UNDERSTANDING EMERGENTISM – Jon M. Fennell is Right, Polanyi's Emergence is Reductive

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Abstract

In his paper "Is Polanyi's Emergence Reductive?" Jon M. Fennell after a detailed analysis of the problem rightly answers the question asked. Nonetheless, he sheds light on some deeper problems too. In this reaction-paper I try to follow his lead and drill further to better understand the concept of emergence and Polanyi's philosophy.

Keywords: emergentism, reduction, materialism, Jon M. Fennel, Walter Gulick, Michael Polanyi.

1. Preface

I have been asked to write about Mr. Fennell's paper "Is Polanyi's Emergence Reductive?" published in *Appraisal* last winter (Fennell 2017). Receiving this request is a great honor for me, and I'm gladly fulfilling it. However, my task is hard because my opinion is simple: he is right, Polanyi's emergence is reductive. So, what should I write? I could only recommend that you read his excellent and detailed analysis as he examines the problem from different angles.

Nonetheless, I feel that his paper, in its real spirit, is not about the reductiveness of Polanyi's emergentism, but sheds light on the deeper meanings of Polanyi's philosophy and emergentism by mainly arguing against the claims of Walter Gulick. Mr. Fennell's paper is highly analytical and dense in information; in this reaction paper I will choose a more Polanyian style to speak about the point of emergentism and Polanyi's philosophy to delve more deeply into Mr. Fennell's reasoning.

2. The Reality of Persons and the Reality of Evolution

There are several ways to explicate the point of emergentism; however, the point of the point is *tacit*. You need a genuine heuristic effort, a "Gestalt switch" in your angle to understand it.

Emergentism is *the fundamental belief and acknowledgement of two personal facts*: 1) *the reality of persons*, and 2) *the reality of evolution*. However, these explicit words in themselves mean nothing. You will understand them on the basis of your own fundamental beliefs. For example, Walter Gulick would certainly say that he believes in both of these facts. He still argues beside neo-Darwinism and against Polanyi; and neo-Darwinism explicitly denies both of these facts. If you feel now that there is a severe contradiction in my words that's okay, but in fact there is none. Because, of course, both Polanyi and I understand these explicit words on the basis of our tacit fundamental beliefs, which are clearly very different from Gulick's. For example, the word "evolution" means for a neo-Darwinian, simple change based on natural selection, whereas for Polanyi evolutionary emergence is based on natural selection and ordering principles.

3. The False Dichotomy of Materialism versus Dualism

Emergentism is about *breaking the false dichotomy of materialism versus dualism*. It is our natural human experience that reality has many faces, and at least two of them can be well-recognised. They were already called a kind of spirit and a kind of body in archaic times. Nonetheless, Plato defined them philosophically as Ideas of the spiritual world and bodies of our shadow world, and Christianity believed him. Aristotelian philosophy and science, which become influential only in the Middle Ages, in a sense tried to leave behind this dualism with a hierarchical view of reality. But then modern critical philosophy and science were born, especially from the efforts of René Descartes and Galileo Galilei, and it established Plato's dualism in a new form: mind and matter. Materialism is also a consequence of modern critical philosophy, and it doubts even the existence of minds or persons, that is, the reality of our natural tacit experiences about ourselves, about our free nature. According to materialism, there are no minds, there are no persons; these are just vacant, naïve terms for complex material systems. There is only matter. Neo-Darwinism is the materialist theory of evolution against the "unscientific" creationism and vitalism of dualism. So, emergentism is all about breaking this materialism-dualism dichotomy of modern critical thinking and establishing a middle ground between these fundamental

beliefs towards reality. This is why Polanyi gave the subtitle "Towards a Post-Critical Philosophy" to his *Personal Knowledge*.

Emergentism was established by Samuel Alexander with his *Space, Time, and Deity* (1920), but it never became a real independent philosophical school. First of all, it was swept away by the rising power of materialism, and secondly neither of the two major followers of Alexander could acknowledge his starting point: that reality in its fundaments is space and time. Lloyd Morgan took a path that could easily be understood as a new kind of dualism, whereas C. D. Broad in turn took another that could be understood as a new kind of so-called non-reductive materialism—"emergent materialism" in Broad's words. The dualism-materialism dichotomy broke the new school at its birth and not the new school broke the dichotomy. Polanyi tried to breathe new life into emergentism at the middle of the 20th century with his theory of tacit and personal knowledge, but he clearly failed. Nonetheless, I believe it's time to try again.

So, if emergentism is true, this means that there are human persons, the reality of whom 1) can*not* be explained merely by their explicit material parts of the present, and 2) *can* be explained by their tacit evolutionary history, that is, on the basis of their explicit material conditions and comprehensive ordering principles of the past and present. The first thesis explains why Polanyi's theory is not "reductionist," in Thomas Nagel's terms, and the second thesis shows that it is still reductive, as Fennell rightly observes. However, the deeper meanings of Polanyi's and Nagel's positions are clearly different.

4. There is no Objective Point of Reference

Emergentism is facing the fact that *there is no objective point of reference*, that all knowledge is based on a personal point of view in a particular place and time. In science, the concept of objective knowledge is based on the worldview of Newtonian mechanics, the point of which was presented so perfectly and famously by Pierre-Simon de Laplace. Polanyi always cites this short passage from Laplace, and we mention Laplace's demon as the ideal objective knower so often in almost every scientific field. So, according to Laplace, this ideal objective knower is a super-intellect that, at any given moment, can grasp the exact place and velocity and any other fundamental characteristics of all of the objects in the universe. Since this super-intellect is also perfectly familiar with the laws of mechanics, it follows that it can deduce from these two factors all the possible past and future states of the universe. In this concept of the universe, time is merely a fourth dimension of space; there is no present which follows the past or future which follows the present but all time of the universe exist beside each other in the so-called block universe at a long-drawn fourth dimensional "present." You can't choose what you will do next because you are, of course, also a part of the block universe, and everything in the universe is strictly determined in this mechanical sense. As a matter of fact, not just free will, but also motion becomes an illusion because everything is written in the hard stone of the fourth dimensional block universe. So, if this picture of the universe is true, as so many eminent physicists believe today, that means there is no real meaning, there is no free will, and there are no responsible actions: Hitler or Stalin were not evil men, just the vacant puppets of the physical laws. Polanyi always emphasizes the importance of this severe tension between modern materialist science and free moral judgments, which are the basis of a free society.

Nonetheless, for us the other severe consequence of this concept of ideal objective knowledge is now more important: following the demon, we try to explain every phenomenon by their explicit material parts and laws. However, comprehensive phenomena and the ordering principles of comprehensive phenomena can be grasped merely by tacit knowing; the ideal Laplacian knowledge simply does not contain these phenomena. Therefore, if we are insisting on our ideal of objective knowledge, we inevitably start to deny the reality of any kind of comprehensive phenomena and ordering principle or use deceptive substitutions by which we hush up the whole problem. With Polanyi's words from *Personal Knowledge*:

> „The tremendous intellectual feat conjured up by Laplace's imagination has diverted attention (in a manner commonly practised by conjurers) from the decisive sleight of hand by which he substitutes a knowledge of all experience for a knowledge of all atomic data. Once you refuse this deceptive substitution, you immediately see that the Laplacean mind understands precisely nothing and that whatever it knows means precisely nothing." (PK 141)

So, a Laplacian Fault or deceptive substitution is kind of a magic trick by which exact, perfectly explicit formulas fill the positions of tacit experiences and concepts that are based on personal knowledge, and then we pretend as if the two knowledges could correspond to each other exactly; therefore, there is no need for tacit skills and personal knowledge in true scientific knowledge and our knowledge can be separated into two distinct,

contradictory parts due to the objective-subjective dichotomy.

When Polanyi introduces the concept of deceptive substitutions in the first chapter of his *Personal Knowledge,* his more detailed example for the concept is the *principle of simplicity*, which is the basis on which one scientific theory is preferred over another one. However, according to Polanyi, the real meaning of simplicity cannot be defined and understood only by explicit objective criteria, as we like to pretend, if in the meanwhile we do not refer to the concealed rationality of reality behind the theories that in fact guide our choice and that cannot be specified objectively. The theory of relativity or quantum mechanics are not simple at all at the exact and objective level of their mathematics if we tacitly refrain from referring to their implicit scientific rationality and meaning concerning reality. (PK 16)

Perhaps it is worth mentioning that Polanyi in turn introduces in an explicit form the concept of personal knowledge through the concept of deceptive substitutions when he speaks about simplicity, which he actually does only in regard to the case of Albert Einstein's theory of relativity. He emphasizes that *scientific beauty* was mentioned several times by Einstein's followers in their explanations of why they chose Einstein's special relativity over H. Lorentz's ether theory, which complied with the experimental data just as much as Einstein's had. Or later, they cited it as the reason why they chose Einstein's general relativity over D. C. Miller's experimental results when, of course, the latter complied with the experimental data. According to him, the concept of beauty refers to that *inherent rationality of nature* that was revealed by Einstein's theory, and it is exactly what we mean by the words scientific beauty. By using another term instead, however, we conceal this fact as if it is only about some aesthetic point. Then we do not have to contradict the materialist dogma that there is no deeper, inherent rationality in nature beyond the strict and exact data of fundamental material particles and their governing explicit physical laws.

Polanyi asked Einstein what the motivation was for his discovery of special relativity, and we know that the answer was not the results of the very famous Michelson-Morley experiments, but his vision of how the universe would look if someone could ride a light beam. According to Einstein's theory of relativity, simultaneity (of the ideal objective observer) is always in question. Different observers at different times, places and velocities could find the time sequence of events different. An event A that is before another event B for one observer could be after event B for yet another one. Furthermore, time and space is not absolute, but depends on the situations of the observers, that is, what their points of reference in the universe are. For example, time on Earth will go differently from that experienced in a fast spaceship, as the famous twin paradox depicts it. Moreover, observation itself is highly limited, not just because of human imperfection, but also because it can only be carried out at the maximum speed in the universe, that is, at the speed of light. Anybody who looks up to the night sky does not see how Sirius is doing at that very moment, but instead witnesses how it was doing eight years ago. There is no time here to go into details, but notice how Einstein intuitively left behind the Newtonian-Laplacian point of reference.

Polanyi says in the first page of *Personal Knowledge* that "as human beings, we must inevitably see the universe from a centre lying within ourselves," and this is the main point of personal knowledge. Einstein speaks about there being no absolute space and no absolute time, how every point of reference has its own space and its own time, and that from every point of reference every other time and space seems to be different. In these statements, both Polyani and Einstein are, in fact, speaking about the same thing. *There is no objective point of reference*.

5. Emergentism is not anti-Darwinian

When neo-Darwinians describe the different changing processes in an allele-distribution with exact probability calculations or the spread of a new mutation in the gene pool of a population, they try to follow the concept of ideal objective knowledge. They use highly advanced mathematics and point-like entities in a multi-dimensional mathematical framework to describe these processes as exactly as possible. However, these descriptions in themselves tell us nothing about any higher-level comprehensive processes or phenomena of life that we are interested in, as the ideal Laplacian knowledge tells us nothing about "any kind of tools, foodstuffs, houses, roads and any written records or spoken messages" (Polanyi 1959, 49). Imagine thousands and thousands of exact probability data expressed in a multidimensional matrix. How can any of these data *in themselves* tell us anything, for example, about a change in the hunting habits of a species?

Emergentism is the acknowledgement of the reality of comprehensive orderly wholes and the acknowledgement of the reality of ordering principles responsible for these orderly phenomena. Lower-level

random processes like natural selection or mutation cannot produce and cannot explain these comprehensive orderly phenomena. With Polanyi's words:

> "Randomness alone can never produce a significant pattern, for it consists in the absence of any such pattern; and we must not treat the configuration of a random event as a significant pattern, whether by attributing to it fictitiously a distinctiveness that it does not possess, as in the case of the scattered pebbles, or by granting it erroneously a specious significance, such as the fulfilment of a horoscope." (PK 37-38)

Emergentism is anti-neo-Darwinian, but not anti-Darwinian. The theory of natural selection is, of course, the fundament of all kinds of Darwinisms. From a scientific point of view, the most important difference between the Darwinian and the neo-Darwinian theories is that the former does not yet include genetics. At the beginning of the 20th century, it was not clear at all what the relation is between Darwin's theory of natural selection and genetics based on Gregor Mendel's principles. Darwin's theory, due to observation, simply supposed that there are variations of living beings among which selection works, and it gave no explanation for the formation of variations. Mendel, at the same time, explicated the principles of heredity entirely independently from the theory of natural selection.

Concerning its methodology, Darwin's work is rather a *historical explanation* by detailed *empirical examinations* based on his personal experiences from his voyage on the Beagle onward, whereas genetics is *highly theoretical* and *mathematized*. It is mainly R. A. Fischer's merit, based on his statistical methods, that this methodological gap was bridged and the Darwinian mechanism of natural selection was reinterpreted in the framework of genetics. According to Polanyi, by this interpretation, Fischer moved the Darwinian theory in the direction of the Laplacian ideal of objective knowledge and this process only continued and was strengthened through neo-Darwinian synthesis.

From a philosophical point of view, the conflicts just multiply. Since Darwin himself never claimed that the theory of natural selection can explain the comprehensive phenomena of evolution or the first formation of life, and thus that natural selection is the only fundamental mechanism in evolution. However, it is perhaps the most important principle of neo-Darwinism. In *The Origin of Species*, Darwin argues more modestly that natural selection can explain the formation of new species in wild nature in the same way as artificial selection, that is, livestock breeding can explain the development of new subspecies of dogs, pigeons, sheep, etc. Here I would just like to recall the last words of Darwin in *The Origin of Species* indicating that his theory does not explain the origin of life.

> „There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being evolved." (Darwin 1872, 429)

In most cases in *Personal Knowledge,* Polanyi speaks about only Darwinism. We discover only from the context which kind or level of Darwinism he is exactly referring to. Nonetheless, to understand the point of his critique, it is enough to see the difference between Darwinism and neo-Darwinism. Then when he harshly argues against explanations by random genetic mutations or he states that the theory of natural selection as a lonely fundamental mechanism cannot explain any real comprehensive evolutionary orderly phenomenon of nature, then he, in fact, does *not* contradict Darwin because Darwin himself never claimed these things. So, Polanyi does not debate Darwin at all. To the contrary, he debates merely the neo-Darwinian expansion of his theory.

It follows that if we do not identify Darwinism with neo-Darwinism then Polanyi could and *should be* regarded as a Darwinian because in the limited original sense he completely acknowledges Darwin's theory of natural selection. Moreover, I dare to say that he is more faithful to the original spirit of Darwin's work because Darwin did not conclude the questions about, for example, the comprehensive orderly phenomena of evolution and its ordering principles, as neo-Darwinism does due to materialism. Of course, Darwin was not an emergentist, but he was not a materialist either. I believe that he did not know yet what to think about these fundamental questions and therefore left the door open for further examinations.

6. Ordering Principles

However, as Fennell notes so insightfully, neo-Darwinians try to shut down the door, not with arguments, but with labels and the power of authority.

> "So, what price is exacted for embracing a preexisting ordering principle? To begin with, it certainly entails censure by scholars committed to the neo-Darwinian account, especially its contemporary form, bolstered as it is by features such as those cited by Gulick." (Fennell 2017, 29)

As a matter of fact, if you strictly follow Polanyi's criticism of neo-Darwinism, your paper will probably not be published even in *Tradition and Discovery*, The Polanyi Society Periodical; because everybody "knows" that neo-Darwinism is good science and there is no need for further examinations. Polanyi vehemently complains about this situation already in the fifties:

> "It is obvious, therefore, that the rise of man can be accounted for only by other principles than those known today to physics and chemistry. If this be vitalism, then vitalism is mere common sense, which can be ignored only by a truculently bigotted mechanistic outlook." (PK 390)

Fennell notes that even Gulick acknowledges at one point that Polanyi is not necessarily a vitalist if he thinks that there is a need for ordering principles to explain the comprehensive phenomena of life and evolution. Yes, he does but then he continues:

> "I referred to the vitalistic aspect of his thought because *Polanyi describes himself* (in the passage I […] quoted from PK 390) *as a vitalist* insofar as he thinks a principle beyond the laws of physics and chemistry is what is necessary to explain evolution. My point is neo-Darwinian thought provides all the principled richness necessary to account for evolutionary emergence and does not deserve censure on this point." (Gulick 2012, 59)

So, since the neo-Darwinian theory has every principle that is needed for the explanation of evolutionary emergence, if Polanyi does not realize this, then he even with these words acknowledges that he is a vitalist: "If this be vitalism, then vitalism is mere common sense, which can be ignored only by a truculently bigotted mechanistic outlook." Because he is either a neo-Darwinian or a vitalist; there is no third option. Do you also wonder whether what Gulick understands under the term of "evolutionary emergence" if he thinks that the neo-Darwinian theory with only "the laws of physics and chemistry" "provides all the principled richness necessary to account for" it? For him, evolutionary emergence refers only to a complex material process. Otherwise, it cannot be explained solely by the laws of physics and chemistry. He is clearly thinking in the modern critical dichotomy of materialism vs. dualism, in this case neo-Darwinisn vs. vitalism, where Polanyi's emergentism simply does not exist.

What is an ordering principle? The principle of simplicity, which is the basis on which a scientist chooses between two different theories, for example, between those of Einstein and Lorentz, is an ordering principle of scientific discovery. "Thou shalt not kill" is an ordering principle of morality that was clearly not followed by Hitler or Stalin. The principle due to which a hunting lion chases its prey towards her hiding flock members is an ordering principle of animal life. The operational principle according to which a machine works is an ordering principle of engineering. The information due to which the skilled flight of a bat develops during ontogeny is an ordering principle of biological development. In our everyday life, in scientific practice and in biological explanations of life, we use these ordering principles to act or to explain comprehensive orderly phenomena. This is as natural as possible. However, the objectivist ideal of science and the materialist conviction of the ruling neo-Darwinian theory force us to doubt the reality of these ordering principles, that is, question their own existential meaning. According to neo-Darwinians, genetic information is nothing other than a specific sequence of DNA. According to Polanyi, this claim is false even in the logical sense (Polanyi 1969) because genetic information is a comprehensive emergent reality; in many cases, it is a coded ordering principle of biological development. According to materialism, the ordering principles of morality are also not real. According to emergentism, they are meaningful ordering principles of human cultural life.

To explain the meaning and workings of the most general ordering principles, that is, the ordering principles of life and evolution, is a much harder and longer task. They mean nothing to a person, such as Gulick, who committed himself to the fundamental beliefs of neo-Darwinism and materialism. Nonetheless, I think I understand them much better now, so I will make an attempt in another paper in the near future. Perhaps, now you already suspect that materialism and emergentism are also types of ordering principles of philosophy and human understandings of reality.

7. Meaning

Fennell cites Gulick at great length during the subchapter titled "Gulick's Sharpening the Issue" (Fennell 2017

31-32). Here, to save the meaning of human life, Gulick speaks again of different kinds of emergences and operational principles of machines—after he had rejected so many times Polanyi's emergentism and any need for ordering principles beyond "the laws of physics and chemistry." Nonetheless, Gulick understands well that neo-Darwinism and materialism in case of human life would lead to the loss of any real meaning and, as we have seen, there would be no free will or responsible actions. Even Hitler or Stalin would be not evil men, but merely the vacant puppets of physical laws. Everything and anything could be justified by power and ideology.

So, what is the answer according to Gulick? "Participation in a purposeful cosmos." (Gulick 2005, 95) Fennell describes this concept of Gulick in the following way:

> "Interestingly, this participation is made possible through worship of God. Giving oneself over to God—and here Gulick indicates that he understands himself to be closely following Polanyi—constitutes an affirmation of meaning. In Gulick's felicitous phrasing, such commitment 'is a virtually self-authenticating way of discovering how life is invested with purpose and significance' (Gulick 2005, 96)." (Fennell 2017, 32)

It is important to see two things at this stage. Firstly, Gulick, up to this point, has attacked Polanyi and emergentism on the basis of neo-Darwinism and materialism. He has stated that Polanyi's ordering principles are vitalistic, that is, unscientific and unnecessary because they are on the wrong side of the materialism vs. dualism dichotomy, and because the neo-Darwinian theory, with only "the laws of physics and chemistry," "provides all the principled richness necessary to account for" evolutionary emergence. But now Gulick makes a big leap to the other side of the dichotomy—which now, by the way, seems also to be necessary and scientific—and claims that meaning can be saved by "giving oneself over to God." If neo-Darwinism is true, then there is no God. Just ask Richard Dawkins; he has a consistent position on this question.

Secondly, Gulick is wrong if he thinks that he is following Polanyi in any sense. For Polanyi, meaning comes from the evolutionary emergence of persons due to the ordering principles of life and evolution, which were denied by Gulick. If you are an emergentist, God does not exist. Man cannot be at the same time the achievement of evolutionary emergence and the creation of God. This is simply a logical necessity. Nonetheless, the question is in which sense we use the term "God." Up to this point, I have used this term in the classical sense, which complies with the materialist-dualist dichotomy. Both materialists and dualists use the term in the classical dualistic sense according to which God is an infinite spiritual substance, the source of every meaning in human life through creation. Materialists explicitly deny this concept. As do emergentists. However, contrary to materialists, emergentists do not deny the reality of every higher-level ordering principle or comprehensive phenomenon.

Polanyi claims that religion "is an indwelling rather than an affirmation." Therefore, its point is not the affirmation of the existence of God, as it was generally treated due to dualism, but instead the immersion in a peculiar system of knowledge as an intellectual tool, that is, the *indwelling itself*. This process can be identified with the process by which a swagger-cane as a tool becomes a part of someone's hand, only it is realized at a higher existential level. (PK 279)

> „God cannot be observed, any more than truth or beauty can be observed. He exists in the sense that He is to be worshipped and obeyed, but not otherwise; not as a fact—any more than truth, beauty or justice exist as facts. All these, like God, are things which can be apprehended only in serving them." (PK 279)

It means that the statement that "God exists" is an affirmation of a tacit commitment, just as the statement that "snow is white is true" is an affirmation of the tacit act of claiming that "snow is white" and not an affirmation of an explicit fact referring to an aspect of reality as "snow is white". (PK 255) There is no such factual reality as God.

> „[Modern critical thinking] destroyed the religious meaning of things without fully compensating for this loss by a different meaning, and the total volume of belief, from which all meaning flows, was effectively reduced." (PK 286)

Every affirmation is the consequence of a person's tacit commitment; explicit sentences in themselves mean nothing. In this sense, *belief is nothing other than a tacit commitment towards reality* that an aspect of reality has a peculiar nature, character, property, etc. and the roots of belief stem *from human evolution* and not from a divine creation. Therefore, religious faith is a type of natural human belief in which someone's tacit commitments are caged into an explicit religious conceptual and explanatory system. The role of religious traditions (among others) was to provide the intellectual tools by which human societies could explicate their fundamental tacit beliefs meaningfully. Of course, the consequence of this process was that what societies think

about the universe, about their places in it, and about their goals. In other words, the meanings of the different aspects of reality were determined by religion. According to Polanyi, we have to be thankful that critical philosophy destroyed religious dogma and the static societies of the medieval and the early modern eras and thereby made thinking freer. But we do not have to be thankful that it did not give answers to the most fundamental questions of human life. Moreover, it often explicitly rejected these questions as unscientific, anthropocentric, and vitalistic, and we have seen that also in this paper in the case of neo-Darwinism. So, we do not have to be thankful at all because in the end the consequence of this process was that, according to the Laplacian ideal of objective knowledge, the universe has become meaningless.

> „The book of Genesis and its great pictorial illustrations, like the frescoes of Michelangelo, remain a far more intelligent account of the nature and origin of the universe than the representation of the world as a chance collocation of atoms. For the biblical cosmology continues to express—however inadequately—the significance of the fact that the world exists and that man has emerged from it, while the scientific picture denies any meaning to the world, and indeed ignores all our most vital experience of this world." (PK 284-285)

However, the universe is not meaningless at all, since in the universe there is life and there are human beings who have emerged from primordial material beginnings, due to the ordering principle of life and evolution, who are not merely give meaning to the world by means of their languages, but also by means of their lives and existences. These humans, most of all, can reveal and understand the inherent hidden rationality of reality, for example, by the discovery of the theory of relativity. This is the real participation in a purposeful cosmos.

Samuel Alexander uses the term "Deity" to make it clear that he speaks about a finite comprehensive emergent reality above the level of human persons or minds and not about the traditional dualistic and infinite concept of God. However, according to Alexander, "Deity" does not yet fully exist, its emergence is not at all complete, and, actually, never will be because that would mean the existence of God (Alexander 1920 II.: 347, 361-362).

So, if Gulick rejects the emergentist concept of meaning for the sake of neo-Darwinism, then he is not following Polanyi in any sense; he is fighting him. The reality of persons, the reality of evolution, and thus the real meaning of human life cannot be established on neo-Darwinian grounds.

8. Conclusion

Emergentism cannot be understood on the basis of materialist or dualistic fundamental beliefs. Its point is that it has its own fundamental beliefs regarding reality in contrast to dualism and materialism. One needs a really brave heuristic effort, a "Gestalt switch" in one's angle, to understand it. But since different fundamental beliefs towards reality have different explanatory powers, I can assure you that if you have understood Polanyi's emergentism you will never turn back to materialism in any form.

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