

**PUTTING INFORMATION FIRST:
LUCIANO FLORIDI AND THE PHILOSOPHY OF INFORMATION**

PATRICK ALLO

This collection of chapters is devoted to Luciano Floridi's contributions to the philosophy of information. As Floridi explains in his replies near the end of the collection, his own work during the past ten years has been almost co-extensive with *the* philosophy of information. Some might find this claim problematic. After all, doesn't the philosophy of information go all the way back to Leibniz? Or shouldn't we acknowledge the crucial role played by Wiener, Turing, Simon, Dretske, and many other fathers of the philosophy of information? Of course, the informational turn in philosophy cannot be reduced to work done in the past decade, let alone work done by one person (see the epilogue by Terrell Ward Bynum and the concluding section of Floridi's replies). Yet, what I want to emphasise is that while there has been a clearly discernible informational turn in recent (and not so recent) philosophy, Floridi gave that turn a more radical twist by claiming that taking the informational turn means redefining philosophy. This is why there is a conception of the philosophy of information that Floridi may rightly call his own.

In this introduction, I want to do two things: situate the contributions to this collection in the broader context of the philosophy of information, and say something more general about Floridi's unique understanding of what *the* philosophy of information is (or should be). I'll start with the latter, and then use my sketch of the philosophy of information as a map to situate the various chapters.

Let's start with an analogy. The philosophy of information is much like the philosophy of probability. The two have similar subject matter, a mathematically well-understood notion, but are stuck with widely divergent and often incompatible interpretations: chances, frequencies, subjective probabilities, propensities, and so on, for the former; qualitative, quantitative, syntactical, semantical, and so on, for the latter. If there is a core notion of information, then that core is composed only of formal properties, with Shannon's communication theory doing the unifying work. Likewise, classical probabilities satisfy the Kolmogorov axioms, but these do not settle what probabilities are. In both cases, the unification doesn't immediately extend beyond the logico-mathematical

framework. We can expand this analogy even further. The philosophy of probability isn't just about interpretations but also covers philosophical applications of probability theory like Bayesian epistemology and philosophical issues that arise from the application of probability theory. Similarly, the philosophy of information isn't exclusively about the concepts of information and computation, it is also concerned with applications of informational and computational methods and models to philosophical problems, as exemplified in this definition by Floridi:

[T]he philosophical field concerned with (a) the critical investigation of the conceptual nature and basic principles of information, including its dynamics, utilisation, and sciences, and (b) the elaboration and application of information-theoretic and computational methodologies to philosophical problems.
(Floridi 2002, 137)

Such applications include, for example, the formulation of an information-based epistemology (Floridi 2006 and forthcoming), the use of the notion of *strongly semantic information* in an analysis of relevance (Floridi 2008a), and the defence of an informational ontology as a means to resolve a central debate between two brands of structural realism (Floridi 2008b).

So far, the analogy seems quite compelling. When compared to the picture of the philosophy of information that arises from a recent handbook (van Benthem and Adriaans 2008), the analogy is in fact quite accurate. This is because the philosophy of information is most commonly understood as referring either to a number of philosophies of information or to the philosophical study of different formal theories of information. When Floridi refers to *the* philosophy of information, he has something quite different in mind, something that is at once more specific, larger in scope, and more ambitious. In short, he thinks that there is just one philosophy of information, that it doesn't apply merely to the study of information in the narrow sense (i.e., the technical notion), and that its ultimate goal is to transform the nature of philosophical theorising. Clearly, the philosophy of probability doesn't have any of these features. This is why the analogy is instructive. It illustrates where Floridi's use of the label "philosophy of information" diverges from the generic use of that label. Unless otherwise stated, I use the term "philosophy of information" (PI) in this introduction in the sense intended by Floridi.

Let me illustrate the specificity of PI by means of two common misconceptions about it. Misconceptions about PI often go hand in hand with the objection that there is no such thing as *the* philosophy of information. This doesn't mean that all these misconceptions are actually found in print. Though some are inspired by actual opinions, they are better thought of as typical instances of a more general attitude. In most cases, the relevant objections are right about specific features of PI but misconstrue or underestimate the range of the whole enterprise.

Correcting the received view is one thing, but for purposes of situating the different chapters in this collection I need a more positive view of PI. To that end, I describe it along three dimensions: (a) its subject matter, (b) its methods, and (c) the substantial views it propounds. This is already implicit in Floridi's claim that PI is a mature discipline because it introduces unique topics and original methodologies, and leads to new theories (Floridi 2002, 124).

As we shall see, the chapters in this collection engage PI along one or more of these dimensions. But first let us turn to the misconceptions.

First Misconception

Because there is no agreement on a unified notion of information, there cannot yet be an agreement on what *the* philosophy of information is. What this objection presupposes is that there is only one reading of "the philosophy of information," namely, as the philosophy of the one true concept of information. Hence, as long as this unique concept is missing there cannot be a single philosophy of information either.

The real misconception in this case isn't just the disputable assumption that a unified theory of information is desirable or philosophically fruitful, it is the stronger claim that the unification of a field or discipline like PI should always and exclusively follow from the unification of its subject matter, namely, the concept of information itself. This is highly problematic. Because of an all too narrow identification of PI with its core subject matter, it can only be one of two things: an exceedingly reductive enterprise or an eclectic collection of philosophies of information. Such pessimism is not justified. With regard to its subject matter, Floridi emphasises integration instead of unification: "On the whole, its task is to develop not a unified theory of information but rather an integrated family of theories that analyse, evaluate, and explain the various principles and concepts of information, their dynamics and utilisation, with special attention to systemic issues arising from different contexts of application and interconnections with other key concepts in philosophy, such as being, knowledge, truth, life, and meaning" (Floridi 2002, 137). More important, this quote also emphasises that the search for integration should not exclusively be grounded in the nature of information but should also reflect the uses of the information. That is, it should not only focus on what information really is but also shed light on why information is a cognitively valuable commodity and how the concept of information can play an explanatory role in the sciences. Integration, then, is about showing how different notions of information can play different and often complementary roles, both in our own epistemic and intellectual lives and for the working scientist. Obviously, such integration no longer requires a unified notion of information.

Second Misconception

The informational turn in philosophy is in the first place a trend that cuts across several (often technically oriented) sub-disciplines, especially epistemology and the philosophy of mind and language. So even if we can have an integrated conception of information, this integration will not diminish the fact that there is no single discipline called the philosophy of information. Since the integration is driven by methodological concerns (the use of information as a commodity and as an explanatory notion), PI can only play an auxiliary role. At its best, it is something that will be integrated into normal philosophical theorising. At its worst, it is a passing fashion with no enduring influence.

Whether or not PI will have a lasting influence is something only the future will tell. Yet, if it has any influence, it shouldn't be reduced to mere methodological recommendations. This is because the methodology of PI comes with more substantial philosophical insights, still methodological in nature but not neutral on substantial issues like the nature and purpose of philosophical theorising. The methodological canon of PI-style philosophy—the *method of abstraction*, *minimalism*, and *constructionism*—is indeed packed with views as to which questions are worth pursuing, and how they should be pursued. Since it would take us too far to show how each of these methods favours particular types of questions and recommends a specific way of answering them, let me make use of an example. Consider the following quote from Popper's "Epistemology Without a Knowing Subject": "An objectivist epistemology which studies the third world [the objective content of thoughts] can help to throw an immense amount of light upon the second world of subjective consciousness . . . ; but the converse is not true" (Popper 1968, 338).

Given that similar considerations inspire Floridi's own take on epistemology, we can use this as a proxy for his views. The question we should then ask is where the methodological recommendations end, and where the substantial views about the nature of knowledge begin. This isn't obvious. Clearly, saying that our theory of knowledge shouldn't be clouded by mentalistic considerations is a methodological consideration; it can be considered as an application of *minimalism* to the problem of knowledge. Yet, since it immediately rules out most traditional theories of knowledge, the philosophical import of minimalism exceeds what can be described as mere methodology.

The lesson we learn from this second misconception is that a characterisation of PI in terms of its subject matter and methodological recommendations isn't entirely adequate. The problem, as we have seen, is that because it underestimates the philosophical import of the methodology of PI, such characterisation cannot account for the radical change PI stands for. With the introduction of new methods and concepts, the nature of philosophy changes as well.

This suggests a three-dimensional characterisation of PI, based on subject matter, method, and substantial views about the aims and purposes of philosophical theorising. Whether or not a substantial view defines the nature of PI is a critical issue. Clearly, not every view defended by Floridi should be situated at the core of PI. In my view, the demand to provide answers rather than analyses (see Floridi's replies) belongs at the core. By contrast, the much-disputed veridicality thesis (Floridi 2004 and 2005b) belongs to the periphery. It is a crucial part of Floridi's own work, but not something that defines the kind of theories PI should favour. Somewhere in between, then, we find opinions about what a theory of knowledge should be like, or rather what it shouldn't be like. I'd like to situate this fairly close to the core, but for most purposes it doesn't really matter where we draw the line. The point is rather that whatever belongs to the core, and this includes substantial views, shouldn't be left out of the characterisation of PI.

The Chapters

With the three dimensions of PI in mind, the various chapters in this collection can now be situated relative to how they engage with PI. Some focus on specific topics within it, others adhere to its methodology or specifically challenge views previously defended by Floridi. But most engage with PI along multiple dimensions at the same time. This is the most fruitful approach.

The two chapters in the section on knowledge, by Roush and Hendricks, respectively, do not really challenge Floridi's work as such but make independent contributions to PI. This is primarily because they adhere to methods that are "minimalist" without being simplistic. Hendricks does so within his own distinctive approach of modal-operator epistemology, and presents the problem of pluralistic ignorance within that setting. The distinctive feature of his approach is the view that knowing doesn't merely require information; it also requires the ability to process it. Roush, by contrast, uses the idea of the knowledge game (Floridi 2005a) to show how knowledge can be more valuable than mere true belief. She combines Lewis's signalling games with considerations about evolutionary stable strategies to show that at least a tracking account of knowledge does not face the so-called *swamping problem*.

Bringsjord picks up the theme of the knowledge game as well, but sticks to its original purpose: showing how one can know that one is not a zombie. By taking the idea that the question "How do you know you're not a zombie?" is best answered in terms of passing a test, he implicitly subscribes to the methodological assumptions on which Floridi has relied. By being more optimistic about the prospects of artificial intelligence (AI), with a proof to support the claim that logic-based AI could pass

Floridi's most elaborate test, Bringsjord also challenges Floridi's own views.

The next two chapters engage PI at its traditional core: the concept of information and its relation to knowledge. Scarantino and Piccinini take a new look at what is perhaps Floridi's most debated view: the suggestion that semantic information is by definition truthful, a view previously defended by Dretske and Grice. Dretske warns that "the tendency in computer science to construe information as anything—whether true or false—capable of being stored on a hard disk is to confuse non-natural meaning (or perhaps just structure) with genuine information. It leaves it a mystery why information should be thought a useful commodity" (Dretske 2009, 383). Scarantino and Piccinini, however, take the distinction between natural and non-natural meaning precisely as their starting point, and argue for a more refined view of semantic information, one that is closer to what cognitive scientists have in mind. Adams initially stays close to Floridi's analysis of information, and its place within the informational turn in philosophy, by comparing his analysis of "being informed" with the distinctive rejection of closure we find in Dretske's theory. That's only one part of Adams's chapter, which also engages the *symbol-grounding problem* and questions the stringent constraints Taddeo and Floridi 2005 imposed on any solution to that problem.

Colburn and Shute work in the philosophy of computer science, and in their contribution to the collection they use the notion of a law, as it is used by computer scientists (i.e., as invariant), to investigate two aspects of Floridi's work. The first is purely methodological, namely, the method of abstraction; the second is more substantial, namely, the notion of a purely computational or informational reality. In both cases, Colburn and Shute reveal close connections and draw our attention to points at which Floridi's use of these notions diverges from their mainstream use in computer science.

Bueno's contribution also deals with the idea of an informational reality, but approaches it from the perspective of structural realism (as it is presented in Floridi 2008b). The main question Bueno asks has to do with how Floridi's proposal leads to a realist position. His answer is based on an alternative proposal: using partial structures and the notion of quasi-truth. The upshot of the proposal is that ontic and epistemic structuralism can still be reconciled, but that an empiricist reading becomes available as well.

Finally, Volkman discusses an aspect of Floridi's work that has already been a topic in a collection on Floridi (Ess 2008) but could hardly be omitted here: information ethics. In Volkman's view, the valuable part of information ethics is its emphasis on *good construction*, and the disputable part is the value it accords to impartiality and the emphasis on foundations. This is why, according to Volkman, information ethics may learn some valuable lessons from virtue ethics.

Conclusion

By way of conclusion, I'd like to do two things. First, recommend the final chapter, by Terrell Ward Bynum, which serves as an epilogue for this collection and is the perfect complement to the specific points I've tried to make in this introduction. And second, emphasise once more what I think is the real challenge for the philosophy of information: namely, to have a concrete and lasting influence by engaging the philosophical community at large, and to avoid either becoming a narrow subfield—a philosophy of the concept of information—or ending up as a set of methodological recommendations devoid of real philosophical substance.

Acknowledgments

I would like to thank everyone who contributed to the successful completion of this project, including all the contributors and referees and the editorial team of *Metaphilosophy*, and Wiley-Blackwell. Special thanks go to Otto Bohmann for his patience and logistical support during the final stages.

References

- Dretske, Fred. 2009. "Information-Theoretic Semantics." In *The Oxford Handbook of the Philosophy of Mind*, edited by Brian McLaughlin, Ansgar Beckermann, and Sven Walter, 318–93. Oxford: Oxford University Press.
- Ess, Charles, ed. 2008. *Luciano Floridi's Philosophy of Information and Information Ethics: Critical Reflections and the State of the Art*, special issue of *Ethics and Information Technology* 10, no. 2.
- Floridi, Luciano. 2002. "What Is the Philosophy of Information?" *Metaphilosophy* 33, nos. 1–2:123–45.
- . 2004. "Outline of a Theory of Strongly Semantic Information." *Minds and Machines* 14, no. 2:197–222.
- . 2005a. "Consciousness, Agents and the Knowledge Game." *Minds and Machines* 15, nos. 3–4:415–44.
- . 2005b. "Is Information Meaningful Data?" *Philosophy and Phenomenological Research* 70, no. 2:351–70.
- . 2006. "The Logic of 'Being Informed'." *Logique & Analyse* 49, no. 196:433–60.
- . 2008a. "Understanding Epistemic Relevance." *Erkenntnis* 69, no. 1:69–92.
- . 2008b. "A Defense of Informational Structural Realism." *Synthese* 161, no. 2:219–53.
- . Forthcoming. "Semantic Information and the Network Theory of Account." *Synthese*.

- Popper, Karl R. 1968. "Epistemology Without a Knowing Subject." In *Logic, Methodology and Philosophy of Science III*, edited by B. van Rotselaar and J. F. Staal, 333–73. Amsterdam: North-Holland.
- Taddeo, Mariarosaria, and Luciano Floridi. 2005. "Solving the Symbol-Grounding Problem: A Critical Review of Fifteen Years of Research." *Journal of Experimental and Theoretical Artificial Intelligence* 17, no. 4:419–45.
- van Benthem, Johan, and Pieter Adriaans. 2008. *Handbook on the Philosophy of Information*. Amsterdam: Elsevier.