Analogy and pattern recognition

Vitor Manuel Dinis Pereira[1]
[1]LanCog (Language, Mind and Cognition Research Group), Philosophy Centre, University of Lisbon
Lisbon, Portugal

Abstract - *I'll show in an initial section (1.) that the kind of analogy between life and information (argue for by authors such as [1], [2], [3] [4], [5], [6]) is like the design argument and that if the design argument is invalid, the argument to the effect that artificial mind may represents an expected advance in the life evolution in Universe is also unfounded and invalid. However, if we are prepared to admit (though we should not do) this method of reasoning as valid, I'll show in an second section (2.), that the analogy between life and information seems suggest some type of reductionism of life to information, but biology respectively chemistry or physics are not reductionist, contrary to what seems to be suggested by the analogy between life and information.*

Keywords: analogy, pattern, recognition, reductionism, life, information.

1 Introduction

The analogy between life and information - for example, pattern recognition, with hierarchical structure and suitable weightings for constituent features [5] - seems to be central to the effect that artificial mind may represents an expected advance in the life evolution in Universe, since information (namely, pattern recognition) is supposed to be the essence of mind and all information (namely, pattern recognition) is implemented by the same basic neural mechanisms. And since we can replicated these mechanisms in a machine, there is nothing to prevent us from set up an artificial mind—we just need to install the right pattern recognizers. (To create a mind, as argue by [5], we need to create a machine that recognizes patterns, such as letters and words. Consider: translate a paper. In despite the best efforts to develop artificial universal translators, we are still very far from being able to dispense the human correction of what we write in another language.)

However, this analogy is of the same kind of analogy involved in, for example, the argument from design.

1.1 The classic watchmaker analogy

The design argument presented and criticized, for example, by Hume in his Dialogues concerning natural religion (1779) [7], can be formulated as the classic watchmaker analogy as follows.

1. The clock for its complexity and the way is ordered, is a machine that has to have an intelligent author and builder, with proportional capacities to his work - the human watchmaker.
2. The world, for its complexity and the way is ordered, it is like a clock.
3. So, the world also has to have a smart author and builder, with proportional capacities to his work - the divine watchmaker (God).

Basically, this argument holds that, just as a clock before being built, we can assume the existence of an intelligent being who built it in a certain order, also for the world, we can assume the existence of an intelligent being who built it according with a specific purpose, given the similarities between a watch and the world. While in the first case the most plausible hypothesis for the builder of the clock would be a human watchmaker, in the second case the most plausible hypothesis for the builder of the world would be a "divine watchmaker" because only this could be capable of such a work.

This argument is an analogy, but, as we shall see below, raises several problems.

Consider: it is obvious that the world is complex, has an order and natural events have a regularity, yet the analogy with the watch is fragile, remote and reductive.

1.2 The classic watchmaker analogy is fragile, remote and reductive

Firstly, it is fragile, because while the clock is a perfect machine, the world is a "machine" full of imperfections and irregularities that go beyond their usual order or regularity.

Secondly, it is remote, because any similarities between the watch and the world can only be regarded as very distant similarities, only in some aspects - one can not say with certainty that the world order is similar to the order of the clock, because while we are sure, by experience, that the clock and their order were created according to a end, we have no certainty, for not having had any experience of this, that the world and its order were even created, much less that there are also in accordance with a end (that would be divine) and not just the natural accident (the latter explanation is, moreover, the scientific explanation).

Thirdly, it is a reductive analogy, because while the clock is a machine with a limited complexity to its small dimensions, the world is a "machine" not comparable to the dimensions of the watch, so that its complexity can not also be compared with the clock.

Now, an analogy can be established from an example that is similar in a relevant aspect - in the case of the watchmaker analogy, the example would be the clock and the relevant aspect would be the complexity of the clock comparable to the complexity of the world - and we have seen that the watchmaker analogy does not fulfil these conditions, we conclude that the analogy is not valid, so the argument is invalid and should not be considered as a good proof of the existence of God.

The analogy between mental life and information is of the same kind of analogy involved in the argument from design.

From the fact that there are mental operations as thought and intention in some parts of nature, particularly in humans and other animals, it does not follow that this may be the rule of the whole that is the nature that far exceeds parts as humans and other animals.

The analogy between life and information takes a part (information) by the whole (life).

The idea that a natural biological function of the brain is processing information has not been established empirically by cognitive neuroscience, is a metaphor. The concepts of "processing" and "information" are concepts of folk psychology that seems scientifically rigorous, but are not scientifically rigorous. Concepts as "pattern recognition" does not exhaust all mental activity: if any mental activity falls under the concept of "pattern recognition", is only part of the activity of the mind.

In what way does thinking co-occur with a stimulus and categorizing it? When I am thinking about Las Vegas while in Lisbon I am not recognizing any presented stimulus as Las Vegas —since I am not perceiving Las Vegas with my senses. There is no perceptual recognition going on at all in thinking about an absent object. So concepts as "pattern recognition", although some part of what there is to say about the nature of thought – as, when I am perceiving Las Vegas with my senses - is far from all there is to say about the nature of thought[1].

Reach to the explanation of the whole (nature, as in the discussion of the argument from design by Hume; life, as in the discussion of the analogy between life and information by authors such as [1], [2], [3] [4], [5], [6]) starting with just one part (humans and other animals, as in the discussion of the argument from design by Hume; information, as in the discussion of the analogy between life and information), without more, makes any of the arguments very weak:

to the effect of the existence of God (criticized by Hume); to the effect of the analogy between life and information (argue for by authors such as [1], [2], [3] [4], [5], [6]).

At the same time, as Hume says, if we are prepared to admit (though we should not do) this method of reasoning as valid, why then choose the part of nature that says more about us, and not another?

Or, as I says, why then choose the part of mental life that says more about perceptual cases and not emotion, imagination, reasoning, willing, intending, calculating, silently talking to oneself, feeling pain and pleasure, itches, and moods—the full life of the mind? Certainly they are nothing like the perceptual cases on which the analogy between life and information rest.

According to science, were natural events that, in a succession of chances (without any special or divine plan), although according to the "laws of nature", led to the creation of the world and existence as we know it.

Thus, even before being able to dream even with Darwinian theories and how they revolutionized scientific knowledge, Hume, through his character Philo, already had an objection to the argument from design that he could not imagine be one of scientific basis of the most devastating effects against such an argument from design - namely the watchmaker analogy.

Indeed, the hypothesis of Hume of a succession of chances, besides being more logical and plausible than the theistic hypothesis, is the that most closely matches Darwinian theories of evolution by natural selection, which would arise a century later (century XIX), as well as approaches all subsequent scientific discoveries, not only of biology, but also of chemistry, and physics, regarding the possible certainties we can have about the creation of the Universe.

2 The analogy between life and information seems suggest some type of reductionism

The analogy between life and information, if we are prepared to admit (suppose you do not agree with the previous section 1.) this method of reasoning as valid (though we should not do), seems suggest some type of reductionism of life to information.

However, biology respectively chemistry or physics is not reductionist, contrary to what seems to be suggested by the analogy between life and information.

2.1 Biological level

On the biological level, for example, molecular genetics cannot provide a derivation base for evolutionary biology ([8]; [9]) or even for classical genetics ([10]). Particularly, Kitcher ([10]) writes: ''the molecular derivation forfeits something important. [...] The molecular account objectively fails to explain because it cannot bring

[1] qz.com/2660/toyota-is-becoming-more-efficient-by-replacing-robots-with-humans/

out that feature of the situation which is highlighted in the [biological] cytological story''. Richard Lewontin (quoted in [11]), in its turn, claim: "Any textbook or popular lecture on genetics will say: 'The gene is a self-reproducing unit that determines a particular trait in an organism'. That description of genes as self-reproducing units which determine the organism contains two fundamental biological untruths: The gene is not self-replicating and it does not determine anything. I heard an eminent biologist at an important meeting of evolutionists say that if he had a large enough computer and could put the DNA sequence of an organism into the computer, the computer could 'compute' the organism. Now that simply is not true. Organisms don't even compute themselves from their own DNA. The organism is the consequence of the unique interaction between what it has inherited and the environment in which it is developing (cf. [12]; [13], [14]), which is even more complex because the environment is itself changed in the consequence of the development of the organism". So, as exemplified by these two quotes from people working in the field, biology are not reductionist.

2.2 Chemical level

Neither chemistry nor physics is reductionist. On the chemical level, for example, the reduction of chemistry to quantum mechanics ([15]; [16]) is a case of failed or incomplete reduction.

2.3 Physical level

And the presumed reductionism in physics is also not more successful than biology or chemistry, on physical level, for example, it is not always possible to combine models of gravitation and electromagnetic forces in a coherent way: they generate inconsistent or incoherent results when applied, for example, to dense matter. This is the main problem currently driving people working in search for a unified field theory.

3 Conclusions

Things out there are not representational, intentional mental states about them is that they are representational, but phenomenological, physical and functional characteristics of mental states (certain type of nerve cell activation co-occurring with our looking at the world) also are not representational, are sensations and experiences.

Cognitive mental states represent, but sensations not represent anything: if certain things out there stimulate nerve cells, are not these cells that representing things out there to being of such and such a manner.

Semantics is out there, things out there stimulate nerve cells, but the co-occurring configuration of these nerve cells with that stimulation, if claim to be "representational or informational or coding", is just a misuse and overuse of terms like "representation": neurons, their synapses, neurotransmitters, receptors molecular et al. are cellular organisms more than we can access because there is no information or representation to explain what in fact we felt and experienced.

The idea that neurons (their chemistry and physics) "encode" or represent "information" is wrong (cf. [17]). If neurons encode or represent, is starting to take for granted what is intended to show: there is no difference between saying that certain BOLD[2] (fMRI) or electroencephalogram (EEG) signal correlates with certain information and saying that certain BOLD (fMRI) or EEG signal is correlated with certain conscious mental states (phenomenal or access). What's there here is question-begging. A fallacy, because they assume "information", they study "consciousness": but someone already showed that neurons encode or represent?

The metaphor of information or of representation is a fallacy of the same kind: neurons neither encode nor represent anything or nothing: what the human voice is encoding or represent? Certain sound waves.

Expressions such as "neural code" are not neurons, are us talking about them. They are to be things out there, they are being represented by us, but they themselves are not representations. Expressions like "information" and "representation" can be eliminated, that what the relevant discipline says about neurons (and related) remains informative. And if "information" is a certain kind of frequency, the frequency is enough! We telephoned, the listener understands us. But we do not say that the signal between these devices, represent or encode or is information!

A book about oceans is not an ocean: we can bathe ourselves in parts of the ocean without have any concept of "ocean" or of "part", we can see red things without seeing that are red (not having the concept of "red ").

Having information about living organisms does not make this information living organisms – they can be "automata" (Descartes in 2nd of his Meditations on the First Philosophy, 1641, [19]). By definition an artificial, for example, plant (information about the way plants look like) is not a living organism, is not a plant. In the same vein, artificial mind is not mind and can not represent an expected advance in the life evolution in Universe in a way suggest by the analogy between life and information: but as a tool - héla! pattern recognition - can help us to have more information about humans and other animals perceptual cases.

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[2] Blood Oxygenation Level Dependent (for example, [18]).

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