

---

# THE REASONER

---

VOLUME 4, NUMBER 9  
SEPTEMBER 2010

[www.thereasoner.org](http://www.thereasoner.org)  
ISSN 1757-0522

## CONTENTS

- §1 Editorial
- §2 Features
- §3 News
- §4 What's Hot in ...
- §5 Events
- §6 Courses and Programmes
- §7 Jobs and Studentships

## §1 EDITORIAL

I am delighted to return as guest editor of *The Reasoner*. Exactly one year ago, I opened the September issue with an interview with Theo Kuipers from the University of Groningen. In our conversation, we touched upon a number of topics, in particular scientific realism, progress, truth, verisimilitude, and the method of philosophy of science. Nearly the same topics are the central ones of this month's interview. This is due not only to my lack of imagination, but also to the fact that, in my view, these are some of the most important problems in the philosophy of science. For this reason, I

133 decided to ask [Professor Ilkka Niiniluoto](#) for an interview. During the last forty years, Niiniluoto has published an impressive number of papers on virtually all fields of contemporary philosophy of science, focussing particularly on probability and inductive logic, truth and verisimilitude (also known as truthlikeness or truth approximation), realism and scientific progress, and the evaluation of theories within natural and social sciences. Let me briefly survey his main contributions, which explain why he is the right person to answer my questions.

134  
137  
143  
144  
147  
148 Niiniluoto is presently Chancellor of the University of Helsinki, where he teaches Theoretical Philosophy, and Chairman of the Philosophical Society of Finland. He is one of the most prominent figures of the philosophical school going back to Eino Kaila, Georg H. von Wright, and Jaakko Hintikka. The development of this tradition has been recently analyzed in a volume, [Analytic Philosophy in Finland](#) (Rodopi, 2003), edited by Niiniluoto himself (together with Leila Haaparanta),

for which Niiniluoto wrote also the introductory, historical chapter. Within this tradition, the Finnish School of inductive logic takes the lion's share. Niiniluoto's first important contribution to the School's research programme is *Theoretical Concepts and Hypothetico-Inductive Inference* (Reidel, 1973), written together with Raimo Tuomela, in which the authors use Hintikka's inductive logic in order to defend critical scientific realism. A few years later, Niiniluoto and Tuomela also edited *The Logic and Epistemology*



of *Scientific Change* (Acta Philosophica Fennica, 30, 1979), a collection of papers devoted to four very recent (at that time) methodological research programmes: structuralism, cognitive decision theory, verisimilitude, and the logical theory of belief change.

Sometimes, errors do trigger progress in the history of ideas. It is well-known that Popper's attempt (in *Conjectures and Refutations*, 1963) to explicate the notion of verisimilitude (construed as similarity or closeness to the comprehensive truth about a target domain) was technically flawed, as Pavel Tichý and David Miller independently proved in 1974. This failure opened the way to the post-Popperian theories of verisimilitude, which constitute a lively research programme in formal philosophy of science. The most developed and well-known theory of verisimilitude is the so-called "similarity approach", proposed since 1974 by Pavel Tichý and Risto Hilpinen, and subsequently developed by Niiniluoto, Tuomela and Graham Oddie. About a decade later, Niiniluoto published two books: *Is Science Progressive?* (Reidel, 1984), a collection of essays devoted to explicating scientific progress in terms of increasing verisimilitude, and *Truthlikeness* (Reidel, 1987), a presentation of his own theory of verisimilitude, as well as a detailed discussion of the history, importance, and applicability of this notion, and a defence against its critics. *Truthlikeness* is often referred to as "the Bible of verisimilitude", since it contains virtually all you need to know for seriously studying the subject (in this case, you will also find useful Niiniluoto's survey article on "Verisimilitude: The third period" in the *British Journal for Philosophy of Science*, 49, 1998).

In his most recent book on these themes, *Critical Scientific Realism* (Oxford University Press, 1999), Niiniluoto offers a detailed and up-to-date presentation of his philosophical outlook. The book subtly combines a coherently fallibilist view of human knowledge with an uncompromising defence of realism in ontology, semantics, epistemology, theory construction, and methodology. Niiniluoto carefully distinguishes all the main forms of realism, antirealism, and relativism discussed in the recent literature, so that *Critical Scientific Realism* can be read also as a high-level textbook, containing one of the most learned and complete expositions of the subject to date. The reader interested in the recent debate on Niiniluoto's philosophy of science should read *Approaching Truth* (College Publications, 2007), a *Festschrift* edited by Sami Pihlström, Panu Raatikainen, and Matti Sintonen, collecting a number of papers by leading scholars devoted to his work in three wide areas: 1) philosophy of logic, of language, and of mathematics; 2) induction, truthlikeness, and scientific progress; and 3) epistemology, culture, and religion.

Before starting the interview, I wish to thank Federica Russo, Jon Williamson, and Lorenzo Casini for their invitation to open this issue and for their editorial work;

and Roberto Festa and Luca Tambolo for many conversations on the topics of the interview, which inspired most of the questions below.

Gustavo Cevolani  
Philosophy, Bologna

## §2

### FEATURES

#### Interview with Ilkka Niiniluoto

Gustavo Cevolani: First of all, thank you for agreeing to be this month's interviewee. As usual, let me start by asking you about your intellectual history. How did you first get into research in logic and philosophy of science? Who had the greatest influence on your philosophical career?

Ilkka Niiniluoto: I did my Master's degree in mathematics in 1968, specializing in probability theory and Bayesian statistics with Professor Gustav Elfving. At the same time, I had started to study philosophy and mathematical logic with Professor Oiva Ketonen. The philosophical devotion and personal integrity of Academician Georg Henrik von Wright made a strong impression on me. I had already decided to move from mathematics to theoretical philosophy when Professor Jaakko Hintikka appointed me his research assistant in the summer of 1971. Hintikka's distributive normal forms and his measures of inductive probability and semantic information provided me the basic tools for the study of theoretical terms and inductive inference. The most inspiring and valuable lessons in philosophical methodology I have learned from Hintikka.



GC: You were trained in the tradition of the "Finnish school" of inductive logic, pursuing the research inaugurated by Eino Kaila, von Wright and Hintikka. In retrospective, what have been the most important contributions of this school? How lively is this tradition today?

IN: Von Wright's treatment of eliminative induction was an important contribution, but it is not much discussed today. The greatest achievement of the Finnish school was Hintikka's system of inductive generalization which improved Carnap's inductive logic by showing how universal statements in infinite domains can receive non-zero probabilities. Hintikka's students—including Risto Hilpinen, Raimo Tuomela, Juhani Pietarinen and myself—then developed and applied this insight in various directions. My own work

on truthlikeness and its estimation is also a continuation of this tradition. Hintikka himself downplayed the role of induction in his interrogative model of inquiry in the 1990s. It is a little disappointing to see that Hintikka's achievement is often ignored by Bayesian scholars who either reject inductive logic or work within the Carnapian framework. The models of induction in Artificial Intelligence are less sophisticated than Hintikka's system. But I am happy that there are philosophers in other countries—among them Theo Kuipers and Roberto Festa—who have made progress along the lines of the Finnish school.

GC: The post-Popperian research programme on truthlikeness (aka verisimilitude, or truth approximation) is a distinguished approach to the central problems of contemporary philosophy of science. Your 1987 book, *Truthlikeness*, is a milestone of this programme, exploring both the logical definition of verisimilitude and its methodological applications. However, the entire programme failed, at least until now, to gain wide acceptance and visibility among philosophers of science. First, truthlikeness is still often conflated with different concepts like probability, approximate truth, partial truth, and so on. Second, its role for the axiology and the methodology of science is largely underestimated and sometimes plainly ignored. What are the reasons of this situation, in your opinion?

IN: Truthlikeness is a fascinating topic which has kept me active already for 36 years, and there is still much research to be done in this area. The community of logicians working seriously on this theme is relatively small, and there is a lot of disagreement about the right approach. Many philosophers who are fond of the realist idea of truth approximation have found the logical treatments of truthlikeness too technical or "Carnapian"—Popper himself never gave me any reference or personal communication, even though I succeeded to save the notion of verisimilitude with an explication that satisfies all the central Popperian desiderata. As there is no consensus so far about the basic principles of truthlikeness, it may be difficult for other philosophers of science to appreciate the important conceptual distinctions, so that they simply work with an intuitive notion of "approximate truth". It is also easy for them to ignore the potential of the precise concept of truthlikeness for wider issues in the philosophy of science. The situation is different from the role of probability: in spite of various interpretations, there is an accepted standard mathematical explication of this notion. On the other hand, there are also hot disputes about many other important concepts in the philosophy of science—such as theory, model, truth, confirmation, lawlikeness, explanation, and reduction.

GC: Verisimilitude plays a crucial role in your own version of "critical scientific realism". You have been defending scientific realism since the beginning of your

career, in the early Seventies. At that time, anti-realism (in its instrumentalist version) was widespread and became very fashionable shortly after, with the publication of *The Scientific Image* by Bas van Fraassen (1980). Today, the trend may appear to be reversed. Last year, the [PhilPapers website](#) organized a survey on a number of central philosophical questions. Among 1800 professionals (PhDs or faculty members), over 70% is reported to "accept or lean toward" scientific realism (although the figure falls toward 50% among those broadly specialized in philosophy of science). How do you judge the results of this poll and, more generally, the present state of the realism/anti-realism debate?

IN: I am glad to hear about this relative success of scientific realism. Arthur Fine was wrong when he announced the death of realism some twenty-five years ago. Of course one should remember, as I tried to show in my *Critical Scientific Realism* (1999), that there are many interesting forms of realism and anti-realism. One can reliably predict that this debate will always be a vital issue in the philosophy of science. During the last decade, structural realism has gained popularity, and internal realism has lost ground. But my guess is also that "leaning toward scientific realism" is quite common among those scholars who are working within the philosophy of special sciences: they have to rely on some sort of realist interpretation when they take a serious look at the contents of the best theories in physics, biology, medicine, psychology, economics, and sociology.

GC: The survey mentioned above reports a slight majority (56%) of philosophers leaning toward moral realism, rising to over 60% among the specialists of normative ethics and meta-ethics. In your *Critical Scientific Realism*, you defend realism in ontology, semantics, epistemology and methodology but accept (a form of) moral relativism. Can you elaborate a bit on this point? In particular, if "moral facts" are human-made and then relative to time, culture, etc., what is the difference between them and other human artefacts?

IN: I have indeed defended "moral constructivism" which treats moral values and principles as human-made social artifacts. Moral facts differ from some other human artifacts by their Durkheimian coercive force—their power in guiding our actions and decisions. In this sense, morality is a "real" phenomenon in the Popperian World 3. It is an extremely important aspect of our life and social interaction, but it has no transcendent (religious or metaphysical) ground independently of human activity. Morality cannot be reduced to natural facts about human needs or evolution, either: individually and socially, we are free to critically reconsider and renew the moral standards prevailing in our community. This sort of modest relativism is compatible with human responsibility, tolerance towards different value systems, and attempts to reach world-wide agreements on human rights.

GC: If you had to suggest a direction of research to young philosophers of science starting out today, what are the topics that you would recommend?

IN: There are still important and largely open problems in inductive logic: inductive reasoning with observational errors and inductive systems with relational predicates. The connection between truth approximation and belief revision models is a promising area. Another up to date topic is the analysis of abductive inference in terms of probability and truthlikeness. A young logician could also spend some time in going through the related work in the field of Artificial Intelligence. Illumination of the key ideas of scientific realism in historical case studies would also give opportunities for interesting research projects.

GC: A question of a more general nature. In the Preface to your [Festschrift](#), the reader learns that, as “one of the most prominent public intellectuals in Finland”, you have “constantly defended science and reason”. Which are, in your opinion, the worst enemies of reason today? Don’t you think that a middle course is needed between two equally dangerous extremes, the “Scylla” of relativism and the “Charybdis” of scientism?

IN: In my view, the most dangerous enemies of reason come from circles that base their beliefs and practices upon irrational faith and superstition with a hostile attitude towards scientific inquiry. Radical forms of postmodern relativism may give support to such communities. The reliance on science is not as such dangerous, since science itself is the critical way of forming beliefs about the world on the basis of public evidence. The mistake of scientism lies in its overstatement of the scope of scientific reason: even though scientific knowledge is relevant for most urgent decision problems, the scientists have no monopoly for solving value questions within a free democratic society.

GC: Regarding scientism, sometimes one is under the impression that large parts of the scientific community don’t practice what they preach. On the one hand, scientists adopt a Popperian jargon, willingly assenting to the idea that theories are always conjectural and open to revision. On the other hand, they become very touchy when their pet theories are challenged, and seem often motivated by ideological, political or economic reasons. In this connection, let me mention two recent episodes. The first is the publication of Fodor and Piattelli-Palmarini’s *What Darwin Got Wrong* (London, 2010), which is giving rise to much debate also in my country (one of the authors is Italian). The second is the so-called [Climategate](#), concerning some hacked documents seemingly showing an attempt to minimize or conceal evidence about climate change. In both cases (admittedly very different in nature), some scientists violently reacted in defence of a purported scientific consensus about, respectively, (neo-)Darwinian evolutionism and anthropogenic global warming. In

your opinion, is there a danger of scientific dogmatism? What have philosophers to say, and to do, about these episodes?

IN: As a critical scientific realist, I am a fallibilist who endorses the corrigibility of all human knowledge. Scientific dogmatism is harmful, since it is in conflict with the self-corrective nature of science and inhibits scientific progress. But scientists themselves should be able to estimate the reliability of their tentative conclusions. When the scientific community reaches a consensus on some question, open criticism should still be allowed, but naturally a change in the prevailing opinion would need strong scientific counter-arguments and new evidence. As experts of critical thinking, philosophers should assist in such episodes by assessing the weight of the rival arguments and positions.

#### TEMPUS DICTUM

Technological Aids to Cognition  
<http://tempusdictum.com>

### Kaplan on indexical logic

It is a simple matter of grammar that it is predicates of ‘that’-clauses, rather than predicates of mentioned sentences, that are equivalent to operators on used sentences (see 2010a: “On Forgetting ‘that’”, *The Reasoner* 4.4, 57-8). So ‘It is true/necessary that I am here now’, for instance, in which there are operators ‘It is true/necessary that’ on a used sentence, is equivalent to ‘That I am here now is true/necessary’, and not ‘I am here now is T/N’ for any predicates ‘T’ or ‘N’, of the now mentioned sentence ‘I am here now’. The difficulty for the main line logical tradition on this issue has been that there is no term forming element (like ‘that’) in standard formal languages transforming a sentence into a nominal phrase referring to the proposition the sentence expresses, when used. And this has led to considerable confusion, through attempts to make predicates of mentioned sentences do the job of predicates of ‘that’-clauses (see 2010b: ‘What Priest (amongst many others) has been missing’, *Ratio* XXIII.2, 184-198).

The specific example of this confusion just given arises in the work of David Kaplan. For one significant, repeated assertion of Kaplan’s is that it is the *content* of a sentence (i.e., the proposition expressed) that carries the truth-value. Thus we find, for example, (Almog, J., Perry, J., and Wettstein, H. (eds) 1989: *Themes from Kaplan*, O.U.P., Oxford, 500):

What is said in using a given indexical in different contexts may be different. Thus if I say, today, ‘I was insulted yesterday’, and you utter the same words tomorrow, what is said is different. If what we say differs in truth-value,