

The Origin of Emergence

A Guide to Samuel Alexander's Space, Time, and Deity

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Series in Philosophy



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Introduction

This is a guide to the origin of the concept of emergence; and, thus, this is a guide to Samuel Alexander's *Space, Time, and Deity* (1920); the two are inextricably intertwined. This Introduction will clarify and explain these claims and will put them in contrast to the conflicting contemporary philosophical and scientific conceptions. The Guide itself will present Alexander's coherent concept of Space, Time, and emergence, and show how the scientific discoveries of the last century rather confirm it.

First of all, the first emergentist is often considered to be John Stuart Mill, and the term comes from George Henry Lewes' book, *The Problems of Life and Mind* (1875), and the Wikipedia page of emergentism, at the start, mentions even Aristotle himself. However, in contrast to Alexander, these authors were not emergentist at all in the sense that they did not develop a whole new philosophical and metaphysical system based on the concept of emergence; they just used a few terms, for example, Mill his famous "homeopathic laws" and "heteropathic laws" (*System of Logic* 1843) for certain concrete purposes which can be regarded as antecedents of later emergentist concepts, especially, in the light of the later, mainstream and widespread Broadian interpretation of the concept I will discuss in a minute. Aristotle was also not an emergentist, of course; nonetheless, for the big picture, it is important to see both the historical and the conceptual connections between him and Alexander.

Modern dualism of mind and matter, and later its antithesis of materialism, and the modern mathematical scientific method were born against the Aristotelian hierarchical concept of the universe. Alexander is not a modern dualist or materialist or even a physicalist in any sense but rather an Aristotelian on the other side of modern philosophy and science: there are two basic "stuff" or "hyle" (Alexander 1920 I: 341) from which the hierarchical order of the universe is built up or develops: first, (lifeless) *matter*, then, *life* and, finally, *mind*. They even agree that the characteristic nature of the bottom of reality is so-called primary matter or Space itself, which does not exist in itself without the other basic stuff.

However, here comes the fundamental difference. For Aristotle, the other, higher stuff consists of different kinds of Forms which reflect the characteristic nature of mind or spirit, more exactly, the timeless/eternal nature of the so-called prime or unmoved mover at the high end of the hierarchical order of reality. However, for Alexander, the other stuff is Time, which also does not exist without Space. Accordingly, the universe is not timeless or eternal but persists *in* Time and, thus, continuously evolves over time, and its hierarchical development

is determined by the fundamental relationship or interaction of its two basic stuffs, which is *emergence* itself. Deity is simply the next higher level of existence in this continuous emergent development. Following Alexander, the capitals of Space and Time express that now, contrary to a concrete particular space and time, we are speaking of the singular whole of Space and Time, that is, about reality or the universe itself.

So, for Alexander, emergence is but the *fundamental relation* of Space and Time as Time appears in Space and Space-Time emerges, and then, more and more developed space-time complexes like matter, life, and mind emerge. In the traditional sense, there is neither material substance nor mental one; there is only emergent Space-Time.

We live in an evolving universe because Time is the ordering principle or the ultimate fundament of reality; there is nothing more. Mind is “only” a unique complex of particular space-times, nothing more. Perhaps human minds “are but the most gifted members known to us in a democracy of things” (Alexander 1920 I: 6), but fundamentally they are nothing more than space time complexes like anything else. There is no God or an absolute Aristotelian center of the universe; Space-Time is emergent and relational, and, therefore, everything in Space-Time or in the universe has its own spatiotemporal center and spatiotemporal perspective and relational existence, which is but the empirical metaphysical description of the Galilean principle of relativity postulated by Albert Einstein in his famous theory of relativity.

Nobody speaks of or investigates the concept of emergence in this original meaning and in this original broader context from Aristotle to Einstein. This is the main reason that this Guide was born; and this is the main reason that it does not deal with the numerous contemporary metaphysical concepts and the secondary literature on Alexander in detail. That would entirely shift the focus on such discussions and interpretations which are based on fundamentally different premises and philosophical convictions, and the curious reader would never understand Alexander’s original concept of Space, Time, and emergence, which is the only real goal of this Guide.

For example, A. R. J. Fisher states the following in his excellent paper on Alexander’s categories.

Alexander had a significant impact on the development of twentieth-century metaphysics [...] his system should be judged on his theory of categories. (Fisher 2015: 249-250)

Alexander argues that Space and Time are actually one thing. Space and Time are mere attributes or aspects of Space-Time. Space is intrinsically temporal and Time is intrinsically spatial. Therefore, he believes in a

four-dimensional manifold of events (STD, vol. 1, ch. 1). His arguments for Space-Time being one unified thing are difficult to follow and obscure. They were discussed at length in the literature and his correspondence. I do not have space to address them here. (Fisher 2015: 251)

As I have just tried to introduce, according to Alexander, everything is the consequence of the emergence of Space and Time, including, therefore, the so-called categories. The categories for Alexander, for example, relation or causation, are but the general or pervasive determinations of Space-Time. He is very straightforward and explicit in this. For example, everything is in a kind of spatiotemporal relation to other things in Space-Time and, thus, relation is a general character or category of things; while, for example, only minds are conscious, of course; thus, consciousness is a special character or quality of things. Therefore, I do not think that it is even possible to speak about Alexander's categories without the detailed examination and understanding of his concept of Space-Time; we will just do some interesting contemporary interpretation of them based on entirely different premises, which is fine, I really learned a lot from Fisher's article, but this is not the goal of this Guide at all.

On the other hand, Alexander does not believe in a four-dimensional manifold of events at all; this interpretation of Space-Time comes from our usual positivist scientific education, according to which "Time" is a fourth dimension or, more exactly, a fourth dimension of a Cartesian coordinate system alongside the three spatial dimensions. As we will see in the first chapter in detail, the whole point of Alexander's argument about the emergence of Space-Time is that the nature of Time has *three* distinct aspects, the most famous and well-known of which is irreversibility, and this is the reason that Space-Time is *three*-dimensional. There is no Space or spatial dimensions without Time and no Time outside of Space or, more exactly, outside of the three spatial dimensions; this is the literal meaning that "Space is intrinsically temporal and Time is intrinsically spatial". Therefore, there is only *three-dimensional* Space-Time; this is our clear *empirical* reality because nobody sees any fourth or even higher dimensions, and thus, any four or other multidimensional description of it is, in fact, a mathematical modeling; which is, of course, legitimate in mathematical physics for certain practical purposes but not Space-Time itself as it appears in our experiences. I will circle back to this important methodological difference one can see here between Alexander's so-called empirical metaphysics and contemporary science and metaphysics.

Another famous example, now, from the contemporary literature on emergence, is Jaegwon Kim's influential concept of "Alexander's dictum" (Kim 1992), according to which, the higher emergent levels have to be causally

effective, otherwise they cannot be real in the metaphysical sense; however, mainstream materialist or physicalist philosophers think that this active causal effectiveness leads via so-called over-determination and downward causation to the breaking of the causal closure of the lower-level physical world as, for example, higher level persons voluntarily move their bodies (See e.g., Kim 1998, 1999, 2001). Since, according to them, this violation of the causal closure of the physical world is clearly impossible, higher-levels are, therefore, either metaphysically not real or they are real, but then this is not a new metaphysical position at all, just the old, well-known, and false dualism of mind and matter.

The conceptual problems are numerous. First of all, according to Alexander, the world is neither physical nor material; mathematical physics is an instrumental tool (method and theory) of the mind for practical purposes, and we are living in an evolving universe of Space-Time; therefore, there is no causal closure of the physical world; it is just a (false) *concept* based on different premises and philosophical beliefs. Causation is also not a mechanical process between material or physical substances but a category, a unique spatiotemporal relation of all things in Space-Time or, in other words, a particular general or pervasive determination of Space-Time; therefore, there is no mechanical causation between non-material things and levels of existence in Space-Time; it is just a (false) concept based on different premises and philosophical beliefs. Finally, the body and mind of a person are not two distinct substances but the different emergent levels of the same developed space-time complex; therefore, there is neither over-determination nor downward causation between mind and body but an even more unique and intimate spatiotemporal relation than causation called reciprocity by Alexander.

I only like to highlight that because of the entirely different premises, philosophical method and perspective, Kim's so-called Alexander's dictum has, in fact, *nothing* to do with Alexander's original concept of emergence. Still, most contemporary philosophers and scientists are only familiar with this dictum concerning Alexander's concept. As it is, in fact, neither a so-called strong nor a so-called weak emergence; these are all contemporary concepts based on an entirely different analytical philosophical approach, which goes back to C. D. Broad and not to Alexander himself. The only way to understand Alexander's original concept of Space, Time, and emergence is a detailed *internal* analysis of his argument based on his own unique method and perspective.

I will mention as a final brief example another typical work of literature related to the above problem, Bas van Fraassen's great work on the history of the philosophy of Space and Time (1970). Van Fraassen does not have a mainstream analytical or positivist attitude at all; still, in this case, he does *not even* mention that Alexander existed at all. According to him, after Albert Einstein, the question of the nature of Space and Time is simply not a

comprehensive philosophical but a specific scientific question, which, unfortunately, in reality, means that the mainstream positivist philosophical interpretation of Einstein's results is simply unquestionable; we are only dealing with the details (van Fraassen 1970: 156-190). Nonetheless, as I have already mentioned briefly, there are no contradictions at all between Alexander's traditional metaphysical analysis and Einstein's strict scientific results; on the contrary—if we can peel off the usual mainstream positivist interpretation, of course. Alexander's concept of Space, Time, and emergence is neither dualist nor materialist, nor positivist or physicalist; it has its own unique realist philosophy and emergentist metaphysics, and it cannot be understood based on alien grounds. This is why it seems strange or even “obscure” and challenging to follow. However, on its own unique realist grounds, this is not the case at all.

Accordingly, my goal in this Guide is to show with a detailed internal analysis that, on the one hand, Alexander's concept of Space, Time, and emergence is a coherent one, in which practically nobody believes today, and, on the other hand, it is coherent with the scientific discoveries of the last century, in which literally nobody believes. The contradictions come not from the strict facts but primarily from the usual positivist scientific interpretation of Space and Time and, perhaps more importantly, from the Broadian mainstream analytical interpretation of the concept of emergence.

So, in science, the usual mathematical description of Time is that it is a fourth dimension of “Space”, that is, in fact, a fourth *spatial* dimension already expressed by Einstein himself. If, according to a mainstream physicalist interpretation, we think that this is not just an instrumental tool for practical purposes but a true description of empirical reality, then this will mean that one of our fundamental experiences of reality that Time, contrary to Space, is irreversible is *as illusory* as we experience that the Earth is standing still under our feet. I would like to emphasize that this literally means that, in reality, we do not age and get old, that is, in reality, we do not even born to firstly be young that then we can get old; that, in reality, there is no evolution either in living nature or in the universe itself; that, in reality, everything *is given* in the so-called (objective) block universe *in present* (or, now, instead in the so-called multiverse); in short, as physicists like to put it and write lengthy books about it, Time is just a(n subjective) illusion.

Contrary to this, at the end of the Introduction to his *Time Reborn*, theoretical physicist Lee Smolin states the following:

Time will turn out to be the only aspect of our everyday experience that is fundamental. The fact that it is always some moment in our perception, and that we experience that moment as one of a flow of

moments, is not an illusion. It is the best clue we have to fundamental reality. (Smolin 2013: xxxi)

In his earlier work, *The Trouble with Physics* (2006), Smolin criticized the direction that twentieth-century physics had taken, especially string theories. Then, in *Time Reborn*, he proposed to solve the problems of modern physics by acknowledging a fundamental fact: Time is real. Although coming from a theoretical physicist, the claim is clearly philosophical. He does not question, for example, the validity of the Lorentz transformation in special relativity or the importance and validity of the equivalence principle by which Einstein extended the Galilean principle of relativity in his general theory, but their mainstream understandings according to the positivist philosophy of sciences, which denies the reality of Time. I just want to contrast this with Alexander's words:

It is not, I believe, too much to say that all the vital problems of philosophy depend for their solution on the solution of the problem what Space and Time are and more particularly how they are related to each other. (Alexander 1920 I: 35)

Which, as I have just tried to explain it, according to Alexander, is but emergence itself: the origin of any further emergence is as Time appears in Space. However, let us now see how the scientist sees the concept of emergence in more detail. Smolin writes:

Emergence is an important term in a relational world. A property of something made of parts is emergent if it would not make sense when attributed to any of the parts. Rocks are hard, and water flows, but the atoms they're made of are neither solid nor wet. An emergent property will often hold approximately, because it denotes an averaged or high-level description that leaves out much detail.

As science progresses, aspects of nature once considered fundamental are revealed as emergent and approximate. We once thought that solids, liquids, and gases were fundamental states; now we know that these are emergent properties, which can be understood as different ways to arrange the atoms that make up everything. Most of the laws of nature once thought of as fundamental are now understood as emergent and approximate. Temperature is just the average energy of atoms in random motion, so the laws of thermodynamics that refer to temperature are emergent and approximate.

I'm inclined to believe that just about everything we now think is fundamental will also eventually be understood as approximate and emergent: gravity and the laws of Newton and Einstein that govern it, the laws of quantum mechanics, even space itself. (Smolin 2013: xxx-xxxi)

Contrary to these higher-level emergent features, "Time will turn out to be the only aspect of our everyday experience that is fundamental." According to Smolin, only Time is fundamental, and this is the reason that it is the only thing that is *not* emergent. While, according to Alexander, Time is emergent, and this is the reason that it is the ultimate fundament of any higher-level emergent development of reality. The starting claims are exactly the same: we should finally acknowledge the fundamental reality of Time both in science and philosophy. However, the concept of emergence, unfortunately, has been turned on its head.

This is not a new development at all, which is why we do not even understand Alexander's original concept. According to Alexander's original intention, the concept of emergence simply expresses the *empirical* fact that we live in an evolving universe. This is the original metaphysical meaning of the concept, excluding both any kind of dualism or idealism and any kind of materialism or physicalism.

However, according to the rising influence of logical positivism and analytical philosophy as well as materialism and physicalism, this original metaphysical meaning did not spread at all, but it has been displaced practically within a few years by an *epistemological* or instrumental one. Accordingly, today in philosophy and science, the concept of emergence, as we could see from Smolin's words, expresses such comprehensive characteristics of complex *material* phenomena, the laws and descriptions of which, since those are not the direct characteristics of the parts, in some sense, cannot be reduced to the laws and descriptions of the factually existing material parts; and, thus, the only real question is what the different methods of reduction are or, more exactly, what their sense, limitations, and types are defining the (actual) concept(s) of emergence. The contemporary literature on emergence from the famous Oppenheim and Putnam paper (1958) until, for example, today's so-called enactivism deals with the arising problems of this kind of differentiation between the levels. Nonetheless, this epistemological meaning and analytical tradition comes from C. D. Broad himself, who introduced his extremely influential views concerning the concept of emergence in his *The Mind and its Place in Nature* (1925), just five years after the publication of *Space, Time, and Deity*.

In philosophy, according to a new kind of dualist approach, there is a third meaning of the concept of emergence, too. According to this approach, the observable development in the universe is not the consequence of its own,

independent logic or nature of the process itself, but there is a deeper *divine activity* behind it which, in fact, spurs this development. This, in the case of biological development, means a kind of theological concept of evolution, of course. This meaning comes from Lloyd Morgan, especially his famous *Emergent Evolution* (1923), who sharply separated science and his so-called *constructive philosophy*. In the case of the former, according to the modern positivist attitude or conviction, he does not allow any traditional philosophical/metaphysical explanations and principles; at the same time, he thinks that the traditional mechanical or physical explanation of the complex phenomena is not well-grounded and the emergence of the universe and, thus, the reality of different higher-level emergent phenomena is a well-observable empirical fact. In the case of the latter, however, he claims that this well-observable development—in the lack of the reality of Time we could add—cannot be accounted for by any natural phenomena but only by a divine “Activity” of God.

These three authors together, Samuel Alexander, Lloyd Morgan, and C. D. Broad, are usually called the British Emergentists, and as I hope we can see, they themselves have already developed those conceptual frameworks in which we tend to use the concept of emergence ever since. Accordingly, the label “British Emergentism” is a pretty loose term since we can speak of a kind of comprehensive emergentist thinking only in a very wide or tacit sense. Contrary to Alexander’s original intention, the concept of emergence has already lost its independent or original metaphysical meaning in the hands of Morgan and Broad; that is, contrary to the two modern Western metaphysical traditions, dualism and materialist monism, which have a decisive influence, it did not develop an independent emergentist metaphysical philosophical tradition at all.

With Broad’s illuminating terms, his own position is emergent *materialism*, that is, with today’s term, non-reductive physicalism; Morgan’s position is emergent *dualism*; while Alexander’s position is emergent *neutralism*, that is, neither dualism nor materialism, and this is exactly its central point (Broad 1925: 649). However, neither Morgan nor Broad could acknowledge Alexander’s starting point: emergence, in its deepest fundamentals, is nothing but the relation of Space and Time; therefore, Time is real and even matter itself is an emergent aspect of reality.

Nonetheless, in a broad or tacit sense, there is a common attitude or conviction among the three British Emergentists, namely, that all of them strongly believe that, based on the observable facts, it is clear that we live in an evolving universe, that is, on the one hand, there is no divine creation and, on the other one, reality is not just material in nature. Morgan also does not believe that there is divine creation; that would mean the violation of the separation of

science and constructive philosophy. There is only divine Activity which unfolds through the long course of emergent evolution, meaning that concerning the evolving universe, he is a staunch emergentist, but concerning the ultimate reality, he is still a dualist (emergent dualism).

However, it is a clear conceptual contradiction that Broad, according to his own conceptual expression, is an emergent materialist, and he still believes that reality is not just material in nature. For Broad, the concept of traditional materialism that there is only one material substance and nothing else is obviously nonsense (although, he prefers stronger words) since we have direct experiences concerning the mind and that is clearly not material; so, for him, the term materialism merely means that there is only one substance, matter, but *reality itself* is much *more* than that. However, since he strictly follows the analytical method, he defines this “more” only in the *epistemological* sense and does not give any metaphysical description.

Moreover, in different cases, he uses different, conceptually *contradictory* definitions. For example, according to him, propositions, especially logical and mathematical terms are not material or mental existents (substances) but “*abstracta*” (that is, especially the realms of “Pure Logic” and “Pure Mathematics”) which is a completely another category of reality than the traditional substances of matter and mind (Broad 1925: 18-19) and instead means a kind of *idealism*. Or, it only becomes clear in the last chapter of his book what he really means under its title “The Mind and its Place in Nature”: the “*perpetual progress*” of mankind both in the bodily and the mental or intellectual senses; consequently, according to him, idealism, if it is properly understood in this sense, is not contradictory to materialism (Broad 1925: 654). Contrary to Alexander, Broad does *not* want to be coherent concerning the different questions or topics to be examined, and he even explicitly states this (Broad 1925: 10); while, for Alexander, the coherence of perspectives is the indispensable starting point for truth.

Nonetheless, the most important Broadian conceptual definition, which is once more a fundamentally different one contrary to the above, is his definition of emergence by the concept of *reduction*. Accordingly, a comprehensive property or law of a *material* compound is emergent if there is no other (traditionally, some kind of vital or mental) substance present; still, this higher-level property or law *cannot* be reduced to the actual lower-level properties and laws of the parts of the given compound. For example, the otherwise well-known chemical properties of water (H₂O), such as being a tasteless, odorless, almost colorless liquid, cannot be known from the more fundamental properties of hydrogen and oxygen. In contrast, the mass of the water is simply the direct result of the masses of hydrogen and oxygen, of course (Broad 1925: 62-63). Consequently, in Broad’s conceptual interpretation, emergence in itself

has no metaphysical meaning but is the simple *contrary* of the conceptual process of reduction. As a matter of fact, he rejected Alexander's original concept because Alexander claimed that the mind and any other emergent phenomena, which, fundamentally, are all different kinds of space-time complexes, in a (non-materialist or non-logical/mathematical conceptual) sense, could be reduced. (Broad 1925: 639)

One could ask at this point, then, what is the basis of Broad's claim that there could be real mental or intellectual progress in the case of mankind? What is the *real* difference between emergent water and emergent mind? How is a compound of different *material* substances capable of perpetual mental progress if the mind is "obviously" not material? According to Broad, there exists a specific "psychic" material component that survives the death of the body, and it is accessible to other minds, especially for sensitive mediums. Broad bases these claims on the "indisputable" and "firmly established" facts of telepathy (Broad 1925: 16-17, 396-400) and his experiences of different séances and spirit summoning. He thinks that, by analogy of chemical compounds, the mind (only in the case of man) is probably a unique compound of bodily/material components and this not yet discovered psychic/material component, and, in reality, this unique compound is that specific thing/substance which possesses the quality of consciousness. (Broad 1925: 535-550)

I personally do not find Broad's concepts and arguments convincing; I believe that the only way emergentism can be consistent if, with his term, it is neutralism, that is, in the traditional dualist and materialist sense, it rejects the reality of both the material and the mental substances and, in a new, independent metaphysical sense, it defines that the only fundament of reality is *emergence* itself; in other words, the evolution of the universe has its *own* distinct logic or nature and *every* existing thing including matter and mind and logical and mathematical terms emerges or unfolds from this fundamental emergent process. This was Alexander's goal. This means, of course, that the fundamental ordering principle that determines this evolution can be neither material nor mental because, in reality, both matter and mind are emergent.

The pivotal problem because of which neither Morgan nor Broad could accept Alexander's original concept of emergence, and I like to emphasize that among scientists and philosophers this general attitude has not changed a bit since then, is twofold. On the one hand, this means that there is *no* God and cannot be which excludes the traditional dualist conviction; and, on the other hand, science or, more exactly, fundamental physics which, by its mathematical experimental method, tries to define the fundamental material substance is *not* the complete description of reality and cannot be which

excludes both the traditional materialist and the more modern positivist and physicalist convictions.

The former is, of course, Morgan's case, and the latter is, in fact, Broad's, who, following Gottlob Frege and especially Bertrand Russell, tries to define the parts of reality that are more than material substance by positive, anti-metaphysical conceptual and logical analysis. Contrary to this, he simply regards Alexander's traditional empirical and metaphysical analysis as "philosophical jam" (Broad 1925: 55).

According to Alexander, in the traditional sense, there are no substances; there is only the emergence of Space and Time; fundamentally, every thing is a particular space-time complex in relational Space-Time; there is nothing over and above Space-Time; every thing, including every human mind, is related to other things in this relational existence of Space-Time. Therefore, on the one hand, there are no objective things given as they are in the absolute sense of their substantial nature; there are only real appearances and real perspective between things in Space-Time; and, on the other hand, the sensory experiences of the so-called secondary qualities of matter and their usual experiential refinement into exact mathematical data are not our only source of knowledge; we cannot see other minds, still perfectly know that there they are or we cannot see the space inside the walls, still perfectly know that there it is and it is not the same as the continuously expanding Space itself both inside and outside the walls.

Our description of Space-Time itself and of the features which belong to any bit of it is but a means of reaching by thought to what is deeper and more fundamental than the products of thought. (Alexander 1920 I: 337)

We can do this because we are not mental substances trying to use the concepts and rules of a kind of "Pure Mathematics" and "Pure Logic" which objectively transcends our material/bodily limitations but fundamentally as spatiotemporal as any bit of Space-Time itself. The relational nature of Space-Time and the principle of relativity not just limit our objectivity but also give us an evolutionary origin or, in this case, rather *heritage* by which we know way more than any formal logic of mind can tell us. So, after all, what are Alexander's so-called empirical metaphysics and his new evolutionary attitude by which he tries to solve "all the vital problems" of philosophy?

First of all, in his Introduction, he is very straightforward that: "For realism, mind has no privileged place expect in its perfection" (Alexander 1920 I: 8). Or: "the effect of the empirical method in metaphysics is seriously and persistently to treat finite minds as one among the many forms of finite existence, having no privilege among them" (Alexander 1920 I: 6). Nonetheless, then, he tries to

show his point by the extensive and detailed analysis of mind and its knowledge. I do not think that this is fortunate and the proper way to order mind to its proper place. So, I will only highlight the first few pages of his Introduction and handle the problems of mind indeed at their proper place. As we will see, most of my critiques will come from this problem that Alexander, although he is crystal clear about what his real goal is, still always circles back to mind, casting a deceptive shadow on his deep evolutionary attitude.

Nonetheless, in the first few pages of his book, he unambiguously clarifies that philosophy is *metaphysics* and uses Aristotle's traditional definition that it is the science of *being*. Therefore, philosophy "differs from the special sciences, not so much in its method as in the nature of the subjects with which it deals" (Alexander 1920 I: 1), meaning, of course, that metaphysics is a general and comprehensive study connecting the sciences through reality or being itself and not a special one. This is the meaning that metaphysics is empirical. "It will proceed like them [the special sciences] by reflective description and analysis of its special subject-matter" (Alexander 1920 I: 4).

According to Alexander's realism, rendering the mind to its proper place, there is no deep abyss between philosophy and science, as we have seen both in the case of Morgan and the case of Broad, who, in different ways, but according to a positivist attitude, sharply separate the science of being and the special sciences. For Morgan, it is constructive philosophy based on explicit dualist beliefs (emergent dualism); while for Broad, it is the analytical method based on Pure Logic and Pure Mathematics (emergent materialism), and traditional empirical metaphysics is simply "philosophical jam." For Alexander, there is no deep abyss, because he does not believe either in divine Activity or in objective (i.e., divine) logic and mathematical analysis. He believes in *experience* wherever it leads us: "facts, however strange the description of them may be, must be accepted loyally and our theories accommodated to them" (Alexander 1920 I: 133).

However, I like to underline once more that for Alexander, experience is not the result of the so-called scientific method of the special sciences, that is, specific mathematically expressed exact data of a material phenomenon based on the senses but the *whole* experience of human existence. For example, our experience that our time in existence is slowly passing away is not the same as the exact data of mechanical clocks expressed in the fourth dimension of a coordinate system. In this sense, experience and empirical metaphysics are "non-empirical or *a priori* or categorical" (Alexander 1920 I: 4). And this is the reason that Fischer finds Alexander's argument concerning the unique reality of Time obscure; van Fraassen does not even mention him; or that the outspoken Broad calls his empirical method simply philosophical jam. Contemporary science and analytical philosophy, based on the results of the

special sciences, according to a positivist attitude, do *not* believe in experience; they believe in exact data, the mathematical/experimental method, and modern logical analysis. When Alexander speaks of the special sciences, he does not speak about this positivist vision. According to Alexander:

The senses have no privilege in experience, but that they are the means by which our minds through our bodies are affected by external objects. Sensations, though integral parts of experience, are not the only ones. Thoughts are experienced as much as sensations, and are as vital to experience. It may even appear that there are experiences simpler and of a lower order than sensation itself; and it may be possible to indicate the precise relation of these various forms of our experience in the economy of things. A philosophy which pursues an empirical method is not necessarily a sensationalistic one. It deals with the actual world, but the parts of it with which it deals empirically are non-empirical parts of that actual world. (Alexander 1920 I: 4)

If you look up at the night sky, in the bright, starry eye of Space-Time, you will clearly experience that you are a small, finite part of an infinite existence, and you will literally see the past of the stars in three dimensions; still, a “good” scientist would ignore these so-called subjective impressions, because of which he/she has become a scientist in the first place at all, and would start to calculate the so-called objective data of some experiment and regard the passing of Time as an exact mathematical variant of a fourth coordinate. If we are the children of evolution in an evolving universe, and mind is ordered to its proper place, then neither our senses nor our reason is fundamental. In other words, there was a time when we had neither senses nor reason yet, but we were led by more fundamental experiences. Alexander simply calls our fundament of sense and reason *intuition*.

Contrary to this, the usual method of mathematical physics and science is still based on the postulation of a so-called objective observer over and above Space-Time usually called “view from nowhere” which, with Alexander’s words, is, of course, an “impossible assumption of an observer outside the whole universe” (Alexander 1920 I: 67). It is perfectly Broadian in the sense that it postulates that the universe exclusively consists of *material*/physical substances; still, it describes this only one material/physical substance from an outside absolute *mental* perspective by objective logical and mathematical terms. This is the reason that a famous sociologist of knowledge calls this positivist philosophical attitude “theology in disguise” (Bloor 2007).

As we will see in more detail, according to Alexander, the complete mathematization of modern physics comes from the new positivist wave of his

time or, more exactly, from the mathematization of metaphysics itself by modern logic. He will emphasize the influential role of Alfred Whitehead, Gottlob Frege, and especially Bertrand Russell, and he has serious fears concerning the future of philosophy (that is, traditional metaphysics, of course). Now, I only want to underline the big difference between the attitude of realism and the attitude of positivism and its connection to “the problem what Space and Time are and more particularly how they are related to each other” (Alexander 1920 I: 35).

Now it is this last calamity with which metaphysics is threatened [...] For the mathematical philosopher, mathematics and logic and metaphysics become in the end, except for minor qualifications, identical. Hence philosophy has been described by Mr. Russell as the science of the possible. This is the inevitable outcome of beginning with things or entities and generalising on that basis. Our empirical world is one of many possible worlds, as Leibniz thought in his time. But all possible worlds conform to metaphysics. For us, on the contrary, metaphysics is the science of the actual world, though only of the *a priori* features of it. The conception of possible worlds is an extension from the actual world in which something vital has been left out by an abstraction. That vital element is Space-Time. (Alexander 1920 I: 177-178)

So, contrary to Broad’s “theology in disguise” and Russell’s “mathematical metaphysics,” Alexander’s determined goal is a *strict realism*: “to de-anthropomorphize” and “to order man and mind to their proper place among the world of finite things” including logics, mathematics and physics (Alexander 1914: 1). Consequently, Alexander’s empirical metaphysics is entirely coherent and, thus, necessarily *circular* and metaphorical at some points as he is searching after the bottom of our very existence: the emergence of Space and Time, the very „stuff” from which every existent is built up, including our mind, our language, our mathematics and, of course, our deep philosophical attitudes; there are no exceptions, not even the so-called scientific method or modern formal logic. Although now Alexander’s work is more than a century old, it is, in fact, revolutionary new compared to the usual inquiries of science and philosophy of our time.

I am trying to do the same. This Introduction, as Alexander’s own Introduction was in his own way and in his actual philosophical and scientific context, is a first short circle of our internal deep dive to shed some light on the coherence and deepness of his concept of Space, Time, and emergence and especially on the reasons why we do not understand his concept in our actual philosophical and scientific context and never will if we are still thinking in a usual Broadian analytical and non-reductive positivist/physicalist conceptual

framework. Although they are called fellow British Emergentists, they are day and night; they are “philosophical jam” and “incoherent conceptual trickery” in relation to each other; and there is no objective observer or view from over and above Space-Time to definitely decide between them in the absolute sense; truth starts on the fundament of the principle of relativity.

This is a Guide to the origin of the concept of emergence or, which is the same, to Samuel Alexander's *Space, Time, and Deity*. It will not deal with the contemporary discussions of the concept of emergence or the contemporary secondary literature on Alexander because that would only lead to futile debates; instead, with detailed internal analysis, it will circularly try to dive deep into Alexander's barely known concept of Space, Time, and emergence. I believe that even after over a hundred years, we could learn a lot from him.

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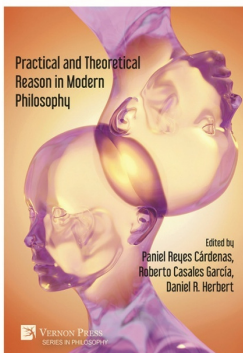
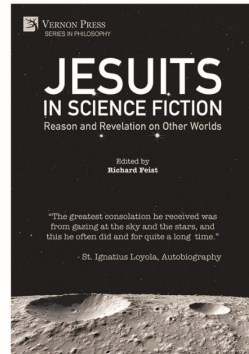
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