generally, are not my focus here, although they are, of course, hugely important in the values people live by.²³

In this particular book, Churchland is interested in our *social nature*.²⁴ It suggests that many criticisms of philosophical naturalism are really ignorant of original naturalistic texts. There is noth-

22 Churchland, *Neurophilosophy*..., 3–4.

23 Patricia Smith Churchland, *Braintrust: What Neuroscience Tells Us about Morality* (Princeton: Princeton University Press, 2011), 3.

24 for a criticism of the Churchlands on this stipulated and then forgotten fact see Serdal Tümkaya, “Is a Cultural Neurophilosophy Possible?” METU, 2014. Chapter 6. <http://etd.lib.metu.edu.tr/upload/12617708/index.pdf>.

ing intrinsic to naturalism which limits its understanding of what nature is to just *directly* physical things. The problem in fact is not about whether non-physical things such as cultures or relations do exist but being informed by the latest scientific findings. And for Quine, here is the scope of scientific findings: "In science itself I certainly want to include the farthest flights of physics and cosmology, as well as experimental psychology, history, and the social sciences. Also mathematics, insofar at least as it is applied, for it is indispensable to natural science".²⁵ Quine explicitly includes non-natural sciences to his treatment of *science*.

More concretely, there should be no *categorical* distinction between academic disciplines, including philosophy. What we should do is tracing the problems, not the academic borders. Great philosophers, such as Aristotle and Kant, had always engaged in the sciences of their time. After all, philosophy has always been done under dynamic change. For this reason, it is reasonable to anticipate that philosophy will continue to change. The direction of this change cannot be "precisely" predicted in advance. However, there is every reason to think that forthcoming philosophy will be more science-friendly:

Philosophical problems were once thought to admit of a priori solutions, where such solutions were to be dredged somehow out of a "pure reason," perhaps by a contemplation unfettered and uncontaminated by the grubbiness of empirical facts. Though a convenience to those of the armchair persuasion, the dogma resulted in a rather anti-intellectual and scoffing attitude toward science in general, and when the philosophy was philosophy of mind, toward neuroscience in particular.²⁶

Philosophical problems cannot be addressed only by the resources of a priori reasoning, let alone by pure reason. They need messy empirical facts to be deeply illuminated. The old, but venerable, philosophy of positivism believed that formal disciplines are the best models for philosophy to follow. However, that project seems not to

25 W. V. O. Quine, *Quintessence: Basic Readings from the Philosophy of W. V. Quine*, edited by Jr. Roger F. Gibson (Cambridge, Massachusetts: Belknap Press of Harvard University Press, 2004), 275.

26 Churchland, *Neurophilosophy...*, 2.

be so successful. Today's intellectual virtues held for philosophical theorizing is not to imitate mathematics or logic, but to be in easy exchange with empirical sciences. That is, worthwhile philosophical naturalism should be in contradistinction to the non-naturalistic philosophies such as logical empiricism or continental philosophy or post-modern ones. It is important since, if it were correct that philosophical problems merely admit a priori solutions, it would be a central and literally categorical distinction between science and philosophy, which would be a sufficient refutation against the thesis of this paper. The reason is simple. Although it is a fact that a priori reasoning, in the broadest sense of the term, is a very important part of scientific theorizing, any (interesting) conclusion also needs to be *experimentally* tested, not necessarily now and here, but sometime and somewhere. Some philosophers such as Giere, even, claim that "a naturalized philosophical theory can be more or less identified with a *testable* theory."²⁷

VI. Concluding Suggestions

Philosophy is frequently said to utilize highly top-down methods to address the problems in its subject-matter. Conversely, sciences are said to be bottom-up researches. Both of these claims are partially correct and partially false. Scientists in practice use whatever methods or tools they think useful, regardless of those being bottom-up or top-down. To a lesser extent, this is also true for the actual practice of the greatest philosophers. It is certain that there are important differences between them. However, that they are different (i.e. difference in degree) is not equal to saying that they are *categorically* different or *should* be different. Philosophy should be a reliable and venerable branch of knowledge, not the rotter of the academic world. Icy isolation between them should not exist anymore. They have never been enemies, but now they should also be close allies.

27 Werner Callebaut, ed., *Taking the Naturalistic Turn, Or, How Real Philosophy of Science Is Done* (Chicago: University of Chicago Press, 1993), 42. Italics are from the original.

References

- Bickle, John. *Philosophy and Neuroscience: A Ruthlessly Reductive Account*. Dordrecht: Kluwer Academic Publishers, 2003.
- Brown, Matthew J. "John Dewey's Logic of Science." *HOPOS: The Journal of the International Society for the History of Philosophy of Science*, 2012 (2): 258–306.
- Callebaut, Werner, ed. *Taking the Naturalistic Turn, Or, How Real Philosophy of Science Is Done*. Chicago: University of Chicago Press, 1993.
- Churchland, Patricia Smith.
Neurophilosophy: Toward a Unified Science of the Mind-Brain. Cambridge, Massachusetts: MIT Press, 1986.
Braintrust: What Neuroscience Tells Us about Morality. Princeton: Princeton University Press, 2011.
- DeCaro, Mario and David Macarthur.
 "Introduction: The Nature of Naturalism." In *Naturalism in Question*, edited by Mario DeCaro and David Macarthur, 1–17. Cambridge, Massachusetts: Harvard University Press, 2008.
 "Introduction: Science, Naturalism, and the Problem of Normativity." In *Naturalism and Normativity*, edited by Mario DeCaro and David Macarthur, 1–19. New York: Columbia University Press, 2010.
- "Fen." 2016. TDK Online. Türk Dil Kurumu. http://www.tdk.gov.tr/index.php?option=com_gts&arama=gts&guid=TDK.GTS.56a7168c0ef528.74552117.
- Frege, Gottlob. "The Thought: A Logical Inquiry." *Mind* 65 (1956): 289–311.
- Frege, Gottlob. *Frege-Wittgenstein Correspondence*. Boston University Department of Philosophy, 2011.
- Haack, Susan. "'We Pragmatists' Peirce and Rorty in Conversation." In *Manifesto of a Passionate Moderate: Unfashionable Essays*, 31–47. Chicago: University of Chicago Press, 1998.
- Hempel, Carl G. *Aspects of Scientific Explanation and Other Essays in the Philosophy of Science*. New York: The Free Press, 1970.
- Hutto, Daniel D. "21st Century Philosophy: In Crisis or New Beginning?" https://www.academia.edu/19875314/21st_Century_Philosophy_In_Crisis_or_New_Beginning.

- Lewontin, Richard. "The Spandrels Of San Marco Revisited: An Interview With Richard C. Lewontin." <https://evolution-institute.org/article/the-spandrels-of-san-marco-revisited-an-interview-with-richard-c-lewontin/>.
- Meehl, P. E. "Philosophy of Science - Help or Hindrance." *Psychological Reports*, 1993 (3): 707–33.
- Moser, Paul K. and David Yandell. "Farewell to Philosophical Naturalism." In *Naturalism a Critical Analysis*, 3–23. New York: Routledge, 2001.
- Nolan, Daniel. "The A Posteriori Armchair." *Australasian Journal of Philosophy*, 2014 (2): 211–31.
- Papineau, David. *Philosophical Naturalism*. Cambridge, Massachusetts: Blackwell, 1993.
- Putnam, Hilary. "Science and Philosophy." In *Naturalism and Normativity*, edited by Mario DeCaro and David Macarthur, 89–99. New York: Columbia University Press, 2010.
- Quartz, Steven R. and Terrence J. Sejnowski. *Liars, Lovers, and Heroes: What the New Brain Science Reveals about How We Become Who We Are*. New York: Quill, 2003.
- Quine, W. V. O.
 "Natural Kinds." In *Essays in Honor of Carl G. Hempel*, edited by Nicholas Rescher, 5–23. Dordrecht: Springer Netherlands, 1969.
Quintessence: Basic Readings from the Philosophy of W. V. Quine. Edited by Jr. Roger F. Gibson. Cambridge, Massachusetts: Belknap Press of Harvard University Press, 2004.
- Ross, Don, James Ladyman and David Spurrett. "In Defense of Scientism." In *Every Thing Must Go: Metaphysics Naturalized*, 1–65. New York: Oxford University Press, 2007.
- Shand, John. *Arguing Well*. New York: Routledge, 2001.
- Tümekaya, Serdal. "Is a Cultural Neurophilosophy Possible?" METU, 2014. <http://etd.lib.metu.edu.tr/upload/12617708/index.pdf>.
- Williams, Bernard. "Contemporary Philosophy: A Second Look." In *The Blackwell Companion to Philosophy*, edited by N. Bunnin and E. P. Tsui-James, 23–34. Oxford: Blackwell Publishing, 2002.