

Re: Poll: Are PCs Turing Machines?

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Stephen Harris wrote:

> <*spinoza1111@yahoo.com*> wrote in message
> *news:1103022608.996483.99650@c13g2000cwb.googlegroups.com...*
> >
> >> > *Therefore, monster "problems", of the sort solved by TMs and not*
> >> > *solvable by PCs, do not exist.*
> >>
> >> *So the only problems that "exist" are the ones that are solvable*
by
> >> *currently existing computers? The problem of factoring a 30 digit*
> > *number,*
> >> *for example, didn't exist until computers were capable of solving*
it?
> > *The*
> >
> > *Correct. If computer science is applied mathematics, then it is*
part of
> > *history. Its problem set is limited to problems that in principle*
can
> > *be solved. Of course, this set expands but owing to the daily*
struggles
> > *of computer scientists with material, concrete realities, to*
> > *deliberately lapse into Marxist phrasing. They don't "exist" in*
> > *Platonic la-la land prior to the date at which they are empirically*
> > *solvable.*
> >
>
> *Mathematical Platonists say that mathematics existed before*
> *even the earth existed and there were humans or computers.*
>
> *Take probability theory. This is an abstraction like a Turing*
Machine,
> *which means it is non-physical. Saying it does not physically exist*
is
> *not the same as saying it does not exist as an idea. The idea arises*
> *from the physical brain but does not have to correspond to anything*
in

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- > *physical reality, for example unicorns with magical (non-causal) horns.*
- >
- > *People say unicorns and other non-existent physical ideas, exist in the imagination. That is not an endorsement of Platonism which is another notion. Your writing suggests that abstract non-physical notions are necessarily claimed to have existence in Platonic la-la land.*
- > *Only Platonists believe this. Most people however, do not believe abstract*
- > *or imaginary ideas have anything to do with Platonism or may not have even heard of Platonism. There is no requirement that a product of the imagination must some day have physical existence. That is called normal thinking not Platonism.*
- >
- > *Claiming that a TM is abstract has nothing to do with Platonism, that is a strawman argument. Only Platonists believe that abstractions*
- > *really exist in some Platonic realm. Regular people who talk about abstract notions reject such a claim of Platonism. Rejecting Platonism*
- > *does not mean you can't talk about possible existence, whether or not such possible existence will actually be physically realized.*
- >
- > *Problems that can "in principle" be solved or approximate the behavior of something non-physical when it occurs are found in probability theory.*
- > *Probability is used to predict future events that have not yet happened.*
- > *Those events may never happen. Probability theory talks about abstract*
- > *events like flipping a coin a million times and determining the number of*
- > *heads and tails. That may be physically possible. But the Central Limit*
- > *Theorem can be applied to predicting the result of a billion, billion,*
- > *billion times, some huge finite number of times that cannot be physically*
- > *realized in the physical existence of the universe before heat death.*
- > *Making some theoretical calculation which predicts an outcome in a physically impossible situation has nothing to do with Platonism. It would*
- > *be a misunderstanding or misapplication of the Platonic philosophy.*
- > *Because Platonists might think this situation belongs to the Platonic realm really has nothing to do with forcing this belief onto others.*
- >
- > *PCs are physical and have all physical parts in a physical universe.*
- > *TMs are abstract, non-physical ideas, which do not exist in the physical universe. The concept of a TM arose from a physical brain*

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- > *but that idea has no physical representation and is quite unlikely to*
- > *ever have a possible physical representation. Because the imaginary*
- > *TM tape has properties not found in the physical universe. And that*
- > *is *not* a claim that the tape exists in a Platonic realm.*

>

- > *Talk about an infinite universe is talk about the physical universe*
- > *and is irrelevant to the turing tape because it does not have*
- > *physical existence. The TM tape has no requirement for a physically*
- > *infinite universe. It has no physical requirements whatsoever.*

Besides,

- > *even if the universe expands forever, it does not mean that more*
- > *matter is created. It is the current position of Physics that no more*
- > *matter is created, that the present amount of matter becomes less*
- > *dense.*

- > *And it is matter, not space, which makes up and limits the substance*
- > *available in the physical universe needed to construct physical*
- > *memory*

- > *for PCs, which performs a similar function to the magical TM tape.*

>

- > *It is quite easy to believe that PCs are physical and so are not TMs,*
- > *while thinking Platonism is false. Platonism is not idea that the*
- > *universe*

- > *existed before humans evolved, constructed physical machines and*
- > *entertained thoughts about imaginary events and conditions or other*
- > *humanly generated thought inventions. Platonism is one possible view*
- > *about*

> *universals:*

- > *"The oldest use of the term "realism" comes from Medieval*
- > *interpretations*

- > *of Greek philosophy. Here "realism" is contrasted with*
- > *"conceptualism" and*

- > *"nominalism". This can be called "realism about universals."*

Universals are

- > *terms or properties that can be applied to many things, rather than*
- > *denoting a single specific individual—for example, red, beauty,*
- > *five, or*

- > *dog, as opposed to Socrates or Athens. Realism holds that these*
- > *universals*

- > *really exist, independently and somehow prior to the world; it is*
- > *associated*

- > *with Plato. Conceptualism holds that they exist, but only insofar as*
- > *they*

- > *are instantiated in specific things; they do not exist separately.*

- > *Nominalism holds that universals do not "exist" at all; they are no*
- > *more*

- > *than words we use to describe specific objects, they do not name*
- > *anything.*

- > *This particular dispute over realism is largely moot in contemporary*
- > *philosophy, and has been for centuries.*

>

- > *In another sense realism is contrasted with both idealism and*

materialism

> and considered synonymous with weak dualism. In still a third, and very

> contemporary sense realism is contrasted with anti-realism.

>

> Both these disputes are often carried out relative to some specific area:

> one might, for example, be a realist about physical matter but an

> anti-realist about ethics.

>

> Increasingly these last disputes, too, are rejected as misleading, and

> some philosophers prefer to call the kind of realism espoused there

> "metaphysical realism," and eschew the whole debate in favour of simple

> "naturalism" or "natural realism", which is not so much a theory as the

> position that these debates are ill-conceived if not incoherent, and

> that there is no more to deciding what is really real than simply

taking

> our words at face value." <http://en.wikipedia.org/wiki/Realism>

>

>

> >They don't "exist" in

> > Platonic la-la land prior to the date at which they are empirically

> > solvable.

>

> SH: This seems similar to Conceptualism or moderate realism later.*

> "Conceptualism holds that they exist, but only insofar as they are

> instantiated in specific things; they do not exist separately."

>

> I think the universe existed prior to humans and did not need

> mathematics to continue operation or evolve humans. I think

> mathematics did not exist in the universe prior to human invention

> and that mathematics is a tool, like so many others humans have

> invented, to describe and predict reality gathered by human sensory

> perceptions of reality. That means humans can imagine abstract

> mechanisms for predicting reality which may or may not match reality.

> Mathematical predictions of reality have changed since Ptolemy, to

> Newton, to General Relativity, to Quantum theory. The human mind

> has evolved to register motion, changes in motion in linked events

> over a period of time: causality. But the notion of causality is

itself

> a human evention, the universe certainly existed before humans

> evolved into it and it functioned without a name of causality being

> applied to it. Causality did not create the universe. The universe

> created humans with minds who invented words to make sense

> of what they perceived. Platonism may seem like a religious belief,

> but I don't think it purports to explain the existence or creation of

> the universe. But of universals which they claim exist independently

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- > *of the human perception of universal patterns. But what humans*
- > *perceive is indistinguishable from an origin of the independent*
status
- > *of universals from an origin of dependent status of universals which*
- > *comes from the source of human invention. From Wikipedia"*
- >
- > *"The epistemological commitment of scientific realism is that*
acceptance of
- > *a scientific theory is belief that what it says about unobservables*
is true
- > *or approximately true. The semantic commitment of scientific realism*
is that
- > *scientific theories are semantically literal, that is, that the*
language of
- > *scientific theories is not interperetable into language about some*
other
- > *domain without change in meaning. The normative commitment of*
scientific
- > *realism is that scientific theories aim at truth about unobservables.*
- >
- > *A further tenet of scientific realism is that scientific knowledge is*
- > *progressive in nature, that is, it builds on previous understanding."*
- >
- > *SH: Platonism cannot be scientifically tested. But abstract theories*
- > *can be experimentally confirmed. The TM is not an abstract theory*
- > *about physical reality due to its use of a turing tape. It is not*
testable.
- > *It is a conjectured behavior for an non-physical invented object. The*
turing
- > *tape doesn't cover the same territory as the Church-Turing thesis.*
- > *Naturalism opposes the concept of Platonism.*
- >
- > *Wikipeda again:*
- > *"Naturalism is any of several philosophical stances, typically those*
- > *descended from materialism and pragmatism, that reject the validity*
- > *of explanations or theories making use of entities inaccessible to*
natural
- > *science. [SH: There would not be any inhabitants of the Platonic*
realm.]
- >
- > *As described by W. V. Quine, who is in large measure responsible for*
- > *naturalism's current pre-eminence among American philosophers, it is*
- > *the position that there is no higher tribunal for truth than natural*
- > *science itself. There is no better method than the scientific method*
- > *for judging the claims of science, and there is neither any need nor*
- > *any place for a "first philosophy," such as (abstract) metaphysics*
- > *or epistemology, that could stand behind and justify science or the*
- > *scientific method. Therefore philosophy should feel free to make use*
- > *of the findings of scientists in its own pursuit, while also feeling*
- > *free to offer criticism when those claims are ungrounded, confused,*
- > *or inconsistent: philosophy becomes "continuous with" science.*

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- > *(Naturalism is not a dogmatic belief that science is entirely correct;*
- > *it is the position that science is the best explanation we have. We*
- > *have to start somewhere in talking about the world, and we don't have*
- > *better evidence for anything other than science; yet as we go along*
- > *we can still change it as we use it.)*
- >
- > *Methodological naturalism (MN) or Scientific Naturalism is a*
- > *philosophical tenet that states that life exists in a single*
- > *natural universe, as supported by science. MN describes life*
- > *as a mechanically unfolding process; where everything is caused*
- > *and possesses an effect.*
- >
- > *MN believes that each human being is an unfolding natural process,*
- > *and every aspect of that process is caused, and is a cause itself.*
- > *It states that what we are and do is connected to the rest of the*
- > *world because our bodies and minds are shaped by conditions that*
- > *precede us and surround us.*
- >
- > **Moderate realists, a variety of realists, hold that there is no*
- > *heaven in which universals live, but rather universals are located*
- > *in space and time wherever they are manifest. Now, recall that a*
- > *universal, like greenness, is supposed to be a single thing.*
- > *Nominalists find it weird that there could be a single thing that*
- > *exists in a bunch of places all at once. The realist maintains*
- > *that all the instances of greenness are held together by the*
- > *exemplification relation, but, again, this relation seems mysterious.*
- >
- > *The resemblance nominalist will reply that 'cat' applies to both*
- > *cats in virtue of either the fact that Fluffy and Kitzler resemble*
- > *an exemplar cat closely enough to be classed together with it as*
- > *members of its kind, or that they differ from each other*
- > *(and other cats) quite less than they differ from other things, and*
- > *this warrants classing them together. Some resemblance nominalists*
- > *will concede that the resemblance relation is itself a universal,*
- > *but is the only universal you need. This betrays the spirit of*
- > *nominalism. Others argue that each resemblance relation is a*
- > *particular, and is a resemblance relation simply in virtue of its*
- > *resemblance to other resemblance relations. This generates an*
- > *infinite regress, but many agree that it is not vicious.*
- >
- > *One way to be a nominalist without being an "ostrich nominalist" like*
- > *the predicate nominalists ("ostrich" because they seem to simply*
- > *stick*
- > *their heads in the sand and pretend there isn't a problem— the phrase*
- > *is D. M. Armstrong's) is to build a theory of resemblance nominalism*
- > *on a theory of tropes. A trope is a particular instance of a*
- > *property,*
- > *like the specific greenness of this here shirt, or the singular*
- > *coyness*
- > *of Gwyneth's smile. One might argue that there is a primitive,*

objective

- > *resemblance relation that holds among like tropes. But that seems*
- > *arbitrary. Another route is to argue that all apparent tropes are*
- > *constructed out of more primitive tropes and that the most primitive*
- > *tropes are the entities of complete physics. Primitive trope*

resemblance

- > *may thus be accounted for in terms of causal indiscernibility. Two*
- > *tropes are exactly resembling if switching them would make no*
- > *difference to*

> *the events in which they are taking part. Varying degrees of*
resemblance at

- > *the macro level can be explained by varying degrees of*
- > *resemblance at the micro level, and micro-level resemblance is*
- > *explained in*

> *terms of something no less robustly physical than causal power.*
> *Armstrong, perhaps the most prominent contemporary realist, argues*
> *that such*

> *a trope-based variant of nominalism has promise, but holds that it is*
> *unable*

- > *to account for the laws of nature in the way his theory of*
- > *universals can.*

>

- > *Ian Hacking has also argued that much what is called "social*
- > *constructionism" of science in contemporary times is actually*
- > *motivated by an unstated nominalist metaphysical view. For this*
- > *reason, he claims, scientists and constructionists tend to*
- > *"shout past each other."*

>

- > *SH: It seems to me spinoza makes some assumptions about what*
- > *is entailed in some adversarial postings which are not implicit. The*
- > *problem of universals being adequately explained by adopting*
- > *moderate realism is a philosophical position, not a matter of fact,*
- > *and is not impervious to doubts about its plausibility. Not adopting*
- > *moderate realism does not require jumping to the side of Platonism.*

>

- > *Why How is When,*
- > *Stephen*

Nil of that bla-bla have any connection with the question: "Are PC's examples of Turing Machines?" .That author is a maniac-compulsive writer. I remind he, that this is mathematical forum not a tournament of verbosity.