On the Use and Misuse of Science in the Humanities: The Case of Culianu's Morphodynamics

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1. *Introduction*

For many in my generation, the collapse of communism in Romania in 1989, which we experienced as a liberation from a long period of dullness, corruption and injustice, was soon followed by the gradual rediscovery of the culturally resplendent interwar period, and especially of thinkers such as Mircea Eliade, Emil Cioran and Constantin Noica. Eliade was a particularly important figure for me. I was fascinated by his writings on exotic themes such as Babylonian alchemy, Zalmoxis, shamanism and yoga, and they prevented me, a student of philosophy, from adopting a too narrow, "Eurocentric" and rationalistic view of the human condition. Reading him, I felt that I could understand and empathise with people and cultures far removed from me in space and time. As he himself put it more than once,

the study of the history of religion and myth could lead us to a new and universal form of humanism.

But then I came to realise, not without hesitancy, that my hero, the defender of universal humanism, had also been a follower of the most parochial and anti-Semitic of all fascist movements, the Iron Guard.[1] This contradiction was difficult to reconcile. Moreover, closer study of his works, including his *Patterns in Comparative Religion* (first published 1949, translation 1958), gave rise to doubts about the 'phenomenological method' Eliade was claiming to employ. Apart from a few rather general notions, such as *the sacred* and *the profane*, *hierophany*, *axis mundi*, *illo tempore*, *coincidentia oppositorum*, occurring with predictable regularity throughout his works, Eliade's 'method' seemed to consist simply in presenting to us his vast knowledge about religions and myths in an accessible language, comparing, contrasting and likening them to one another as he saw it fit. His references to Husserl, Heidegger and even to van der Leeuw seemed to me to be more of a way of paying lip service to the idea of a phenomenology of religion understood as a strict science (to borrow from Husserl). The closest he came to a methodological elaboration was in *The Quest* (Eliade 1969), but he never delivered the systematic treatise he promised on the topic. Although I have no proof, I wonder whether this 'failure' was merely accidental. Given his broadly phenomenological-hermeneutic outlook, Eliade could not have written a rigorous methodological treatise. For, as I later came to realise, all we can do in the humanities is to *describe and understand* various phenomena

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[1] My encounter with Norman Manea helped me a great deal in understanding the extent of Eliade's political failures. See *Curierul de est* (Manea & Kanterian 2010).

of human history, culture and religion, but not to explain them (away) by means of scientific theories.

In search of a more systematic approach to religion, I came across Culianu's work, and was intrigued. Here appeared to be a very systematic intellect at work, transforming Eliade's loose phenomenology into a more rigorous framework by incorporating more recent developments in the study of the mind, philosophy, game theory, and even in hard sciences such as mathematics and physics. His attempt at transforming the study of religion, moving from mere morphology to rigorous morphodynamics seemed promising. Needless to say, his intransigent attitude towards the barbaric Iron Guard and the nefarious post-Communist elites in Romania after 1989 also appealed to me. I was and still am deeply moved by his tragic death.

But as I delved deeper into Culianu's writings, curiosity gave room to perplexity, perplexity to doubt, and doubt finally to disappointment. Culianu's theory of *morphodynamics* struck me as a badly argued account of religion and its history, relying on questionable arguments and sources. His breathtakingly ambitious claim to have discovered the universal mechanism of human history and the human mind began to look to me like a feeble assertion, built on *un château de cartes*. In what follows I will try to give some reasons for this admittedly harsh verdict. My discussion will not focus on his historical and empirical claims, but on general issues of philosophical and conceptual nature.[2] But, out

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[2] As I am not a historian of religions, I am in no position to assess Culianu's empirical work. I am aware, however, that his morphodynamical approach never caught on in the field. The initial reviews of his books, especially *Eros and Magic in the Renaissance* and *The Tree of Gnosis*, pub-

of fairness, I will first give, in section 2, a neutral and hopefully accurate overview over Culianu's theory. To this end, I will focus on the posthumously published *The Tree of Gnosis* (Culianu 1992), the most up-to-date articulation of his theory of morphodynamics. The most relevant parts of this book for my discussion are the foreword, the introduction, chapter 10 ("The Tree of Gnosis") and the epilogue ("Games People Play").[3]

2. Morphodynamics in The Tree of Gnosis

2.1 Culianu's general aims

The Tree of Gnosis is at first sight a book about a specific topic in the history of religions. In fact, the goal of the book is more ambitious. As the preface makes clear, the investigation of gnosis only serves as one among several possible entry points into a much more general theoretical project. This project can be characterised by four general aims. These are (a) to give a precise, scientific definition

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lished by experts in the field, were rather critical. See for example: Bornstein 1989, Burke 1990, Webster 1990, Desjardins 1993, Segal 1994. For more sympathetic discussions, see the various contributions in Antohi 2003a. But note also the reservations Sorin Antohi himself raises about Culianu's grand claims in his introduction to this collection. See Antohi 2003b: 26ff., also Antohi 2002. For other detailed accounts of gnosticism, see Rudolph 1983, Churton 1987, Filoramo 1990, King 2005.

[3] Other relevant writings include *The Eliade Guide to World Religions* (1991), *Out of this World* (1991), and various articles, e.g. Culianu 1990a and Culianu 1991a. They are collected, in Romanian translation, in the excellent volume *Jocurile minții* (2002), put together by Sorin Antohi (Antohi 2002).

of history, (b) to integrate this definition into a general account of the human mind, i.e. morphodynamics[4], (c) to apply this account of the human mind to all intellectual human enterprises, including religion, literature, science and philosophy, and (d) to use the proposed account of history and the mind to predict history, e.g. future cultural and intellectual developments. In *The Tree of Gnosis* Culianu articulates in some detail points (a) and (b), makes general remarks about (c), and only intimates (d).

Did Culianu also think that his account could predict the events of real history, say demographic developments, wars, the course of the economy and the stock markets, the rise to power of certain political leaders and ideologies, results in sports, etc.? In other words: did Culianu believe that his grand theory was completely deterministic, in the sense that for somebody (Laplace's demon) who had full information about the state of mankind at a certain point in time it would be possible to predict all its future states? This is nothing he explicitly asserts. But it seems that such a determinism is at least compatible with, or maybe even an intended consequence of, his theory of mind and history.

2.2 Defining gnosticism

Culianu starts with a desideratum:

Our modern view of history is vague and outdated. It is in need of radical revision in the light of what is occurring in more sophisticated areas of knowledge, whose

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[4] Note that the term has its established currency in geology, where it refers to the study of the morphology of changing surfaces.

worldview started changing a hundred years ago. The discipline of history failed to join this trend [...]. This is an embarrassing situation.[5]

As a remedy to this desideratum, Culianu offers his own definition of history: "history is the integrated morphodynamics of ideal objects".[6] What then is morphodynamics? What are ideal objects? And what argument supports this definition?

The argument begins with three empirical desiderata, as applied to gnosticism.[7] Historians of religion have failed to account for, first, the historical origins of gnosticism (whether it was a Christian heresy or originated in pre-Christian times,[8] second, the historical development of gnosticism, as "one school of thought", and temporal succession of gnostic doctrines ("messy", unpredictable), and, third, the great diversity of gnostic doctrines, which can't be subsumed under one unifying definition, a "definition by invariants" (xiv). For "not all gnostics were anti-cosmic, encratite, or docetist; not all of them believed in the Demiurge of this world or even that this world was evil, and not

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[5] Couliano 1992: xiv, xi.

[6] Couliano 1992: 21.

[7] Culianu seems to use this term in two ways, as denoting either all dualistic systems or gnostic dualisms in Europe from the 1st century to the Cathars in the 15th century (see his chp. 1), or just the first dualistic movement in this series (xiii). Since Culianu considers the subsequent dualistic systems (such as Marcionism and Manichaeism) to be merely modifications of gnosticism taken in this second sense (xvf.), I will use 'gnosticism' in the first sense, as an umbrella term.

[8] Couliano 1992: xiii–xiv.

all of them believed in metensomatosis or reincarnation of the preexistent soul."[9]

It appears that the "gnostics were free to believe in anything they wanted and its contrary."[10] It is pointless, therefore, to study their writings to discover a shared doctrinal core, a set of ideological invariants. What we need to investigate instead are the ways in which the gnostics arrived at their random creeds. For this reason, Culianu suggests a fundamental shift in our investigative focus, away from *historical* and *doctrinal* questions, and towards a *systemic* perspective of gnosticism. According to this perspective, "Gnosticism is not a monolithic doctrine but simply a set of transformations belonging to a multidimensional, variable system that allows room for illimitable variation."[11]

2.3 Some analogies

We can use some simple analogies here to understand Culianu's proposal. Think, for example, of the game of chess. Chess does not consist, or express, any doctrine, but consists of a set or collection of rules specifying permissible moves of its figures on the board, and of a few other rules (e.g. about the starting position, checking, pawn promotion, taking turns, ending the game). Evidently, these rules allow for great, although not illimitable, variation.[12] If by

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[9] Couliano 1992: xiv. An encratite person is an abstainer or an ascetic. A docetist is somebody who believes that Christ's body was not human, but a phantasm.

[10] Couliano 1992: xv.

[11] Couliano 1992: xiv.

[12] The so-called Shannon number of chess, a well-known estimate of the number of possible games of chess, is 10^{120}.

the rules specifying permissible moves on the board we understand rules of transformation (from one given configuration of the figures to another configuration), we obtain a close analogy to Culianu's description of gnosticism. Take another example, the traffic rules in the United Kingdom, e.g. how to enter and leave a roundabout with a car. Here too we can speak of certain rules as forming a set or collection, and here too there is no point in trying to figure out what doctrine these rules are expressing. While it may be a bit more difficult to fit the notion of "transformations" into this example, it is clear that these traffic rules do allow for a great, maybe even an indefinite, number of variations (although, again, they are not illimitable).

I will offer one more analogy. Think of a very simple version of English, with the standard grammar and a limited vocabulary, consisting of just two nouns, "duck" and "goose", two predicates, "chases" and "does not chase", and the definite article "the". All propositions in this language are of the form "The [$Noun_1$] [Predicate] the [$Noun_2$]". We generate its propositions by flipping a coin three times. If the first coin shows head, the $Noun_1$ position is filled by "duck", if it shows tail, by "goose", and the same for the $Noun_2$ position. In the predicate position we write "chases" if the coin shows head, otherwise "does not chase". Thus, we obtain for, say, Head-Head-Tail the proposition: *The duck chases the goose*. And for Head-Tail-Tail the proposition: *The duck does not chase the goose*. We can also add the convention that, for the purposes of the game, whatever proposition this simple language mechanism will generate we shall "believe" or claim to believe. We can call this language mechanism "Simplenglish". Simplenglish allows

room for some variability, but it is much more limited than in the previous two cases; the mechanism can generate exactly eight propositions (2^3). In this respect Simplenglish is less akin to what Culianu describes as the essence of gnosticism. We could, of course, create a much more complex language mechanism, with a much higher number of combinatorial possibilities. At any rate, in another respect Simplenglish is certainly closer to what Culianu takes to be gnosticism. The generative rules of Simplenglish obviously do not express a doctrine. Nor does the question of truth arise for any *proposition* thereby generated, at least not in the sense that the generative mechanism itself gives us any ground to believe that the generated proposition is true. The question of the truth of any proposition Simplenglish generates simply does not arise, if we stick just to playing the game of Simplenglish. Moreover, the question of truth also does not arise for the ensemble (the "doctrine" or "dogma" formed out) of the eight possible propositions of Simplenglish.

It is now clear how Culianu wants his account of gnosticism to be understood. Just as what we call "Simplenglish" does not stand for any individual proposition or set of propositions that the language mechanism may generate in a particular round of the game, what we call "gnosticism" does not stand for any doctrine either, a doctrine expressible by a proposition or a number of propositions. In each case, the generic label, "Simplenglish" or "gnosticism", stands rather for the entirety of the rules of the generation of certain propositions and their contraries, which the speakers of Simplenglish and the gnostics respectively are free to believe or not believe. I will come back to this random

and non-committal aspect of such games or systems, which Culianu calls *mind games*. But first, let us obtain a fuller picture of his theory of morphodynamics.

2.4 The ontological dimension

Culianu underpins his account of mind games with a sort of ontological theory. He claims that systems, or "ideas that form systems", are *ideal objects*. They exist in their own logical dimension, and they are "fractalic in nature" (3, 7). What is an ideal object? Culianu uses an analogy to explain this, taken from E. A. Abbott's novel *Flatland* (1884).[13] Imagine a world with only two spatial dimensions, say the surface of a soup, with only two-dimensional objects existing in it, the circles of oil.[14] The inhabitants of this world, the Souplanders, would only have knowledge and understanding of spatial relations in their world and not of three-dimensional spatial relations. Souplanders can perceive only lines and can move only left-right and forward-backward, not up-down, a direction which is meaningless to them (2). They perceive each other as lines, and are unable to perceive us in our three-dimensional world. If we dig a spoon all the way into the soup, Souplanders will not perceive the spoon as such, but only a series of two-dimensional phenomena

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[13] Culianu seems to have come across *Flatland* through Rudy Rucker, a mathematician, computer scientist and science fiction writer. Some of Rucker's theoretical books were the main source of inspiration of Culianu's morphodynamics. They are referred to in key passages of Couliano 1992, and especially also in the programmatic first chapter "A Historian's Kit for the Fourth Dimension", in Couliano 1991b.

[14] Strictly speaking, real circles of oil on the surface of a soup are not two-dimensional. But let us ignore this, for the sake of the argument.

in time; first a small line which appears out of nowhere, expands, and then contracts again (if the spoon has an elliptical shape). The Souplanders would have no explanation for these occurrences. Only a genius Souplander might one day make the appropriate calculations to postulate a third, unperceivable dimension, populated with objects unknown to the Souplanders. Maybe Souplanders would assume that this higher dimension "is just a mathematical fiction that serves as a heuristic device" (3).

Culianu suggests that just as our three-dimensional world relates to two-dimensional Soupland, so a four-dimensional world would also relate to our three-dimensional world. And according to Einstein there is a fourth dimension. Objects unknown to us (can be postulated to) exist in this fourth dimension, and "become understandable only when they are recognized as such *in their own dimension*" (2). We can only perceive their three dimensions, when they interact with our world, in the way in which three-dimensional objects interact with the two-dimensional surface of the soup on which the Souplanders live. When those four-dimensional objects enter our world, we perceive them as a series of phenomena in time. But this does not mean that these objects really are a sequence of events, just like the spoon dipped into the soup is not a sequence of events, with some occurring later than others. The tip and end of the spoon are synchronous, existing at the same time.[15]

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[15] Note that this can be said of physical objects in relativistic physics only if they belong (are defined to belong) to the same inertial frame of reference. I ignore this complication here, although it is in tension with Culianu's references to Einstein.

In Culianu's view, systems of ideas, or mind games, such as gnosticism, are four-dimensional atemporal objects. He writes: "Ideas form systems that can be envisaged as 'ideal objects'. These ideal objects cross the surface of history called time as the spoon crosses Soupland, that is, in an apparently unpredictable sequence of temporal events" (3). This, in his view, explains why historians have not been able to make sense of the origins and "chaotic" evolution of gnosticism; gnosticism is to us what the spoon is to the Souplanders. More generally, any phenomenon of the history of religions, indeed any historical phenomenon, and therefore history as such, is to us what the process of dipping the spoon into the soup is to the Souplanders. Any historical phenomenon is a four-dimensional synchronous ideal object, which only *appears* to us to have a temporal structure, because we cannot take it in at a glance, but only to the extent to which bits of it enter, at different points in time, our three-dimensional world. I am not sure whether Culianu says this explicitly, but what is implied by this view is that the only things that can be said to have a temporal structure are the acts or episodes of entering of the ideal object into our world and our acts of perceiving this process.

Incidentally, we understand now why Culianu rejects both Lévi-Strauss's structuralism and Eliade's phenomenology (5). On the structuralist view, religion codifies social relations. But for Culianu gnosticism is an abstract, atemporal system of ideas, which, one could add, does not have the historicity that social relations have. Phenomenology, in turn, can't explain the historical development of religion, and it also postulates inexplicable, basic patterns of religion

(the sacred and the profane, *axis mundi*, *illo tempore*, etc.).
Morphodynamics appears to fare better on both accounts.

Gnosticism, then, is a four-dimensional system of ideas,
an ideal object, a "logical spoon". Of course, we want to
know *which* system of ideas gnosticism is, for else we would
not be able to distinguish gnosticism from other systems of
ideas, such as Christology (which Culianu also discusses).
There must be something specific about the ideal object
that gnosticism is. Culianu's answer seems to be that gnos-
ticism is the combination of (a) certain given premises and
(b) the transformation rules characterising any system of
ideas. Culianu mentions, in the foreword,[16] two principles
which he takes to be central concerns of any culture, the
principle of ecosystemic intelligence (the universe has an
intelligent and good cause) and the anthropic principle
(there is a certain fit or commensurability between humans
and the universe). The basic feature of gnostic doctrines is
the rejection of at least one of these two principles, and in
the extreme of both, as in the early version of gnosticism:
"even when the gnostic Demiurge is fairly good, he remains
inferior and ignorant, while human beings do not belong
to this world."[17]

2.5 The computational dimension

Having explained the *differentia specifica* of gnosticism,
it remains to elucidate the transformation rules. This is
crucial, for once identified, we will be able to explain the
perplexing complexity of gnostic ideas by tracing them, by

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[16] Couliano 1992: xv.
[17] Couliano 1992: xv.

means of the rules generating them, back to their point of departure.

Culianu finds these rules in a basic trait of human existence, the fact that we make decisions by the logic of Yes/No. He offers the example of a gangster in Chicago in the 1930s, who apparently was making all his decisions by flipping a coin.[18] Heads meant Yes, tails No. But we can have more complicated decisions, Culianu suggests, by tossing the coins twice or three times, etc. The computational process of these decisions all follow the binary logic of Yes/No (or +/-). All the human mind does in fact, Culianu claims, is to carry out computations in this binary logic, but at such a speed that we don't recognise them as such in everyday life. Our minds are essentially computers, and "religion, like philosophy, science, and even literature" are all computational processes.[19]

According to Culianu, this account of the mind allows us to explain the complexity of gnostic doctrines as the result of a computational process based on simple Yes/No rules. The more Yes/No decisions we add, the more possible outcomes we obtain. For two such decisions, we have four possible outcomes, Yes-Yes, Yes-No, No-Yes, No-No. For three, we have eight, etc. (for any sequence of n decisions, we will have 2^n combinatorial possibilities). Each of these possible outcomes can be seen as a branch, and the totality of possibilities can be displayed as a tree,[20] starting with two branches, each dividing into two more branches, etc. The

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[18] Couliano 1992: 239. Culianu does not tell us who this gangster was. I was unable to find information about this man.

[19] Couliano 1992: 239.

[20] cf. Couliano 1992: 242.

generation of a specific gnostic doctrine, say Marcionism,[21] is one branch on this tree, the result of a random process of a (finite? infinite?) number of Yes/No decisions that take their point from of departure the basic assumptions of gnosticism mentioned above. For example, starting with a No to the assertion "There is only one god" (there are two), we then say Yes to the assertion "One of the two gods is inferior to the other", Yes to "The world was created by one god only", Yes to "This world contains evil", and finally No to "The superior god created the world." This gives us Marcion's doctrine that this (fallen) world was created by an evil demiurge, while the superior good God does not belong to this world.[22]

Culianu stresses that the truth of gnostic doctrines cannot be decided, indeed, that they don't have any truth content.[23] They were just random results of mind games played by the gnostics, similar to the coin flipping by the Chicago gangster.[24] This conclusion applies to *all other systems of ideas* as well, for example to Christianity:

> The main theological debates that led to the establishment of Christian doctrine were mind games people played with one another for centuries, mind games not unlike chess (only perhaps less complex), which should not have had any consequences for the parties involved and could not be won, unlike chess […]. Yet they nevertheless accomplished the moral and physical destruction

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[21] Couliano 1992: ch. 6.

[22] See Couliano & Eliade 1990: ch. 12.4

[23] Culianu explains this already in Couliano 1990: ch. III.7.

[24] Couliano 1992: 240.

of many […]. Likewise Western dualism was a mind game.[25]

Of course, the game character of gnosticism and dualism did not prevent opponents from taking it very seriously, leading to persecution and destruction, as in the case of the Cathars.[26] The tragedy here was that the game of gnosticism, in itself a purely random game, issuing neither true nor false statements, interfered with the game of power, which was an altogether different game.[27]

2.6 An illustration: the tree of Christology

Although gnosticism is an ideal object with branches bifurcating according to binary logic, surprisingly Culianu does not offer a diagram of the resulting tree in the *Tree of Gnosis*, but only a number of distinctions which could be used to draw such as diagram (e.g. "The God of the Book of Genesis created absolutely everything" versus "Some things were uncreated, e.g. the abyss and the waters" versus "Something other than the God of the Book of Genesis created everything"[28]). He does offer, however, the tree diagram of another ideal object or mind game, that of Christology, i.e. the doctrine concerning the nature of Christ.[29] I reproduce it here:

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[25] Couliano 1992: 267.
[26] Couliano 1992: 240.
[27] Couliano 1992: 240.
[28] Cf. Couliano 1992: 245.
[29] Couliano 1992: 15.
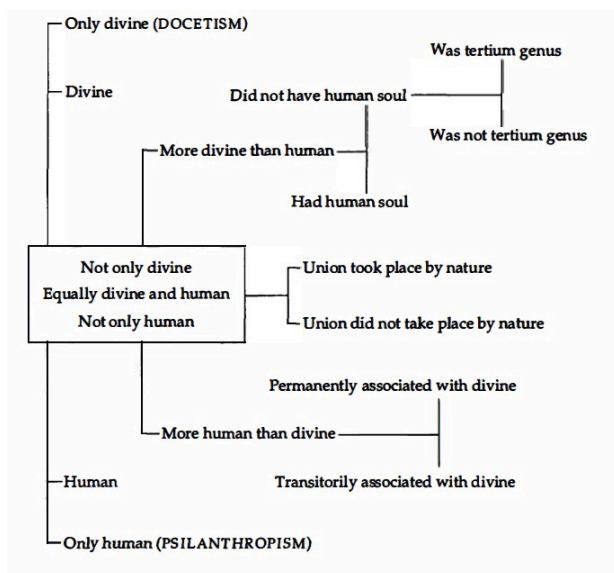
Culianu comments as follows:

Christology, if interpreted as a viable whole, is not the succession of anarchic, unrelated events in time but a system made of binary switches that, much like the spoon in Soupland, crosses time in an unpredictable sequence. […] Ideal objects exist in their logical space, and their morphodynamics is the correct approach to the comprehensive understanding of history.[30]

Of course, the mere description of these ideal objects, for instance of which nodes divide up into which branches,[31]

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[30] Couliano 1992: 16.

[31] E.g. the node "More human than divine" branches off into "Permanently associated with divine" and "Transitorily associated with divine."

only gives us morphology. To get to history, we have to integrate these descriptions "into a dynamic process of extraordinary proportions that is the temporal interaction of such systems, a process with an infinite number of dimensions."[32] This gives us *morphodynamics*, "the study of events in spacetime."[33] In Soupland, morphodynamics would amount to the description, by the Souplanders, of what they perceive through time, in two dimensions, when the spoon is gradually entering the soup. Thus, morphodynamics, unlike morphology, does not merely describe, from a static point of view, the complex structure of an ideal object, but its interaction with our world, in time.

As mentioned, Culianu believes that morphodynamics applies to all systems of thought. His final, grand claim runs as follows:

> With complex data at hand, we should be able to demonstrate that portions of the map of the Buddhist system would overlap with portions of the Christian system with portions of German idealism with portions of modern scientific thought, because all systems are infinite and tend to explore all possibilities given to them. Accordingly, when sufficiently extended, their maps of reality would certainly coincide.[34]

Culianu's attempt to turn the study of religion into a more precise and scientific enterprise, by combining it with insights from modern physics, mathematics, game theory, biology and recent theories of cognition, is certainly

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[32] Couliano 1992: xii.
[33] Couliano 1992: xii.
[34] Couliano 1992: 268.

impressive and daring. Nevertheless, his morphodynamics suffers of numerous shortcomings. I will now present those that strike me as the most serious.

3. Culianu's sources

It is strange that a theory which aims to have such far reaching philosophical consequences, concerning the nature of history and the mind, is based on a rather meagre exploration of actual philosophical literature. In the continental philosophical tradition, there are many sophisticated accounts of the nature of history, whether in e.g. Hegel, Dilthey, Heidegger or Cassirer. Hegel and Heidegger (and Hans Jonas and Jacob Taubes) are briefly mentioned in *The Tree of Gnosis*,[35] but only in the context of a discussion of various approaches to gnosticism.[36] The philosophy of history also became an important branch in analytic philosophy, the dominant current in Anglophone philosophy in the 20th century. Especially in the first decades after the Second World War, partly overlapping with Culianu's formative period, the philosophy of history became a serious concern for a good number of analytic philosophers.

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[35] Couliano 1992: ch. 11.

[36] There is one reference to Heidegger's account of history, as it influenced Taubes, but it is rather anecdotal, with Heidegger being described as "a great lover of puns" (256f.). Culianu also mentions Goethe, but only to reject his idea of the "archetypal plant" (*Urpflanze*), as it can't account for historical or dynamical transformations, just like Lévi-Strauss's and Eliade's approaches (4ff.). It seems to me that Goethe's idea can be made good use of in the humanistic disciplines. There are certainly affinities here between Goethe and Wittgenstein, another important anti-reductivist. See Rowe 1991.

Nevertheless, one will look in vain for names such as W. H. Walsh, William Dray, Charles Taylor, G. H. von Wright or Arthur Danto in Culianu's writings.[37]

Instead of an engagement with these genuinely philosophical traditions, Culianu takes his inspiration from more questionable sources, for example from a fantasy novel, E. A. Abbott's *Flatland*, from the mathematical speculations on "the fourth dimension" by C. H. Hinton, a somewhat puckish character, and from Rudy Rucker, a popular science author, science fiction writer and inventor of "cyberpunk". Take Rucker, an author prone to make the boundary between science and science fiction all too permeable. Here are, at random, two statements by him: "Set theory is, indeed, the science of the Mindscape. A set is the form of a possible thought"; "The world can be resolved into digital bits, with each bit made of smaller bits."[38] Rucker's books are littered with this sort of phantasmagorical statements. They may look impressive and scientific to the untrained reader, but are often covert nonsense. Which possible thought is {1, 2} the form of? Of the thought "1 is followed by 2"? This is of course a different thought from "2 is followed by 1", since the first is true, but not the second. But the set {1, 2} and the set {2, 1} are one and the same set. Moreover, in set theoretic notation the "," does not stand for any verb or copula, so not for "is followed by" or any other such phrase. The standard notation for a set is not a *sentence*. Sets do not represent thoughts, or their "form" (whatever "the form of a thought" is supposed to mean). Furthermore, into what sort of "digital bits" can the law of gravity or an electron be

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[37] See references and discussion in von Wright 1971: 1ff.
[38] Rucker 1995:41, 1987: 313f.

resolved? And since there cannot be any computer processing an infinite amount of digital bits, what is even the *point* of using computational metaphors here?

Rucker tells us that the world is itself created out of a computation of inconceivable dimensions.[39] By which computer, we may ask? His seemingly triumphant answer is: by the world itself, which is just this computer. So the world is a computer that is creating itself by computation. This is, at best, to replace the word "world" (or "reality") with the word "computer", which is a gratuitous verbal trick, not making Rucker's claim true (the world is not creating itself). At worst, this is nonsense. A computer is made out of matter, which pre-exists the computer, and requires, in principle, a programme and a programmer, which also pre-exist the computer.

The same goes for Rucker's claim that the universe is a fractal object, which Culianu accepts.[40] Fractals are not objects in space and time, but mathematical structures. They can be given a visual representation, such as the famous "Mandelbrot Set", but the representation is always just an *approximation*, the result of a finite number of computations. (Further confusion is created here by calling both the mathematical structures *and* their visualisations "fractals"). *Some* fractals possess a certain property, self-similarity, which makes their visual representations particularly intriguing and beautiful. Now, there are certain *similarities* between these visual approximations of self-similar fractals and certain structures in reality, e.g. of ferns and coastal lines, which also can be *said* to be self-similar. Therefore,

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[39] Rucker 1987: 314.
[40] See fn. 47 below for a quote.

we can *model* such real structures by means of visualised fractals. *But only up to a point*. As the mathematician Ian Stewart explains:

> In a fractal model of a fern, each frond is made of smaller fronds, which in turn are made of even smaller ones, and this process *never stops*. In a real fern, it stops after four or five stages, at most. Nevertheless, the fractal is a better model than, say, a triangle. Just as an ellipsoid can be a better model of the Earth than a sphere.[41]

The crucial point here is that while fractals, or, to be more precise, their (finite) visualisations, can be used to model certain objects in nature, such a representation has its limits and in no way proves that reality itself is "fractalic", or, worse, is the result of fractal computations which "take place in nature". It is an essential feature of a model that it does not share all its features with the reality it represents. Rucker, and Culianu, overlook this important fact.[42] This has serious consequences for Culianu's claim that gnosticism, and systems of ideas in general, are just the result of infinite chains of computations or decisions. Culianu has not shown any such thing, and could not, given what I have just argued.

In *The Tree of Gnosis*, Culianu refers to other scientists as well, in particular to the pioneer of mathematical biology, D'Arcy Thompson (1860-1948). Very ingeniously,

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[41] Stewart 2017: 262f.

[42] For further criticism of Rucker, concerning his take on Gödel's (first) incompleteness theorem, see Franzén 2005: 115f., incidentally a reliable antidote, using Gödel's celebrated theorems as an example, against the general trait in our culture to saddle ill-understood theories (here concerning arithmetic and logic) with phantasmagorical interpretations.

Thompson had extended mathematical methods from the new discipline of topology to the study of biological forms and processes. For example, he showed how, through certain geometrical transformations (the "deformation" of the coordinate systems by means of which certain objects are depicted) we can pass from the cannon bone of the ox to the cannon bone of the sheep and of the giraffe. But what does the possibility of such a transformation show, we may ask? Given his Pythagorean inclinations, Culianu concludes that Thompson has shown that the cannon bone of the ox really *is* a geometrical transformation of the cannon bone of the giraffe or of the sheep, in other words that *nature has performed* this particular mathematical operation.[43] But despite his own Pythagorean inclinations, in his celebrated paper "Morphology and Mathematics" Thompson did not quite make this claim.[44] He simply juxtaposed the three examples of a particular bone, and demonstrated that through certain geometrical transformations we can obtain (the geometrical, idealised representation of) the cannon bone of the ox from, say, (the geometrical, idealised representation of) the cannon bone of the giraffe, *but also vice versa*. No direction of causation can be established through this method; the ox did not appear before the giraffe *because* we can transform, through a geometrical operation, a certain bone of the giraffe into a bone of the ox. For, again, we can also do the opposite. What Thompson's method does is to offer a mathematical *model* of certain real objects and of how they can be related to one another in geometrical terms. As I have already stressed, such a model is, like every model, an approximation to reality, not

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[43] Couliano 1992: 6.
[44] See Thompson 1915: 857, 863, 870.

the expression of its essence, an approximation which can be more or less useful, given certain overriding theoretical purposes. For example, if we can show that we only need a relatively simple geometrical transformation to pass from a certain order of mammals in the clade of Ungulata, the Perissodactyls (horses etc.), to another order, the Rodentia, and here more specifically to the family of Leporidae (rabbits etc.), then we may have good reason to infer that the Perissodactyls "are more closely related to the Leporidae than the former are to the other Ungulates, or than the Leporidae are to the rest of the Rodentia", which is precisely Thompson's conclusion, supported by the following visual juxtaposition:[45]
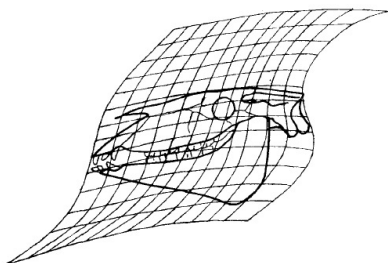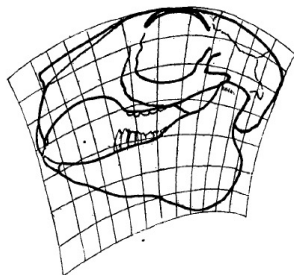

Fig. 60.—Horse's skull.

Fig. 61.—Rabbit's skull.

[45] Thompson 1915: 891f.

This would make horses and rabbits close relatives in evolutionary terms, even though it would still not establish that horses came *before* rabbits, or vice versa, i.e. that one descended from the other. But even Thompson's more modest conclusion is disputable, maybe even false. Today Leporidae such as rabbits are not classified as belonging to the order of Rodentia any longer, but rather to another order, of the Lagomorpha, and are considered to be evolutionarily quite distant from Perissodactyls, as are Rodentia. These insights are based on advances in molecular biology. Evidently, Thompson's morphodynamics, a term he himself employed, has its clear limitations. It does not help us, by itself, model history (evolution). It offers only a method of *visual* comparison and the establishment of *similarity* relations, which are themselves subservient to the aims and purposes of the scientist, and may need to be employed in combination with other methods to lead to reliable results.

Most importantly, the mathematical operations that allow us to transit from, say, Thompson's Fig. 60 to his Fig. 61, are not operations which are found *in* reality and are *literally* "performed by nature". To jump to this sort of claim is to confuse the features of our method of the representation of things with features of things.[46] Culianu seems to me to have too quickly and uncritically embraced a method introduced in a field far removed from his discipline, and moreover a method not without its own problems even when applied in its own "home domain", evolutionary biology. But even if Thompson's morphodynamics faced no challenges in biology, one fundamental

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[46] A confusion investigated and criticised, from different angles, by both Kant and Wittgenstein.

difference to Culianu's morphodynamics would still remain. Thompson's morphodynamics is fully *mathematizable*, and is underpinned by a sophisticated branch of mathematics, topology. Nothing even remotely resembling this can be said about Culianu's morphodynamics, whose basis is "binary logic". I will come back to this.

4. The question of method

Evidently, Culianu attempted to transform the study of religion into a more scientific discipline. He tried to import methods and patterns of reasoning from more respectable sciences into his discipline. Even if we ignore the problematic status of his scientific sources, there is a more fundamental problem lurking here. Are the humanities really part of, or reducible to, the hard sciences? Since we live in the age of science, there is great pressure and temptation to give an affirmative answer to this question. Nevertheless, this reductionism is mistaken, in my view. It eliminates the humanities as *sui generis* disciplines, and distorts the study of human nature and history, which is only to a limited extent susceptible to the quantitative methods of the hard sciences.[47] Culianu's lack of engagement with genuinely philosophical literature is problematic in this context as well. Philosophers from Hegel to von Wright have advanced a number of weighty reasons against assimilating the humanistic, historical and hermeneutical disciplines, to which both philosophy and the study of religion belong, to

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[47] See Dupré 2001 for a particularly trenchant discussion of this reductivism, which Dupré calls "imperialist scientism".

the natural and the formal sciences, i.e. to physics, biology, mathematics.[48] If he had taken this tradition into account, maybe he would not have succumbed so easily to the reductivist temptation to study humans in the way physicists study electrons and mathematicians study numbers.

The contrast to Eliade may be useful here. While Eliade did not develop a rigorous defence of his approach to the history of religions, he is broadly located in the humanistic and non-reductivist tradition I have mentioned. This can't be said of Culianu, at least concerning his methodological aspirations. It is ironical that the greatest historian of religions of the 20th century sought to establish his discipline on *sui generis* grounds, in opposition to reductionist and scientistic interpretations of religion, only to be succeeded by a pupil who attempted to reframe the discipline as a sub-branch of mathematical biology, fractal theory, and popularised and distorted fragments of mathematics à la Rudy Rucker. In my view, methodologically Eliade is to be preferred over Culianu.

But in fact, the method Culianu really employs in *The Tree of Gnosis* is not actually scientific in the way he claims it to be. As far as I can see, when he gets down to doing actual work, he is using the standard empirical and ~~hermeneual~~ means available to the historian in general, e.g. the careful reading and interpretation of texts, the comparison between different readings and doctrines, the making explicit of tacit presuppositions, the historical contextualisation of texts, ideas and authors, the description of historical developments and tendencies, the critical evaluation of the research

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[48] A philosopher who needs to be added to those I have already mentioned is Wittgenstein. His ideas can be turned into a powerful tool to defend the autonomy of the humanities. See Hacker 2001: 34ff.

literature, etc. What is truly problematic about his work is the superstructure, his "morphodynamics", not the scholarly and interpretative work carried out at the more factual level. If we can detach this superstructure from the rest of his work, we may well be able to assess what is truly valuable in Culianu. This is a task for others to undertake. My goal here is purely negative, to show that the superstructure of morphodynamics is beset with problems. I will first raise a few logical and epistemological objections, then focus on the theme of decisions and computations, of the problem of Soupland, ideal objects and the 'fourth dimension', and finally of Culianu's account of history.

5. *Logical and epistemological objections*

First objection: self-contradiction. As seen, one of Culianu's claims is that not only gnosticism, but all systems of ideas are just generated by mind games we play. Given their game-like character, the doctrines or propositions of such systems are neither true nor false. But what about Culianu's own doctrine then, i.e. "All systems of ideas are just generated by mind games we play"? Since this doctrine is also part of a system of ideas (morphodynamics), it too is generated by a mind game, and as such it is neither true nor false. Hence, it is not a true doctrine. Hence, it is not true that all systems of ideas are just generated by mind games we play, which refutes Culianu. However, if we insist that not all doctrines are neither true nor false, because Culianu's doctrine, for one, is actually true, then Culianu's doctrine that all systems of ideas are just generated by mind games we play is, again, not true, which also refutes Culianu.

Culianu's account of mind games and systems of ideas is entangled in a hopeless logical contradiction.

Second objection: "neither true nor false". What is Culianu's argument for the claim that propositions generated by mind games are neither true nor false? The only reason he seems to offer is that such propositions are arrived at by an aleatory decision, comparable to the gangster's flipping of a coin. But all this gives us is a *sentence forming procedure* for articulating certain propositions. This procedure has no effect on the *truth-value* of the proposition, because it is not a *proof procedure*. We can illustrate this using the example of Simplenglish sketched above (2.3). Given its vocabulary and syntax, our sentence-forming mechanism or game allows us to generate, by flipping a coin three times, a certain well-formed sentence in Simplenglish, say "The duck chases the goose". But of course, this game does not *prove* the truth or falsehood of the proposition. To establish whether "The duck chases the goose" is true, we would need to *look*, to *observe* whether or not the duck in question is chasing the goose in question, in an appropriate situation. Then we will be able to tell whether or not the Simplenglish sentence generated by the game is true or not, in a particular instance.[49] Of course, the sentence *might* be neither true nor false. But this will not be because the sentence was generated by the coin flipping game. Rather, it might be that I am asserting the sentence while there is no duck or goose in my vicinity, and I am not thinking about a particular duck or goose either. In such a case it

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[49] To make this a more precise argument, we ought to distinguish between a sentence and its assertion. But I hope that my main point is clear without getting to deeply involved in the philosophy of language.

will be appropriate to say that the sentence is neither true nor false.[50] Now, it might well be that all, or some, propositions of gnosticism were neither true nor false. But this would be because they contain expressions which refer to nothing or have no meaning, or because they are about deeply controversial themes (such as the origin of evil). For example, it might be that the Manichaean doctrine: "The world was created by Good to evict Evil"[51] is neither true nor false, because the noun "Good" has no clear meaning or reference in this context.[52] But this special case of a lack of a truth-value does not owe anything to the fact that the sentence has been generated by a sentence-forming game. Truth is not affected by such a game. Culianu has confused the procedure for generating a sentence with the question of (demonstrating) the truth of a sentence.

One might object that what he really had in mind was not a procedure for generating a sentence, but a procedure for the selection of whole sentences. But we can easily see that even then Culianu's denial of truth is unfounded. For this option we need to start with given sentences, as opposed to generating them. Say we start with the sentence "Christ had a human soul" (in the "mind game" of Christology). The aleatory selection game consists in tossing a coin, and if we obtain head, we affirm the sentence, otherwise we *negate* the sentence. This is exactly what is

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[50] The reasons for this are discussed in Strawson 1971: 1ff.

[51] Cf. Couliano 1992: 241.

[52] Or because, as Wittgenstein suggested, such propositions do have a meaning, but are not truth-apt statements, but rather expressive of certain life forms and attitudes to the world in general. For a brief presentation of Wittgenstein's view, see Kanterian 2007: 130f., 141 ff.

going on with several branches of the tree of Christology drawn by Culianu[53] and reproduced above.[54] To see why even this version of a "mind game" does not affect truth, consider a modified game we could play with Simplenglish. Instead of generating propositions, we choose one of the eight possible propositions of Simplenglish, say "The goose chases the duck", and now we flip the coin. If we obtain head, we choose the affirmative version of the sentence, so simply "The goose chases the duck", and if we obtain tail, we choose the negation of the sentence, "The goose does not chase the duck". As above, the way we arrive at our sentence does not in the least affect the truth-value of the sentence. It may well be that the goose in question is chasing the duck, in which case if our selection game has led us to "The goose chases the duck", we have been luckily led to a true sentence.

Third objection: "free to believe in anything". Culianu writes: "gnostics were free to believe in anything they wanted and its contrary."[55] This statement is one of the premises in his argument that the question of truth does not arise for gnostic doctrines. There is a trivial and a non-trivial reading of this statement. Anybody is free to believe lots of things, not just in gnosticism, but in many other areas as well. I may come to believe that the Corona virus is a hoax and

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[53] Couliano 1992: ch. 15.

[54] As a more minor issue, note that the logic generating that tree is not strictly speaking binary, for some nodes branch out into more than two branches.

[55] Couliano 1992: xv.

part of a huge conspiracy against mankind.[56] While this is a foolish belief, I can't be *prohibited* from believing it (but only from expressing my belief). I am also free to believe the contrary of this claim, i.e. that the Corona virus is not a hoax. In the sense in which we can speak of freedom of belief as the lack of prohibition (or even the impossibility to impose a prohibition), it is trivially true that I am free to believe many things *or* their contrary. What is more difficult to make sense of is the claim that I am free to believe many things *and* their contrary, *at the same time* (or in the same respect). Am I really free to believe, at the same time, that the Corona virus is a hoax *and* that the Corona virus is not a hoax? I don't think that if somebody said this to us in conversation, we would simply accept this as an honest expression of their belief. We might say that the person in question is joking, in delirium, rambling, irrational, or simply does not understand what the word "not" means in English. There are some complex issues concerning the logic of belief, but I don't need to pursue them here.[57] For it is clear enough that the gnostics did not believe everything and its contrary at the same time, i.e. that they, or each of them individually, held *both*, say, that the world was created by Good to evict Evil *and* that the world was *not* created by Good to evict Evil.[58] The gnostics did not hold such obviously inconsistent beliefs. Culianu wrongly infers

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[56] Or, to use another example: the idea that manmade climate change is not pushing us towards the extinction of our whole species and of life in general on our planet.

[57] See Kripke 2001: 125ff.

[58] Couliano 1992: 241.

from the incompatibility of *all* gnostic doctrines to their randomness or lack of truth.

But maybe Culianu meant to say that the gnostics were free to *choose* to believe anything they wanted, as it pleased them. This sounds like a postmodernist take on truth and belief, in the sense that it is entirely up to the individual to believe whatever they desire, with no commitment to whether or not the belief is true, whether it can be justified, whether it is rational to hold it, etc. "Anything goes", in short. But again, it is not true that we are really that free in the choice of our beliefs. I may be able to choose to believe that Joe Biden is a ~~slightly~~ better US president ~~that~~ Barack Obama, but this is owed to this particular topic – there is no simple and clear cut way to decide whether or not I am correct. But imagine that you are looking out of the window and see an apple falling from the tree. Here you are not really free to *choose* to believe that an apple has, or has not, just fallen from the tree. Or take your own name: are you really free to *choose* to believe that the name written into your (non-fake) passport is *not* your real one? You may *say* so to yourself, but this does not mean a real choice is truly available here. In the case of the gnostics, we have strong reasons to think they were not free to choose to believe whatever they wanted. They held their beliefs with great passion, and thought they had good reasons for their choice of beliefs. Just because all (most, some) of their beliefs strike us as more or less random today, it does not mean that this was the case for them as well. For the gnostics, their beliefs had the necessity of fervently believed dogmas.

What is it for a collection of beliefs to be random anyway? I think the root problem here is a misinterpretation of the nature of diagrams of doctrines belonging to the same family (such as the diagram of Christology). Culianu draws a table of all (or many) possible gnostic doctrines, using negation to construct the branches of the diagram.[59] Naturally, this means that some doctrines will not be compatible with others, namely with their negations, as discussed. Similar tree diagrams can be drawn for innumerable topics and debates, and they can be very useful, for example for pedagogical purposes. Now, if one stares long enough at such a diagram, one may, at some point, start to see it as a mere drawing and feel indifferent about the individual branches, i.e. the propositions and doctrines each branch represents. So, maybe this is one sense in which one can call a collection of beliefs random. But this does not mean that the beliefs in question are neither true nor false, that we are at total liberty to choose or reject them, that they may not form a coherent set of beliefs (or "theory"), and that there is some special aleatory quality to these beliefs.

Take analytic philosophy as a somewhat related example. We could draw various trees of this philosophical

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[59] Incidentally, note that we can't get the tree started without some externally given proposition. And we can't continue the tree without adding further propositions, which are not simply generated out of the initial proposition. In other words, we need propositions from the outset, to be able to choose between them. Hence, these "imported" propositions cannot be arrived at by the same aleatory procedure used to then choose between them. Nor are they "derived" from some initial proposition. This is why it is misleading to say that life, like myth, is a multiple-choice mechanism (Couliano 1992: 239). A multiple-choice setup presupposes a range of things to choose from. It does not create them.

current. For example, we could start with the proposition "Philosophy is part of science", then obtain its negation, "Philosophy is not part of science". This would give us two possible characterisations of analytic philosophy, indeed conceptions of it, since some analytic philosophers, e.g. Willard Van ~~Ornam~~ Quine, believed that philosophy is part of science, while others, e.g. Wittgenstein, believed the opposite. Then we could subdivide this initial division by adding a proposition, "Philosophical problems can be solved by formal-mathematical tools", and then negate this proposition as well, as "Philosophical problems can't be solved by formal-mathematical tools". This would give us the following "Tree of Analytic Philosophy", allowing us to assign thinkers and schools to the individual branches:
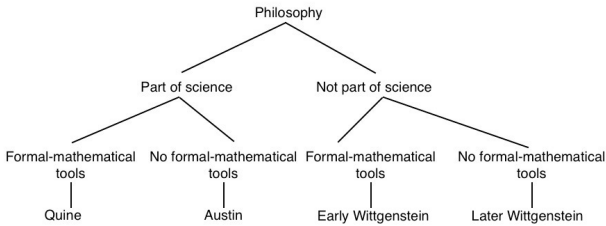
Whatever one may think about this very rough sketch of certain currents in analytic philosophy, one thing is clear. While we can say that there is no single doctrine shared by all analytic philosophers,[60] and therefore that analytic phi-

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[60] From the fact that no doctrine was shared by all analytic philosophers, it does not follow that the term 'analytic philosophy' has no meaning. The term has an ineradicable dynamical sense. It refers to a philosophical movement which underwent a long and complex histori-

losophy was not a monolithic doctrine, it does not in the least follow that we are justified to say that (a) individual analytic philosophers did not hold any doctrines, (b) their beliefs were 'random', (c) their beliefs were neither true nor false, (d) analytic philosophers picked and chose their beliefs as they pleased, for no reason whatsoever, by means of "mind games", (e) what the term analytic philosophy *really* refers to is the 'ideal object' that is the set of rules generating this tree diagram. Nothing could be further from the truth. *The tree above does not reveal the hidden 'morpho-dynamical' mechanism or aleatory 'mind game' or 'set of rules of transformation' or 'ideal object' or 'infinite fractal' of analytic philosophy.* It simply gives a rough overview over some currents in analytic philosophy. The great philosophers did not toss any coins, and neither did analytic philosophers. They engaged in *argument* and *reasoning* with one another, with their predecessors and with the facts at hand. The same is surely true for the natural sciences as well. Culianu's attempt to prove the aleatory character of (some, most, all) systems of ideas is in my view a total failure.

Fourth objection: "the gnostics did not hold any beliefs". Culianu does not only claim that the gnostics' beliefs were random, but at times also that they did not hold any beliefs. This is because he holds that "gnosticism" does not stand for any system of ideas, but rather for an ideal object, or set of rules generating individual gnostic propositions. Evidently, the two claims are incompatible with one another. If the

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cal development, like, say, 'modern art'. At times, certain doctrines were shared by some of its representatives, but not by others, and some of these doctrines were later modified or replaced by yet others. Cf. Hacker 1996: 247f., Kanterian 2004.

gnostics had random beliefs, they *had* beliefs; in which case we can't say they had no beliefs. The no-belief claim is actually refuted by Culianu himself, because, as seen, he also characterises gnosticism as a doctrine which rejects the principle of ecosystemic intelligence and the anthropic principle.[61] In other words, he does assign definite doctrines to the gnostics after all. This undermines Culianu's characterisation of gnosticism as an ideal object. Obviously, the gnostics and dualists held (a variety of) beliefs. When they referred to their own views and beliefs, they certainly did not have in mind the generative rules Culianu proposes, but claims about the origin of the world, of evil, of the possibility of escape from this fallen world, etc. The gnostics were existentialists *avant la lettre*, as Culianu himself suggests, following Hans Jonas.[62] This is one of the most interesting themes in *The Tree of Gnosis*, and whenever Culianu addresses it, he offers deep insights, such as here: "The world is pervaded with impermanence, suffering, and anxiety; if it was Good who created it, something must have corrupted it in between. *The Devil appears as a necessity from our first reflection on our experience of the world.*"[63] But of course, existentialists are not people without beliefs, and not even people with random beliefs. It is a pity that in his last phase Culianu did not develop this existentialist theme in more detail, but was instead sidetracked by scientific and pseudo-scientific paradigms.

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[61] Couliano 1992: xv.
[62] Couliano 1992: xv; 256.
[63] Couliano 1992: 241.

6. *Decisions and computations*

Culianu claims that our mind games, of which gnosticism is just an instance, consist in computing randomly our decisions by means of the binary logic of Yes/No, and indeed that life itself consists of making such decisions. There are several confusions here. First, not all our voluntary behaviour is based on decisions prompted by Yes/No questions. If I take a walk in the park, I don't decide for each individual step whether or not I should make it. Second, not all our decisions are prompted by Yes/No questions. "I choose strawberry" is prompted by "Which sort of ice cream would you like to have?", which is not a Yes/No question. Third, not all decisions are prompted by questions. I see a child falling and hurting itself on the playground, and decide, without putting any question to myself, to drop the ice cream I am eating and run to the child's rescue. Fourth, few of our decisions are made in a random way, and then only under specific circumstances, as in this exchange: "Would you like to go swimming or play tennis?" – "I don't care, let's toss a coin." In fact, as this example shows, we need a *decision* to make a random decision. The first decision can't be random, for logical reasons. Fifth, to make a decision is not to *compute* anything, although it may well be that, sometimes, we make a decision based on the result of some computation (or calculation). Making decisions involves, typically, weighing which course of action is appropriate, reasonable, called for, achievable, expected from us, etc. In other words, decision-making involves *practical reasoning*, which has nothing to do with binary logic, let alone with random events. Practical reasoning is the precise opposite

of random decision making; it is what makes human action justified, intelligible, rational, and what links it to moral responsibility, to praise and blame. Sixth, when the gangster flips the coin, he is not *computing* anything. He is just making use of a physical process with a random outcome, to determine his next action[64]. For this reason, and seventh, Culianu is misrepresenting computation. Computation is precisely *not* the random selection of Yes or No, of 0 or 1. A Turing machine, which can be seen as an ideal model of a computer, is characterised, among other things, by the so-called determinacy condition, i.e. that its next step is completely determined by its current state and the symbol it is scanning.[65] There is no mystery here – computers are programmable machines. We want them to accomplish certain tasks. To this end, they have a finite set of commands, such that, given a certain state of the machine and given a certain command, we get it to transit into one and only one (other) state. There is nothing equivocal or random about any of these commands. Eighth, and finally, Culianu misrepresents the nature of the human mind. It is not a computer. While computationalism used to be a dominant theory of the mind in the 1960s and 1970s, it is much less so today, even in mainstream philosophy of the mind,

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[64] And maybe precisely to make himself believe that he is not to be blamed for the outcome. But because, as I said, he is making a rational decision to determine his actions by a randomised process, he is still fully responsible for his 'random' actions.

[65] See De Mol 2018. I am simplifying here a bit, since there are non-deterministic Turing machines as well. But my argument is not affected by this.

which, I should add, does locate itself, problematically, in continuity with science.[66]

Computationalism is much more discredited, indeed rejected, in the philosophical tradition descending from Wittgenstein.[67] According to Wittgenstein, what we first ought to ask is not whether humans are thinking machines, but whether machines can think to begin with, and, more fundamentally, how the concept of thinking is formed and acquired. We do not acquire the concept of thinking after building and then observing machines, but *apply* the concept to them, licitly or not. Our concept of thinking is more fundamental than the concept of a machine, and that is true for other psychological concepts as well. We learn to use and master such concepts only in the broad stream and open-ended interactions of human life, prior to and aside from our conceptualisations of machines and computers. Wittgenstein wrote: "How could human behaviour be described? Surely only by showing the actions of a variety of humans, as they are all mixed up together. Not what one man is doing now, but the whole hurly-burly, is the background against which we see an action, and it determines our judgment, our concepts, and our reactions."[68] This applies, *mutatis mutandis*, to the idea of having a mind, being able to think, etc. Wittgenstein concluded: "Only of a human being and what resembles (behaves like) a living human being can one say: it has sensations; it sees; hears;

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[66] See Rescorla 2020. A good example for this development is Hilary Putnam, who in 1967 introduced the classical computational theory of the mind, only to repudiate it in 1988. See Rescorla 2020 for references.

[67] For two examples, cf. Hacker 1993, Hanfling 2001.

[68] Wittgenstein 1970, §567.

is deaf; is conscious or unconscious."[69] Seen in this light, Culianu's computationalist bent was misguided.

7. *The ideal objects of Flatland and Soupland*

When it comes to his theory of systems of ideas as ideal objects, we enter the most obscure part of Culianu's morphodynamics. There are several fundamental unclarities here.

The first unclarity concerns Culianu's characterisation of ideal objects. He suggests at one point that for Souplanders the third dimension might be just a mathematical fiction, used as a heuristic device, to explain certain strange phenomena.[70] This would then apply to the objects existing "in" that third dimension as well. Applied one dimension higher, this stands then in tension with Culianu's claim that gnosticism or history in general *is* an ideal object. There is nothing fictional about gnosticism as a historical current or about history in general, and they are not heuristic devices either. Heuristic devices for *what*?

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[69] Wittgenstein 2009, §281. It is interesting that in an early essay from 1976, "Freud – Jung – Wittgenstein," Culianu touches upon Wittgenstein's approach to myth and religion, as discussed in the latter's *Remarks on Frazer's* Golden Bough (see Culianu 2002, Wittgenstein 1993). Wittgenstein was only concerned to stress broad and open-ended, tendencies of human life forms, not to postulate a fixed set of (mental) structures causing these. Culianu, by contrast, reads Wittgenstein as saying that there are "structuralising abilities" *in* man, and immediately links these to Jung's archetypes. Culianu's structuralist-mentalist bent, which eventually led to him to the postulation of mind games, is already visible in this essay. For a discussion of Culianu's links to Jung and to structuralism, see Segal 1994.

[70] Couliano 1992: 3.

The second unclarity concerns the fourth dimension postulated by morphodynamics. Put very simply, for Einstein, the fourth dimension is time, or, less simply, the three dimensions of space form, with time, the four-dimensional continuum (an idea introduced by Minkowski)[71]. There is initially nothing special about this continuum, and nothing *unknowable* about it; it is simply a mathematical way of representing events in the world, whether in classical or in relativistic physics.[72] The difference between the two frameworks only arises when we take into account two systems of reference ("objects") that are in *motion* with respect to one another.[73] Note that in the Flatland/Soupland scenario we don't have only two dimensions either, but three, if we take time into account, since events take place in these two-dimensional worlds. Now, if history, according to Culianu, is just a sequence of slices of ideal objects in our "three-dimensional world,"[74] we actually need *five* dimensions to make sense of this, not four. This is because to speak of a sequence (of slices) is to speak of time, in addition to which we need to assume that mysterious further dimension in

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[71] Cf. Einstein 1920: ch. XVII and Appendix II.

[72] Einstein & Infeld 1950: 226ff.

[73] In the classical framework, if an object exists or an event happens in a system of reference A, an observer in another system of reference B will be able to describe it, from his perspective, simply by knowing the relative position of A and the relative speed of A versus B, presupposing the same time frame, i.e. that whatever exists or happens in A at a certain time exists or happens for B at the same time, no matter in what state of motion or rest A and B are. In the relativistic framework, this assumption of motion-independent "absolute time" is dropped. See Einstein & Infeld 1950:175ff., Weizsäcker 1982:147f.

[74] Cf. Couliano 1992: xv, 3.

which ideal objects exist,[75] plus the three spatial dimensions of our world. Note, incidentally, that it is wrong to speak of ideal objects existing *in* that further (fourth or fifth) dimension. They obviously exist in all their dimensions (if they exist at all), or, more precisely, they exist in the world constituted by all the dimensions in question. After all, the desk I am writing on right now does not exist only in "the" third dimension (which one would that be?), just because it is a three-dimensional object that "two-dimensional creatures" can't observe in its entirety.

The desk exists "in" all three dimensions, or, more accurately, it has three dimensions. It does not exist in just *one* of the dimensions it has. Similarly for ideal objects, assuming that they exist: they don't exist in the fourth dimension, but rather they are four-dimensional objects. But to be a four-dimensional object, according to Minkowski and Einstein, is precisely to be an object of *our* world, not of some other mysterious world. Culianu, by contrast, seems to need a fifth dimension for his morphodynamics.[76]

There is talk about a fifth dimension in modern physics. Einstein himself attempted, with others, to make use of such a dimension to incorporate electromagnetism into the general theory of relativity, but was unsuccessful. The

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[75] Couliano 1992: 2, 7f., 16.

[76] At times, Culianu goes to more daring extremes, talking about the "process with an infinite number of dimensions we call history", in line with his idea that systems "are fractalic in nature" (Couliano 1992: xii, 7). It is better to leave such paroxysms of pseudo-mathematic-al imagination uncommented.

concept is still used in physics.[77] But this does not mean that it can be easily ~~fused~~ with Culianu's morphodynamics. The fifth dimension, as conceptualised in physics, is subject to rigorous *mathematization*, and bears no relation to the ideal objects Culianu envisages, which are, on one reading, simply just *tree diagrams* of certain propositions, some of which are just negations of each other (this is all the term "binary logic" really amounts to in our context).[78] In other

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[77] See https://en.wikipedia.org/wiki/Five-dimensional_space.

[78] It is therefore misleading to suggest, as Patapievici does (1995: 369f.), that the trees Culianu's "binary logic" allow us to build can be given a perfect mathematical expression by resorting to advanced branches of algebra, in particular the theory of *p*-adic numbers, invented by Kurt Hensel in the 19$^{\text{th}}$ century ("*p*" takes prime numbers as argument). It is true that for a minuscule subset of these numbers, the 2-adic numbers, we can offer a tree diagram as an intuitive representation. But note, first, that this tree is just a graphic *approximation*, for it would have to have, "in actual fact", infinitely many branches (as there are infinitely many 2-adic numbers). Hensel himself preferred a different graphic representation of such numbers, in terms of points on concentric circles (see Hensel 1913:140). The tree-like representation is therefore inessential to the study of such numbers, although may have an application in physics and also a pedagogical use (as in the article Patapievici refers to, which introduces a wider audience to the topic, published in a special issue of a popular science magazine, *La Recherche*; see Patapievici 1995: 372, fn. 1, Barsky and Christol 1995). Such representations don't play a fundamental role in mathematical treatises on the topic (cf. e.g. Mahler 1981). Second, Culianu's tree of Christology has only a finite number of branches, and not because it is a mere approximation of an infinite mathematical structure. For it is *not a mathematical structure*, but simply the (useful) graphic representation of the relations between various possible Christological doctrines, all of which are in principle "finite" (and thus not "fractalic"). Culianu's tree of Christology and the tree of 2-adic numbers Patapievici juxtaposes in his essay (1995: 370f.) bear only superficial similarities with one another. The best, although

words, Culianu's ideal objects are actually *two*-dimensional objects! In more than one sense Einstein's fifth dimension is not Culianu's fifth dimension. We should not play fast and loose in this manner with well-established concepts and scientific disciplines, and be led astray by extremely superficial analogies between entirely different domains of discourse.

Culianu's wrongheaded desire to draw a parallel between himself and Einstein, most likely induced by Rucker's fantasies, is particularly obvious in the introduction to *The Tree of Gnosis*.[79] Here he refers to Einstein's book *The Special and the General Theory of Relativity* (1916, transl. 1920), and claims that the great physicist resorted to Abbott's *Flatland* to explain "why we are not in a position to understand the world from inside out." But Einstein does not refer to Abbott anywhere in his book, and he does not make such a claim about our cognitive abilities either. In chapter XXXI of his book Einstein imagines two-dimensional flat beings existing on a plane, contrasting with flat beings existing on a spherical surface.[80] He considers these two scenarios solely

not the only, proof is that while the first node in the tree of Christology splits up into *three* branches, the tree of 2-adic numbers does not. Consider also how the generation of the two trees comes about. Is Culianu's tree really generated by *mathematical* operations, as is the tree of 2-adic numbers? Take, as an example, the node "More divine than human". By which mathematical operation do we proceed to the node "Had a human soul" as opposed to the node "Did not have a human soul"?

[79] Witness Rucker's final sentences in *Mind Tools* (1987): "So what is reality, one more time? An incompressible computation by a fractal CA [cellular automaton] of inconceivable dimensions. And where is this huge computation taking place? Everywhere; it's what we're made of".

[80] Einstein could have found inspiration about the two-dimensional beings in Helmholtz, whose work he knew. Helmholtz introduced the idea of beings, *Flächenwesen*, living on a two-dimensional (plane or

for the purpose of introducing, through the second scenario, the possibility of a world which is finite, but without limits. He then moves one dimension higher to make sense of Riemann's three-dimensional spherical space, which is also finite and without limits. The flat beings in Einstein's scenario serve a purely heuristic purpose, to help us make sense of the initially counterintuitive idea of a boundless, but non-infinite space, which, Einstein claims, is what his theory of general relativity postulates to be precisely the nature of the universe we inhabit. Einstein does not use his scenario of the flat beings "to describe verbally the higher dimensions through analogy", as Culianu claims in *Out of this World*, where he quotes from chapter XXXI of Einstein's book.[81] In particular, Einstein does not try to convince us, through Flatland-like analogies, that there are entities "in" a dimension higher than the ones we can grasp – the fourth or fifth dimension.

Culianu has extracted, illicitly in my view, highly theoretical concepts from modern physics, to give a pseudo-explanation of something whose nature lies in plain view and requires no mathematics and no ontology of higher dimensions to be grasped – *history and historical phenomena*. For it should be evident that we do have knowledge of these phenomena. We perceive them all the time, in

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spherical) surface in his essay "Ueber den Ursprung und die Bedeutung der geometrischen Axiome", published in 1876 (Helmholtz 1876: 27ff.). This essay was based on a lecture he had given even earlier, in 1869, so well before Abbott's publication of *Flatland*. It is much more likely that Abbott was inspired by Helmholtz, rather than Einstein by Abbott.

[81] See Culianu 1991: 13.

"four dimensions"! Was the assassination of Archduke Franz Ferdinand on 28 June 1914 not observed by many eyewitnesses? Could they not indicate when and where the crime took place? What exactly is missing from these eyewitness accounts that prevents us from describing this crime, in full, as a historical event? Nothing. Of course, we could also ask about the causes of the crime, its motives etc. But answers to these further questions would not refer us to "ideal objects" which we apparently can't perceive in their totality, but simply to the open-ended search for descriptions and explanations that we call historiography.

Similar considerations apply to the study of gnosticism. While according to the Soupland story the third spatial dimension is inaccessible from the point of view of the Souplanders, in studying gnosticism there is no inaccessible higher dimension. As said: Culianu himself has told us *what* gnosticism is, namely a system of ideas, propositions or rules. And he also tells us what these ideas, propositions and rules are. Take his "tree of Christology": more or less everything about Christology, every important possible Christological doctrine is right there on paper, in front of our noses.

A related unclarity concerns the ambiguity of systems of ideas as ideal objects and as mind games. As ideal objects they are supposed to be atemporal, but at the same time, as mind games, they apparently generate objects in time. We can't have it both ways. Either systems of ideas are ideal objects and then atemporal. Then we lose sight of their rule-driven generative character, as ideal objects do not generate, create, or cause anything. Or systems of ideas are mind games, in which case we do save their generative character, but then we have to locate them in our world. In fact, we

have to be more precise here. What we have to locate in the world are not the systems of ideas, understood as collections of rules, but the games and their *players*. For rules do not generate anything by themselves, nor do they interact with the world. It is us, those playing (mind) games who employ the rules in the world and apply them to objects in the world. Think of the example of chess mentioned above. Culianu uses the following notions almost interchangeably: "systems of ideas", "ideal objects", "collections or sets of rules", "generation of objects", "mind games". But these notions are not synonymous. One would need to carefully distinguish between them to escape Culianu's conceptual maze.

A further unclarity about ideal objects concerns time, and is expressed in the following sentence: "These ideal objects cross the surface of history called time as the spoon crosses Soupland."[82] First of all, if the ideal objects are collections of propositions, or of rules, then they don't cross anything, because propositions and rules don't *cross* anything; they don't move in space and time. (How many propositions are there on your desk? How fast are they moving, and into which direction?) Second, to cross something is to cross some thing in *space*, e.g. a road or junction, or the soup surface in the Soupland scenario.[83] And

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[82] Coulianu 1992: 3. Witness also Culianu's description of history as the "dynamic process of extraordinary proportions that is the temporal interaction of such systems, a process with an infinite number of dimensions" (xii).

[83] In the Soupland analogy the spoon is itself very much in time; it is moving. And time also exists in Soupland. *Mutatis mutandis* here: the ideal objects exist in time; they *interact* with our world. Hence, they have a *history*. Culianu actually admits himself that there is a temporal

one needs *time* for this. But we can't cross time itself ("the surface of history called time"). Moreover, and third, if the ideal objects can cross anything, they exist in time and are themselves spatial. And that is exactly right: gnosticism is a historical phenomenon studied in the history of religions. Culianu's theory of ideal objects dissolves into triviality or nonsense.[84]

8. *Culianu's denial of history*

In claiming that historical events and phenomena are just slices of ideal objects that we can't truly know, and that history is simply the inexplicable sequence of these slices, Culianu in effect destroys history as a discipline. For his approach presents all standard pursuits of historical explanation as

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dimension to gnosticism, since he ascribes motion to the gnostic "spoon" (or ideal object), just like the spoon in Soupland needs to move to *enter* Soupland. In fact, this holds for all ideal objects. For Culianu has told us that religion, philosophy, science and literature are all (computational) *processes*. But processes occur in time. There is another difficulty. In Soupland, morphodynamics would amount to the description, by the Souplanders, of what they perceive through time, in two dimensions, when the spoon is gradually crossing the soup surface. Paradoxically, this would mean that morphodynamics, as formulated by us in our world, would be *limited to our world*, not at all capturing the higher dimension, which is what the actual purpose of morphodynamics is supposed to be, according to Culianu.

[84] I should also note that strictly speaking, Souplanders can't move at all, because motion is not possible in two dimensions. And Souplanders can't perceive anything, because from their perspective two-dimensional objects have no extension. The whole Flatland scenario is, taken literally, nonsense. But taken metaphorically, and treated with caution, it has its uses.

illusory, and, moreover, makes history itself appear to be an illusion or a surface phenomenon, the shadowy reflection of unfathomable ahistorical entities.[85] Whence this destructive tendency? Maybe from his conviction, which was also Eliade's, that history is terror, and that we need to escape it.[86] Understandable as this attitude is, the argument it motivates, about the alleged unreality of history, is deficient.

To offer one final criticism in this respect, let us briefly reflect on how we may represent some historical event, say the outbreak of the First World War. We could, for instance, represent it by means of a simple timeline, e.g. by marking, on the left of the line, the assassination of the Archduke Ferdinand on 28 June 1914 (A). Next to it, we could then insert pointers to additional events, e.g. the declaration of war against Serbia by Austria-Hungary on 28 July (B), Austria-Hungary's invasion of Russia on 10 August (C), and so on. This would give us a one-dimensional representation of an event, the war, taking place in "space-time," i.e. in four "dimensions".

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[85] And there is something incoherent about the very interaction between the realm of ideal objects and our merely phenomenal historical world. For we need to posit the existence of time to make sense of this interaction, not only at the phenomenal, but also at the realm of ideal objects. If we don't do this, not only can we not 'explain' history as the interaction between those objects and our world, but we are forced to assign the dimension of time as a *sui generis* feature of our world, absent from the realm of ideal objects. That realm would therefore be *missing* something, and could not be seen as a reality more encompassing than our world, contrary to Culianu's intentions.

[86] As Eliade put it in his diary, the task of the historian (of religions) is "să 'demascăm' prezența transcendentului și a supra-istoricului în viața de toate zilele" (Eliade 2017: 46).
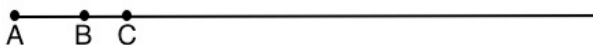
Note that the one dimension of our representation, the timeline, is purely spatial, helping us to take in, at a glance, a whole sequence of events. The line itself, as it is already drawn on paper, has no temporal dimension to it. What has a temporal dimension is our interpretation of the line. We know how to read it: if a dot occurs to the right of another dot, it means that the first dot symbolizes an event that took place after the event symbolized by the second dot. So C occurred after B, and B after A. There is nothing problematic or mysterious here. The problem only arises if we mistake certain features of our method of the representation of things for features of the things represented. For example, one could infer from the fact that our timeline is non-temporal, i.e. that the dots on it are all "simultaneous" with one another, that the object represented also has these features, i.e. that the First World War did not occur in time, but really exists in its own dimension, as an atemporal "ideal object," which we finite creatures can only experience bit by bit, in time.

And this is the fundamental mistake Culianu commits. Take a look at his tree of Christology, reproduced above. All Culianu has done in drawing this tree is to offer us a two-dimensional representation of some logical, semantical and doctrinal relations between various possible Christological positions. This representation is, speaking as a non-expert in this area, extremely useful, as are Culianu's various differentiations between the plethora of dualist doctrines,

differentiations which could easily be turned into another useful tree diagram, a tree of gnostic dualist doctrines. But what none of these tree diagrams show is that what they represent are not phenomena with a history, but rather ahistorical ideal objects. Culianu reaches this conclusion only because he has committed the fundamental mistake of misunderstanding his own representations.

Given this mistake, it is especially wrong to suggest, as Culianu himself did, but also some of his interpreters appear to do, that he has found "the key to everything," a "*mathesis universalis*", the true mechanism driving everything in human history, indeed in the whole universe. This apparently follows from Culianu's demonstration that there is "practically no sector of the world and human existence that cannot be defined as a mind game,"[87] that "*everything*, from society to the world, is a system of ideal objects, generated through computational binary logic."[88] In fact, Culianu's writings do not offer such a *mathesis*, explaining and predicting the course of human history, any more than the prophecies of Nostradamus or Marx do. For there is no such thing as a *mathesis universalis* of human nature and history, let alone of the universe, no matter how much some of us may be craving for one.

9. *Conclusion*

I have tried to show that Culianu's morphodynamics is a questionable doctrine, resting on dubious arguments

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[87] Couliano 1992: 268.
[88] Patapievici 1995: 376.

and sources. Unfortunately, Culianu undermined what was novel and important about his work in the history of religions by imposing the ill-conceived superstructure of morphodynamics onto it. To regain a better appreciation of his real achievements and valuable findings, we need to strip away this fictional and bogus superstructure.

Nevertheless, Culianu's morphodynamics remains an intriguing object of study. The reason is precisely because it is a fiction, belonging to the domain of myth, more precisely of myth generated at the opaque and hard to fathom interface between the humanities and the hard sciences. We must therefore study Culianu's morphodynamics as an *object* of the study of the history of myth and religion, reflecting certain ideas and mythological preconceptions of his time, but also maybe of our age in general. In his attempt to explain myth and religion, which can't be actually explained, but only described and understood, he created another myth, disguised as a scientific theory – morphodynamics. What Wittgenstein wrote about Freud seems to me to apply to Culianu as well:

> Take Freud's view that anxiety is always a repetition in some way of the anxiety we felt at birth. He does not establish this by reference to evidence – for he could not do so. But it is an idea which has … the attraction which mythological explanations have, explanations which say that this is all a repetition of something that has happened before.[89]

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[89] Wittgenstein 1966: 43.

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