THE CURRENT POSITION OF PHILOSOPHY

JASPER DOOMEN, The Netherlands

DOOMEN, J.: The Current Position of Philosophy FILOZOFIA 65, 2010, No 7, p. 672

What does the fact that academic philosophy has specialized to a high degree entail for its pursuit? In particular, how can philosophy at present contribute to discussions pertaining to scientific issues? Due to its evolved character, it does not, in contrast to earlier times, when it was still intertwined with the sciences, produce substantial material results. Now that the sciences have established themselves as independent domains, its role is limited, being focused on reflection. This does not, however, lead to its demise; in fact, it may, in order to preserve at least the appearance of stability, turn out to be the covering discipline in an ever changing scientific landscape.

Keywords: Specialization - Philosophy - Interdisciplinarity

Introduction. Philosophy typically reflects on anything considered relevant, and it is no wonder that many, over the last century predominantly critically, have examined the role of philosophy and its tasks. In this article, a modest attempt is made to describe the position (academic) philosophy occupies, in particular in relation to the sciences. In the first section, I briefly describe the contrast between philosophy and the sciences, whose focus is different. The second section inquires into the relation between philosophy and the sciences; their perspectives may differ, but a number of the fundamental issues in the sciences are the subject of philosophical pondering.

It is, accordingly, important to make it clear to what extent philosophers are, or can be, expected to have an insight into scientific developments and to assess their merits. This is illustrated with a number of representative examples. The question then arises what the implications are for philosophy's ambitions, especially when one also considers the fact that philosophy itself has specialized to a high degree. It appears to be difficult to maintain a unity in philosophy, and that a means to facilitate this is in order. This is argued in section 3, where a possible suchlike means is suggested.

1. The character of philosophy. Philosophy has evolved from an encompassing discipline, in ancient times, through an auxiliary one in the Middle Ages, embracing what is now known as the humanities and some basic education in logic, mathematics and astronomy – dubbed together the *artes liberales* – to a present, relatively clearly demarcated one.¹ With the progression of the various sciences, several new fields have come to the

¹ There was, of course, no specific moment when this situation presented itself; rather, a gradual development occurred, and it may be argued that as late as the 18th century, philosophy was not yet

fore, having been divided as specializations, such as biochemistry, geology and linguistics. Philosophy itself has only recently come to the fore as a distinct discipline.²

This development is usually beneficiary or even necessary: one often needs to command a specific knowledge to a high degree, or be able to perform very particular tasks; still, this doesn't mean that a critical attitude can be dispensed with. In the case of the sciences, there are a number of *external* elements that necessitate specialization. In the field of medicine, for instance, new approaches, inventions and applications make it possible to cure diseases, or facilitate treatments.

This situation does not apply to philosophy, or at least not necessarily. Philosophy, too, has flourished, albeit not in the same way as the sciences, and has witnessed the rise of new branches, and its body of thought has vastly expanded. Moreover, within the already existing branches, there has been a degree of specialization not unlike that in many of the sciences. It may now be difficult for someone who has focused on one of its fields to comprehend the results obtained in another, let alone gain a sufficient overview.

The developments in the field of logic, in particular since the rise of predicate logic, for example, are impressive, both quantitatively and qualitatively; it can be very hard – and not just as a result of a lack of time – to command them if one is (supposedly) relatively informed. Some of the specializations in philosophy may nowadays indeed be regarded as fully developed fields of study, with enough literature and relevant topics at one's disposal to fill a Bachelor's program if one would so desire.

The thorough specialization which has slowly become characteristic for philosophy in the same way as it has for the sciences has led to results not unlike those which can be ascertained in the realm of the sciences. Here, too, the representatives of the various subfields don't have an overview of each other's research and are in some cases even unable to understand each other or find the time to study their respective findings.

This state of affairs is easily contrasted with those in earlier times. As simplistic and outdated as some theories propagated by ancient and medieval philosophers may seem to be at present – though I would by no means want this to imply that they in fact are –, those thinkers seem at least to have been able to discuss their topics in common. Of course, it can be advanced that the reason this was possible lies precisely in the fact that their approaches were, in a number of respects, somewhat crude and lacking. Although this is not without merit, it rather points to something else.

None of the issues previous philosophers have dealt with has been resolved at present in a philosophical way;³ if any answers have been found (albeit provisional ones), they can be qualified as scientific, having been emancipated once rubricating the results

regarded as a separate discipline in some respects (R. Posner, *The Problematics of Moral and Legal Theory*, pp. 111, 112).

² Cf. R. Rorty, *Philosophy and the Mirror of Nature*, p. 131.

³ It may be argued that philosophical issues *have been* resolved thus, e.g. because something is no longer relevant (or is not an issue at all (L. Wittgenstein, *Tractatus logico-philosophicus* (1997), § 4.003, p. 26)), but it seems impossible to ascertain this as it is not clear how they could be approached from some sort of meta-perspective, supposedly granting an overview.

obtained necessitated this process. Actual responses were found, so that any *philosophical* interest waned. The real philosophical discussions have become more sophisticated, but their quality has not necessarily increased, precisely because an improvement in relation to previous ways of thinking cannot be ascertained as easily as in the sciences; perhaps one may even say that once an improvement can be established, the matter is no longer philosophical but has become scientific.

Incidentally, the issue whether progress can be established in the sciences themselves needs to be approached critically. One may argue, defining 'normal science' as "[...] the research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice.",⁴ that "[...] it is only during periods of normal science that progress seems both obvious and assured."⁵

2. Philosophy and the sciences. In order to establish the position philosophy occupies at present, it is important to consider the role of a number of scientific issues in philosophical discussions. I indicated in the previous section that philosophy has gradually evolved as a separate field of research. Due to the interrelatedness of many philosophical and scientific discussions, however, this isolation is not absolute. The philosopher who wants to maintain an overview seems, accordingly, forced to familiarize himself with at least the basics of the relevant developments in the sciences, which proves to be an ever more demanding task.

The difficulty does not merely result from the fact that philosophical topics have become increasingly intricate (and that the history of philosophy obviously expands) (cf. section 1); the sciences themselves have shown the need for an ever greater specialization, even leading to entirely new disciplines. As, e.g., a number of questions demanded quantitative approaches, which philosophy was insufficiently able to provide, economics, psychology and sociology were acknowledged as emancipated sciences. In time, this has led to further divisions within the established sciences.

At present, it is not surprising that scientists of widely different disciplines can hardly understand each other's research. This is not just the case in extreme examples, such as between a geneticist and an archaeologist, who have relatively little in common; it can also be established between people working in related fields, a situation which will only increase as time goes by and there will be a growth in results, which will moreover become more intricate than before. As I mentioned in section 1, external elements are largely responsible for this outcome. As long as one wants to maintain the standard of living one has come to know and to strive for progress (in whatever way one wants to comprehend the word), benefiting from new cures to diseases, relatively safe ways of transportation, and such, this situation, at least to some degree, must be accepted.

In the following, I will point out some of the difficulties resulting from the fact that

⁴ Th. Kuhn (1996), p. 10.

⁵ Th. Kuhn (1996), p. 163.

some discussions in philosophy are closely connected with scientific issues. These are merely examples and there is no claim to exhaustiveness, neither concerning the fields referred to (one could also, e.g., point to artificial intelligence or quantum physics) nor the topics discussed. I will illustrate my reasoning by pointing to discussions in representative disciplines of the exact sciences, life sciences, social sciences and the humanities.

2.1. Mathematics. Mathematics is a relatively equable discipline; yet it has evolved, just as the other sciences, which has eventually led to some highly sophisticated results. Kant's observation, that geometry, which he considered a single field of study – as was at that time still possible – proceeds through mere a priori knowledge,⁶ and provides immediate evidence,⁷ is not just based on his epistemological convictions, but results from the perspective that geometry is assessed from a single, undisputed interpretation.

It has proved to be difficult to maintain this: not only has the field of mathematics rendered very specialized results, but its nature has also been subjected to philosophical reflections. More specifically, doubt has been cast by Poincaré on Kant's thought⁸ that synthetic judgments a priori are involved in geometry.⁹ This is connected with the fact that his observations are made from the assumption that no non-Euclidean geometry might serve as an alternative for traditional geometry.¹⁰

Poincaré himself concludes that geometrical axioms are conventions¹¹ and that "a geometry cannot be truer than another one; it can only be *more convenient*",¹² which brings him close to James, who clings to the notion of 'truth' but establishes its content idiosyncratically (at least at the time he wrote it): "[...] When the pragmatists speak of truth, they mean exclusively something about the ideas, namely their workableness [...]"¹³; "I contend that you cannot tell what the *word* 'true' *means*, as applied to a statement, without invoking the *concept of the statement's workings*."¹⁴

The relation between mathematics and logic, to mention another relevant issue, has also given rise to ample debate. It has been claimed, by those who are at present known as logicists, that arithmetic is part of logic: "I hope [...] to have made it probable that arithmetical laws are analytic judgments and subsequently a priori. Accordingly, arithmetic would only be a further developed logic, and every arithmetical theorem a logical law,

⁶ ("[...] Die Geometrie [geht] ihren sicheren Schritt durch lauter Erkenntnisse a priori [...].") I. Kant, *Kritik der reinen Vernunft*, p. 101 (edition of 1787: p. 120).

⁷ Ibid.

⁸ I. Kant, op. cit., p. 54 (edition of 1787: pp. 40, 41); p. 68 (edition of 1787: pp. 64, 65).

⁹ H. Poincaré, La Science et l'Hypothèse, pp. 65, 66.

¹⁰ Cf. H. Poincaré, op. cit., p. 65.

¹¹ H. Poincaré, op. cit., p. 66.

¹² ("Une géométrie ne peut pas être plus vraie qu'une autre; elle peut seulement être *plus commode.*") H. Poincaré, *op. cit.*, p. 67.

¹³ W. James, *The Meaning of Truth*, p. 4.

¹⁴ W. James, op. cit., p. 120.

albeit a derivative one."¹⁵ Husserl even pleads pure logic ('reine Logik'), which is supposed to be independent of any (other) science,¹⁶ and to provide an epistemological foundation.¹⁷

It may be argued, on the basis of an influential analysis, that, on the contrary, arithmetic, and mathematics in general, is not dependent on logic, but logic is dependent on mathematics.¹⁸ Even if one can decide upon a way to find an answer to the question if one of these lines of thought is correct, and, if so, which one,¹⁹ it would require a substantial grasp of mathematics only to be found among specialists.

2.2. Darwinism. The impact of Darwin's ideas, conveyed primarily in *The Origin of* Species and *The Descent of Man*, is great. Not only biology and related subjects have been significantly influenced; Darwinism has become an approach in a large number of sciences.²⁰ Its impact on religion is also evident, albeit in another way, conflicts rapidly arising after Darwin presented his views.²¹

Accordingly, Darwinism has become a field of philosophical interest. One may even argue that with respect to it, "[...] science and philosophy get completely intertwined."²² There is of course the danger of promoting Darwinism, which provides impressive but no certain results, to a practically unquestionable frame of reference,²³ ironically turning it into a dogma itself, but this is not the place to evaluate its merits.

These findings are difficult enough to grasp without an extensive training in biology, but the recent general focus on genetics has complicated things even further. The developments in this young science have given rise to debates in ethics, philosophical anthropology and other fields. Within Darwinism itself, genetics has come to play an important role, so that an approach has come to the fore which may be qualified as 'gene centrism'.²⁴

¹⁵ ("Ich hoffe [...] wahrscheinlich gemacht zu haben, dass die arithmetischen Gesetze analytische Urtheile und folglich a priori sind. Demnach würde die Arithmetik nur eine weiter ausgebildete Logik, jeder arithmetische Satz ein logisches Gesetz, jedoch ein abgeleitetes sein.") G. Frege, *Die Grundlagen der Arithmetik*, § 87 (p. 91 (edition of 1884: p. 99)).

¹⁶ E. Husserl, Logische Untersuchungen, first volume, § 61 (pp. 225, 226).

¹⁷ E. Husserl, op. cit., §§ 67-69 (pp. 244-249).

¹⁸ ("Is [...] de wiskunde niet afhankelijk van de logica, de logica is wel afhankelijk van de wiskunde [...].") L. Brouwer, *Over de Grondslagen der Wiskunde*, p. 127, founded primarily in chapter 3 (pp. 125-179).

¹⁹ I think this is very difficult to do, or even impossible, for reasons I won't elaborate here.

²⁰ Cf. M. Ruse, *Darwin and Design*, p. 294.

²¹ Cf., e.g., M. Ruse, *The Evolution-Creation Struggle*, pp. 130-145.

²² D. Dennett, *Darwin's Dangerous Idea*, p. 21.

²³ D. Dennett, op. cit., pp. 46, 47.

²⁴ D. Dennett, op. cit., pp. 325, 326; explored in detail by Dawkins (*The Selfish Gene*, Chs. 2, 4, 11, 13).

2.3. Economics. It is not surprising that philosophy and economics converge in a number of important respects. The question how of goods are, or should be, divided is a basic question of economics and also appears in many philosophical debates, which are increasingly technical and require an ever greater grasp of this comprehensive science. In his *magnum opus A Theory of Justice*, Rawls describes what a just distribution of goods and attribution of liberties would be.²⁵ He opposes 'the ideal market process' (simply put, the 'laissez faire' approach).²⁶ Although he himself claims, "Certainly economic theory does not fit the ideal procedure.",²⁷ it cannot be denied that his is in fact an economic theory, just not of the sort he qualifies as the stumbling stone. In order to fully appreciate the merits of his approach, one needs to be familiar with the (in this case at least basic) concepts of economics.

Another obvious field of research to mention here is game theory, which deals with the choices individuals make in order to optimize their interests in situations their options are partly determined by the behavior of others. A domain of both economics and mathematics, it has, from the first presentations,²⁸ about halfway through the 20th century,²⁹ become a territory of specialists, inaccessible to any others aspiring to contribute. As in most cases described in this section, this field has isolated itself as a result of its success. In time, it may even, all the more since its applications grow,³⁰ evolve from the interdisciplinary approach it is today into a separate science, a process often manifested in the academia,³¹ rendering it ever more recondite.

2.4. Linguistics. The relationship between language and thought has a long tradition, but has increasingly become a domain of specialists, particularly since the 'linguistic turn', when a great number of thinkers started to grant language a pivotal role in analyzing philosophical issues. The question whether language is fully acquired through experience or there are innate principles at work has a long history, going back to the rationalism/empiricism (to use these designations) debate in the 17th and 18th century, while its roots may even be traced back to some of Plato's thoughts.³²

Chomsky has pleaded the first alternative, initially by pointing out the difference be-

²⁵ J. Rawls, A Theory of Justice, § 11 (p. 53); § 46 (p. 266).

²⁶ J. Rawls, op. cit., § 54 (p. 316).

²⁷ J. Rawls, *op. cit.*, § 54 (p. 317).

²⁸ (Although there were some thinkers in previous times who can, in retrospect, be considered as propagators).

²⁹ See J. Nash, "Two-person Cooperative Games", pp. 129-136. Rawls' theory mentioned above can, by the way, be interpreted in the context of game theory, considering the crucial 'veil of ignorance', which means one isn't supposed to know one's position in society once one is to decide how it is to be arranged (J. Rawls, *op. cit.*, § 24 (pp. 118-123)), though he only resorts to technical explanations in a few instances.

³⁰ Cf. J. Buchanan, G. Tullock, *The Calculus of Consent*, Chs. 11, 12 (pp. 147-188).

³¹ In such diverse fields as are medieval studies, psycholinguistics, and artificial intelligence.

³² Cf. Meno, 82a-86c; Phaedo, 75b-76a.

tween a deep structure and a surface structure,³³ which he uses to present an elaborate syntactical theory,³⁴ culminating in a universal grammar. In his research, Chomsky seeks a parallel with rationalism,³⁵ though, of course, as he himself grants, there are significant differences. His findings have also proved to be influential on some ideas in the philosophy of language,³⁶ or have at least been incorporated into philosophical theories.

In the field of semantics, the link between philosophy and linguistics is evident as well. Dealing with meaning, in order to find one's way in this interdisciplinary field, a familiarity with philosophy of language and some basics of linguistics is required. This domain too, although it deals with themes which were already at the focal point of attention in ancient philosophy, has become progressively technical from the 20th century on-wards.³⁷

2.5. *Philosophy's fate.* It is not my intention to deal with all philosophical aspects of scientific discussions – it is, in fact, as was indicated, part of the purport of this paper to make it clear that this is increasingly more difficult and has become (virtually) impossible. The discussions mentioned rather serve as representative examples. In fact, in order to be able to estimate the merits of discussions similar to those represented, which are relatively straightforward, it would be necessary to have an overview of all relevant recent developments in the sciences, an enterprise which hardly seems possible in our age, when, notwithstanding the special talents some people display, the notion of 'homo universalis' can only be deemed an unattainable ideal.³⁸ This is also how I would like to answer to the objection that an overview is still possible as I have discussed a great number of sciences. It must be acknowledged that I have done this rudimentarily and not in detail, which I would in the case of many sciences hardly or not be able to do.

Philosophy differs from the sciences in that the presence of the external elements mentioned is less compelling. There is no need for philosophy to produce material results craved for by society. Its presence is justified by its task to reflect on issues such as those discussed here. In order to maintain this position, however, it seems necessary that it is not dispersed like the various sciences. In the case of the sciences, this is to some extent a result of their own successes; in the case of philosophy, no similar success has been

³³ Cf. Aspects of the Theory of Syntax, pp. 16-18.

³⁴ This has been improved in his new approach (cf. N. Chomsky, *The Minimalist Program, pas-sim*).

³⁵ N. Chomsky, Aspects of the Theory of Syntax, pp. 47-59; Cartesian Linguistics, p. 59.

³⁶ Cf. G. Harman, *Deep Structure as Logical Form, passim.*

³⁷ Once one starts investigating the relation between semantics and syntax (e.g., P. Seuren, *Autonomous versus Semantic Syntax, passim*, or, more recently, D. Bouchard, *The Semantics of Syntax, passim*), things get even more complicated.

³⁸ Cf. in particular with respect to mathematics H. Putnam, *Reason, Truth and History*, p. 177: "[...] It is not [...] true that one can get overwhelming agreement on the truth of an arbitrary accepted scientific theory. The fact is that most people are woefully ignorant of science and many theories, especially in the exact sciences, require so much mathematics for their comprehension that most people are not even capable of understanding them."

reached. By keeping developing as it has, it will in the end render itself useless as the justification mentioned will have ceased to exist: it will in fact be scattered and lose its (only) task, a process culminating in many cases in discussions that have lost all meaning and purpose.

To be sure, the highly specialized debates it produces are not devoid of value, but these consist primarily in the exercise of (academic) abilities; because of the ever higher degree of differentiation, it will prove to be difficult to share thoughts except between a small group of specialists, which is exactly the case for the sciences, with the crucial difference, again, that in their case there is a need to resort to this state of affairs, a need which does not rise for philosophy.

3. A remedy. How can some unity be maintained in philosophy? It seems necessary to ascertain a canon of literature, comprising the most important works which have appeared. Of course, it may be a matter of debate which would be included. Still, the problem is not yet as great as it might seem. At the moment, there is still enough coherence and some consensus about the literature appears to exist, considering the contents of the courses taught at universities. It may seem to be difficult to realize a canon for philosophy,³⁹ but at present grossly the same philosophers are studied; students are at least expected to be generally familiar with their ideas, and, in addition, to have a thorough knowledge of those of whose teachings one has acquired detailed information through specialization.

It is still possible to share thoughts on the ideas they put forward, but unless a canon is established, the continuation of this situation may be threatened. This would mean that philosophy as a whole would disappear and be replaced by metaphysics, logic, epistemology, etc. Philosophy is, of course, already divided into these branches, as it has been throughout its rich tradition, but these are still, it seems, embedded in a common frame of reference. Cohesion is thus realized; that this may be maintained somewhat artificially, as the similarities between these branches are slowly surpassed by the differences, is no decisive objection.

Philosophy thus being consolidated obviously does not mean that it can resume its role as the mother of the sciences; the division into branches mentioned above can, accordingly, not take the same form it did with, e.g., Descartes, who famously likened philosophy to a tree, whose roots are metaphysics, and whose trunk is physics, the branches springing from it constituting all the other sciences.⁴⁰ The results found in section 2 rather

³⁹ I limit this to Western philosophy, i.e., American and European ideas, here. It would, however, be preferable for students of philosophy to have some (basic) knowledge, which can be acquired in a relatively short time span, of, e.g., Buddhism and the ideas of Al-Farabi and Xunzi, to mention some important representatives of some diverse schools of thought. It would, I think, not be realistic to expect students to gain an extensive knowledge of Eastern philosophy.

⁴⁰ ("[...] Toute la philosophie est comme un arbre, dont les racines sont la Metaphysique, le tronc est la Physique, et les branches qui sortent de ce tronc sont toutes les autres sciences [...].") R. Descartes, *Les Principes de la Philosophie*, p. 14.

lead to the conclusion that philosophy's claims in this respect must be modest, while it was pointed out in section 1 what internal problems it encounters. Yet philosophy may produce some unity in order to prevent the sciences from alienating from one another; it may serve as a common basis and – paradoxically – assume its new role as the constant element in a continually changing scientific landscape. That its role will indeed be different from before is clear.⁴¹

The canon itself is relatively easily established; as I said, at this time we still share a lot of ideas (which by no means implies agreement with regard to their value; it just points to their being studied in general), so that one can determine a list with a number of works; as I realize I won't get away with just leaving it at this, I point to the following, I think uncontroversial, examples: Plato's *Republic*, Descartes' *Meditations on First Philosophy*, and Kant's *Critique of Pure Reason*. I wouldn't presume to provide a complete list here, nor deny the convenience of being dismissed from the task of presenting this by myself.

It should not be intended to lead to a dogmatic set of literature in that it would never come up for revision (works can be added or eventually removed), nor in that the works included should determine the outcome of subsequent philosophical discussions; they merely constitute a common background representing various important views. Preferably, the original works would be read (i.e., in the languages in which they were originally written), so that an immediate access to the text is possible, but if necessary compromises can be made here; in general, the important works have been translated accurately.

Apart from the canon, containing works to be studied in detail, students should, as is the practice at the moment, familiarize themselves with the basic ideas contained in other books by these philosophers, and with those of other philosophers whose works they don't have to read themselves. To that effect, textbooks and encyclopedia can still be used.

As for the writings that are produced, it is necessary that one focuses on the contents rather than on the quantity of secondary literature. If it serves a supporting role, the use of secondary literature is desirable, but it should indeed have a function (and not be mentioned for the sake of being mentioned), and not replace the primary goal, to convey one's message, a danger which lurks with the ever growing amount of (secondary) literature with which one is expected to be acquainted.⁴² In some respects, many of the writings of the 17th and 18th century, in which hardly any (explicit) references are made, and those of the medieval philosophers, who refer to sources with which they were all familiar (such as the Bible and materials they studied in common), may serve as useful exemplars.

Conclusion. Philosophy has been conceived in many ways throughout history. Its position in relation to the exact sciences and theology and, in time, once they had evolved into distinct fields of research, to the other sciences, has left its status unsettled. Having

⁴¹ R. Rorty, op. cit., pp. 377-394.

⁴² Ironically, of course, this paper itself suffers from this problem, too. In this case, however, the point is demonstrated in part by it, although the literature incorporated is circumstantial and unavoidable.

been known in a number of guises, such as the handmaid of theology and (conversely) the mother of the sciences, in this article I have attempted to describe how it can be maintained at present, against the background of a rapidly changing and ever more inaccessible scientific climate.

Philosophy's reflective role is in peril of being eroded. This is a result of two relatively recent developments. First, the sciences have developed from the beginning, but the scientific discoveries and improvements have meant that in most cases even a basic understanding, which seems necessary for philosophy if it doesn't want to be isolated, means a thorough schooling. However, it is nowadays hardly possible to have a sufficient understanding of more than a handful of sciences, let alone a detailed overview. Secondly, and perhaps not unrelated to this, philosophy itself has seen a rise in the number of specializations, which have also become less accessible. Scientific *and* philosophical developments are manifested at a seemingly exponential rate.

In section 2, I pointed out more in detail what difficulties one encounters when one wants to maintain an overview of relevant scientific developments pertaining to philosophy. It turned out that it is virtually impossible to keep up with these, let alone be well versed in them, even when one limits this to the extent relative to one's interest.

In section 3, I presented a remedy to this rather gloomy outlook. At present, in (Western) philosophy a coherence similar to that manifested in the Middle Ages has become unattainable, partly because of its own developments, and partly because of the scientific issues mentioned. This does not mean, however, that some coherence should be impossible. In fact, the programs at universities agree to a great degree with regard to the works studied. Still, this coherence should not be taken for granted; it may be maintained in the future by establishing a canon with the relevant works to study.

LITERATURE

- D. Bouchard, The Semantics of Syntax. Chicago, IL/London: The University of Chicago Press, 1995.
- L. Brouwer, Over de Grondslagen der Wiskunde. Amsterdam/Leipzig: Maas & Van Suchtelen, 1907.
- J. Buchanan, G. Tullock, *The Calculus of Consent*. Ann Arbor, MI: University of Michigan Press, 1962.
- N. Chomsky, Aspects of the Theory of Syntax. Cambridge, MA: MIT Press, 1976.
- N. Chomsky, Cartesian Linguistics. New York, NY/London: Harper & Row, 1966.
- N. Chomsky, The Minimalist Program. Cambridge, MA/London: MIT Press, 1995
- R. Dawkins, The Selfish Gene. Oxford/New York, NY: Oxford University Press, 1989.
- D. Dennett, Darwin's Dangerous Idea. London et al.: Allen Lane, The Penguin Press, 1995.
- R. Descartes, *Les Principes de la Philosophie*. Descartes' works, vol. 9-2. Ed. by C. Adam and P. Tannery. Paris: Librairie J. Vrin, 1964.
- G. Frege, Die Grundlagen der Arithmetik. Hamburg: Felix Meiner Verlag, 1986.
- G. Harman, "Deep Structure as Logical Form." In: D. Davidson, G. Harman (eds.), *Semantics of Natural Language*: pp. 25-47. Dordrecht/Boston, MA: D. Reidel, 1977.
- E. Husserl, *Logische Untersuchungen*, first volume. Collected writings, vol. 18. Den Haag: Martinus Nijhoff, 1975.
- W. James, The Meaning of Truth. Cambridge, MA/London: Harvard University Press, 1975.

- I. Kant, *Kritik der reinen Vernunft*. Kant's collected writings. First section: works. Vol. 3. Berlin: Georg Reimer, 1904.
- Th. Kuhn, *The Structure of Scientific Revolutions*. Chicago, IL: The University of Chicago Press, 1996.
- J. Nash, "Two-Person Cooperative Games". In: *Econometrica. Journal of the Econometric Society* vol. 21, issue 1, 1953: pp. 128-140.
- Plato, *Meno*. Complete works, vol. 3, part 2. Ed. by A. Croiset and L. Bodin. Paris: Les Belles Lettres, 1963.
- Plato, Phaedo. Complete works, vol. 4, part 1. Ed. by L. Robin. Paris: Les Belles Lettres, 1963.
- H. Poincaré, La Science et l'Hypothèse. Paris: Ernest Flammarion, 1920.
- R. Posner, *The Problematics of Moral and Legal Theory*. Cambridge, MA/London: The Belknap Press of Harvard University, 1999.
- H. Putnam, Reason, Truth and History. Cambridge: Cambridge University Press, 1995.
- J. Rawls, A Theory of Justice. Cambridge, MA: Harvard University Press, 1999.
- R. Rorty, Philosophy and the Mirror of Nature. Princeton, NJ: Princeton University Press, 1980.
- M. Ruse, Darwin and Design. Cambridge, MA/London: Harvard University Press, 2003.
- M. Ruse, The Evolution-Creation Struggle. Cambridge, MA/London: Harvard University Press, 2005.
- P. Seuren, "Autonomous versus Semantic Syntax". In: Foundations of language. International Journal of Language and Philosophy vol. 8, 1972: pp. 237-265.
- L. Wittgenstein, *Tractatus logico-philosophicus*. Work edition, vol. 1. Frankfurt am Main: Suhrkamp, 1997.

Jasper Doomen, M.A., J.D. J. Perkstraat 4 A 2321 VH Leiden The Netherlands