

The Curious Case of Freeman Dyson and the Paranormal

M A T T H E W D E N T I T H

IN A 2007 ARTICLE POSTED ON EDGE (www.edge.org/3rd_culture/dysonf07_index.html), a prestigious web page where scientists debate controversial issues, the famous theoretical physicist and raconteur Freeman Dyson stated once again that he is proud to be a heretic in regard to “fashionable scientific dogmas.”

The public is led to believe that the fashionable scientific dogmas are true, and it may sometimes happen that they are wrong. That is why heretics who question dogmas are needed.

Dyson expressed his love of scientific heresy earlier in a 2006 *New York Review of Books* essay entitled “The Scientist as Rebel,” which is littered with skepticism for fashionable scientific dogmas, especially reductionism, the idea that all knowledge about the world can be reduced to a sophisticated understanding of natural law. Although Dyson admits that the reductionist programme has yielded great successes, he is concerned that reductionism has become a fashionable dogma that ignores the possibility that holistic solutions might also be necessary for advancing knowledge:

If we try to squeeze science into a single philosophical viewpoint such as reductionism, we are like Procrustes chopping the feet of his guests when they do not fit onto his bed. Science flourishes best when it uses freely all the tools at hand, unconstrained by preconceived notions of what science ought to be.

An example of Dyson’s heretical thoughts about reductionism can be found in his attitude towards claims of the paranormal. Another *New York Review of Books* essay includes Dyson’s largely positive review of Georges Charpak’s and Henri Broch’s book *Debunked!*, but he expresses skepticism for their claim that since paranormal phenomena cannot be studied scientifically, they

do not exist. Dyson rejects the reductionist dogma that all such phenomena can be reduced to phenomena of natural sciences and that, furthermore, paranormal phenomena are examples of where such reductionist programmes break down.

I would like to offer a cautious defense of Dyson’s skepticism about reductionism. I take it that Dyson is arguing against an increasingly common form of skepticism, one that denies the occurrence of paranormal phenomena because such phenomena are meant to be contrary to what we know about nature. I will consider what a charitable interpretation of his argument should look like, drawing upon the distinction between what is *rational to believe* and *what is*.

The question Dyson asks, in essence, is this: *Can we reduce our beliefs about such things as the paranormal to those kinds of things governed by the laws of the natural sciences?* With this in mind, it seems to me that there are three ways we can charitably interpret Dyson’s skepticism about reducibility claims.

1. We should not rely too heavily on simplicity.

One way to interpret Dyson’s claim about irreducibility is to focus on methodological reductionism. This is the claim that “small is beautiful.” That is, simple explanations, using the concepts from the natural sciences, provide the best strategy to explain phenomena.

Compare two hypothetical theories of gravity. One of them is slightly more complex because it contains an extra term that does no work. It seems quite clear that we should prefer the less complex theory because the additional complexity adds no explanatory power. Now, while I think we should prefer simple belief structures that describe known phenomena (and I think we will find that the scientific endeavor provides

Question for author: proofers unsure of what the underlined means. Perhaps “are thought to be” or “are defined as” would be clearer?

such systems) the notion that simpler systems reflect what is happening behind the scenes is highly contentious. If we select a simpler theory over a more complex one with the same explanatory power, then this choice may be motivated by purely aesthetic reasons. We should be aware that such an aesthetic judgment does not allow us to say that this simpler theory is a more accurate description of what is going on behind the scenes.

Applying Occam's Razor we should prefer the simpler theory but, if we were omniscient, we might well find that the more complex theory, with its extra term, is still the more accurate description of what is going on behind the scenes. The extra term may pick out some entity or aspect that, even though it does not interact with its surroundings, is part of the complete story of how the world is. As such, more complex theories about the operation of the world, such as those put forward by parapsychologists, should not be dismissed just because they are more complex yet no more testable than their cousins in the natural sciences.

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2. We should not be chauvinistic.

While we cannot conceive of a world where the fundamentals of math or logic are different, I believe that we can coherently imagine a world that operates according to physical principles other than the ones posited by our current understanding of the natural sciences. What we take to be the laws of nature might only describe what we experience and such experiences could be reconciled with other, different, descriptions of the world. In other words, these putative laws of nature might not be an accurate representation of the natural world in its entirety; they might only be descriptions of best fit for the observations we have made. Such putative laws do not guarantee us knowledge of what is really going on.

Dyson's claim about the irreducibility of the paranormal to the scientific could be taken to be the distinction between what we can be reason-

illustration

ably expected to *believe in* and what *actually exists*. Indeed, following Dyson's logic, it is plausible that there are some phenomena behind the scenes that we might never have any way of knowing about (either due to never being in a position to experience them or because our contemporary systematic accounts of these phenomena do not allow knowledge). If this is a plausible claim, then such explanations of best fit appeal to what we can *justifiably believe* but not necessarily to what *really happens*.

This construal of Dyson's argument does not try to make all such theories, such as those about the paranormal, suddenly plausible. What it does tell us is that it is conceivable to claim that there are some forces that we might not know about which, in turn, might explain the existence of some phenomena considered paranormal.

3. There exist different languages.

We could consider Dyson's rejection of a reductionist account of paranormal phenomena to be a language issue. What if the language of the natural sciences cannot describe certain phenomena. You would either have to think that such phenomena do not exist or you would need to admit to there being some other language that does describe them.

The language that is English has a grammar, syntax and so forth. All these things apply to the objects that make up English; the words. In the same way we can also talk about more formal languages like those in the natural sciences. Unlike English speakers, scientists will find very few synonyms for the things they describe. Although I can describe a sunset in almost endless ways, the language in which the scientist describes the electron is limited. This is because the words and rules of the language of science are far stricter.

I think that Dyson's non-reductionist/holistic account could be interpreted as casting doubt on the intuition that the language of the natural

sciences can describe all phenomena. Consider the distinction between the social sciences and the natural sciences. Can we redescribe social phenomena in purely naturalistic terms? Can politics be reduced to and described by the language of physics? In this interpretation, reductions cannot be made “good” because there is something very different about the expressive resources available to the language of the social sciences. This difference is often identified in respect to regularities; we think that the regularities of the natural sciences reflect universal and necessary rules, while the regularities of the social sciences are likely only to be true for arbitrary reasons.

Consider the divide between the microscopic and the macroscopic views of reality. The world we have direct experience of is the macroscopic. As far as we have been able to ascertain it works on determinate, mechanical principles that seem best shown in our understanding of the natural sciences. There are also microscopic phenomena: quanta together with, perhaps, an attendant indeterminacy. Yet both domains exist, and the world as we experience it, the macroscopic, is built on and above the microscopic world. Somehow any indeterminacy of the micro gets translated into the determinacy of our macro-level world.

The point of this is that we seem to have two different languages, the micro and the macro, which, when combined, are a theoretically full account of the scientific/naturalistic world.

Theories that cross from one language to another need a guiding principle to explain how one set of terms can be linked to another set of terms. If we want to explain the relation of micro-level events to macro-level events then we want some bridging principle. In the same way, if social science theories are instances of accidental regularities while those of the natural sciences are not, then, plausibly, we want to know how to relate accidental regularities to laws of nature when we make claims that go from the social to the natural.

One way to look at this problem is to postulate a “Third Language.” Imagine, if you will, that there is a language that describes perfectly what we call the micro and macro-physical, but that this language is unknown to us. Possibly the language may never be known; it might be structured in such a way that we could never work it out, or to properly formulate it we would need

to experience certain phenomena to which we have no epistemic access. Nonetheless, this Third Language would tell us how the things we call microscopic interact with the things we call macroscopic.

The terms microscopic and macroscopic are unlikely to be terms in this Third Language; instead they are terms used by two other languages to describe each other. In their own domains each respective language is perfectly useful but they present problems if they are used to try and describe phenomena in another domain, to wit—macroscopic attempts to describe microscopic events. A Third Language would achieve this by being the one true language of completed physics.

If the paranormal has a language of its own, it may well be irreducible to (which is to say “may not be translatable into”) the language of the natural sciences. If such a thing as the Third Language exists, then the complete description of the world would be found in it. The paranormal, then, would not be subject to the laws of the natural sciences but rather the laws of the natural sciences and the paranormal would be subject to the laws described in the Third Language.

The Normal and the Paranormal

That there exists some experience of things some people call “paranormal” is undeniable. What can be contested is whether such experiences are of processes that are incompatible with what we take to be the laws of nature. Most reports of paranormal activity can be redescribed, with some ease, into instances of already known natural processes simply experienced in an unusual way.

It seems possible, however, that this process of redescription might leave behind a small set of phenomena that do not belong to the domain of the natural sciences. Such a set of phenomena might well be considered contra to the natural sciences and may be called “spooky” or “paranormal.” What are these phenomena?

One answer is that the phenomena belong to a more complex, but no more testable, theory of knowledge. This relates to the first interpretation of Dyson’s irreducibility claim. Another option is that the phenomena belong to a stronger and more testable theory that fits the world better than the theories of the natural sciences. This relates to the second interpretation. Either way, we prefer simple, testable systems, but we

should not assume that these simple and testable systems we advocate in the natural sciences present the full story of the way the world works. Just because our descriptions do not admit to there being paranormal phenomena does not mean that the phenomena do not occur.

A third answer is that paranormal phenomena are phenomena that are just not describable in the language of the natural sciences but that this does not mean that such phenomena are in any way counter-rational or counter-intuitive. One version of this kind of reasoning appeals to a Third Language in which languages, such as the micro, the macro, the social and possibly even the paranormal, are adequately described and explained.

I believe that if we are charitable in our interpretation of Dyson’s argument, then there is some merit to a claim about the irreducibility of the paranormal to the scientific. That said, there are two things that need to be kept in mind when considering these options. One is that just because it is logically possible that there are some phenomena not described by the natural sciences, we should not assume that such phenomena exist. As well, we cannot exclude the possibility that there are some phenomena to which we have no epistemic access; our theories of knowledge could be (forever?) incomplete. It is possible (which is different from the claim that is probable) that this is the case with at least some phenomena we call paranormal. Such paranormal phenomena would thus be outside the realm of the natural sciences but not necessarily in direct conflict with them. Indeed, this is the position that Freeman Dyson seems to support.

The second, and, to my mind, more important point about the possible irreducibility of the paranormal to the normal, is that even if these phenomena did exist and were called paranormal, this would not mean that such phenomena would have to be in any way spooky. Such phenomena would still act in a coherent and consistent way because they would be subject to the actions and interactions dictated by logic. Such phenomena might never be described by the laws of nature, or such phenomena might require that we expand our current understanding of such laws, but it would not be counter-rational to hold such beliefs.

This explains, I believe, the curious case of Freeman Dyson’s “heresy” in respect to the paranormal.