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Meaningful Reality: A Metalogue with Floridi's Information Ethics

Pompeu Casanovas
INSTITUTE OF LAW AND TECHNOLOGY, AUTONOMOUS UNIVERSITY OF BARCELONA, POMPEU.CASANOVAS@UAB.CAT / CENTRE FOR APPLIED SOCIAL RESEARCH, ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY, POMPEU.CASANOVAS@RMIT.EDU.AUS

Abstract. This is a comment on some aspects of the *The Ethics of the Information* by Luciano Floridi. This paper explores some of the notions advanced in the book, its methodology, and its practical and ontological turn. In the end, some suggestions are made about the relationship between Information Ethics (IE), policy, and law.

1. INTRODUCTION

The Ethics of the Information is a freely written book by a free thinker.[1] This statement intends to be more than a rhetorical one. Freedom means liberty. Liberty to think aloof. Liberty to dive into the philosophical tradition with a fresh gaze. And liberty to quote freely those past and present thinkers that Luciano Floridi believes to be quotable according to the subject he is dealing with, and the argument he is fleshing out. Academic writing puts forward some tacit rules—do avoid conveying personal feelings, do not cite incompatible schools, remain stuck to a single way of thinking; especially, never use the pronoun *I*. He breaches them all. To breach rules and keep reading and referring to Quine, Church, and Moore as often as to Deleuze, Cassirer, and Lacan without falling into syncretism is the privilege of an independent mind. It is a rare quality.

Let's put it differently. If the author of this book were asked "Do you believe in God?," most likely he would reply as Einstein did: "I believe in Spinoza's God." Do not laugh, do not weep, do not wax indignant. Understand. He invites his fellow readers to *understand* what is happening through a literary, pervasive, and sometimes irritating *I* that creates a complete series of neologisms to express his interrelationship and interface within the informational world—*infosphere*, *inforgs*, *conceptual design*, *hyperhistorical predicament*, *ITentities*, *re-ontologization*, *ontological friction*, *onlife experience*, *nested telepresence*, *foreward and backwards presence*, *metaphysical entropy*, *artificial evil*, *ecumenical axiology*, *homo poieticus*, *ecology of the self*, *ecopoiesis*, *informational privacy*, *informational structural realism*, *environmental ethics*, *distributed morality*, etc.

Let's try to situate their standpoint. If *The Ethics of the Information* were a mere invitation to dialogue, these terms would constitute metaphors the author would live by. A kind of holistic semantic network. But Floridi is carefully operating at each step through what he calls *levels of abstraction* (LoA), a methodological approach that allows a cartographic perspective to grade the conceptual map over the epistemic territory: he defines at each step the meaning of the terms, but he *shows* first the correlate references and co-references they intend to denote. This is what *structural realism* consists of. A sort of low and upgraded

phenomenology of the living web, to be discussed with and within the self-reflecting entities of the living web.

To use his own words when he faces identity, he *individuates* before *identifying* as informational entities the objects he is referring to. And he displays them through an articulated language, comprising the chosen level of abstraction (LoA), the informational and cognitive structure of those objects, and the type of complex representation that links them. So, not only answers but research questions are equally introduced to be discussed alongside with the reader.

2. THE ETHICS OF THE INFORMATION AS A METALOGUE

There is a semantic and pragmatic threshold then that the reader is gently required to cross over. Better than a dialogue, this game can be more adequately defined as a *metalogue*, an interactive and multi-leveled philosophical conversation about what thinking, writing, reading, and talking mean through the new technological conditions of contemporary life. It is worth noticing that this is a discourse (i) focused on the phenomenological *existence* of clusters, entities of information, (ii) and on the structure of its conditions: "To be present is to be the value of a typed variable of LoA."[2] In other words, to be present is to be digitized at a certain level.

This assumption made, the book enters into a self-referential but interactive analytical space in which the author's *I* dissolves to expand the relational reality—*hybrid*, a mixture of physical and artificial—he is proposing to explore and disclose gradually *in between*. For "to be is to be *interactable*."[3] This is not assuming an inner and outer dimension of the infosphere, but the infosphere as a primordial *Umwelt*, as the place in which we all already are supposed to live, sense, feel, think and communicate as producers and consumers (*prosumers*) of content. *Umwelt* points at the inescapable ecological environment in which informational units are *present*, including our encapsulated identity. "The self, and mental life in general," he states, "is located in the brain but not present in the brain. Thus the locus of the self is the brain but the self is not present in the brain."[4]

This largely resonates with the cybernetic perspective that Norbert Wiener and Gregory Bateson set up at the beginning of our information age, after World War II.

> Sometimes we [Bateson/Wiener] used to discuss whether a computer can think. The answer is "no." What thinks is a complete circuit that might include a computer, a man and the environment. Similarly, we can ask whether the brain can think, and again the answer is "no." What thinks is a brain that is inside of a man, who is part of a system comprising a room. Drawing a boundary line between a part (which does most of the computation to a larger system) and the larger system of which this is part means creating a mythological component commonly called I or self.[5]

Almost paradoxically, this mythical *I* is the only place where we can personalize the delocalized interface from which we are gathering, assembling, storing, and processing information. There is something interesting in the main idea that knowledge is always socially and collectively embedded or, coming back to Floridi's formulation, in the idea that we all constitute units of self-organized information capable to "semanticize" our ecological niche, the *infosphere*.

The rejection of anthropocentrism is not new. Bateson's "ecology of mind" (1972), Herbert Simon's and Allen Newell's "artificial intelligence" (1969), Minsky's "society of mind" (1976), and Arne Naess's idea of "deep ecology" (2005) were all grounded on some structured representation of a shared and common knowledge too, rooted onto a complex environment and able to be computed in an independent way. Their modeling was "constructionist" as well: they were building up conceptual models to grasp the nature of ecology or of computational science—"sciences of design"—as complex systems. However, to do so, they didn't need to equate their conceptual universe with a sharp idea of Being. Ontology, in the classical philosophical sense I will expose in the last section, was never a real issue for them. They had instead a strong sense of the sacred, of the boundaries of human knowledge.

Floridi, on the contrary, situates ontology at the center of his formulation: "Being and the Infosphere are co-referential. [. . .] The Infosphere is the *totality of Being* [emphasis added], hence the environment constituted by the totality of informational entities, including all agents, along with their processes, properties, and mutual relations."[6] In a nutshell:

> IE [Information Ethics] is an ecological ethics that replaces *biocentrism* with *ontocentrism*, and then interprets Being in informational terms. It suggests that there is something more elemental than life, namely Being, the existence and flourishing of all entities and their global environment, and something more fundamental than suffering, namely, *nothingness*. It then interprets Being and nothingness at an informational level of abstraction, as *infosphere* and *entropy*, on the basis on an informational structured realism as articulated in Floridi (2011, chs. 14 and 15). In short, it is an environmental ethics based on the phenomena and corresponding concepts of information/infosphere/entropy rather than life/ecosystem/pain.[7]

3. THE PRACTICAL TURN

Why is the author choosing this formulation? Why is he remaining in the philosophical language of Being (*Sein*), Presence (*Dasein*), Care (*Sorge*), and, most surprisingly, Nothingness (*Nichts*)? After the harsh Neo-positivist logical attack on the Heideggerian *Das Nichts nichtet*, it would be difficult to imagine for an analytical philosopher of the twentieth century to consistently keep such clear references to ostensive phenomenology in carrying out his general project on information ethics.

A possible answer is that Floridi is not a philosopher of the twentieth century, but a thinker past and beyond the linguistic turn, less worried with his own language than realistically committed to the description of what he perceives as a radical new way of living brought about by the sudden explosion of the digital world. If I could develop further the metalogical game I started above, I would rather imagine him in the Baroque Age, in good company with the giants of rationalism, enjoying and taking into account the content of the Bible, the Gospel, Greek and Latin philosophy, medieval and renaissance arts and crafts, and turning the results of science and mathematics into philosophical concepts that would stand by their own, *more geometrico*.

For instance, how to avoid *evil*—what Floridi calls now *artificial evil*, a hybrid between natural and moral evil this time—was one of the main obsessions not only of Spinoza, but of Hobbes and Leibniz as well.[8] All three thinkers are easily retrievable from Floridi's writing. Especially Spinoza, whose concepts of *substance* (i.e., information) and *conatus* (i.e., maintenance of Being), are directly and indirectly quoted in the book.

Let's reproduce the four principles of Information Ethics: (i) entropy ought not to be caused in the infosphere, (ii) entropy ought to be prevented in the infosphere, (iii) entropy ought to be removed from the infosphere, (iv) the flourishing of informational entities as well of the whole infosphere ought to be promoted by preserving, cultivating, and enriching their well-being.

Classical works by Cassirer, Hazard, and Skinner, to quote three different historical schools and languages, come easily to mind. The inner connection between the growing protection of rights (life, goods, property) and the evolution from security to happiness in the seventeenth and eighteenth centuries is a well-established fact in intellectual history.[9] In this sense, IE seems to be firmly rooted on the British Enlightenment as much as on the Neo-Kantian synthesis. Do notice the preventive and negative character of the three first principles (*not causing*, *preventing*, *removing*), and the positive but prudential attitude shown in the last one (*cultivating*, *enriching*, *but preserving*). Metaphysical entropy is the kind of loss, destruction, or damage caused on informational entities. The other way around, enriched, enhanced, or *augmented ethics* is intended to monitor the ecology of the infosphere, balancing the decreasing of *ontological friction*, and thus promoting the expansion and well-being of these entities in it.[10] Let us explain what this term is referring to, taking a short detour by what I will call the practical turn of IE.

The Internet and its semantic counterpart, Web 2.0 (social web) and 3.0 (the Internet of Things, the Semantic Web), should not be confused with the infosphere, in Floridi's usage. The former can be understood as technical descriptive concepts. The latter incorporates a *normative* dimension that is user-centered, focused on the creative and social behavior of agents (be they individual or collective), and it can be paraphrased as the ultimate boundaries of their *onlife* experience. And "hyperhistory [the kind of history inaugurated by the use of computational devices]

happens onlife."[11] From this point of view, the infosphere is the natural housing of contemporary subjects or, better, of the bundle of information that constitutes them as such. Protecting the infosphere entails therefore to protect the *identity* of its more complex, self-reflecting, and conscious entities: "Selves are the final stage in the development of informational structures, for they are the semantically *structuring structures* [emphasis added] conscious of themselves."[12]

It means that, as macro-ethics, IE embraces innovative foundations (as opposed to deontologist, consequentalist, or contractualist ethics) and possesses a regulatory side. This is the practical turn. It only requires a minimal moral axiology and some procedural rules to be put in place. Good and evil will depend upon specific criteria along a gradual chain of moral value in a sort of "axiological ecumenism."[13] But, and this constitutes the IE turn-off from liberal enlightenment, Floridi resolutely embraces the non-standard, *allocentric* approach, already taken in bioethics, medical, and environmental ethics that "seek to develop a *patient-oriented ethics* in which the receiver of the moral action may not be only a human being, but also any form of life."[14] In a similar way, IE is centered on the informational entity that receives the action, rather than on its relation or relevance to the agent.

This patient-approach reveals particularly fruitful to draw the structure of moral agency, as moral agents are defined at an informational LoA of reality as "any interactive, autonomous, and adaptable *transition systems* that can perform moral justifiable acts."[15] But human individuals, artificial artifacts, institutions, and, especially, Multi-Agent Systems (MAS) are *accountable* (not always responsible) for the events and acts performed over other patient agents that receive the effects of their behavior.[16] IE makes a choice, then, in favor of the victims, the holders of rights, rather than fostering agency qua moral agency. I think this is particularly important to understand the kind of ontological turn that the author is proposing to ground ITC tools on the defense of rights and the correct and effective deployment and evolution of the infosphere. Thus, enhancing plurality is a better strategy than harmonizing such a deployment from a single or monotonic point of view.

The "tragedy of the Good Will"—the lack of balance between power and information—constitutes one example of such a perspective opened up by IE. Nowadays it is perfectly possible, for instance, as already happened in 2004 with the tsunamis caused by the Sumatra-Andaman earthquake, witnessing in real time their devastating effects without having the effective ICT tools to prevent them. Another privileged example is *informational privacy*, which is defined as follows: "informational privacy is a function of the ontological friction in the infosphere."[17] *Ontological friction* refers to "the forces that oppose the information flow within the infosphere, and hence (as a coefficient) the amount of work and effort required for some kind of agent to obtain, filter, and/or block information about other agents in a given environment."[18] According to Floridi, classic ITC tools used to decrease the degree of ontological friction among agents, and therefore decreased their level of privacy as well. However, new generation of protections—

through Privacy Enhancement Technologies (PETs) or the recent Privacy by Design Technologies (PbD)—are able to reverse the situation, balancing the level of protection with the increasing information flow. This certainly constitutes one of the next challenges in the development of the infosphere.

4. THE ONTOLOGICAL TURN

I think the author succeeds in convincing the reader of the interest of developing IE as a foundation for computer ethics, business ethics, and the kind of meta-theory that is needed to link moral codes and regulations to computer science. But the quest for a meaningful reality should not conceal some difficulties in this endeavor.

Perhaps the first one comes from the redefinition of some notions whose functional meaning has been already well established in artificial intelligence and engineering. This is the case, for example, with *Multi-Agent Systems* (MAS). The term usually refers to software agents in computerized systems composed of multiple interacting intelligent agents within a given environment. It is certainly true that MAS can be constituted by a combination of software and human agents. However, the author's use of the term seems to cover all sorts of social groups—institutions, government agencies, companies, NGOs, among other organizations. Although the intentional meaning of such a broad use is clear—mainly not to confuse moral agents with individuals, stressing its social component—the use of the term could be more consistently defined, as it has recently proposed relating to institutions and norms (the so-called nMAS).[19]

The more confusing notion is precisely *ontology*. In philosophy, this term does not belong to the rich Greek tradition. The term *ontology* goes back to the beginning of the seventeenth century in the Netherlands. Johann Clauberg, Rudolf Göckel (Goclenius), and Juan Caramuel de Lobkowitz used the term before Christian Wolff (*Philosophia prima sive ontologia methodo scientifica pertractata, qua omnes cognitionis humanae principia continentu*r, 1730). According to recent research, it seems that it was first coined by Jakob Lorhard (*Ogdoas Scholastica*, 1606), and based at its turn on Clemens Timpler's work *Metaphysicae Systema Methodicum* (1604). *Ontology* was a term specifically born in the Protestant philosophical ambience to counterbalance the use of the term *metaphysics* (referred to the being) established by the formidable defenders of the Catholic Counter-Reformation, among them Francisco Suárez (*Disputationes Metaphysicae*, published in Mainz in 1606).[20] *Ontologia* meant the intelligible dimension of being and the organization of knowledge, thus stressing its human side. All of this is well-known and do not intend to lecture the reader.

I am referring to it because these philosophical origins are compatible—but not identical—with the use of the term in contemporary computer science.[21] *Ontologies*, in plural, are formal vocabularies plotting the machine scalable and reusable conceptual structures shared by a community of users to solve problems such as semantic interoperability and transportability.[22]

One of the pillars of Floridi's book is the thesis of *re-ontologization* of ICTs referred to "a very radical form of engineering, one that not only designs, constructs or structures a system (e.g. a company, a machine, or some artifact) anew, but one that also fundamentally transforms its intrinsic nature, that is, its *ontology or essence* [emphasis added]"[23]—e.g., the transition from analogue to digital data, the convergence between digital resources and digital tools, etc.

It seems to me that such a statement involves the description of social processes in a way that departs from the regular philosophical or computational use of the term.

To Floridi, practical use of ontologies in a globalized world deals more with communication and shared common references than with the technical possibility to interconnect formally semantic languages: "I am using 'ontology' to cover the outcome of a variety of processes that allow an agent to appropriate (be successful embedded in), semanticize (give meaning to and make sense of), and conceptualize (order, understand, and explain) her environment, through a wealth of levels of abstraction. In simplified terms, one's ontology is one's world: that is, the world as it appears to, is experienced by and interacted with, the agent in question."[24] This use reminds the use of Wittgensteinian concepts in hermeneutic sociology, as famously put forward, e.g., in the late fifties by Peter Winch (1958): cross-cultural communication would entail partaking a shared knowledge of the same world. But this interpretation has little to do with the technical means that make possible the cross-communication between natural and formal languages.

Both to explain or to design web services, platforms, and mobile applications in an iterative and feasible way, semantic web programming languages and *anchoring* the ontological level through editors such Protégé or Kaon on socially constructed contexts are needed. Of course this is not the purpose of the book: "Understanding philosophy as conceptual design means giving up not on its foundationalist vocation, but rather on the possibility of outsourcing its task to any combination of logico-mathematical and empirical approaches."[25]

The problem is that even accepting it, even if the philosophical analysis consists of an independent level by its own, some connection with its empirical assumptions and with the formal models related to empirical data (NLP, graph modeling, data mining, semantic statistical results, deontic and non-monotonic logical models, etc.) is still needed. How conceptual design relate to the social data that trigger and enable its construction? What kind of "structural coupling" could be put in place between the philosophical architecture of IE and their fields of application? Would it not be possible to connect some of the alleged concepts with social (ethical, legal, political) indicators?

As a matter of fact, Floridi's LoA seems to seek the connection among theoretical concepts, the philosophical layer, and empirical knowledge. To my view, Whitehead's fallacy of misplaced concreteness is accurately avoided, but if this inner connection cannot be made explicit with real

use cases, it is easy to fall into the fallacy of composition, especially because the relationship between micro and macro-ethics is not directly focused in the book, and the author shifts from individual to collective agency.

Stemming from the two last chapters—on distributed morality and global information ethics—there is still room to figure out a reasonable answer to such questions. The degree of ontological friction, or the degree of resilience or tolerance, appear especially apt to be measured. The same for the "moral enablers" (trust, transparency) on the sociological layer that the author calls *infra-ethics*. This layer could be coupled with some complementary ideas coming from the "science of the web" and on "web social machines."[26]

I will end my comments with a final statement on the digital divide and inequality. Reading these last chapters I have had the impression that some of the assertions on global information ethics were putting aside or shelving some facts that can show the present deep differences in accessibility to resources and potential pitfalls of the web. The infosphere is not the same for everybody. Let's look at some examples. According to the numbers that Cambridge mathematician Timothy Gowers made public on scientific research, the profit margins of the major commercial STM publishers, such as Elsevier, Springer, Wiley Blackwell, and Informa, are in the order of 35 percent.[27]

There are then severe restrictions to accessing knowledge for those that are not in the position to pay such high costs. Gathering and constructing reliable data on the web is also difficult, painful, and time consuming. Some years ago, chief scientist Kimberly Claffy, from UCSD-CAIDA Super-computation Center, wrote a seminal, sound, and well-informed article about the *economic and legal* obstacles she had to overcome to mapping the web: "Our scientific knowledge about the Internet is weak, and the obstacles to progress are primarily issues of economics, ownership, and trust, rather than technical."[28] I don't think the situation is much different now with the raising of big data. National governments, big companies, national citizens, and *digital neighbors*—people belonging to the *digital neighborhood* of crisis mappers, *NGO's* volunteers, etc.)—might not share the same interests and have different conflicting values. Since the Justinian Code, traditional regulations—laws, statutes, and rights—in Western culture are based on power, discrimination, and inequality (i.e., on the making of conceptual boundaries and differences among subjects, groups, elites, and classes grounded on and backed by the force of arms as last resort).

The author of the book could consider these barriers when balancing facts and values to apply information ethics principles. More changes are required related to the structure and composition of regulations, and what they mean to our culture, to face the challenges he is pointing out in the volume. Some kind of legal imagination should be at stake to cope with digital rights, rules, and norms. The very concept of law (and consequently the Rule of Law) cannot remain unchanged either, especially if the author is going to postulate a fundamental "*ontic trust* binding

agents and patients," "a primeval, entirely hypothetical *pact*, logically predating the social contract."[29]

Why should this pact be binding? And how? And to whom? To some extent, Floridi is changing the rules of the game. The methodology of LoA and previous meta-theorical IE and agency schemes do not hold here. This kind of "pre-logical" and "hypothetical" explanatory constructs—such as the Kelsenian *Grundnorm*—were already postulated and discussed in similar terms by neo-Kantian and phenomenologist legal philosophers in the Weimar Republic, following the legacy of the German nineteenth-century dogmatic *Konstruktion*. The architecture and rational structure of the state and the difference between legality and legitimacy were one of the main topics in their updated discussions on the Leviathan. I do not think the author is really willing to start again with this kind of discourses to link IE to policies and legal issues. At a certain level, I think he will unavoidably have to face the problem of power within the infosphere. But this task is by far too complex to tackle without the aid of legal, policy, and economic analyses. I would encourage him to expand the scope of IE in this direction. Actually, a closer look at recent publications would reveal some steps.[30] With *The Ethics of the Information* he has already done a very good job. He is not in need of fictions. For the time coming, better to not wake up the sleeping dogs.

NOTES

1. Luciano Floridi, *The Ethics of the Information* (Oxford: Oxford University Press, 2013).

2. Ibid., 42.

3. Ibid., 13.

4. Ibid., 222.

5. See Gregory Bateson, "The Birth of a Matrix," 39–64.

6. Floridi, *The Ethics of the Information*, 65.

7. Ibid., 98.

8. See Spinoza's Letters on Evil (correspondence with Blayenbergh, written between December 1654 and June 1656). Cfr. Gilles Deleuze, chapter 3, *Spinoza: Practical Philosophy*, 30–43. See also the hidden Leibnizian interest in Spinoza's Ethics in Matthew Stewart, *The Courtier and the Heretic*.

9. See, for all, Ernst Cassirer, *Die Philosophie der Aufklärung*.

10. Floridi, *The Ethics of the Information*, 204 and 160.

11. Ibid., 8.

12. Ibid., 227.

13. Ibid., 123.

14. Ibid., 62.

15. Ibid., 134.

16. Ibid., 158.

17. Ibid., 232.

18. Ibid.

19. G. Andrighetto et al., *Normative Multi-Agent Systems, Schloss Dagstuhl - Leibniz-Zentrum für Informatik GmbH*.

20. Cfr. the recent works of Peter Øhrstrøm and his team about it. E.g., Øhrstrøm et al., "Jacob Lorhard's Ontology," 74–87.

21. Nicola Guarino and Pierdaniele Giaretta, "Ontologies and Knowledge Bases. Towards a Terminological Clarification."

22. "A specification of a representational vocabulary for a shared domain of discourse—definitions of classes, relations, functions, and other objects—is called an "ontology." Thomas R. Gruber, "A Translation Approach to Portable Ontology Specifications," 199. For updated methodology on ontology building, see Mari Carmen Suárez-Figueroa et al., "The NeOn Methodology for Ontology Engineering," 9–34.

23. Floridi, *The Ethics of the Information*, 6.

24. Ibid., 298.

25. Ibid., 2.

26. Tim Berners-Lee et al., "A Framework for Web Science"; Jim Hendler and Tim Berners-Lee, "From the Semantic Web to Social Machines: A Research Challenge for AI on the World Wide Web."

27. Elsevier's profit was £826 million in 2013. Twenty Russell Group university libraries in the UK now pay Elsevier alone nearly £16 million per annum. Oxford University subsequently revealed it spends nearly £1 million a year with Elsevier (C. Steele, "Who Owns Scholarly Knowledge").

28. Kimberly Claffy, *Top Ten Things Lawyers Should Know about the Internet*, 2.

29. Floridi,*The Ethics of the Information*, 301.

30. Ibid.; Mariarosario Taddeo and Luciano Floridi, *The Ethics of Information Warfare*.

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Mary's Acquaintance

Peter Boltuc
UNIVERSITY OF ILLINOIS AT SPRINGFIELD AND AUSTRALIAN NATIONAL UNIVERSITY

This paper is largely about the Knowledge Argument. I argue that not all physical knowledge is easily accessible to human beings as knowledge by description. Human cognitive architecture is the cause of this lack, not limitations on physicalism.

The paper is also about the philosophical method. Computer science and neuroscience provide the methods that traditional philosophical approach, related primarily to semantics and philosophy of language, lacks and has a dire need for. This approach goes beyond computationalism, for many reasons;[1] the present article relies primarily on biologically inspired cognitive architectures (BICA).[2]

The article may seem like an argument in favor of reductive physicalism, but this is not the case. I only show that the knowledge argument against physicalism does not work. In order to clarify my broader position, briefly, I end with a surprise note in favor of non-reductive approaches. The non-reductive argument, sketched out here, is not focused on qualia but more directly on first-person consciousness.

This paper, and especially the postscript, is a bit of a pre-print, an invitation for discussion before the final formulation of my position emerges. Comments are very welcome.[3]