

Mathematically Mysterious - by Andrew R. Scott

The question "*How can mindless mathematical laws give rise to aims and intention?*" makes at least four unjustified assumptions. It assumes that mathematical laws are mindless, and it assumes that mathematical laws give rise to aims and intention, and in doing so it assumes that humans, or any other creatures, genuinely do have aims and intention, rather than just a deceiving illusion of these things. It also assumes that mathematical laws actually do "give rise" to anything at all, rather than just being descriptions of the activities of deeper, hidden things. Thus the question itself has to be questioned, before beginning to consider answers to the question. Then we have to turn to the issue of aims and intention, for these are things presumed to reside within consciousnesses that are able to exert free will, but we have no idea about what consciousness actually is, let alone how it might arise, and we don't know whether or not we have freewill. Thus I am tempted to deem the question ridiculous, although perhaps I have no choice about whether I do so or not, if I am lacking in free will, perhaps due to every keystroke being determined by mathematical law?

To proceed or not to proceed? That is the question. Will I decide, or will mathematics, or something else?

Nevertheless, we can consider the issues and explore some options, especially if we accept some of the assumptions, or perhaps they are presumptions. Never mind, we can continue.

It is indisputable that mathematical laws work as a mechanism to *describe* many events within our reality, and to predict them with astonishing accuracy. But being a descriptive and predictive tool does not mean that something has any ability or power to actually "give rise" to anything. That is the most fundamental assumption in the question - the implication that mathematical laws have the ability to actually *do* things, rather than just being descriptions embodying the way in which things occur.

I am tempted to finish now, by answering the question - "*How can mindless mathematical laws give rise to aims and intention?*" - with a simple "They probably can't and they probably don't". Yes, I am inclined to finish there, and while that will not win any prize for academic exposition, it should perhaps win a prize for human honesty, and humility. We have no idea if mathematical laws have any powers whatever, beyond the descriptive, and we never will. I will add that to my humble self it does seem highly unlikely. It seems more likely that if aims and intention really can freely occur within us, we will never know how.

However, having decided to finish, something changed my mind about finishing just there, and I really do doubt that it was a law of mathematics, even though laws of

mathematics may well describe how the decision was made. But anyway, to give the question some further attention, probably more than it deserves, we have to consider what is meant by “mathematical laws”.

Do we mean mathematical laws such as multiplication is commutative while division is not? In other words, the laws that govern the numerical operations of mathematics. Or do we mean mathematical laws such as the inverse square law that tells us how the effect of gravity changes with distance, for example? These are surely two very different types of law. The first just tells us the rules of mathematics whereas the second tells us what mathematics indicates about how the universe operates. If we make the primary assumption implicit in the question, and assume that mindless mathematical laws do, or at least might, give rise aims and intentions, we need to attribute to mathematics a power to achieve things. In other words the laws must make things happen. But no... my mind will not allow me to make that leap. I must repeat, the laws *describe* how things happen, that is all.

Description is not power. What the real puzzle - the real question - should be is how does the way in which the universe works give rise to aims and intention, assuming it does, which we don't know. We can speculate about that endlessly and fruitlessly until we know what the consciousness needed to decide on an aim and have an intention, assuming it does decide these things, actually is. But *we don't damn know*. We are stuck in the ridiculously pretentious situation of someone looking at something without knowing what it is or what it can do and asking, “how does it work?” Consider please, a big black box on display with no labeling, no description, other than perhaps a sign that says “What is in here creates something wonderful.” Asking how what is in the box works is pretty silly until you know what the “something wonderful” is. Now... we do know what we mean by “aim” and “intention” but we do not actually know what either of them *is*, because we don't know what the consciousness needed to achieve them is, or how it arises, or even, I repeat, whether or not it really does allow aims and intention rather than just creating the illusion of these things.

Mathematics, ultimately, is just a way of describing the sometimes complex interactions among units - digits, quanta... That mathematics works as a description probably reflects the fact that reality is ultimately quantised, rather than continuous. Space, time, spacetime, matter, energy - all of these fundamental things must perhaps ultimately be quantised, i.e. composed of fundamental units, given that a mathematical system based on interactions among units works so well. Perhaps...

Enough! Fewer than 7000 characters rather than the permitted 25,000 is perfectly sufficient. I will conclude with this relevant survey of the human condition: We don't know why mathematics describes the universe, or at least parts of it, so effectively;

we don't know what the consciousness that perhaps, but not definitely, allows aims and intention to emerge actually is; and for good measure let's add that we don't actually know what matter really is, or charge, or mass, or how life arose in the first place, or etcetera, etcetera, etcetera... Repeat, repeat, repeat: Mathematical laws *describe*, they do not explain, even though their description of interrelationships can seem like explanations at some levels, only to melt away into mere descriptions when we dig deeper. Science itself, describes, it does not explain, even though its descriptions of interrelationships can seem like explanations at some levels, only to melt away into mere descriptions when we dig deeper. We are the "Lost" islanders, stumbling from puzzle to puzzle and from each partial enlightenment on to the next baffling aspect of our mysterious predicament. Which, come to think of it, sounds like fun; and it is! We should enjoy the puzzles and the mysteries, while humbly accepting that deep down, when we reach the deepest kernel of why things exist and why they do the things they do, we have not really got much of a clue, and probably never will have.
