

Truth in Philosophy of Information and Later Lyotard: where can we find  
the criteria for judgement?

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# Introduction

The approach this essay takes aims to compare and evaluate several different philosophical theories of truth that are relevant when considering philosophy of information (PoI) and its notion of truth. The difficulty lies in the fact that the underlying assumptions of different theories of truth are profoundly different. They reach into some of the biggest divides in philosophy - idealism versus realism, the analytic tradition versus continental. Thus, when assessing philosophy of information, great care has to be taken to understand which initial assumptions it is being examined with. For example, in philosophy of information, even the question of 'what is philosophy?' has to be considered. What is the philosophical aim of an enquiry into the notion of information? Is it an attempt to understand what information is and how it works, or to construct the concept of information that fits our world view? PoI's methodology relies heavily on levels of abstraction and a lot of vocabulary is borrowed from information technologies. As this essay examines PoI's theory of truth and compares it with other historical approaches that examined truth, great care is taken to understand the underlying differences between them, rather than merely examine the effects and overarching claims the theories make. This analysis is constrained by the length of the present essay, and is by no means comprehensive. It is however a necessary step to set up the analysis in the final sections, which outline an encounter between PoI and the works of the later Lyotard, which will be contextualised in relation to historical theories of truth. It also means that there is an extra layer of complexity in correctly identifying the most important underlying assumptions that go into the correctness theory of truth. The aim of this

work is not to prove or disprove legitimacy of Pol and its theory of truth, but to examine its underlying assumptions - find what its criteria for judgement are and establish a framework within which we can compare it to the criteria used in other theories of truth.

After the overview of the most well established theories of truth, particular focus will be given to the philosophy of Lyotard. The focus will be not just on his approach to truth, but his philosophical framework as a whole. Lyotard has critiqued older theories of information, and comparing his position to Floridi's theory is particularly interesting and fruitful, since they both have been strongly influenced by Kant and Wittgenstein and this commonality provides sites of comparison and contrast. Although Lyotard and Floridi share these influences, their works are also profoundly different in some important nuances of how reality should be approached. Lyotard's views on the concept of **the event** will be of particular relevance and the concept will be primarily compared to that of **data** from Floridi's framework. Floridi's **levels of abstraction** will be contrasted with Lyotard's **genres of discourse**. The encounter that this investigation into Lyotard's and Floridi's views leads to is a nuanced one. On the one hand, they both agree that the ultimate truth is unachievable in principle, yet the consequences of this fact are different between the two philosophers' positions. They both recognise the ontologically inaccessible nature of reality and each one has a concept to articulate it. For Lyotard, it is the event, for Floridi, it is data. However, where Lyotard understands the paradox of such a concept and its shortcomings as something that is inevitable and has to be contended with, Floridi attempts to overcome the problem. It will be shown how Floridi's attempt turns into

several complex structural schematics which, upon unraveling, show several lines of reasoning that are not necessarily consistent with each other. It is hoped that this essay can add to scholarship on Floridi's Pol through this encounter with Lyotard's thought, taking up critical positions that have not hitherto been thoroughly developed.

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This essay will explore a notion of truth and its relation to judgement in the framework of the philosophy of information. The aim is to analyze how the concept of information interacts and relies on its interpretation of reality as semi-objective - placing a functional, pragmatic judgement of what is true to be of the highest value. Such a view contains a possible issue of elevating a pragmatic understanding of truth to the status of a metaphysical truth. That is to say, an informational framework, while recognised as being subjective, is nonetheless *treated* as allowing some objective truth about the nature of the world to be known. More specifically, the concept of information is an objective, but also liminal and relational<sup>2</sup> concept (2013, Floridi, p. 197). The complex structure of Pol and its components makes it difficult to discern the underlying assumptions - by situating Pol within the history of theories of truth, the present essay hopes to elucidate them. Pol was introduced as a new theory, with the possibility of it being "*philosophia prima*"<sup>3</sup> (2013, Floridi, p. 24). Pol can be considered as *philosophia prima* if information is recognised as a fundamental component in any environment and thus worthy of autonomous investigation, and if it provides a comprehensive methodology of inquiry with

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<sup>1</sup> Woodward, 2006, has developed insights in this area, and the present essay aims to build on his contribution.

<sup>2</sup> Liminal - neither internal nor external; relational - neither absolute nor relative.

<sup>3</sup> *Philosophia prima* - first philosophy

problems to explore. But Pol is not entirely enclosed by the philosophical tradition; Pol is influenced by earlier research that looks at information, digitalization, computation and similar concepts. It is a promising branch of philosophy<sup>4</sup>, which now has to show its worth against existent issues in the history of philosophy. The present essay examines the conceptualisation of truth and judgement in the Pol, particularly in the context of other well known theories of truth. It will examine the validity of the veridicality essay in Pol and correctness theory of truth.

The correctness theory of truth does not rely on any single theory of truth, rather it attempts to find a bottom-up approach by reducing truth to the idea of correctness. It shall be shown to be more complicated than the pragmatic truth approach, because its criterion is not the single “usefulness”, but purpose mediated by the level of abstraction (LoA). The LoAs serve as separate frameworks in which the truth/correctness of semantic information can be judged. Different LoAs provide different criteria for those judgements. Another area of where the criteria for judgement (of whether something is true) occurs, is in Floridi’s model for reducing the truth to correctness, by translating *i* (semantic information) into Q (query) and R (result), that is further translated into a Boolean question and answer (essentially turned into binary 1 and 0 - yes or no). Here Floridi’s correctness theory relies essentially on coherence theory of truth, as it has to verify and validate the [Q+R] by generating a model of the relevant system, a relevant LoA, which is chosen by the agent already embedded in some framework.

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<sup>4</sup> It is promising both in its reach and the open problems available to it, as per W. Hofkirchner and G. D. Crnkovic, 2011.

Where does the judgement and criteria for making a judgment come into Floridi's Pol? One answer is that the criteria are the levels of abstraction themselves and that judgement is choosing one LoA over another. Again, this is the sense in which the theory can be shown to be pragmatic - the choice of LoA cannot be justified even in principle any other way than it being useful, because there can be no primacy given to one LoA over another, except for its use to the agent judging it. However, the case will become more complicated once all the relevant concepts are explained and their interactions shown.

Since semantic information is truth-constituted<sup>5</sup>, rather than a truth bearer<sup>6</sup>, it has components of other theories of truth. Simply put, the claim that semantic information is truth-constituted is the claim that what is not true cannot be semantic information. This in turn is what allows the reduction of truth to the notion of correctness, as it is already assumed that semantic information contains truth; all it needs is the criteria and the justification for why that is so, and the correctness theory provides it. In this aspect it shall be argued that the correctness theory seems to rely on the correspondence theory of truth, as the information is expected to correspond to the facts about the world from which the system that tests truthfulness of information is constructed.

It should also be noted that although the concept of truth can be relatively straightforward, it can be seen as one of the most intrinsic parts of what makes

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<sup>5</sup> Meaning that it is true by the nature of being semantic information, rather than having a property of truthfulness, like is the case with truth bearing concepts.

<sup>6</sup> Truth bearing concepts are concepts that are not intrinsically true by the nature of existing, but have the capacity to be true.

Floridi's theory stand out from other semantic theories.<sup>7</sup> Most theories of semantic information do not hold that information has to be true. However, that makes them susceptible to the Bar-Hillerl-Carnap semantic paradox, where tautologies and contradictions seem to be the most informative messages possible.<sup>8</sup> In this essay the focus is not on the so-called Theory of Strong Semantic Information that Floridi develops.<sup>9</sup> Nor is it on the symbol grounding problem and Floridi's attempt to solve it with action-based semantics. The focus is on the correctness theory of truth and the attempt to comprehensively analyse its claims about the truthfulness of semantic information. As such, orthogonal aspects of both Lyotard's and Floridi's views have been indicated where relevant, but do not align with the central argument of this essay, such as their views on agency and self determination.

## Levels of abstraction

The first task is to give a brief explanation of levels of abstraction (LoA). LoA is the main method of philosophy of information (Floridi, 2013, p. 46). Floridi presents it as suitable for Pol, but in a "refined version" (Floridi, 2013, p. 47). His refinement is necessary, because several different versions of this approach have been challenged.<sup>10</sup> This is not meant to be an in depth explanation of the levels of

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<sup>7</sup> Because Floridi insists on the truth condition, for examples of how other theories attempt to deal with this issue see: Lozinskii, 1994, Jeffrey, 1990 and Mingers, 1997.

<sup>8</sup> For more information see: Bar-Hillel and Carnap, 1953.

<sup>9</sup> A very interesting article about this theory and paradoxes can be found here in Lundgren, 2015. B. The Information Liar Paradox: A Problem for Floridi's RSDI Definition. *Philos. Technol.* 28, 323–327 (2015).

<sup>10</sup> For example, the plausibility of ontological levelism has been questioned by Heil, 2003 and Schaffer, 2003.



abstraction - which runs the risk of being a question of method or usage - instead, the focus is on the principal mechanisms behind that method. The method of levels of abstraction is useful for when one has to consider something that is too complex to consider all its aspects at once or as a common grounding to agree on the set of criteria by which something is judged.

Floridi's version is epistemological, meaning it can be seen as levels of observation or interpretation of a system (Floridi, 2013, p. 79). Its layers are based on access to the system, rather than what the system actually is. At the same time though, Floridi claims that the levels of abstraction provide a foundation for both levels of organisation, which are ontological, and levels of explanation, which are epistemological (Floridi, 2013, pp. 69-70). The shortcoming of this method is that its application in type-free systems is problematic, as Floridi himself recognises (Floridi, 2013, p. 79). Type-free systems are systems in which it is impossible to group variables in types, such as the concept of society or mind. The method's strength is that it adds clarity to what is being considered at each given moment. Further in the present essay, the application of the levels of abstraction to the concept of data will be addressed and critiqued and primarily stems from the considerations of what data is and how it should be understood, which is done with reference to Lyotard.

Floridi also stresses that LoAs are teleological, or goal-oriented (Floridi, 2013, p. 75). That is true to a point, until the mediation of purpose becomes important, such as in the criteria for judgement in the correctness theory of truth. A simpler example will suffice here, with more in depth consideration covered later. Let us say, I read a book

with the purpose of finding out information about building a table. The information that the book contains will be interpreted in a level of abstraction that allows me to reach information about building a table. However, the purpose of finding out information about building a table was itself mediated by different information, interpreted at a different level of abstraction, such as having materials for the table and nowhere to put a glass of water. This level of abstraction is not mediated by purpose however, because I had no intention of building a table before having those materials. The purpose *can* come after the data is available and interpreted. It is data in its various forms<sup>11</sup> - the accessibility to those materials, the data that continuously circulates through my brain at the biological, chemical and physical levels of abstraction, and many more different forms of connections between data constitute the world in which I want to build a table. At this level of inquiry, purpose and levels of abstraction are effectively the same, since the system considered contains type-free variables.

## Overview of non-information [past] theories of truth

There are many different theories of truth that have been established over the years. The two basic types that can be distinguished are inflationary and deflationary theories of truth, with deflationary ones holding that truth is unsubstantial and a mere logical property, they shall be left aside.<sup>12</sup> The focus here will be on inflationary theories of truth. Their underlying assumptions differ significantly and as such they all have problems to overcome, yet none can be discounted all together. The three

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<sup>11</sup> Data which is ontological, before interpretation.

<sup>12</sup> See: Damjanovic N., Candlish S. "The Myth of the Coherence Theory of Truth"

main theories that are relevant for this essay are the correspondence theory of truth, the coherence theory of truth and the pragmatic theory of truth. These theories shall be used to define the most salient points in the space of argument about truth, as one is essentially objective, one subjective, and one tries to mediate between these positions. The redundancy theory of truth is also acknowledged, but is not relevant here.<sup>13</sup> Tarski's semantic theory of truth<sup>14</sup> is also acknowledged as not fitting easily into the three categories and having some similarities to Floridi's theory, however, due to the focus of this essay, considerations of Tarski's theory will be minimal. The present work will analyse each theory of truth to show its main tenets so that when it is time to examine Floridi's correctness theory of truth, a firm understanding and reference points to rely on will have already been established.

## Correspondence theory of truth

The correspondence theory of truth is often associated with Aristotle, although the depth of his engagement with the concept of truth is lacking by today's standards.<sup>15</sup> In its fullest iteration, correspondence theory comes from the analytic tradition and its underlying assumption is that of a realist position. It assumes that there is a mind-independent world and what is true is a statement that corresponds to objective reality. The short version of this view is usually that true is what corresponds to fact. However, this merely invites criticism targeted at the notion of fact or the inquiry

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<sup>13</sup> For more on this, see: Odegard, D. "Truth and Redundancy."

<sup>14</sup> Tarski, A. "The Semantic Conception of Truth: and the Foundations of Semantics"

<sup>15</sup> Hamlyn, D. W. "The Correspondence Theory of Truth."; also Glanzberg M. (Editor), 2018, *The Oxford Handbook of Truth*.

about the existence of negative facts<sup>16</sup>. Another version of correspondence theory may claim that truth is extrinsic rather than intrinsic property. These versions are oversimplifications and can be easily refuted by showing them to be inadequate.<sup>17</sup> Another reflection on correspondence theory is once again a refutation of different versions of it. According to Patterson, a true correspondence theory “will define a relation of correspondence between sentences and the world in which the meanings of those sentences can be explained” (Patterson, 2003, p. 439). This suggests that correspondence theory of truth is closely related to truth-conditional theories of meaning. Arguably, correctness theory of truth is one such theory. At the very least, correctness theory of truth certainly has the element of correspondence theory in that it is fundamentally of realist position. The concept of information has within itself properties of both meaning and truth. However, it draws elements from other theories of truth as well.

When we look at the criteria for judgement in a correspondence theory of truth, it is (generally) considered to stem from empirical knowledge. Thus a further examination has to take place in considering how empirical knowledge is acquired and what the nature of it is. In effect, we are questioning the realist position, rather than just the correspondence theory of truth. Sellars distinguishes between believing or judging and a proposition that is believed in or adjudged. To him, believing or judging is an activity of “the organic self, pretty definitively represented in consciousness by feeling and attitude” (Sellars, 1941, p. 646). Whereas to make a judgement about

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<sup>16</sup> The discontent towards negative facts was first observed by Russel, criticism of this view can be found in Oaklander, L. N., & Miracchi, S., 1980.

<sup>17</sup> For further info, see: Lewis, D. “Forget about the 'Correspondence Theory of Truth'.”

something, the attitude adopted is that “the organic self” is judging something as “real as one’s self” (Sellars, 1941, p. 647). The weight of this criteria is recognised by Sellars himself as it “colours all judgement” (Sellars, 1941, p. 647). Thus it comes to the difference between sensing and perceiving, where sensing is the simpler version, a function of a sensory organ, and perceiving is the more sophisticated equivalent that has with it a judgement of the perceived object being as real as one’s self.

A final question in regards to the correspondence theory is how one should think about purely conceptual objects. For example, what is a fact? According to Sellars, “A fact expresses a satisfactory completion of the endeavour to know”, it represents “a peculiar kind of isolate or abstraction” (Sellars, 1941, p. 649). Truth here must correlate with knowledge, yet our knowledge is merely an endeavour completed to some satisfaction, to a particular level of abstraction. If we assume that the level of abstraction is chosen by perception, our correspondence is only to reality as we perceive it, rather than to what it actually is. The difficulty here is in mediation between epistemological and ontological understanding of reality, something that will be addressed towards the end of the essay.

## Coherence theory of truth

The coherence theory is generally considered to be held by philosophers belonging to the idealist branch of philosophy. Some claim that Kant, Spinoza and Hegel were

proponents of the coherence theory.<sup>18</sup> However, some attribute the creation of coherence theory to Russell and try to show that such theory is inadequate all together<sup>19</sup>, or even claim that Hegel, for example, was a realist and held views more alike to correspondence theory.<sup>20</sup> Clearly, there is no unified view to pinpoint exactly what coherence theory holds to be the case. There is no unified group of thinkers, yet most well known coherence theorists seem to be Bradley<sup>21</sup> and Joachim<sup>22</sup> when considering a metaphysical approach and Blanshard<sup>23</sup> and Hempel<sup>24</sup> from the more epistemological framework.

Such disagreements arise for several reasons. The clearest of them is the difference in approach between metaphysical and epistemological justifications for the concept of truth. Bradley, for example, while believing that our knowledge stems from feeling and sensation, does not accept that those “truths” are definitively without error. In other words, Bradley accepts that data is not created by us, but that it does not follow that it is independent of interpretation (Bradley, 2012, p. 204). A still deeper consideration that Bradley adopts is in making his view clear against Russell’s views. In simple terms, Bradley says that it is impossible to claim with absolute certainty any piece of knowledge and that all truths are therefore contingent on other truths (Bradley, 2012, p. 209). Any and all abstractions have in themselves, according to Bradley, “unreality and error” (Bradley, 2012, p. 473). Bradley’s colleague Joachim is

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<sup>18</sup> Like in Walker, R.C.S., 1989, *The Coherence Theory of Truth: Realism, anti-realism, idealism*

<sup>19</sup> See: Candlish S. and Nic Damjanovic P. “The Coherence Theory of Truth: Russell’s Worst Invention?”

<sup>20</sup> See: Westphal K.R., 1997, ‘Harris, Hegel, and the Truth about Truth’.

<sup>21</sup> His views can be found here: Bradley, 2012, *Essays on Truth and Reality*

<sup>22</sup> As per: Joachim, 1906, *The Nature of Truth*

<sup>23</sup> Can be found: Blanshard, 2002, *The Nature of Thought*

<sup>24</sup> See: Hempel, 1935, “On the Logical Positivists’ Theory of Truth.”

known to have taken these views further and claimed that “systematic coherence is constitutive of truth” (Baldwin, 2018, p. 136). Joachim claims that “The judgement of fact, indeed, if it is to affirm *definite* meaning, demands [...] an explicit system of judgements” (Joachim, 1906, p. 107). Such definite meaning is to be truth, but the difficulty that Joachim faces is in connecting such a system of judgement with the truth as a metaphysical ideal, which he admits is impossible to reach (Joachim, 1906, p. 171). To put it succinctly, the coherence theory of truth as understood by Joachim, has the perfect truth as a complete coherence, which by necessity must also have in itself a moment of finite reflection in a human being. However, since we can only access such truth by epistemological means, there is no way to definitively prove the coherence theory in terms of its metaphysical claim of absolute truth.

Logical positivists such as Hempel and Neurath argue for a coherence theory of truth from a more epistemological perspective. Young, in a paper that reviews their ideas, formulates the main notions of coherence theory very well, by clarifying that “the truth conditions of a sentence are others sentences speakers can hold to be true” (Young, 1991, p. 468). The issue remains the same - one has to either appeal to an absolute truth or contend that coherence as a “test” for truth is not infallible. Coherence theory may warrant the truth assertion, but only by the standard of the system that it is a part of. Further considerations of the theory have many nuances that will not be addressed here, however, interested reader can find them in Putnam<sup>25</sup>, Dummett<sup>26</sup>, Young<sup>27</sup> and Cohen<sup>28</sup>.

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<sup>25</sup> Putnam, H., 1981, *Reason, Truth and History*.

<sup>26</sup> Dummett, M., 1982, ‘Realism’, *Synthese*, 52. 55-112

<sup>27</sup> Young, J.O., 1995, *Global Anti-realism*, Aldershot: Avebury

<sup>28</sup> Cohen, L., 1978, ‘The Coherence Theory of Truth’

## Pragmatic theory of truth

One difficulty that has to be pointed out straight away is that pragmatism as a branch of philosophy is quite divided and different pragmatists have different versions of what the concept of truth means. The focus here is on Peirce and James as the founders of pragmatism. The second wave of pragmatism, sometimes referred to as neopragmatism, is also acknowledged, with Rorty at the forefront.<sup>29</sup> This section will attempt to highlight the tenets of pragmatic theory of truth that are most relevant to this essay. It is not meant to be an in depth analysis of pragmatism, but a guide to better position Floridi's and Lyotard's views. In the present essay, pragmatism represents philosophical attempts to operate in-between the correspondence and coherence theories of truth, whilst avoiding skeptical or sophistic disavowals of the possibility of truth.

Peirce is credited with being the 'father' of pragmatism. His notion of truth is tricky, because it appears to appeal to something abstract, but through the prism of pragmatism: "The opinion which is fated to be ultimately agreed to by all who investigate, is what we mean by the truth" (Peirce, 1878, p. 299). It is pragmatic in the sense that it is based on practical matters - people's agreement, cause and effect. It does not differentiate whether some people came to that truth by pure rationality and others by empirical experience. The notion of investigation being fated is prone to misinterpretation<sup>30</sup>. Peirce's notion of truth involves a belief in a goal

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<sup>29</sup> Rorty, R., 1998, *Truth and Progress* and 1990, *Objectivity, Relativism and Truth*

<sup>30</sup> By fated Peirce here probably means a scientific inquiry that goes on indefinitely and would somehow converge in truth (Misak, 2004).



oriented reality, where our investigations of the world are leading, almost by necessity of the continuous investigation, towards truth.

Such a notion of truth is quite different from the theories previously discussed, even if there are clear elements of both correspondence and coherence theories in it. The pragmatic theory of truth has an element of correspondence in that Peirce thinks reality is independent of thought. Peirce's theory also has an element of coherence theory, in that truth depends on coherence of the system it is investigated in - namely, that something is true if people believe it to be true throughout a sustained enquiry. Yet unlike correspondence theory, Peirce does not think truth has to correspond to reality, and unlike coherence theory he does not think that the opinion of what is true depends on what someone thinks (Peirce, 1878, p. 299-300). This view may seem paradoxical or contradictory, as there is a strange and perhaps unjustified notion of progress towards truth.<sup>31</sup> Such notion is merely alluded to rather than put forward as a claim to be judged, and then an argument urging practicality of belief is developed. This peculiarity is important and will be relevant later, when considering Pol's notion of truth and reality.

Perhaps more clarity to Peirce's view can be offered by introducing another important concept of his, fallibilism. This term was coined by Peirce to say that people cannot attain absolute certainty concerning questions of fact." (Peirce, 1955, p. 59). That is not to say that no knowledge is possible, rather, that knowledge does not require absolute certainty. If we consider this view in regards to the project of this

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<sup>31</sup> Quine in particular had several arguments against Peirce's notion of truth, which can be found in Quine's *Word and Object*, 2013.

essay, both Floridi and Lyotard can be thought of as taking this view and developing it further. At the same time, it is important to note that another concept of Peirce's, tychism (meaning chance), highlights the difference between Lyotard and Floridi. Tychism, put broadly, is a doctrine of chance, which holds that chance is a definitive factor in the workings of the universe. Thus, that the world is indeterminate in principle. However, this does not mean that Peirce denies the existence of any laws in the universe, merely that laws, perhaps better understood as patterns, appear due to chance.

Peirce's contemporary and the person credited with popularising pragmatism, James, offers a slightly different view of truth. Some argue that his notion of truth equates it to mere utility.<sup>32</sup> Indeed, James himself says it at one point:

“You can say of it then either that 'it is useful because it is true' or that 'it is true because it is useful.' Both these phrases mean exactly the same thing, namely that here is an idea that gets fulfilled and can be verified.” (James, 1907, p. 204).

Such statements are justifiably criticised for it seems obvious there can be useless truths and useful lies, although one should consider truth in the framework of pragmatism fully before raising such critique. Since truths of ideas, for James, are found in events and activities, they are not static. “The truth of an idea is not a stagnant property inherent in it” (James, 1907, p. 201). Thus, what is useful or useless, what is true or not true, is time dependent.

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<sup>32</sup> Schmitt 1995, *Truth: A Primer*, p. 78

What this means more fundamentally, is that pragmatic theories of truth (generally) have a much 'looser' criteria for judgement of what it means for something to be true. While for a correspondence theory truth has to correspond to fact, and for coherence theory truth has to cohere to the system it is being considered in, pragmatic theory's constraint of usefulness is much more universal and underdetermined<sup>33</sup>. It is more fluid in its final relation to the world. And yet, it can be argued to contain within it the essential parts of both correspondence and coherence theories, as long as they are considered pragmatically or in what could be called a lower level of abstraction. Pragmatic truth corresponds to facts based on their usefulness and it coheres to the system of beliefs as far as it is useful to do so. It is clear that proponents of correspondence or coherence theories would see such a lack of definitive criteria as a shortcoming (Bradley, 2012, p. 145). However, the reason that pragmatism can be seen as having elements of both is because it starts the inquiry from an opposite end and instead of claiming a universal criteria for truth, it claims an idiosyncratic notion of usefulness from which to build truth up.

Both Lyotard's and Floridi's approaches can be seen as being influenced by pragmatism. Lyotard is looking for a way to determine truth without universal criteria and by making sense of events by the links they make, even though there is no right way to connect them, which can be seen to draw from Peirce's tychism, even if indirectly. Floridi seems to agree with James' view that truth is not a stagnant property inherent in it, although the comparison becomes complicated when truth is considered as a property of information. One could say that Floridi takes some

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<sup>33</sup> As Pierce said: "To 'postulate' a proposition is no more than to hope it is true." ("Pierce, 1892, p. 323)

aspects of the pragmatic theory and adds to it a form and more substance, making it less vague, highlighting the coherence and correspondence aspects of it while seemingly avoiding its pitfalls. The task now is to examine the correctness theory of truth, with the focus on its criteria for judgement, to see if it can stand as a separate theory of truth that combines the advantages of those that came before, or whether it is merely a more sophisticated rebranding of older theories of truth. Before that - a general introduction to the framework of philosophy of information.

	<b>Truth is</b>	<b>Strengths</b>	<b>Internal issues</b>	<b>External issues</b>
<b>Coherence</b>	<b>True statements are statements that cohere to the system they are examined in</b>	<b>All truths are connected in a belief system</b>  <b>Recognises we cannot go outside our belief systems</b>	<b>Metaphysical vs epistemic view of truth</b>	<b>Specification objection</b>  <b>Transcendental objection</b>
<b>Correspondence</b>	<b>True statements correspond to the facts in the world</b>	<b>Most intuitive</b>	<b>Disagreements over whether truth is extrinsic or intrinsic property</b>	<b>Moral truths don't correspond to facts</b>  <b>Facts fail to correspond to reality (are disreputable).</b>
<b>Pragmatism</b>	<b>True is what is useful to believe</b>	<b>Most flexible</b>  <b>Recognises and accounts for human limitations</b>	<b>Whether truth is useful to talk about (pragmatists vs neo-pragmatists)</b>	<b>Conflation of truth and use to mean the same thing</b>  <b>Does not engage with what truth is, but merely how we judge something to be true</b>

# Philosophy of information

Philosophy of information (Pol) is a relatively recent development in philosophy. This area adopts under itself a whole spectrum of philosophical enquiries and promises to “represent the information turn in philosophy” (Floridi, 2013, p. 25). The exact definition of Pol, as is given by one of its main proponents, Luciano Floridi, is the following:

“The philosophy of information is the philosophical field concerned with (a) the critical investigation of the conceptual nature and basic principles of information, including its dynamics, utilization, and sciences; and (b) the elaboration and application of information-theoretic and computational methodologies to philosophical problems.” (Floridi, 2013, p. 14).

As Floridi explains, the first part of this definition is concerned with ‘what is the nature of information’ and the second part is clarified with the claim that it provides an ‘innovative methodology’. Both of these statements will only be briefly addressed here as to provide a framework of reference to the main topic of this essay - criteria for judgment in Pol’s notion of truth.

What is the nature of information? This is possibly the most difficult question that Pol faces. Indeed, Floridi describes the question ‘what is information’ to be the “hardest and most central problem” (Floridi, 2013, p. 30). There are many difficulties in answering this question. For example, at the broadest level, there are disagreements on whether information is a property of energy and matter relations or whether it is a “thing” of its own. Wiener said: “Information is information, not matter or energy. No materialism which does not recognise this can survive the present day” (Wiener, 1948, p. 132). However, there are many different interpretations present. Floridi notes seven different approaches to answer the question of “what is information”, many of which have several different theories around them (Floridi, 2013, p. 31).

Initial questions about the nature of information began with philosophically minded scientists, rather than philosophers. Wiener’s *Cybernetics* and Shannon’s *Mathematical Theory of Communication* are probably the best known early works that tackle the concept of information in considerable depth. Wiener describes information as a “measure of order” (Wiener, 1950 p. 116) and is generally talking about semantic<sup>34</sup> information - something to be understood and interpreted (Wiener, 1950, p. 94). Shannon, who wrote around the same time as Wiener, is more concerned with information as syntactic<sup>35</sup> phenomenon. It is important to note that Shannon was well aware of the notions of semantic information - in the famous 1948 article ‘A Mathematical Theory of Communication’ he clarifies straight away that he is considering an engineering problem and so will ignore the semantic aspect of information. The syntactic approach to information is definitely important as it helps

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<sup>34</sup> semantic here to mean *meaningful* information

<sup>35</sup> syntactic here to mean concerned with form or structure of information.

us clarify what forms information can take, its transmission and reception. However, not considering the semantic aspect would mean missing the crucial aspect of information as a phenomenon, namely, it would mean we are considering mere forms of data and their patterns, rather than information.<sup>36</sup> So for the sake of clarity, I will be using Floridi's definition of semantic information as a starting point: information as well-formed, meaningful and truthful data (Floridi, 2013, p. 104). This definition is an "upgrade" from the General Definition of Information (GDI) where information is understood as well-formed, meaningful data, without the truth component which is added by Floridi. The GDI, while still definitely open for debate, is used widely and should not be considered controversial.<sup>37</sup> This definition raises some questions of its own, however, and the property of truthfulness is what will be considered in depth in this essay. Before that a brief overview of other components of the definition will be given.

Well-formed data is data that is bundled together within a system with predefined rules that allow analysis of said data. It could be rules for code, natural language or other syntactic systems that provide structure for individual points of data. Second part of the definition, 'meaningful' data is data that is recognisable within the chosen syntactic framework. In other words, meaning here is not some overarching absolute meaning achievable without mediation, but a meaning that is contingent on syntax. This is important to keep in mind, because as it will be shown later, syntax is in fact dependent on the meaning of data too. Neither syntax nor semantics has a primacy

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<sup>36</sup> However, depending on interpretation, data can be seen as "giving" meaning, something that will be explored further into the essay.

<sup>37</sup> For other authors using GDI to define information: Davis and Olson, 1985; Silver and Silver, 1989; Lucey, 1991; Warner, 1996; Whittemore and Yovits, 1973.

in the definition of information. Truth aspect of Floridi's definition deserves a separate chapter and will be discussed in more detail.

Finally, we must consider how data should be understood within the definition. Defining what data is proves particularly difficult. The simplest explanation is not always the best, because it can be too abstract to provide any value. For example, MacKay (1969) writes of information as a distinction that makes a difference. Later, Bateson (1973) simplifies it even more to say that information is a difference which makes a difference. Other such pleasantly sounding, but ultimately not very informative phrases include, "datum is ultimately reducible to a *lack of uniformity*" (Floridi, 2013, p. 85) or data understood as "constraining affordances" (Floridi, 2013, p. 7; p. 87). So we are left with an old Aristotelian 'differentia' which is used to interpret data by Floridi and so will be used here as well. As a brief recap of what it means, there are three basic ways to interpret data in this way. (1) Data as a lack of uniformity 'out there' in the real world. Such data is to be understood as data before it is epistemically interpreted - it can never be accessed, merely postulated. (2) Data as difference between signals or (3) data as difference between symbols. It can also be argued that all three layers are related, where data 'out there' makes possible the data of signals and the data of symbols. That is why in simplest yet still meaningful terms we can say that a datum is a relational entity (Floridi, 2013, p. 87). This is a crucial point that will be important later - data, and the information we establish from it, is always relational, never existing merely by itself. While many further clarifications and expansions on what data is can be made, this brief explanation will



be enough to proceed to the next concept, that is, the veridicality essay in the definition of information or why information has to encapsulate truth.

## Veridicality essay

The first step in exploring truth and its relation to information is to explain why information is necessarily true. Why can there be no false information? After all, everyday media is full of claims of misinformation, false information and encouragement of fact-checking - such linguistic uses are perfectly acceptable. In the context of Pol, however, they are unclear at best. There is a lot of potential for confusion, therefore, when discussing the truthfulness of information. For this reason, when writing about information whose truth value has not yet been determined, or when considering information that is false, and thus is not actually information, the terms used instead will be 'well-formed and meaningful data' or simply 'content'.<sup>38</sup>

There are several ways to clarify why information has to be truth constituted. The simplest way to explain well-formed and meaningful data is in terms of attributive and predicative uses of adjectives.<sup>39</sup> The difference is most clearly seen with an example. A female doctor is a person who is a female and is a doctor. A good doctor, however, is not a person who is good and is a doctor. The 'good' here is not talking about the

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<sup>38</sup> Terminology is adopted from Floridi, 2013, ch. 8.

<sup>39</sup> Geach, 1956, explains the distinction in more detail, a further clarification can be found in Johnson, 2003.

person, but about the role that the person performs. Some adjectives can fit both attributive and predicative uses depending on the context as well as be used negatively or positively. 'A good doctor' is describing a doctor that performs her role well, a false doctor, is describing someone who is not in fact a doctor. In the same way, false information should not be understood as information that is false, but rather not as information at all.<sup>40</sup>

Another way to see why information contains truth value inherently is to see what happens if it is assumed that false information can exist. It will be enough to highlight main aspects of this argument, but a reference to a full explanation is provided.<sup>41</sup> Essentially, if false information is accepted as a valid concept, then tautologies and contradictions are most informative pieces of information. In fact, contradiction is then more informative than a true statement, as well shown by Bar-Hillel and Carnap.<sup>42</sup> If that were the case, however, then the concept loses its semantic property - becomes meaningful without limits. Information becomes "semantically indestructible" (Floridi, 2013, p. 104).

One has to consider the method of levels of abstraction, the concept of data and information as 'object' to understand what semantically indestructible information would mean. As mentioned before, without truth condition, data is a partial component of information, in that data points have to be well-formed, meaningful relations to become information. However, without truth value inherent in the

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<sup>40</sup> A more in depth explanation can be found in Floridi, 2013, ch. 4.11.

<sup>41</sup> Floridi, 2013, ch. 4.12.

<sup>42</sup> Bar-Hillel and Carnap, 1953.

definition, all data that can be interpreted becomes informative. The difficulty in talking about data is that it is not a mere object, but a relation as well. This relational entity has to be true to be an entity that is informative. Otherwise, what is informative is not that relational entity, but some other relation about it that allows interpretation - it is informative at a different level of abstraction, different relational entity. For example: If, when meeting a friend, her response to your question "how are you?" was "I'm fine, thanks", it would contain the information that she is fine. If, however, she said the "I'm fine" in a tone that portrayed sadness and distress, you would be informed that she was not, in fact, fine. Yet in the second instance, the statement "I'm fine" was not what was informative. It was merely a vessel for informative data that was her tone of voice - it was informative on a different level of abstraction. On a daily basis we are simultaneously sorting through several levels of abstraction and it creates the appearance of false information being informative. Yet what is informative is only what is true, even if it is sometimes delivered together with untruthful data and has to be separated by clarifying the levels of abstraction.

The arguments above show why information should be considered to encapsulate truth. Now it is time to look at the issue in more depth. If information encapsulates truth, how does it happen? "How does well-formed and meaningful data become truthful?" (Floridi, 2013, p. 182). To begin with, correctness theory of truth will be explained in detail, then some clarifications will be given in its comparison to coherence and correspondence theories. Then Lyotard's views will be introduced and contrasted to Floridi's position.

## Correctness theory of truth

This part of the essay is mainly explanatory, with a critical view of some aspects of the theory reviewed further into the essay. It is done in the hopes of adding clarity and ease of access to the reader, since the correctness theory of truth follows a rigid schematic which can be difficult to follow at first.<sup>43</sup> The correctness theory of truth (CTT) is Floridi's attempt at answering the question: How does well-formed and meaningful data become truthful? The first criteria that is necessary for CTT is the assumption that a piece of semantic information considered is true (the veridicality essay). The second criteria is that semantic information of any kind has to be translatable into propositional semantic information. The latter criteria is argued to be satisfied, since: (1) the semantic translation<sup>44</sup> only needs to be translatable in principle, in fragments, based on the chosen level of abstraction and (2) because natural languages have been acknowledged to be semantically omnipotent.<sup>45</sup> Essentially, the assumption is that the semantic information is always translatable to propositional language in principle, but it may always require a code (syntax) to do so. The validity of these arguments will be explored later in the essay, when all the necessary conceptual framework is established.

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<sup>43</sup> Some concerns after the initial readings of Pol can be found in special issue of *Minds and Machines*, vol. 24, 2014, in particular 'Towards an Informational Pragmatic Realism' by Caticha A. and "On the Possibility of Quantum Informational Structural Realism" by Bynum T. consider in more depth the possibilities and issues that this essay also raises.

<sup>44</sup> to illustrate: syntactic translation is reproducing a piece of information into another piece of information by changing its form - from analogue to digital for example. Semantic translation is in translating pieces of information by retaining their meaning - you singing the song instead of playing the record of it.

<sup>45</sup> Floridi supports this with a reference to Formigari, 2004, p. 91-92, however, more needs to be said about it, since for Lyotard, some events are beyond representation and there is an incommensurability of language games (Williams, 1998, p. 62).

Once the conditions for translating semantic information into propositional semantic information are satisfied, the information  $i$  is translated into a query (Q) and a result (R), where the query is a request for some data and the result is the requested data. Thus,

$$i = Q + R$$

Semantic information formulated in this way paves the path for a clear understanding of the necessary conditions for the understanding of semantic information (that is already assumed to be true, because of the veridicality essay). The purpose of these translations is to deconstruct information into its components in order to show how content becomes information - how it is truth constituted. After the translation of  $i$  into  $Q + R$ , it is translated further into Boolean question and answer ( $Q + A$ ), a binary mathematical logic system.<sup>46</sup> From these two steps, three new criteria for the interpretation emerge: context (C), level of abstraction (LoA) and purpose (P). The context is the circumstances under which a piece of content is considered. Level of abstraction is closely related in that it is the structure in which the context has to be considered. These criteria are nothing new and can be traced back to Austin and then in turn to pragmatism.<sup>47</sup> Strawson is referenced to have identified the third criteria - purpose. Purpose is necessary as a criteria since queries are always formulated teleologically - for some goal, although that goal may not be explicit. As an example of the three criteria, our piece of information is that there is a glass on

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<sup>46</sup> Boolean algebra is simply a mathematical logic that uses 1 and 0 as true and false values.

<sup>47</sup> Floridi references Austin's article 'Truth', 1950; who in turn references Peirce to say that the meanings of words depend on the context they are used in.

the table. Translated into query and result “Where is the glass? On the table.” we can decipher the importance of the criteria. The question is always asked in a specific circumstance, a particular instance which gives it context, which is itself also determined by a particular level of abstraction chosen. After all, we could also have said “Where is the glass? In the kitchen.” - same context (the placement of the glass), different level of abstraction (kitchen vs table). The purpose can be understood as the cause for the rise of the information, what prompted the query - I may want a drink and need a glass or tell someone where I left the glass. Note that the query is part of the translation, the information itself has all those elements, they are just more difficult to see without a Q + R schematic. When further developed into Boolean question and answer, we see how all three criteria are shifted to the question and the answer is left as mere confirmation: “Is the glass on the table? Yes” is the Boolean equivalent of stating “the glass is on the table”. In this form, all of the content is shifted to the Q and it becomes clear that content is not yet information, for there are at least two possible *i* with the same three criteria - either that there is a glass on the table, or that there is not.<sup>48</sup>

Since the aim of this essay is to explore the underlying assumptions that give rise to truthfulness of information, some time needs to be taken at this point to consider the three criteria: context, level of abstraction and purpose.<sup>49</sup> Context is supposed to mean a specific circumstance, which in turn is to be determined by choosing a specific level of abstraction. LoA can essentially be either ontological or

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<sup>48</sup> It also further clarifies the notion that tautologies and contradictions are mere content, not information (Floridi, 2013, p. 193).

<sup>49</sup> Floridi refers to them as parameters.

epistemological in terms of its initial assumptions, named as levels of organisation and levels of explanation respectively. Ontologically, the system that is being analysed is thought of as having some structure which can be captured and analysed (Newell, 1990). Epistemologically, the system under consideration is not presumed to have in itself some structure that is to be uncovered, but merely to separate between goals and specific interpretations of the given system. Floridi criticises both approaches by claiming that LoAs provide a foundation for both ontological and epistemological approaches, because of its “clear endorsement of each specific LoA” (Floridi, 2013, p. 71). In other words, LoA provides the criteria for adopting certain ontological and epistemological commitments.<sup>50</sup> However, the problem is in the conditions that create the endorsement of the specific LoA. Floridi claims that the method of levels of abstraction is Kantian in that it is transcendental - concerned with conditions of the possibility of experience and that it is anti-metaphysical (Floridi, 2013, p. 60). This in turn means that the criteria for the levels of abstraction rests on the conditions of the possibility of experience. Floridi claims to be trying to do something similar to Kant by moving away from the raw essence of things and onto the conditions of how they exist to us. Yet with the adoption of an informational framework, these conditions remain unclear, since the clear endorsement of each level of abstraction is determined by the data given to us, but the methods of its interpretation are not clear. To claim to be Kantian is to take on Kant’s epistemological solutions, but also entails accepting the problems raised by the Kantian revolution.

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<sup>50</sup> Note that LoA are not claiming to be without ontological commitment, merely that the commitment is selected consciously at each LoA.

There is also the criteria of purpose to be considered. There is always a purpose in interpretation of data, even empirically, for any phenomena automatically creates a certain framework - a world of possible interpretations, which in turn depend on the agent's ability to access it. One way to explain it is again to rely on the LoA. Even in circumstances where a phenomenon reaches the senses by accident, the interpretation of the phenomenon is purposeful. As Strawson put it: "The truth-functional system is an interpreted, not an abstract system" (Strawson, 1964, p. 65). Strawson, in his rigorous and illuminating derivation of truth systems in a logical theory makes an effort to stress that the same expressions can be used at different times and be interpreted differently (Strawson, 1964, p. 102). This is meant to illustrate the importance of purpose as a criteria for establishing the content of semantic information. However, as has been alluded to in the beginning and as will be explained later, it is possible to reduce all criteria to only the levels of abstraction and see context and purpose as derivations of it.

Now, the final steps of the correctness theory of truth will be considered. Those steps are called verification and validation.<sup>51</sup> These concepts perform their role in the context of answering a Boolean question, or as Floridi puts it, saturating it. The question performs the role of determining the parameters of context, LoA and purpose of given information, and the answer merely confirms or negates the satisfaction of these conditions by verifying the parameters and validating the content (Floridi, 2013, p. 194). In the example of the glass on the table, the question 'is the glass on the table?' establishes all three criteria (context, LoA and purpose).

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<sup>51</sup> Most commonly used in software engineering (Fox, 2007)



The answer serves the role of checking (verifying) the sensibility of the structure of the question and then validating its content as fitting the purpose to which the question was asked. However, the verification of the Q cannot be enough to determine the correctness value, because it is a precondition of the established model.<sup>52</sup> What can determine the correctness in those circumstances is, according to Floridi, “a [...] pragmatic or factual interaction, which provides an exogenous grounding of correctness” (Floridi, 2013, p. 197). In other words, no matter how complex the path to determine the correctness of content, it relies on the pragmatic interpretation of a given content in order to determine whether that content qualifies as semantic information.

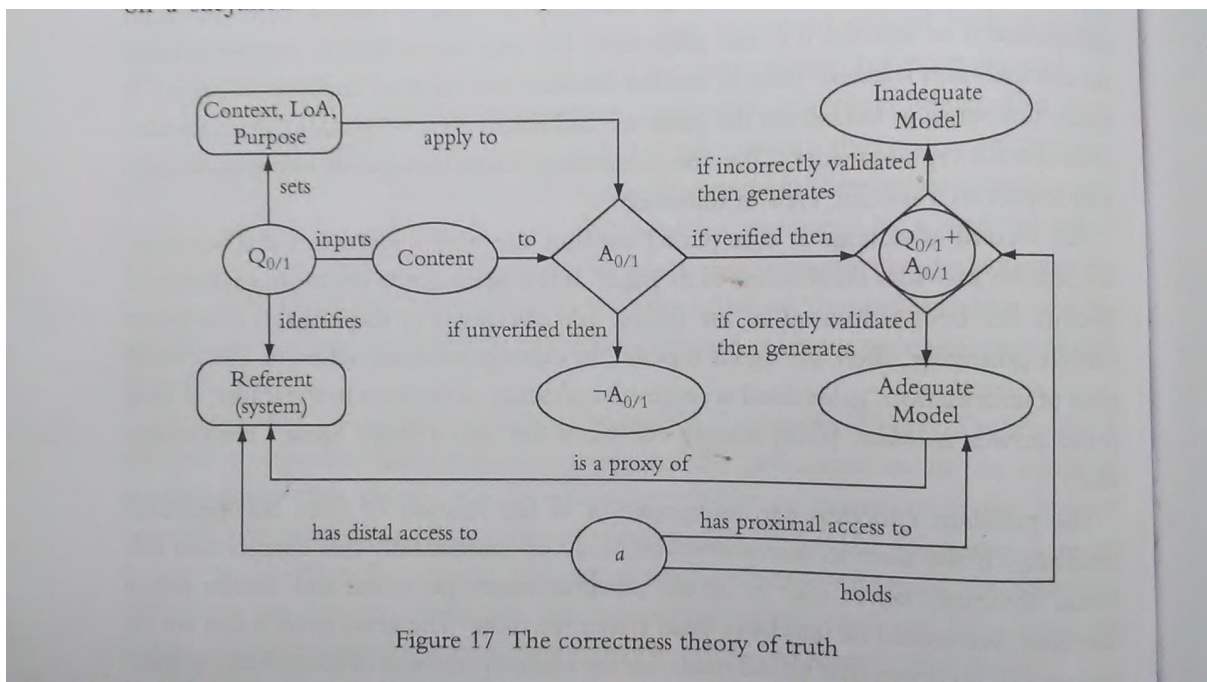


Figure 17 The correctness theory of truth

A schematic of the correctness theory of truth (Floridi, 2013, p. 198).

<sup>52</sup> As a reminder:  $i = Q + R$  turned into  $i = Q + A$ , the information is already supposed to be true in order to find out why and how it is true.

So it stands that the three criteria (context, LoA and purpose) are in themselves pre-conditioned by the system that is under consideration and merely help the agent to create a model of that system. Whether the model adheres to the system (is true), depends not on the criteria themselves, but on the adoption and execution of the criteria. This creates, at first glance, a counter-intuitive version of truth: whether it is true that the glass is on the table depends on whether the agent can select the right context, LoA and purpose with which to make that assertion. Or to put it another way, in the correctness theory of truth, a model of a system is constructed (in the form of Q and A) and then determined to be either correct or not based on the criteria covered above. This determination can only happen, however, if the model adequately represents the system under investigation, that is, if an agent can access the system through a model of the system. The notion of access here is not clear and Floridi uses computer science terminology of read/write permission protocols in an attempt to clarify the concept of accessibility.<sup>53</sup> The assumption that Floridi seems to be working from is that an agent can access the system under consideration if and only if an agent's access to the model in turn allows it to access the system. How does one know if the model has correct access to the system? According to Floridi, this is not a problem, because the presumed accessibility of the model's correlation to the system does not need to be interpreted alethically or epistemically, but pragmatically. The interpretation of the correctness theory of truth changes quite drastically, however, when it is considered in more detail and while maintaining certain ontological assumptions about data. This interpretation will be offered in the

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<sup>53</sup> Can be found in Floridi, 2013, ch. 8. 'read' means sense and retrieve; 'write' means modify and record.

later stage of the essay, but first some insights in how correctness theory compares to coherence and correspondence theories of truth..

## Coherence and correspondence theories of truth in comparison to correctness theory

Before beginning to unravel the connection of pragmatism and the correctness theory of truth, it is important to clarify CTT's relation to coherence and correspondence theories. It was alluded earlier in the essay that some aspects of CTT seem to rely on assumptions taken from coherence and correspondence theories. It is time now to clarify the similarities and differences between them to avoid any confusion moving forward. For while CTT does have some similarities to said theories, Floridi also makes explicit clarifications for why CTT is a separate theory from the aforementioned two.

To start with coherence theory, let us consider what is in the blueprint that is created for the evaluation of correctness. There are elements such as the system under investigation, a model based on that system, the question with its criteria (parameters) of context, LoA and purpose, the answer that validates them and finally the agent that the information is for. Such a complex system of different concepts, that are built upon more concepts, seems like an ideal candidate for an argument of coherence theory. However, Floridi points out that the correctness of information is ultimately judged by the external feature of the answer, meaning that although the answer may be considered to be within the system, it's conditions for judgement are

pragmatic and thus external (Floridi, 2013, p. 200). So even though CTT is a separate theory, there are definitely elements that it shares with coherence theory. The main similarity is that the construct used to determine correctness of content, in order to upgrade it to information, exists as a coherent construct. This means that each element (system, model, question, answer, agent)<sup>54</sup> are all interconnected and exist as a process. Neither of the components is sufficient by itself. The 'system' part of the construct can be considered the correctness-maker and a source for the correctness of A, but only if it is part of the construct and is interpreted as such. Add to that Floridi's point about the Kantian nature of CTT in the sense that it only deals with semantic information and never with systems in themselves and the resemblance to coherence theory is certainly strong.

On the other hand, Floridi makes it clear that "the relation between model and system is not one of pictorial representation or resemblance or similarity, but one of fit" (Floridi, 2013, p. 201). This in turn invites a consideration of CTT similarity to correspondence theory, in that it seems the model has to correspond to the system it is modeled upon. However, this is also refuted by Floridi as the system is first identified by the criteria of the question (context, LoA and purpose) and then by the modelled question and answer coupling. Floridi calls this "alethic bidimensionalism" and argues that it bypasses the assumption of at least some correspondence theories according to which "only one relation connects truth-bearers and truth makers" (Floridi, 2013, p. 202). As a further argument to contrast correspondence theories with CTT Floridi also notes that CTT is not ontologically committed to the

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<sup>54</sup> For clarity, please refer to the image in the previous page, or in Floridi, 2013, p. 198.

empirical existence of a system that is being investigated. That is a Kantian point, alluding to the fact that CTT is never assuming that the system under investigation is the ultimate reality. The 'system' in CTT is still constructed by the criteria of the question and thus is only a representation of reality as interpreted by who (or what) is asking the question.

Thus the correctness theory of truth differentiates itself from correspondence and coherence theories. However, when it comes to pragmatic theories of truth, the situation is more complicated. It seems that Floridi is implicitly stating that CTT is a pragmatic theory of truth, when considering the final steps of identifying correctness, he claims that the final step should "take us into the realm of pragmatics" (Floridi, 2013, p. 196). Yet it is not obvious what kind of pragmatism Floridi endorses here.

As was noted in the chapter on pragmatism, the key thinkers have different opinions in the way they consider truth. However, there are some aspects of both correspondence and coherence theories in pragmatism, just like in CTT. It may be said that CTT is a sophisticated version of a pragmatic truth, with a rigid structure that is meant to substitute the often criticised appeal to a notion of usefulness or utility used by early pragmatists. However, the difficulty in that case is combined from both fields, for there is still the question of how either CTT or pragmatic theory of truth determines the criteria for their judgements. CTT criteria in forming the question (of the  $Q + A = i$  structure) can give us some interesting insights, but are in themselves insufficient. From pragmatism, Peirce's notion of tychism and subsequent emergence of patterns can loosely be considered as a predecessor to

the events and how they emerge and link. Whereas James equates true to a good where “The true is the name of whatever proves itself to be good in the way of belief, and good, too, for definite assignable reasons.” (James. 1907, p. 42). This can be seen as an aspect of pragmatism that Floridi follows, in that the structure of CTT is built to prove what is believed to be a good concept - truthful information. If the argument was pushed no further, perhaps it would seem that Floridi’s approach is sensible and clear in relation to pragmatism. Levels of abstraction, context and purpose can all act as vessels for the “good in the way of belief”. The second part of the essay will focus on a more thorough investigation of the criteria of judgement in the PoI. The connection to pragmatism in the rest of the essay is not factual, trying to relate pragmatic tenets to CTT, but methodological, relating to the question of the kinds of truths that are possible to determine and how to do so. For that end, the main thinker to rely on will be Lyotard.

## Information and Lyotard

### The event

Lyotard is a thinker who is extremely difficult, if not impossible, to capture in a simple summary. In *Discourse, Figure* he differentiates between discourse as interpreted by semiotics and structuralism, and figural, which is disruptive and does not allow for a simple systematisation. In *Libidinal Economy* Lyotard explored psychoanalysis and

desire, with influence from Freud, a critique of Marx and many other areas.<sup>55</sup> In these 'libidinal period' texts Lyotard emphasises the irrational, the unknowable and the unconscious over their traditional metaphysical correlates of certainly, reason, and cogito. In *Lessons in Paganism* and *Pagan Rudiments*, indeed throughout his works, Lyotard engaged with the idea of paganism as a kind of affirmative relativism of events. Here, Lyotard comes close to a sophistic, plastic account of truth. His most famous work is *The Postmodern Condition: A Report on Knowledge*, where Lyotard critiqued legitimation of grand narratives, a topic returned to in *Just Gaming*, where a large part of the focus is on judging without universal criteria. This imperative to judge is in line with James' pragmatism of truth as use: truth not as something static, but as something determined with criteria that is involved in what is being considered, rather than being some external rule, projected onto an idea as its criteria.

As Woodward<sup>56</sup> says, Lyotard's most philosophical work is *The Differend*, with development of phrases as instances of events and the differend - identification of incommensurable points of view, which cannot be agreed upon in principle. At first glance, Lyotard can be thought of as a disruptor, as someone who is always sceptical of any grand statements and absolute certainties and that is true to some extent. However, the central piece of his philosophy is the event<sup>57</sup>, wherein Lyotard recognises the problematic nature of truth claims, whilst nevertheless acknowledging an imperative to try and know, judge, or schematise . Thus Lyotard's views are best

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<sup>55</sup> Schehr considers it the most problematic of Lyotard's works (Schehr, 2001, p. 62).

<sup>56</sup> Woodward, in <https://iep.utm.edu/lyotard/#SH4c>.

<sup>57</sup> Most clearly shown in Bennington, 1988.

taken as he argued for - with context and without vast generalisations that make attempts at universality.

In this section, Lyotard's ideas and concepts will be explained and simultaneously contrasted with similar concepts and ideas in Floridi's Pol. It has to be noted that only some aspects of Lyotard's philosophy will be considered, with what is deemed to be most important for the essay being expanded on the most. The event is a central concept to Lyotard's philosophy, its importance in the framework of Pol has been highlighted by Woodward and it has an essential role in this essay as well. An effort has been made to compare and contrast relevant aspects of Lyotard's and Floridi's approaches in order to uncover underlying assumptions that the correctness theory of truth relies on. Some reference is made to Lyotard's resistance to narratives, the idea of judging without criteria and the differend. With most of the focus being on the event and genres of discourse.

First of all, it is important to show that the choice of making an inquiry in Pol's theory of truth through the lenses of Lyotard is not accidental. Lyotard has critiqued and analysed the concept of information and its effects in several of his works (especially *The Inhuman*). While his understanding of the inner workings of information was limited, the critique he offered at the larger scale is of an immense value (Woodward, 2016, p. 42-43). One of Lyotard's main terms in his philosophy is that of the 'event' (Bennington, 1988). However, it is important to be careful in the interpretation of such a concept and account for the pre-conditions that characterise it. For example,



Lyotard is famous for denouncing grand narratives and universality of ideas.<sup>58</sup> More than simple denouncing though, it can be said to be an insistence on exploration. Lyotard is sceptical of *the* ways of thinking that proclaim themselves as the only true way, the only true interpretation (Bennington, 1988, p. 9). The event, then, can be seen as a precondition to that exploration. That is because the event is something that does not fit in a narrative, it is something unpredictable. Events also “generate and give content to structures, theories, and representations, but something of them will always resist incorporation, remaining elusive and inexplicable” (Woodward, 2016, p. 44). This suggests it can be understood as underlying causes, although that wouldn’t be quite right, since cause and effect can be considered as the grandest narrative of all. Thus the generation of content to structures and theories is not to be seen as a direct causal influence, but to be left as something intrinsically elusive and unbounded by explanation. Lyotard’s exploration of an event begins by avoiding the presupposed narrative. It is elusive and prone for misinterpretation though, because there is always the danger of subverting a grand narrative so much that the subversion itself becomes a new grand narrative.

How does one avoid a meta-narrative in trying to explain the world though? Perhaps the first step is to understand why meta-narratives are insufficient. The claim made by Lyotard is that any grand narrative brings with itself injustice (Bennington, 1988, p. 112). Grand narrative here is tightly connected to piety. The idea being that a belief in grand narrative means adopting certain abstract underlying beliefs, by which particular judgements are made. Such a connection also means that there can be no

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<sup>58</sup> Particularly in *The Postmodern Condition: A Report on Knowledge*, but in his later works as well.

good or bad narratives in opposition without an ever tighter grasp of piety. Thus, when the grand narratives fall, a multiplicity of narratives, of new and different interpretations of the situation, rise (Bennington, 1988, p. 113). A further claim is that this multiplicity of narratives is actually what makes up the history and culture of a civil society. They may sometimes form into the big narratives, but are essentially held together by many small stories and explanations (Bennington, 1988, p. 114).

In the beginning of *The Postmodern Condition* Lyotard clearly identifies that “scientific knowledge is a kind of discourse” (Lyotard, 2004, p. 3). He also notes that technological advancements, especially in the realm of language and communication will have a considerable impact on knowledge and society. In particular, he claims that during this transformation, knowledge: “can fit into the new channels, and become operational, only if learning is translated into quantities of information” (Lyotard, 2004, p. 4). He sees this as a further drive of a kind of discourse that scientific knowledge purports, with the added problem of knowledge becoming a commodity in the capitalist sense. “Knowledge ceases to be an end in itself, it loses its “use-value”” (Lyotard, 2004, p. 4-5).

## First critique of correctness theory of truth - moving from narratives to phrases

When establishing the first possible critique of philosophy of information and its theory of truth, we must avoid the trap of misinterpreting Lyotard and presuming that

there is no disagreement between his views and those of Floridi. The argument of *The Postmodern Condition* as phrased by Bennington's *Writing The Event* is:

“The form of the argument here is that as a discourse bound to the truth of its referent cannot presuppose the validity of its own access to that truth (which would amount to not respecting the referent at all, but merely its own internal discursive organisation), then it needs to have recourse to a different type of discourse to provide it with a grounding.” (Bennington, 1988, p. 114).

In other words, for a claim to be true, it has to have reference to something other than its only referent by which it is determined to be true. If this were not abided by, the claim is essentially self-referenced, thus losing all validity of its truth claim. In Floridi's version of the correctness theory of truth, a similar situation exists and this similarity is discussed here. As has been explained previously, Floridi's theory relies on a complex structure that includes several conceptual reference points, such as a question with its set of parameters (criteria), which constitute content, an answer to verify and validate the question, generated model, the system under investigation and the agent itself. However, most of these points are referencing something within the structure itself, such as the content being in reference to the question (Q) and answer (A), rather than the system. It is only the question that is identifying the system and then, if the combination of Q + A validates it, a model is generated. Floridi's indirect response to Lyotard's claim that truth must have more than one referent is by showing how the correctness theory of truth has a double, rather than a single, access to the artifact in question (a piece of semantic information). Floridi

calls it bidimensionalism and argues for its strength in regards to correspondence theories (Floridi, 2013, p. 202-203).

The bidimensionalism is hypothesized to exist because the agent has a two-part access - a proximal access to the model and a distal access to the system upon which the model is built. The bidimensionalism only holds if one agrees that the model of a system has access to the system itself. Access here is again meant in computer science terms that Floridi uses, meaning to read/write<sup>59</sup>. This is obviously unachievable to completion, otherwise the model would *be* the system. However, the idea here is that the access is partial and works as a test - whether it can reproduce or predict behaviour of some aspect of the system (Floridi, 2013, p. 202, referencing Davison, 2003).

Finally, we arrive at the crucial point: the structure of CTT relies on the scientific realist form of testing - where the system in question is assumed to be an infallible source of truth (Floridi, 2013, p. 202). The bidimensional aspect of the theory is hardly satisfactory, because the two point access is actually from the same point of the system that is meant to be infallible. There is no bidimensionalism - the question, with its criteria, sets the motion to (if successfully verified) validate the model. Yet the model was still brought out of the system in question. Verification of whether the Q and A are appropriate is irrelevant at this stage, because the model is created only when the Q and A are verified. Otherwise, there would be nothing to base the model upon.

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<sup>59</sup> Technically read - sense/retrieve and write - modify/record (Floridi, 2013, p. 197).

There are two complications with the critique outlined above. The first is that Lyotard's criticism was targeted at grand narratives and thus it should be applied directly to the narrative of scientific realist position and its infallible source of truth, the narrative that philosophy of information purports<sup>60</sup>. This is considered below. The second is that Floridi's correctness theory of truth resists the interpretation that its reliance on the system as infallible is ungrounded, because it claims not to engage in the ontological task of explaining what the world is like, given the truth value of semantic information.<sup>61</sup> According to Floridi, "CTT decouples the semantic from the ontological task and requires truth to be only a semantic relation between models" (Floridi, 2013, p. 203). Although this argument could be thought of as Floridi's refutation to the critique above, such a move in itself is questionable, since the symbol (data) grounding problem is still extremely contentious<sup>62</sup> and thus leaving out the ontological side from the concept of truth merely displaces the burden of grounding it to another area. In other words, claiming that truth is merely a semantic relation between models, means a further inquiry has to take place in the origin of semantic content. That is why Lyotard is useful in examining the framework of information: "Lyotard examines the 'micro' level, the ontology of information and how it relates to the semantic and existential constitution of meaning as such." (Woodward, 2016, p. 43).

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<sup>60</sup> In the aspect of assuming the system to be an infallible source of truth. A more detailed framework that Floridi develops is Informational structural realism and it differs from scientific realism significantly. (Floridi, 2013, Ch. 14 and 15).

<sup>61</sup> Even so, the inconsistency is there - CTT uses scientific realist position to ground itself in the world, while maintaining that its exogenous grounding is pragmatic.

<sup>62</sup> A comprehensive list of attempts to solve the symbol grounding problem can be found in Floridi, 2013, ch. 6, together with his attempt to solve it. While some believe the problem is solved (Floridi, Taddeo, Steels), others disagree (Beliacka, Bringsjord).

This section shall examine Lyotard's critique of the reliance on legitimation for science. In his own words, Lyotard is clearly targeting scientific knowledge<sup>63</sup>: "Scientific knowledge cannot know and make known that it is the true knowledge without resorting to the other, narrative, kind of knowledge, which from its point of view is no knowledge at all" (*Postmodern Condition*, 2004, p. 29). However, as Bennington rightly notes, "Lyotard here certainly relies too heavily on the assumption that narrative is the 'other' of scientific or theoretical claims" (Bennington, 1988, p.116). The problem is not the narrative itself. After all, it is certainly true that scientific inquiry relies on narrative to some degree at least, because a lot of its inquiry begins from knowledge that is not scientific. Medicine is an example, with modern medicine often being made from concentrates or extracts of plants that were believed to have medicinal properties for centuries. In *The Postmodern Condition* Lyotard tries to identify the similarities and differences in the pragmatics of narrative knowledge and the pragmatics of scientific knowledge (Lyotard, 2004, ch. 6 and 7). In some ways, it seems that Lyotard is only being pragmatic about some aspects of scientific knowledge. He says: "Scientific knowledge is in this way set apart from the language games that combine to form the social bond. Unlike narrative knowledge, it is no longer a direct and shared component of the bond" (Lyotard, 2004, p. 25). Whether scientific knowledge is a direct and shared component of the bond depends on what other narratives it connects to. This may be contentious, so a clarification is in order. Scientific knowledge cannot exist without some narrative that gives it meaning, however, the very notion of "scientific knowledge" contains a narrative.

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<sup>63</sup> Although not *just* scientific knowledge - grand narratives in general as well.

Within this narrative, just like all narratives, are other derivative narratives of the know-how, or know-why. There is no possible interpretation of the phrase 'scientific narrative' without linking it with some other phrase. The social bond Lyotard refers to is not pre-conditioned by a specific language game, it is pre-conditioned by the links between events, which are not determined. The strength of scientific knowledge, just like narrative knowledge, appears not in the language games, but in the event and the links made.

Lyotard's binary distinction between scientific knowledge and narrative knowledge can be contrasted to Floridi's bidimensionality in the following way. On the one hand, there is the scientific knowledge and the claim to an infallible source of truth (the system). On the other, there is the narrative knowledge and the model that is produced from the system. Floridi says he is "*positing and modelling a system*" and that it gives him dual access to that system (Floridi, 2013, p. 202). However, following Lyotard, modelling of the system would fall into the language game of narrative knowledge and thus be incommensurable with scientific knowledge and the system itself. That is because to model a system, one of two things has to happen. Either the model is no longer just denotative statements, and thus becomes incommensurable, or it is derived from the same scientific knowledge and thus there is no dual access to it. Earlier the argument was made for the latter, however, the interpretation in terms of the former is also possible. Either way, bidimensionality is not satisfied when considered through the framework of Lyotard's scientific and narrative knowledge.

A further consideration is that, as articulated by Williams in *Understanding Poststructuralism*, this binary fails to take account of a third group of affects: “*For Lyotard, an object or referent changes with the feelings, desires and language that are associated with it*” (Williams, 2005, p. 80). The claim here is that knowledge, whether scientific or narrative, owes its existence to something more fundamental - the event. And indeed, events such as flat earth movements illustrate how links between events can be constructed in a scientific language, yet without following the rules of the scientific language game and still maintain its preconceived notions as knowledge. As Williams further clarifies, “Where there are questions concerning change and values, feelings and desires should be privileged. This privilege cannot be extended to a full independence.” (Williams, 2005, p. 80). To put simply, a piece of knowledge is never an object of its own, it always relates to feelings, desires and language. Depending on what kind of knowledge it is, depends what links it can make, what language game it can or will be adopted into. Language games may be incommensurable, like Lyotard says. However, the events that link up and ultimately make up the language games themselves do not have a *right* way of linking them. Thus, a more illuminating way to see how narratives develop may be through the event and its links.

Lyotard's later work *The Differend* approaches the event with the construct of phrases. There is some disagreement about how 'phrase' should be translated in English. Abbeele, translator of *The Differend* notes that the term 'phrase', as developed by Lyotard, is not a grammatical or linguistic entity, but a pragmatic one. A phrase should be seen as “the situating of its instances (addressor, addressee,



referent, sense) with regard to one another.” (Lyotard, 2002, p. 194). Bennington suggests, however, that using the term ‘phrase’ invites a misunderstanding in thinking of it as a “*fragment* of such a unity” (Bennington, 1988, 124). Unity here is precisely the whole of the connections between addressor, addressee, referent and sense. Furthermore, in *The Differend*, the “event is understood as the occurrence of a phrase” (Woodward, 2016, p. 65). And since the event is always ultimately elusive and inexplicable, the components of the phrase allow as close an access to the event as is possible.

Perhaps the best way to understand Lyotard’s views, especially when keeping in mind the contrast it is to serve here for the PoI, is by understanding how reality is constituted according to Lyotard. As Bennington puts it when interpreting Lyotard:

“Reality is, then, neither simply given and awaiting more-or-less adequate transcription, nor is it magically produced by a demiurgic act of creation on the part of a speaker, but is an unstable state attributed to referents on the basis of operations of nomination, ostension and description” (Bennington, 1988, p. 121).

To Lyotard, reality is not “out there” to be discovered, nor is it constructed in our own minds. Interpreting reality through Lyotard’s notion of a ‘phrase’ means to constitute the components of addressor, addressee, referent and sense. The combination of them allows for an interpretation of ‘reality’. However, this ‘reality’ is conditional - the phrase is only meaningful in relation to other phrases, which also constitute some parts of the previous phrase: “Reality is established by the link of a certain

description and an ostension” (Bennington, 1988, p. 121). It may also be important to note that while the idea that knowing what is real is unstable and in need of constant review is not new, Lyotard can be seen as more transgressive than most, in that he does not think that the notion of the subject or of an experience is necessary to the analysis of knowing what is real (Bennington, 1988, p. 123). The role of that which for Descartes is the ‘I’ or for phenomenologists is experience, for Lyotard is simply the phrase. The phrase, as has been highlighted above, is not accessible fully, since it represents the event, but which can be interpreted in the form of the addressor, addressee, referent and sense.<sup>64</sup> Thus, to Lyotard, there is a certain primacy of the phrase and in turn of the event, that supersedes what is normally referred to as subjects, reality or meaning. Those are merely the effects produced by the relations between phrases (Bennington, 1988, p. 125). A crucial point in considering the event within the phrase is that an event of a phrase cannot be ‘targeted’, it is too elusive. That’s because a phrase is essentially a placeholder of the event. Yet the moment the attempt is made to capture it, what is instead captured is its effect.

We can now see that the phrase-event is going to be the site of a sustained encounter between the work of Lyotard and Floridi. Just like the in *The Differend* phrases are instances of event, so in Floridi, the argument will be, data are instances of event too.

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<sup>64</sup> Sense here is also translated as meaning in Bennington, 1988.

## Lyotard's methodology

James Williams, in reviewing Lyotard's methodology, raises two important questions in relation to the event: "If events are beyond representation and understanding, how can they be referred to with certainty?" and "What is the practical use of things that can neither be satisfactorily referred to nor predicted?" (Williams, 1998, p. 63). These questions target a potential issue in Lyotard's philosophy, since the event is one of the major concepts he relies on. As Williams later explains, the issue of claiming certainty for the event is essentially futile. For example, when the event is considered through the prism of a phrase, as has been outlined above, the issue of certainty of the event is replicated onto the concept of a phrase. The attempt to avoid this problem is through giving some partial definition, "by proxy" (Williams, 1998, p. 66).<sup>65</sup> In this case an access to the phrase is given by the concepts of its building blocks - addressor, addressee, referent and sense. It is impossible to capture something that is beyond representation with something that is not. That is because further questions can always be raised to undermine the attempt, such as "If phrases are events, then on what grounds can there be any certain claims to understand or represent what they are?" or "If events are phrases, then does our certain understanding and representation of phrases not provide us with a certain understanding of events?" (Williams, 1998, p. 66). The crucial part to understand here is that Lyotard is well aware of this problem. According to Williams, it is

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<sup>65</sup> The problem of proximal access here can be seen as the same problem that the CTT has with its notion of proximal access to the system.

precisely Lyotard's strategy to present these issues as something unavoidable (Williams, 1998, p. 67).

Understanding the issue of phrases as events and their links is easiest through the concept of the 'differend' - incommensurable conflicts that come from trying to find the right way to react to any given phrase or event. They exist because: "each phrase in a debate, dialogue, monologue or succession of events is open to an infinite number of equally right responses" (Williams, 1998, p. 70). In the case of an event, a response to which has two different rules for judgement, there is no way to reconcile them, because a judgement can ultimately only follow one set of rules. "the judge must take sides with one of the parties or be unjust to both" (Williams, 1998, p. 71). This also shows that for Lyotard, there is no relying on reality to find justice and truth. Reality, to us, comes from the links between the events, because it only becomes meaningful through those links. "Reality cannot be deduced from sense alone, no more than it can from ostension alone" (Lyotard, 2002, p. 44). Simply put, Lyotard tries to show how we make sense of the world, how it acquires meaning to us: "A system of names presents a world. The universes presented by the phrases that group names are signified fragments of that world" (Lyotard, 2002, p. 44). This view has a magnitude of implications across philosophy but the most relevant aspect for this essay is the idea that the object and its place in the world exist together, that one cannot exist without the other. "Reality is not expressed therefore by a phrase like: *x is such*, but by one like: *x is such and not such*" (Lyotard, 2002, p. 45). That is important because it will allude to Floridi's connection of data and its relations, of the

impossibility of thinking of data or its relations separately. The 'x is such and not such' illustrates how data is seen as constraining affordances in Floridi's work.

## Information, data and event

A further inquiry into Lyotard's thought will be correlated to some notions of Pol in order to show the similarities in these approaches. This comparison is not meant to equate the two frameworks, but merely to highlight some important aspects they share, such as the importance relation has to meaning (sense). According to Williams "For Lyotard, everything can be understood as a phrase, but phrases cannot be fully understood" (Williams, 1988, p. 69). Just like for Floridi, everything can be understood in terms of information, but the question of 'what is information' is still open (Floridi, 2013, p. 16 and p. 30). On the surface, this comparison can be extrapolated to mean that an event in Lyotard is the same as data in the theory of semantic information. That is because a datum, in Floridi's version of semantic information, is understood as a constraining affordance, or "a lack of uniformity" (Floridi, 2013, p. 85 and p. 87). In other words, in the theory of semantic information, data is just as elusive and cannot be *fully* captured, yet at the same time seems to generate the basic building block of information.

In a chapter that engages in a search for the event within information theory, Ashley Woodward explains that Bateson's phrase of "a difference that makes a difference" could be seen as a surface level description of how Lyotard understands the event,

but also notes that this interpretation would be wrong. It is wrong, because the event that is created by information is immediately translated into a message, it is made sense of. Since the event, according to Lyotard, can never be fully understood, information cannot constitute an event. So it is important to keep this insight in mind when considering if a building block of information - data, could fit the role of the event in the information theory.

The explanation of phrases and their instances can be equated to a piece of information and its interpretation through a specific level of abstraction. When a phrase occurs, it can be linked to other phrases by the rules supplied by the genre (Williams, 1998, p. 70). In the same way, when information occurs, it is linked to other pieces of information (it is interpreted), in a specific LoA that is determined epistemologically (Floridi, 2013, p. 79). Just like “no genre provides the absolutely correct or right way of linking on from the initial phrase” (Williams, 1998, p. 70), so levels of abstraction do not provide an absolute interpretation for any piece of information. All interpretations in both Lyotard’s and Floridi’s approaches are seen as having to be necessarily constrained by an adopted framework which is not universal. The difference is that the event does not have to be well-formed to be meaningful (Woodward, 2016, p. 66). This is a contentious point, however, since the question then is how can something be interpreted to be meaningful, without having a form. This leads back to the question posed by Williams, where if events are beyond understanding and representation, how can they be known with any certainty? In other words, how can an event be meaningful without being well-formed? Well-formed, according to Floridi, means “that the data are clustered

together following the rules that govern the chosen system, code, or language being analysed” (Floridi, 2013, p. 84). This means the event is beyond the possibility to analyse. However, that also means that the event itself cannot be interpreted as meaningful. What is meaningful instead, is its effect. For example, when considering the phrases from *The Differend* as events, we see that each phrase has 4 components, otherwise known as four instances of the phrase universe. As Woodward notes, “The ‘meaning’ of the phrase is only given when the relations between these instances are fixed, and this fixing only takes place with the occurrence of another phrase, which ‘situates’ the first” (Woodward, 2016, p. 66). This means that there is no meaning in the event as a singular occurrence, at least when considering it through *The Differend’s* phrases. Since information is understood as a well-formed, meaningful and truthful data, the event in the information theory should be found in the occurrence of data, rather than information. This only makes sense, however, if we are considering data in the theory of semantic information, where it is not simply a ‘bit’, somehow existing independently, but data as a ‘difference that makes a difference’ in the sense of only being meaningful in relation to other data points, but before becoming well-formed - just like the event.

Data as an event should be understood as “ontological” data. There is a similar relation to the one that Woodward points out, in terms of Lyotard distinguishing “language understood as ‘a means of communication of facts about reality’ from what he calls ‘ontological language’” (Woodward, 2016, p. 66). Data, when understood as ‘a bit’<sup>66</sup>, as a smallest piece of information, only makes sense when

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<sup>66</sup> As in Shannon’s ‘Mathematical Theory of Communication’, or Wheeler’s ‘It from Bit’ for example.

the interpretation of it is already assumed. That is, when it is interpreted in a preselected level of abstraction where the data type is already determined. In that case, it is indeed a valid question whether information theory has room for the event. In contrast, when data is understood ontologically, the symbol (data) grounding problem becomes relevant in the attribution of meaning and truth of information - how can data acquire meaning?<sup>67</sup> The argument here is that the methodological problems Lyotard faces in referring to the event with any certainty are essentially the same as when semantic information tries to refer to data as a building block of information. Data, before it is interpreted, is a change that causes another change, to paraphrase Bateson. Just like with ontological language in Lyotard, such data occurs without any rules for its interpretation. It is only after its occurrence that the possibility of interpretation can appear, because, unlike information, it does not contain meaning or require to be well-formed.

As Woodward claims, the issue is not just about how information and data are understood, although that is obviously important too. The issue is also that the event should be impossible to incorporate within the system, unless it also changes the system (Woodward, 2016, p. 65). On the one hand, the informational framework is heavily influenced by the Boolean system and the binary language of 1s and 0s. Indeed, as has been shown before, the correctness theory of truth relies heavily on such an interpretation, with the assumption that any information can be translated, *semantically*, into a propositional semantic information (Floridi, 2013, p. 186). This

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<sup>67</sup> Many strategies have been attempted to solve this problem, all with contentious results, some examples of the attempts can be found in: Davidsson, 1993; Billard and Dautenhahn, 1999; Sun, 2000; Mayo, 2003; and of course Floridi's attempt can be found in Floridi, 2013, ch. 6 and 7. It is still debated whether it was successful in Baliecka K., 2015.



would suggest that the informational framework is too rigid to have any space for the event and is just another meta-narrative. However, as has been mentioned before, the focus about the event in the information framework may be more suited in the consideration of data, rather than information. The crucial point to keep in mind is that the event is not meaningful itself, it becomes meaningful when it 'interacts' with another event, the effect an event has is meaningful. In other words, what is important when considering data as an event is not whether each new point of data changes the framework it is considered in, but whether it changes the meaning of the framework. Woodward states "The 'meaning' of the phrase is only given when the relations between these instances are fixed, and this fixing only takes place with the occurrence of another phrase, which 'situates' the first" (Woodward, 2016, p. 66). What this means in the informational framework is that the meaning of data depends on the level of abstraction, yet the level of abstraction is simultaneously determined by the data considered. According to Floridi, "LoAs are anchored to their data, in the sense that they are constrained by them; they do not merely describe or organize them, they actually build models out of them" (Floridi, 2013, p. 72). And that is precisely how we can understand data as instances of events - data does not just become incorporated into the system, it changes the system just by the fact of it manifesting. The informational framework is merely a translation of this manifestation.

The understanding of data and how its relations build levels of abstraction, which in turn build the systems, and the interpretation of this phenomenon as an event in Lyotard's sense, opens up certain questions in the correctness theory of truth, that

we will soon be able to come back to. First, a clarification: equating data to Lyotard's event does not resolve any paradoxes that the notion of event itself has. However, what it does help us with, is a clearer picture of the gaps in Floridi's Pol and his attempts to overcome it. One could say that Lyotard's philosophy helps us approach Pol from a different perspective, within a different framework. In Lyotard's work, there is no right linkage between phrases as events: "We cannot know how to link other phrases onto it, and yet such links constitute an understanding and a representation of the initial sentence (Williams, 1998, p. 68). There is no way of "tending towards a right concatenation" (Williams, 1998, p. 68). Lyotard's notion of event forces him into a sort of relativism. The links that the phrase events create do not have some 'right' property to them, because they are not fixed to a reference to outside reality. Truth for Lyotard could be said to exist in a mix between coherence and pragmatic theories, where there is a necessity to make links between events, but how the links are made is not determined by any set criteria. There is a distinction in Lyotard's work between the metaphysical prohibition on final truth, and the ethical demand that we must make judgements. On the surface, the same can be said about Floridi's Pol and its correctness theory of truth. It does not attempt to define truth as relation between models and reality in itself, but to identify relations between models that make sense (Floridi, 2013, p. 204). However, Lyotard is adamant about truth relations being formed by events and their effects. "Truth is primarily a matter of events and only secondarily of correspondence or of consistency" (Williams, 2005, p 82). Lyotard requires us to judge, rather than to access truth. Whereas Floridi's correctness theory attempts to construct what is essentially a set of rules for judging whether something counts as information (whether something is true in this case).

## Component parts of the correctness theory of truth

If data can be considered as events, then any judgement about the correctness of semantic information in Floridi must not have any universal criteria for judging it to be true. It is important to avoid an oversimplified view of claiming that the complex structure itself provides proof of there being some form of universal criteria, since with that line of argument, the same could be said about the outlined instances of the phrase, such as addressor, addressee, referent and sense. The way that the event becomes meaningful must not be confused with the event itself, which cannot be captured in this way. To remind the reader, earlier CTT was explained as having its criteria as a complex system, where the question, formed by the Boolean translation  $i = Q + A$ , would set the criteria - context, LoA and purpose, which would be checked against the content (well-formed and meaningful data) to determine whether it was correct. Moving on from the previous discussion about its claim to bidimensionality, the focus now is in other parts of the theory.

The way that the correctness theory of truth is first established is by assuming that one already has an artefact that is true - some semantic information, and “reverse engineering” it to find “what its components are and how they interact with each other to deliver information” (Floridi, 2013, p. 185). The steps to do this have already been explained, so now the focus is only on the problematic parts, first on

polarization and normalization and then on its exogenous reference and overall structure.

In the present essay, polarization has been explained to mean to take some information  $i$  that has been formulated propositionally, and to “disassemble it into a combination of query  $Q$  and a result  $R$ ” (Floridi, 2013, p. 188). As one of its advantages, Floridi explains that it shows the need to specify the context, level of abstraction and purpose for which the query is formulated. The problem here is that if levels of abstraction are always teleological and for some purpose, the purpose must have been mediated by data. As has been noted before, data is always relational, but more than that: “These differentiated entities are epistemically (still) virgin but (already) ontically distinctly-existing” (Floridi, 2013, p. 367). Meaning that data is assumed to exist, but cannot be accessed as such. However, what is also assumed is that once data exists, it can then be “epistemically exploitable as resources, by agents like us, for their cognitive processes” (Floridi, 2013, p. 368). It is not entirely clear how this epistemic exploitability should be interpreted, but based on the previous quote, it seems fair to assume that the epistemic exploitability is not direct or complete. What makes this assumption stronger is the consideration of levels of abstraction. The version of levels of abstraction that Floridi purports claims that “the relation between models and their references (the analysed systems) is neither one of discovery [...], nor one of invention, but one of design” (Floridi, 2013, p. 72). What this is really saying, is that the making of an ontological commitment (attempting to make a model of reality by choosing a LoA) is constrained by data, since that is what LoA is determined by.

Ultimately, it would appear that the criteria to determine whether something is true in the correctness theory of truth are data that are judged within different levels of abstractions, which could be compared to the different genres in Lyotard's philosophy<sup>68</sup>. Data can only be judged, indeed even encountered, through the levels of abstraction, since data understood ontologically cannot be reached as such, without first adopting a particular way to encounter it. Furthermore, that particular way, particular LoA is determined by the data creating differences. Information as well-formed, meaningful, truthful data, is an attempt to find a way to accurately judge the differences created by data.

So there is a tension in Floridi's approach, in that different levels of abstraction are incommensurable in their interpretation of data, but are themselves constrained by data. Different levels of abstraction, just like different genres of discourse in Lyotard's philosophy, don't have a 'correct' interpretation, because there is no way to definitively link data in that particular way. Different links of data will produce a different level of abstraction.

One further issue then is that in the correctness theory of truth, there are two other criteria - context and purpose. Together with the LoA they are meant to give meaning to the Query. Unfortunately, Floridi does not delve deep into consideration of those parameters and refers to Austin<sup>69</sup> and Strawson<sup>70</sup> as having already proven these

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<sup>68</sup> This also means they are incommensurable, just like genres are incommensurable for Lyotard.

<sup>69</sup> Floridi references his article: Austin, 1950, 'Truth' in *Philosophical Papers*.

<sup>70</sup> Floridi references his article: Strawson, 1964, 'Identifying Reference and Truth-Value' in *Theoria*.

criteria as necessary. However, they are well known to have disagreed on the topic of truth<sup>71</sup>, so referring to them both without much specificity makes his argument slightly unclear. The parameters of context and purpose have to be themselves understood within a certain level of abstraction, which means the circumstances and the purpose of the agent constructing the information are themselves interpreted only partially, as mediated by the level of abstraction. To give an example of what this means. Floridi illustrates his parameters with the example of *i* being “the beer is in the fridge” and  $Q + R$  thus being translated to “Where is the beer? In the fridge”. The first parameter, context, is the circumstances of the question “where is the beer”, such as asking it while being in the kitchen or while being in the supermarket, however, the interpretation of context is mediated by some level of abstraction, some partial interpretation of the surroundings (in this example). The purpose is also LoA reliant, since the reason for asking for information is at least partially dictated by the environment and furthermore, as Floridi notes “queries cannot acquire their specific meaning in isolation or independently of their CLP parameters” (Floridi, 2013, p. 188). CLP here stands for context, level of abstraction and purpose. Yet, as has been shown, both context and purpose are essentially mediated by level of abstraction at a deeper level. Note that the claim is not that levels of abstraction create context and purpose, but that their interpretation and thus use as a parameter or criteria for judgement, is constrained by the level of abstraction adopted in each instance. This can also be related to genres in Lyotard’s philosophy to make the argument clearer. According to Lyotard, ‘ends’ appear together with genres and take hold of phrases and the instances they present. “Our ‘intentions’ are tensions (to link

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<sup>71</sup> See: Snowdon, P and Gomes, A., 2019, ‘Peter Frederick Strawson’ in *The Stanford Encyclopedia of Philosophy*.

in a certain way) exerted by genres upon the addressors and addressees of phrases, upon their referents, and upon their senses.” (Lyotard, 2002, p. 136).

## Exogenous access to truth

The fact that all criteria in the correctness theory of truth can be interpreted in levels of abstraction would not in itself be an issue, since the schematic still works with having as criteria just the levels of abstraction. This is not a tautology, since the criteria can merely be interpreted through levels of abstraction, they are not created by them. The next important step is the question of correctness itself. Floridi recognises that unless his theory ultimately finds some “exogenous grounding”, it will not be able to provide a “foundational analysis of truth itself without begging the question” (Floridi, 2013, p. 196). Thus Floridi attempts to show how the complex schematic ultimately relies on something outside the schematic itself to evaluate it. For that, he introduces the concepts of proximal and distal access. These concepts were mentioned in before and will now be explained in more detail. The concept of a *proxy*<sup>72</sup> is, like many concepts in philosophy of information, borrowed from computer sciences. Essentially, it means for one agent to control another in order to gain some access. For example, Dropbox acts as a proxy to let your computer access their server, Gmail is a proxy to access your emails that exist in a server somewhere. It acts as an intermediary between a server that has the information and the agent requesting the information. According to Floridi, a model is a proxy of the system and

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<sup>72</sup> Floridi indicates that the concept is from Luotonen, 1998.

so an agent has proximal access to the model and a distal access to the system itself (Floridi, 2013, p. 196). The problems this approach has in terms of its purported bidimensionality have already been shown, but another issue to consider is the access itself and its relation to correctness.

One advantage of thinking in terms of proximal and distal access to the system is in the way it validates correctness within the theory. As per Floridi's example:

“If the agent in the bedroom upstairs asks whether the beer is located in the fridge, and the agent in the kitchen downstairs answers positively, then the agent upstairs, by having proximal access to this overall piece of information, gains distal access to the presence of the beer in the fridge, as long as the answer is *correct*” (Floridi, 2013, p 197).

If thought of in terms of meaning, the concept of correctness here works like a coherence theory in that whether the answer (in the form of  $i = Q + A$ ) is correct or not depends on the whole schematic. Floridi claims that is not the case, because correctness should be understood not as an internal property of the system, but the external feature of the answer and that this guarantees a pragmatic interaction with the system through its model (Floridi, 2013, p. 200). However, if correctness is to be an external property of the answer and its measure of correctness relies on its conformity to the system, it becomes essentially correspondence theory - its notion of correctness relies on the information corresponding to some fact about the world - the system. Of course, said system may be another model, so that the access to



reality is always beyond reach. All the while, the goal of Floridi was to make this access pragmatic.

The access is meant to be pragmatic in the sense of “actual interactions” between the “agent  $a$  holding the information that  $p$ , the model  $m$  generated by  $p$ , and the system  $s$  modelled by  $m$ ” (Floridi, 2013, p. 196). It is rather unclear what those “actual interactions” are supposed to be. On the one hand, there is the proximal and distal access - distal access is “to (part of) the actual, physical system” and proximal access is “to its (partial) model” (Floridi, 2013, p. 198). However, since it is always only a partial model, and the access is only to a part of the system, the judgement of the correctness of the well-formed and meaningful data is actually imbedded in the schematic itself, since what is correct depends on how the question, from the given data, is formed (at what level of abstraction it was accessed), rather than *how* the data was accessed<sup>73</sup>. This also strengthens the previous argument about the lack of bidimensionality in Floridi’s theory, because here it is shown how the access is monodimensional since the only *different* way of “reading  $s$ ” (meaning accessing the system) is through a different level of abstraction. The proximal access to the model of the system, merely gives a partial access to the system already stipulated, rather than another perspective of that system.

The inability of informational framework to access data fully shows its judgement of truth to be necessarily incomplete. As Lyotard says: “Either this genre is part of the set of genres, and what is at stake in it is but one among others, and therefore its

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<sup>73</sup> This point was made earlier in a different sense of ontological data. This is just a different approach to the same issue.

answer is not supreme. Or else, it is not part of the set of genres, and it does not therefore encompass all that is at stake, since it excepts what is at stake itself” (Lyotard, 2002, p. 138). Substitute ‘genres’ for levels of abstraction and it is clear what Lyotard’s problem with informational framework is. It is not that Floridi’s theory is wrong, but it attempts to do more than its approach allows.

So to summarise and highlight the underlying issue: the correctness theory of truth can be seen as pragmatic in the sense that it does not presuppose whether it has access to some facts about reality or that its truth depends solely on the coherence of the schematic. However, since it is recognised that the access is always partial, the schematic can also be assumed to be only partial, since it is born out of the context that the issue is considered in. Namely, all information is only considered in terms of propositional semantic information. While that does not mean that its interpretations are wrong, or that it fails to identify the correctness and thus truthfulness of information, it does mean that it may be implicitly not considering other aspects of data.

## Structure of CTT (Translation)

The structure of correctness theory of truth has many components that, depending on the level of abstraction, can be seen as criteria for judgement or as part of the structure that allows for that judgement. As has been shown, the levels of abstraction can be seen as an ultimate criteria itself, given by the data it is meant to interpret.

When one looks at the component parts of the correctness theory, it can also be insightful to look at the first step, translation. This is perhaps a clearest case of a narrative in *Pol*, and in the appeal at universality of judgement - something Lyotard is strongly against.

In *Just Gaming*, Lyotard says, in response to the question about the position of mastery of an author, that the pragmatic condition is one where the interpreter of a question has no privileged access to the topic, because the topic changes with each question (Lyotard, 1999, p. 6). The central claim that will be focused on now, is Lyotard's statement that "we judge without criteria" (Lyotard, 1999, p. 14). The first thing to clarify, is that the claim "judgement without criteria" can be misleading, because ultimately, it is impossible to judge without criteria. What Lyotard really means is judgement without *universal* criteria. That is, each judgement's criteria are determined together with the judgement itself. Indeed, often the criteria escapes explanation as such "in each instance, I have a feeling, that is all" (Lyotard, 1999, p. 15). Before going any further, one more clarification is that initially Lyotard equates justice with truth (Lyotard, 1999, p. 23). Later, however, "The just is not of the same genre as the true" (Lyotard, 1999, p. 24). This is important since focus in this work is on truth and in *Just Gaming* it is on justice.

Lyotard says: "If they [statements] are not proportional, how can they be obtained through implication from propositional statements?" (Lyotard, 1999, p. 22). In other words, Lyotard claims that statements do not have equal semantic value, they do not necessarily carry over the truthfulness of previous statements. That is because some

statements stem from other statements, but those secondary statements are not in the same class, they are derivative. So, if we have a statement that is prescriptive, like, “one ought to drink beer”, how would that statement be turned into a propositional statement while retaining its meaning? This question is important, because the first step of correctness theory of truth in Floridi is that of assuming that all kinds of semantic information can be semantically translated into propositional statements. The example of semantic translation provided by Floridi will help illustrate the point. He is making this example to contrast it with the syntactic translation:

“Contrast it now to being able to travel from one station to another on the London Underground, by receiving verbal instructions from someone who is navigating using the visual indications provided by the map. This is a semantic translation, and your trip is a test of its accuracy.” (Floridi, 2013, p. 187).

The problem with this example is that although what is happening is a semantic translation, it is not a translation into propositional statements. The translation is into prescriptive statements - the giving of instructions. The problem that we can derive from Lyotard is that there is an incommensurability between prescriptive and propositional statements. Lyotard says:

“There is a resistance, an incommensurability, I would say an irrelevancy, of the prescriptive with respect to the functions of propositional logic, that is, with

respect to that which gives theoretical discourse to its authority (even if the clause of utterance proper to philosophical discourse is added to it)" (Lyotard, 1999, p. 22).

So what Floridi's example shows is that translation of semantic information is possible, but he does not show that it is possible in terms of propositional statements, which was supposed to be the point of the example.

Looking at the issue of translation in a broader sense, we can again draw from Lyotard an interesting and relevant insight. He claims that among the western thinkers of politics, such as Plato and Marx, there is "the deep conviction that there is a true being of society, and that society will be just if it is brought into conformity with this true being" (Lyotard, 1999, p. 23). With the conviction that there is some true state of society, the statements made from that truth can then become 'just' prescriptions. Just, however, in the sense of "correct" (Lyotard, 1999, p. 23). According to Lyotard, this model of 'if, then' raises a problem, in that it means a receiver of a prescriptive statement would have to be able to work out how the descriptive statement from which the command originated, was true. This can only be achieved pragmatically, that is, the receiver of a prescriptive statement will have to judge the descriptive claim behind the command as true or false with each and every prescriptive statement. Ultimately, Lyotard recognises that there is a school of thought<sup>74</sup>, members of which grant that the "principal functors of propositional logic also work in matters of prescription" (Lyotard, 1999, p. 24). This is generally referred

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<sup>74</sup> He names people like von Wright, Rescher and "the Anglo-Americans in general" (Lyotard, 1999, p. 24).

to as apophantic<sup>75</sup>, a term from Aristotle, adopted by Husserl and Heidegger who differentiated between apophatic and ontological approaches.

The difference between apophatic and ontological approaches is an important aspect in the consideration of the correctness theory of truth. On the one hand, data in the philosophy of information is understood ontologically and indeed can even be considered as Lyotard's event, similar to phrases in *The Differend*. Data is understood as "dedomena", that is, as data before it is epistemically interpreted. And as has been shown, data can only be interpreted in levels of abstraction, that is, its interpretation is never complete, it is always partial. This partial understanding is what then gives rise to the concept of information as data that is interpreted in a specific level of abstraction - following specific rules that give it form and meaning. Floridi takes a leap from the data as that which is beyond interpretation, to assuming that it can be interpreted sufficiently well to make a judgement of its truth value, which is in fact merely a comparison of forms of interpretation, comparison of different levels of abstraction. It is not wrong, it simply does not address the question of what is the nature of truth. The correctness theory of truth is concerned with relations of interpretation, rather than the origin of truth.

## Conclusion

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<sup>75</sup> Apophantic is often understood as a logic of statements.

Philosophy of information is set up as a potential *philosophia prima* and as such, it has to contend with the oldest philosophical questions in its own framework. The framework Floridi developed owes its foundations to many thinkers, from Kant and Wittgenstein, to more recent and direct references of Shannon and Wiener. Its notion of truth and how it can be found is complex and multi-layered and the attempt to better understand these concepts in Pol, forces one to consider not just philosophy of information in isolation, but to compare it with other theories of truth and thinkers that, at least at first sight, speak in a very different language to Floridi. Nevertheless, when the comparison is done correctly and sensibly, a lot of insight can be gained from looking at the philosophy of information with a different framework, or at least aspects of different frameworks, in mind.

In this essay, the attempt was made to briefly introduce the most prevalent theories of truth as well as Floridi's correctness theory of truth and show how it differs from those theories. This was done at a relatively introductory level, because the aim was to better situate correctness theory within those frameworks. After a thorough explanation of the correctness theory itself was given, Lyotard's notion of event was introduced, together with other important aspects of Lyotard's philosophy, such as incredulity towards meta-narratives and understanding of phrases as events. When compared to some of the most central concepts for philosophy of information, such as data and levels of abstraction, links were made between Lyotard's and Floridi's approaches.

The essay focused on Floridi's thought, with Lyotard's framework used mainly as a way to critique some aspects of Floridi's correctness theory, such as its bidimensionality. The main argument put forward was that data can be considered as an instance of the event, in a similar way to Lyotard's phrases. Genres of discourse were compared to the levels of abstraction in their role of judgement and interpretation. This equation of Floridi's foundational concepts with Lyotard's more skeptical concepts led to finding a point of tension in Floridi's philosophy, whereby data was considered as ontological and its only access seen as the levels of abstraction, which are themselves constituted by data only and at the same time understood as already interpreted with an exogenous access to the system under consideration. Another finding is that although pragmatic, exogenous access may be granted to Floridi's theory, the fact that it is partial means that the correctness of the semantic information can only ever be partial too. This partial information is not interpreted as such, because the structure of the correctness theory does not permit it by necessitating a choice of level of abstraction before the interpretation. In this way, it can be seen as creating a narrative in how data, and thus information, should be understood. Finally, a brief, but important nuance was covered which highlighted the difference in Lyotard's and Floridi's underlying assumptions, namely, the views toward propositional statements and the translatability of semantic information. Lyotard accepts it as a possibility, but is disappointed by it, whereas Floridi pursues this line of reasoning.

There are still many questions to be answered that will unfortunately have to be taken upon in another piece of writing, such as the symbol (data) grounding problem,



which is crucial in the debate about ontological data and its possibility of being instances of Lyotard's event, as well as the contentious topic of agency and self-determination in both Lyotard's and Floridi's frameworks. The hope is that this essay added to the scholarship on Floridi's philosophy of information in a way that enriches the development of this framework and that the engagement with Lyotard's views has broadened the scope through which this framework could be interpreted.

## Bibliography

- Austin, J. L., 1950, Urmson O. J. and Warnock G. J. editors, 'Truth' in *Philosophical Papers*, Oxford: Oxford University Press.
- Baldwin, T., 2018, Glanzberg M. (Editor), 'Truth in British idealism and its analytic critics' in *The Oxford Handbook of Truth*. pp. 125-149, United Kingdom: Oxford University Press.
- Bateson, G., 1973, *Steps To An Ecology Of Mind*, New York: Balantine Books.
- Bennington G., 1988, *Lyotard Writing the event*, United Kingdom: Manchester University Press.
- Billard, A. and Dautenhahn, K., 1999, 'Experiments in Learning by Imitation Grounding and Use of Communication in Robotic Agents', *Adaptive Behaviour*, vol. 7, pp. 411-434.
- Beavers, A.F., Jones, D., 2014, 'Philosophy in the Age of Information: A Symposium on Luciano Floridi's The Philosophy of Information', *Minds & Machines*, vol. 24, 1–3. <https://doi.org/10.1007/s11023-013-9330-6>

- Blanshard, B., 2002, *The Nature of Thought*, vol. 1. London: Routledge.
- Bradley, F. H., 2012, *Essays on Truth and Reality*, Cambridge: Cambridge University Press.
- Bielecka K., 2015, 'Why Taddeo and Floridi did not solve the symbol grounding problem', *Journal of Experimental & Theoretical Artificial Intelligence*, volume: 27, issue: 1, pp. 79-93, DOI: [10.1080/0952813X.2014.940138](https://doi.org/10.1080/0952813X.2014.940138).
- Cubek R., Ertel W., Palm G., 2015, 'A Critical Review on the Symbol Grounding Problem as an Issue of Autonomous Agents' in Hölldobler S., , Peñaloza R., Rudolph S. (eds) *KI 2015: Advances in Artificial Intelligence*. KI 2015. Lecture Notes in Computer Science, vol 9324. Springer, Cham.  
[https://doi.org/10.1007/978-3-319-24489-1\\_21](https://doi.org/10.1007/978-3-319-24489-1_21)
- Candlish S. and Damnjanovic N., 2010, "The Coherence Theory of Truth: Russell's Worst Invention?" in *Signs, Minds and Actions*, pp. 13-22. Access: <https://doi.org/10.1515/9783110330571.13>.
- Cohen, L. J., 1978, 'The Coherence Theory of Truth' in *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition*, vol. 34(4), pp. 351–360.
- Damnjanovic N., Candlish S., 2013, 'The Myth of the Coherence Theory of Truth'. In Textor M. (eds) *Judgement and Truth in Early Analytic Philosophy and Phenomenology. History of Analytic Philosophy*. Palgrave Macmillan, London.
- Davis, G. B., and Olson, M. H., 1985, *Management Information Systems: Conceptual Foundations, Structure, and Development*, 2nd edition, New York: McGraw-Hill.

- Davidsson, P., 1993, 'Toward a General Solution to the Symbol Grounding Problem: Combining Machine Learning and Computer Vision' in *AAAI Fall Symposium Series, Machine Learning in Computer Vision: What, Why and How*, pp. 157-161.
- Dummett, M., 1982, 'Realism', *Synthese*, vol. 52, pp. 55-112.
- Dodig-Crnkovic, G. & Hofkirchner, W., 2011, 'Floridi's "Open Problems in Philosophy of Information", Ten Years Later.' *Information 2* Vol. 2 pp. 327-359.
- Douglas O., 1977, "Truth and Redundancy." *Mind*, vol. 86, no. 343, pp. 333-344.
- Floridi, L. 2013, *Philosophy of Information*. United Kingdom: Oxford University Press.
- Fox, C. J., 2007, *Introduction to Software Engineering Design*, London: Pearson.
- Formigari, L., 2004, *A History of Language Philosophies*, Amsterdam: John Benjamins Publishers.
- Geach, P. T., 1956, 'Good and Evil', *Analysis*, vol. 17, pp. 33-42.
- Hamlyn, D. W., 1962, "The Correspondence Theory of Truth." *The Philosophical Quarterly*, vol. 12, no. 48, pp. 193-205.
- Heil, J., 2003, 'Levels of Reality', *Ratio*, vol. 16(3), pp. 205-221.
- Hempel, Carl G., 1935, "On the Logical Positivists' Theory of Truth." *Analysis*, vol. 2, no. 4, pp. 49-59.
- James, W., 1922, *Pragmatism: A New Name For Some Old Ways Of Thinking*, London: Longmans, Green and CO.
- Jeffrey, R. C., 1990, *The Logic of Decision*, Chicago: University of Chicago Press.
- Joachim, H., 1906, *The Nature of Truth*, New York: Greenwood Press.
- Johnson, Ch., 2003, "Closing the Question About the Open Question Argument or: What Geach Kant Do, and Much Much Moore!" Access:

<http://charleswjohnson.name/essays/closing-the-question-about-the-open-question-argument#johnson20030110as>.

- Lewis, D., 2001, “Forget about the 'Correspondence Theory of Truth'.” *Analysis*, vol. 61, no. 4, pp. 275–280.
- Lozinskii E., 1994, ‘Information and Evidence in Logic Systems’, *Journal of the American Theoretical Artificial Intelligence*, vol. 6, pp. 163-193.
- Lucey, T., 1991, *Management Information Systems*, London: DP Publications.
- Luotonen, A., 1998, *Web Proxy Servers*, Upper Saddle River, NJ: Prentice Hall PTR.
- Lundgren, 2015. B. The Information Liar Paradox: A Problem for Floridi’s RSDI Definition. *Philos. Technol.* 28, 323–327 (2015).
- Lyotard, J. F., 2004, *The Postmodern Condition: A Report on Knowledge*. United Kingdom: Manchester University Press.
- Lyotard, J. F., 2002, *The Differend: Phrases in Dispute*, USA: University of Minnesota Press.
- Lyotard, J. F., and Thebaud J. L., 1999, *Just Gaming*, USA: University of Minnesota Press.
- MacKay, D., 1969, *Information, Mechanism and Meaning*, London: MIT Press.
- Mayo, M., 2003, ‘Symbol Grounding and Its Implication for Artificial Intelligence’, *Twenty-Sixth Australian Computer Science Conference, ACSC2003* (Adelaide, Australia, pp. 55-60.
- Mingers, J., 1997, ‘The Nature of Information and Its Relationship to Meaning’ in Winder R. L. *et al*, eds, *Philosophical Aspects of Information Systems*, pp. 73-84, London: Taylor and Francis.

- Misak, J. C., 2004, *Truth and the End of Inquiry: A Peircean Account of Truth* (expanded edition), New York: Oxford University Press..
- Newell, A., 1990, *Unified Theories of Cognition*, London: Harvard University Press.
- Odegard, P., 1997, 'Truth and Redundancy', *Mind*, vol. 86(343), pp. 333-344.
- Oaklander, L. N., & Miracchi, S., 1980, 'Russell, Negative Facts, and Ontology' *Philosophy of Science*, vol. 47(3), pp. 434–455.
- Patterson, D., 2003, "What Is a Correspondence Theory of Truth?" *Synthese*, vol. 137, no. 3, pp. 421–444.
- Peirce S. C., 1878, "How to Make Our Ideas Clear" in *Popular Science Monthly*, Vol 12. pp. 286-302.
- Peirce S. C., 1955, 'The Scientific Attitude and Fallibilism' in Buchler, J., ed., *Philosophical Writings of Peirce*, New York: Dover.
- Putnam, H., 1981, *Reason, Truth and History*, Cambridge: Cambridge University Press.
- Quine, W. V., 2013, *Word and Object*, USA: MIT Press.
- Rorty, R., 1998, *Truth and Progress: Philosophical Papers*, United Kingdom: Cambridge University Press.
- Rorty, R., 1990, *Objectivity, Relativism, and Truth: Philosophical Papers*, Cambridge: Cambridge University Press.
- Rosenberg, J. F., 1972, 'Russell on Negative Facts' *Noûs*, vol. 6(1), pp. 27–40.
- Sellars, R. W., 1941, "A Correspondence Theory of Truth." *The Journal of Philosophy*, vol. 38, no. 24, pp. 645–654.
- Schaffer, J., 2003, 'Structural Realism, Again', *Synthese*, vol. 136(1), pp. 127-133.
- Schehr, L., 2001, 'Lyotard's Codpiece', *Yale French Studies*, number 99, pp. 62-76.

- Schmitt, F., 1995, *Truth: A Primer*, Boulder, CO: Westview Press.
- Shannon, C., 1948, 'A mathematical theory of communication' in *The Bell System Technical Journal*, volume: 27, issue: 3, pp. 379 - 423.
- Silver G. A., and Silver, M. L., 1989, *Systems Analysis and Design*, Reading, Mass.: Addison-Wesley.
- Snowdon, P. and Gomes, A., 2019, "Peter Frederick Strawson" in *The Stanford Encyclopedia of Philosophy*, Zalta E. N. (ed.), URL = <https://plato.stanford.edu/archives/spr2019/entries/strawson/>.
- Steels, L., 2008, 'The symbol grounding problem has been solved. So what's next?' in *Symbols and Embodiment: Debates on Meaning and Cognition*, pp. 223-244. Oxford: Oxford University Press, pp. 223-244.
- Strawson, P., 1964, 'Identifying Reference and Truth-Value', *Theoria*, vol. 30, pp. 96-118.
- Sun, R., 2000, 'Symbol Grounding: A New Look at an Old Idea', *Philosophical Psychology*, vol. 13, pp. 149-172.
- Tarski, A., 1944, "The Semantic Conception of Truth: and the Foundations of Semantics." *Philosophy and Phenomenological Research*, vol. 4(3), pp. 341–376.
- Walker, R.C.S., 1989, *The Coherence Theory of Truth: Realism, anti-realism, idealism*, London and New York: Routledge.
- Warner, T., 1996, *Communication Skills for Information Systems*, London: Pitman Publishing.
- Westphal K.R., 1997, Harris, Hegel, and the Truth about Truth. In: Browning G.K. (eds) *Hegel's Phenomenology of Spirit: A Reappraisal*. International Archives of the

History of Ideas / Archives Internationales D'Histoire des Idées, vol 149. Springer, Dordrecht.

- Wheeler, J. A., 1990, 'Information, Physics, Quantum: The Search for Links', in W. H. Zureck, ed., *Complexity, Entropy, and the Physics of Information*, Addison-Wesley, Redwood City, pp. 354-368.
- Wiener, N., 1948, *Cybernetics: Or, Control And Communication In The Animal And The Machine*, New York : Paris: Wiley; Hermann et Cie.
- Wiener, N., 1950, *The Human Use of Human Beings: Cybernetics and Society*, London: Eyre and Spottiswoode.
- Williams J., 1998, *Lyotard Towards a Postmodern Philosophy*, United Kingdom: Polity Press.
- Williams J., 2005, *Understanding Postructuralism*, United Kingdom: Acumen.
- Wittermore, B. J., and Yovits, M. C., 1973, 'A Generalised Conceptual Development for the Analysis and Flow of Information', *Journal of the American Society for Information Science*, vol. 24(3), pp. 221-231.
- Woodward, A., 2016, 'Information and Event: Lyotard's Philosophy of Information.' *Lyotard and the Inhuman Condition : Reflections on Nihilism, Information, and Art*. pp. 41-73. Edinburgh: Edinburgh University Press.
- Woodward, A. 'Jean-François Lyotard (1924—1998)' in *Internet Encyclopedia of Philosophy*, ISSN 2161-0002, <https://www.iep.utm.edu/>, access date: 10-07-2020.
- Young, J., 1991, "Coherence, Anti-realism and the Vienna Circle" in *Synthese*, vol. 86, pp. 467–482.
- Young, J.O., 1995, *Global Anti-realism*, Aldershot: Avebury.

