

On the Origin of Purpose: Une Faux Problème *

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Abstract

In this article we analyse the question of the origin of purpose. Due to the overwhelming success of science in explaining phenomena, it is often asked, when, and how science could explain purpose and consciousness by use of purely mechanical laws. Here I argue that such a reduction is impossible.

1 Introduction

Since the incredible discovery of Newton that one can understand the workings of the world with use of experiment and thought, it is the object of many thinking individuals to attempt to further this understanding. From the followers of Newton, who deconstruct their knowledge of the world in an attempt to find a mechanism to explain what their experiments show, to the innovators who make new breakthroughs in such mechanical understandings, those who try and find new mechanisms to explain new - or previously unexplained - phenomena.

*It was Henri Bergson who coined the term false problems in his essay "Les faux problèmes"

The vain through which the *èlan vital* of science and philosophy ran, was directed to the deconstruction of intuition, and experience into blind, mindless, ever pervading laws: **mechanisms**.

It is still this very vain of thought still leads to the heart of thought today.

As such, when one finally reaches back and thinks of this enterprise with the very kind of thought it advertises, when one demands of these thoughts a slither of conciseness, he runs into the all too fascinating question: "How do purpose arise from mindless mathematical laws?"¹.

This question is a question of "how", and not a question of "if", for an "if" would suggest that our entire enterprise of thought is, perhaps, on false grounds. We fear this possibility with the whole of collective conscience. We, us philosophers of science, us brave souls, who dare to question the very assumptions of the magic of science, we must rephrase it as "if", it is, in some sense, the very ground on which we stand.

This question can offer two meanings to us:

1. The first is a question of consciousness – can mechanics explain the purpose we observe, can this form of explanation be used to explain another forms, like *telos*? Can mechanics offer an explanation of a second order, a reflective thought? Can a mechanism therefore be responsible for consciousness?
2. The second is a question essence – if *telos* can be explained away by a mechanism, is it therefore more essential then it? Is it that our universe is but a machine?

¹This very question was the subject of an essay contest by the Foundational Questions Institute (FQXI). This paper is based upon an essay submitted to the contest by Kremer(2017)Kremer (2017).

To approach our hefty question we must first define our terms, what are mechanisms, what are purposes? These definitions will require discussion, one which is the very beginning of our venture.

2 Firm Ground to Lean On

In order for us to go on this investigation we must order the evidence present in the scene, and make sure we understand them properly. The question with which we are presented is "can *mindless mathematical laws* give way to *purpose*?".

In this question we swiftly run into two problems, two of them regard clarity and definition. what are mindless mathematical laws? what is purpose? These may bring about more questions – can there be mindful mathematical laws?

I would like to argue that *mindful mathematical laws* are in fact laws which rely on purpose, and are not different from purpose oriented laws in psychology and economics, or any other social science. This argument, like all good arguments, must rely on definitions and clarity of thought. so we must first answer our original questions.

What are mindless mathematical laws?:

With the aim of understanding the properties of mindless mathematical laws, we look at the most potent example – Newton's law of Universal Gravitation. This law is usually written as follows

$$F = G \frac{Mm}{r^2} \tag{1}$$

Here F is the force experienced by either of the two masses M, and m, and r is the

distance between them. By use of Newton's second law we write it as

$$\frac{d\vec{v}}{dt} = G \frac{M}{r^2} \quad (2)$$

For the sake of clarity, and brevity it was written as the first derivative of velocity and not the second derivative of position. As far as my eyes can see there is no limitation of generality between these orders of change.

This law, when put to words, would be as follows: *The instantaneous change in the velocity of a particle is directly proportional to the mass of a close particle over the distance between them squared* The key word here being instantaneous. This law regards the behaviour of the particle in some unspecified instant, or in the general abstract sense of an instant; but an instant nonetheless. This law, if put very heuristically, is a description of how this particle is to act at an instant, at a "right now". Such a law bears no reference to any duration of time, it does not demand or describe the action of a system over some period, but only cares for the present moment.

This is the essence of its *mindlessness*, it does not include a duration of time, but simply assigns an instantaneous value to \vec{v} .

On the other hand we have laws of purpose, like an evolutionary law "animals strive to mate, in order to continue their species", which describes the behaviour of animals of large periods of time with one sentence, in which there are no variables.

Under these considerations I would say that a *mindless* law is one which does not describe the past or the future, but simply an abstract general "instant". While a law which describes a purpose is one which prescribes a behaviour along a duration of time, perhaps all of time.

This definition is supported in the most unexpected of places: the second essay of Nietzsche's Genealogy of Morals. In his description of the emergence of the conscience he describes what is necessary for man to be able to make promises regarding the future. *"a world of strange new things, circumstances and even acts of will may be placed quite safely in between the original 'I will', 'I shall do' and the actual discharge of the will, its act, without breaking this long chain of the will. But what a lot of preconditions there are for this! In order to have that degree of control over the future, man must first have learnt to distinguish between what happens by accident and what by design, to think causally, to view the future as the present and anticipate it, to grasp with certainty what is end and what is means, in all, to be able to calculate, compute"*Nietzsche (2010)

It seems to me that a similar, and nearly identical argument may, and ought to be given for the case of purpose. Purpose requires a vision of the future, an ability to realise what will necessarily follow, so that one may plan, or set up aims, and intentions. Such a vision of the future is not present in laws like Newton's, for they, indeed, assign instant values, and deal in the instant, and not in any duration. In fact, in a world with the view of Newton there is no real future, but only separated instants, each bringing about the next, but having no "contact" with it.

It is precisely here that one might wonder, if we could give a more mathematically oriented definition, or criterion for identifying purpose, or mindlessness. This mission, essentially, is to look for **cause of instantaneity** in the equation. Looking for what gives this law its perspective on time. This fact is, of course, the derivative with regard to time. Aside from being a central point of previous discussion, it is the only term which involves time. Thus, changing the derivative we may arrive at two vastly different laws. Both of which will indubitably be false.

1.

$$x = G \frac{M}{r^2} \quad (3)$$

2.

$$\int_{t_2}^{t_1} x dt = G \frac{M}{r^2} \quad (4)$$

1 is not a law with any consideration of time, it is not influenced by the variable t at all. It is in fact a constant relation, once determined and forever to exist; x is $G \frac{M}{r^2}$, not matter the time or the place. Such a law may not be instantaneous, but it is certainly not purposeful, and in this regard it is neutral. Upon such a relation one may construct any kind of law, it is a universal building block.

The most obvious reason for this, is that usually such laws are a-priori. In physics we do not deal in unchanging quantities, this is the domain of mathematics. Relations like the definition of π are a-priori and are such building blocks, helpful in constructing laws of either variety.

On the other hand, one has the integral law 2. In order to use this law, we must have a knowledge of the function at both ends of this interval $[t_2, t_1]$, not only for practical use, but in principle; this law is useless if does not have a knowledge of the functions behaviour in this interval, while in the derivative law one must only care for the instant at hand.

It is thus that a differential equation is the calling card of a mindless law, while the integral law is the calling card of a purposeful law. One looks at singular moment, while the other looks at a duration, at a given future and a past.

Important Note: These definitions are not entirely universal, but only hold (to the

best of our knowledge) in the context of physical laws. It is absurd to claim that the results of social psychologists are integral equations.

3 The Question of Origin

We then ask, "How could a differential equation lead to an integral equation?". Given the laws of mathematics, we may claim "of course! We must simply integrate twice!".

This answer applies to one aspect of the question, a mathematical origin, a question which can be put "It is possible to transform a differential equation into an integral one?". This question is neither philosophical in nature, nor difficult to answer – Of course! It is true that one must simply integrate. This answer does not help our philosophy inquiry, due to the fact that integrating in the first place would require the relevant knowledge, unavailable in a mindless law.

On the other hand, we may interpret the question differently, as it was originally intended at FQXI essay contest, as to the temporal origin of purpose from mindlessness. This question is not about the logical possibility of the transformation, but about a description of a possible emergence.

It is this question which is of significant philosophical interest. It is my position that this question is a false question, a question arising from a misunderstanding of terms.

Bergson put forward this concept of false problems in his essay "Les faux problèmes", and applied it to the question of "why is there something rather than nothing?". For Bergson, this question is based on confusing categorical differences – something, and nothing – with quantitative differences – more, and less.

This very same argument could be applied to this question of purpose, one may claim

that purpose and mindlessness are two fundamentally different categories, and one does not arise from another. In another words, it is not a difference of complexity as is common to think nowadays, but rather a fundamental separation of concepts.

However, many have not considered this Bergsonian argument convincing, and still ask "Why is there something rather than nothing?". In fact, some, while convinced, may not be satisfied by such an answer. In this essay I wish to show that this question is false by different means.

In order to show that the problem is, in fact, false, I will first show that physics may too be described by a purposeful law, such that it is not unique to psychology. This purposeful version of mechanics is known to be more general, and thus may be considered a better description of reality. Due to this, we may dismiss the claim that purposeful descriptions are the result of ignorance. Then, by analysis of the idea of purpose I will argue that it is impossible to explain away by use of a mechanism.

4 On the Universality of Purpose

In order to show the extended field of validity which the teleological explanation treads, I will show the teleological formalism of classical mechanics – the most mindless of all fields!

This teleological formalism is called the *least action principle*. It is entirely based on the concept of a system striving to minimise a quantity called action:

$$S = \int_{t_2}^{t_1} L(q, \dot{q}, t) dt \tag{5}$$

where q represents a generalised coordinate. Using an analysis which is standard and will follow, we arrive at a set of differential equations more general than those of Newton. In the word of Landau and Lifshitz, as said in their volume on classical mechanics, "*The most general formulation of the law governing the motion of mechanical systems is the principle of least action...*" Landau and Lifshitz (1976).

To show a minimisation we take a differential and compare it with zero

$$\delta S = \delta \int_{t_2}^{t_1} L(q, \dot{q}, t) dt = \delta \int_{t_2}^{t_1} \left(\frac{\partial L}{\partial q} \delta q + \frac{\partial L}{\partial \dot{q}} \delta \dot{q} \right) dt \quad (6)$$

using partial differentiation and recognizing that if the integral is zero for all δq then the integrand is zero we have

$$\frac{\partial L}{\partial q} = \frac{d}{dt} \left(\frac{\partial L}{\partial \dot{q}} \right) \quad (7)$$

This is a generalisation of Newton's second law of motion. Thus the description of a system as striving to minimise its action is not only just as general but more general than the mechanical law of Newton.

This purposeful formulation of laws is more general in physics, especially as this formulation of mechanics is the basis of the Feynman interpretation, and of the Lagrangian formulation. Both of which are immensely useful in Quantum Field Theory, and in General Relativity. This usefulness and generality of purpose is certainly extended to the areas of thought in which it is uncertain whether one can use mechanisms to explain behaviours. In Biology, and certainly in the social sciences.

5 Why describe using purpose?

In order to quench the thirst for the origin of purpose, I believe that the question of how this description arose in the first place, is most fitting.

The question which is therefore most relevant is "Why we describe using purpose?". A most immediate and intuitive response (something which would appeal to Bergson) is to state that it is a feature of our own cognition: that humans are biased towards such description, that this is the way our brains are wired. It is worth noting, that this response is immediate only due to the effect of the scientific revolution (good or bad). If we were to ask this question in time such as the middle ages, or ancient Greece, we would hear that God ordained a purpose into all things, and they simply follow it, or that all things have spirit, and are capable of operating to achieve goals. This second answer is very similar to our own immediate response, as it puts purpose into the spirit, into the perception of the world through the eyes of a sentient being. The scientific revolution caused the default cause to be the effective one, not the final one. This is also quite similar to the answer probably given by the philosophers of Miletus. They too looked for a material cause, a physical explanation, as we do today. For me, the reason our perception produces purpose relies on two elements:

1. A concept of causality, or causal structure.
2. A will.

A concept of causality is essential, since one cannot conceive of change, or of results of actions without one. Imagine an alien with no concept of causality, we'll call him Hume. Hume cannot possibly strive to do anything, since he does not understand that doing something might change his position. One might step further and claim that

Hume would not understand how to change the things he wants to, and might therefore never form a purpose. Imagine, on the other hand, an alien with not conception of will, call him Buddha. Buddha might understand that things cause one another, and how they do so, but without a wanting he cannot have purpose, or a goal, for he wants nothing. We thus understand purpose to be built upon the will, and a causal structure. This would be sufficient to answer the question why we use it to describe all. Once equipped with an idea of how an organism operates, we would describe all its parts as having purpose, for we know what must be caused (and that it may be caused), and we understand them as wanting it, for they act to achieve it. This description would fit whether its subject is a cell, an animal, or a particle moving about in a vacuum; for the will in it is placed by the observer, namely, us, and the causation is understood by us. We thus put it simply: Purpose arose when observers began to understand causality, and began to want things themselves (after which they began to project to the subjects of their studies). It is thus left to figure out why we want, and why we conceive of causality the way we do. This question is both deep and complex. I'll work towards an understanding of these concepts in the next section.

6 Why causation?

This question, has in fact, been under heated discussion since the work of our sceptic alien David Hume. For Hume, only those ideas for which we can find basis in our experience are valid. This conception of the validity of ideas is where Hume's exceptional Empiricism shines – Only our experience leads to valid ideas. The way Hume checks whether an idea arose from experience is to check, from introspection, if it's origin is in

an impression (an Ideologically safe version of sensory impression), and not in another idea. A famous, and staple, result of Hume's masterpiece, "A Treatise of Human Nature", is that causality has no origin in impression, but arises from the mind. He shows this by examining the idea of causality, claiming that it requires an order in time, and locality in space-time. Hume (2003)

It is now required to explain why we perceive such a structure of the world, if it does not in fact exist. To do so I must appeal to the work of the great philosopher who found inspiration in Hume's desperation: Immanuel Kant. For Kant, Space-time (although he treats these concepts separately, and for good reason, for the sake of brevity we shall unite them here. for our discussion we need not treat them as separate entities.) is an a-priori construction, one which is essential to perception. Additionally causality is also an a-priori construction. It is immensely important to Kant's philosophy that these constructions are synthetic a-priori. Kant and Guyer (1998) It is also a staple of Kant's philosophy, although his moral, not metaphysical thought, that Logic is universal to all intelligent beings. Weinryb (2008).

This is essential to my argument. I believe, that a combination of the a-priori construction of space-time, and the universal tool of Logic, leads to causality. A similarity of Logic and causality is visible from the form of sentences in both topics. For example: given two axioms A and B, and a theorem C, we would say "A and B, therefore C"; additionally, given two events A and B, and an event C, we would say "A and B happened, therefore C happened". Aside from the word of root "happen", we see that these sentences are essentially the same. This similarity was noticed by Spinoza, and played an important role in his metaphysics. Weinryb (1990) For him, there is no causality, only Logic. For me, Logic as the essence of intelligence, is the origin of

causality. **We organize our experience of the world in the same way our minds are organized.** We project the structure of our own thought onto our experience of the world. A deep resemblance shared by the causality all people conceive of, is explained by the universality of Logic in our thoughts.

7 Why Will?

This question, at least so it seems to me, is far more complicated. I will therefore rely more on the work of great philosophers than I did up until now. I will use their work quite mischievously in order to show that finding a mechanical origin for Will, is fundamentally impossible.

It is entirely tautological to state that Will either is a part of perception or it isn't. Either Will is subject, like all our perceptions, or it is objective, that is to say, that it transcends our understanding, and that it the-thing-in-itself.

First we consider the Will as a part of perception. A different question may then be asked: "Can perception be explained by a mechanism?". Luckily for us all, the distinguished German Polymath Gottfried Wilhelm Leibniz, is famously quoted stating: "It must be confessed, moreover, that perception, and that which depends on it, are inexplicable by mechanical causes, that is, by figures and motions, And, supposing that there were a mechanism so constructed as to think, feel and have perception, we might enter it as into a mill. And this granted, we should only find on visiting it, pieces which push one against another, but never anything by which to explain a perception. This must be sought, therefore, in the simple substance, and not in the composite or in the machine." Leibniz (1989).

If, on the other hand, Will transcends perception, which is the basis of the philosophy of Arthur Schopenhauer (2012), then it is, by definition, transcendent from perception, meaning, beyond understanding and description, such that even if it does come about by means of a mechanism, it is not within our realm of understanding; making this very question unanswerable. This take on Will, conforms with the ever essential purpose of physics. As Landau stated, if indeed the Will is a part of objective reality, it would make purpose, in part, a part of objective reality, affecting the world without our understanding. Quantum Mechanics is known for being extremely confusing yet consistent and confirmed experimentally. We might see in QM, it being more purpose oriented than any other field of physics, an expression of this objective Will. However, it is important to keep our hats on, and to stress that once transcend beyond our Epistemic faculties, it is easy to invent connections which might seem reasonable even if they are not there. We must consider this idea as a Rationalist would, and be aware of its flaws like an Empiricist would.

Thus the ultimate answer to the question is either, "No", or that it is not answerable.

Although one may develop theories further, and discuss this most important of philosophy further, this essay lacks the space, and the appropriate forum to do so.

8 Conclusions and Discussion

In this essay I attempted to argue that purpose and will can never be reduced to mechanical laws. An initial and fundamental part of this argument, is to understand the place of **actual** mechanics in this discussion. Second, we demonstrate that there is no reason to think that even physics could be explained mechanically. And finally we

discuss causation and purpose in order to put a final nail in the coffin of the mechanical explanation of purpose.

In this essay I attempted to convince the reader (and myself) that the question of the origin of purpose is problematic, due to purpose being an essential part of human experience. Whether purpose and Will are part of objective reality, as Aristotle and Schopenhauer would argue, or if they are simply a part of the non-mechanistic part of the mine, they remain beyond mechanistic explanation.

We deconstruct the question in the tradition of Bergson, and in the Method of Descartes, in an attempt to gain understanding of it, before reaching its essence and deciding upon an answer.

In this analysis we have not considered the possibility that the universe is entirely mechanistic due to the so-called purposeful description of physics, and it's obvious importance.

In closing, I would like to note that when one attempts to explain the world using the terms of mechanics, by so-called mindless mathematical laws, it is by definition out side of his scope to explain such things are purpose.

A world ruled by a mechanism is, by it's very definition, a world in which purpose is only an evolutionary illusion.

If one agrees with Darwin, a most sensible thing to do, one cannot address evolution in terms of purpose, but only in terms of statistical accidents. If purpose exists, then it is the driving force; if the world is a machine, then it is that which defines its behaviour; **one cannot have his purpose cake and eat it too.**

One cannot chose to understand the world via mathematics, and then, midway, abandon ship and attempt to involve psychology. Mechanics doesn't lead to purpose,

just as purpose does not lead to mechanics, for, in the end, even if the result is the same, it is not proper reduction, there is always an essence of the original thought left in the formalism.

It is true, that in the end, we simply agree with Leibniz, rather than prove that such an explanation is impossible. But I hope that the preceding sections were either convincing, or simply interesting enough.

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