

Causation and Consciousness

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Part One

Taking Science Seriously versus Being Scientific

Taking Science Seriously

- Granting independent spatiotemporal physical existence to the micro-physical entities postulated in scientific theory
- Accepting that a completed science is possible and that the laws of such a science would specify a causally closed physical universe

Taking Science Seriously

- Accepting that the events and objects registered in conscious experience are caused by the physical existence and interaction of micro-physical entities obeying physical laws
- Accepting that consciousness only comes into existence when the correct physical conditions are present, e.g. a physical brain

Taking Science Seriously

- To sum up, taking science seriously implies that consciousness is dependent on pre-existent physical conditions and that the content of conscious experience is caused by the activity of micro-physical entities, e.g. the electro-chemical events occurring in the neurons of a physical brain

Being Scientific

- An aim of this talk is to demonstrate that taking science seriously in the sense described previously is not the same as being scientific
- To investigate what being scientific is means looking at science as it is actually practiced

Scientific Observation

- The fundamental practical aim of scientific observation is to deliver facts
- Facts are true observations, uninfluenced by the personal beliefs, opinions, bias, self-interest, etc, of the observer
- The reports of human observers, in general, are not reliable
- A methodology of observation is needed

Scientific Observation

- The conscious experience of perception is self-evidently factual in a primary sense – it “is what it is”
- In a secondary sense, perception is factual *about the world* when it agrees with the perception of others
- To obtain reliable factual observations about the world science must ensure that all observations can be *publicly verified*

Scientific Observation

- This requires that the personal, subjective elements of conscious experience are systematically removed from the domain of scientific observation
- Qualitative experience can only be acknowledged when it has been transformed by a public measure into something quantitative

The Physical World

- This methodology of excising the subjective, first-person aspects of conscious experience produces a special class of facts – physical facts
- The physical world is that class of entities capable of producing objectively observable effects or physical facts

The Physical World

- The division of experience into a physical, objective world and a psychic, subjective world is effected by the definition of what counts as a scientific observation – not by any commitment to a particular ontology

Scientific Theory

- Scientific theory is concerned with discovering deeper and deeper regularities in the physical world – i.e. the world as disclosed by objective observation
- It formalises these regularities as mathematical relationships or laws
- This is an extension of the same underlying process that occurs in perception

Perception

- External perception is our ability to see objects rather than a dancing swirl of colours, sounds, touch-feelings, etc.
- Objects are regularities in the streams of sensory experience
- Perception is the result of learning to detect these regularities
- Perception projects these regularities into sensory experience to produce a world

Perception and Causation

- Inherent in perception is that sensory regularities are experienced as having been caused
- So we perceive an external world having causative powers, not a series of sensory regularities

Perception and Causation

- We have no warrant from perception to infer that an independent physical world instantiated in a physical spacetime is the cause of our experience
- Our only warrant of reasonable explanation is to acknowledge that there are regularities in our sensory experience and that 'something' must be causing them

Science as Extended Perception

- Scientific practice is perception aided by conception and technology with the aim of discovering, representing, predicting and controlling deeper regularities in the stream of conscious experience
- This practice extends the work of perception, but in the limited domain of objectively observable facts

Science as Extended Perception

- Instead of transforming sensory regularities into perceptions, science transforms quantifiable regularities abstracted from sensory regularities into mathematical laws
- We conceptualise micro-physical entities as bearers of these observed regularities and, following perception, we imagine them existing in a physical spacetime

Spatio-Temporality

- Again, we have no warrant to assume that these deeper regularities exist in a physical spacetime
- Spatio-temporality is the form of existence of sensory experience within which the underlying regularity of experience is expressed
- We cannot say what form this regularity could have outside experience

Quantum Mechanics

- If the regularities in experience are caused by the spatio-temporal existence of micro-physical entities then we would expect to discover an ultimate physical level that is spatio-temporally conceivable
- But science's search for regularity in conscious experience has currently ground out at the level of quantum mechanics

Quantum Mechanics

- At the quantum level we find no determinate cause for the activity of the higher level physical entities, just laws of probability
- A probabilistic knowledge does not explain any particular event - to say it was decided by chance is to beg the question – how was that chance decided?

Quantum Mechanics

- The causal connection that leads from the micro-physical existence of atoms and molecules up through neurons to brains to experience remains ungrounded
- ‘Something’ has decided how a particular quantum system collapses, but we remain unable to provide an explanation of this ‘something’ in terms of spatio-temporal physical existence

Quantum Mechanics

- We persist in trying to visualise superposed system states and non-local effects as being instantiated in a physical spacetime
- But our inability to ‘make sense’ of the quantum level is exactly what we would expect to find in an existence that was ultimately not instantiated in a physical spacetime

Part Two

The Forgetfulness of Consciousness

The Scientific Domain

- We have reasoned that the task of a physical science is to discover lawful regularities in the stream of conscious experience
- To this end, science limits itself to only consider the objectively observable (physical) facts present in experience

Scientific Neutrality

- Physical facts obtain their warrant of certainty from the self-evident certainty of conscious experience
- Science is finally accountable to these physical facts – on this rests its impartiality and neutrality
- We may take the authority of other sources, but certainty finally resides in experience

Scientific Neutrality

- By settling controversy on the basis of objective observation, science has remained ultimately immune from the pressures of self-interest
- It is on this basis that we can account for the extraordinary and consistent progress of science over the last four centuries

Scientific Neutrality

- Once it was the doctrine of religion that science had to protect itself from – the ultimate reference of all matters of truth to the higher authority of the received word of God
- Now it is the doctrine of materialism (or materialistic dualism) that seeks to redefine the domain of scientific enquiry

Science and Metaphysics

- If we go back to the idea of taking science seriously we can see that it contains an ontological commitment to the independent existence of a spatio-temporal physical existence
- This has nothing to do with being scientific as we have examined it

Science and Metaphysics

- Scientific practice is concerned with the detection of lawful regularities in experience
- It investigates questions that can be settled or tested via an appeal to objective observation
- The question of a physical universe existing independently of experience cannot be settled by observation

Science and Metaphysics

- Because most scientists take independent material existence for granted does not make it scientific any more than the theism of the 17th century made science theistic
- The basic misconception is that the validity of scientific observation and theory depends on an independent physical existence

Science and Metaphysics

- If science and scientific observation were based on the existence of a physically instantiated universe then science would no longer be based on fact – it would be based on a metaphysical speculation
- With this speculation in place we could then extend the idea of scientific theory to include the notion of micro-physical entities causing conscious experience

The Loss of Certainty

- Now we enter into a circularity: we are attempting to explain something – conscious experience - that at the same time we are using to validate explanation
- By making conscious experience dependent in this way (as a term in a chain of cause and effect) it can no longer serve as an ultimate and certain witness

The Loss of Certainty

- Instead conscious experience has to stand aside - our ultimate certainty lies in the existence of physical matter
- But the existence of physical matter is not certain and the existence of conscious experience is certain
- We have traded certainty for a hypothesis

From Correlation to Cause

- Where once science was concerned extending our understanding and control of regularities in conscious experience, it now sets out to explain conscious experience itself, via the construction of psycho-physical laws
- These laws obtain their validity from our own metaphysical assertion, we legislate the correlation of experience to be caused

The Scientific Amnesia

- And having systematically eliminated consciousness from the scientific model of the universe (in order to remain impartial), we are surprised to discover that the existence or non-existence of consciousness makes no difference to how the physical universe would behave or evolve

The Scientific Amnesia

- We wonder about free will, whether mental states are the same as brain states
- We forget that the physical world was constructed out of a human decision to only allow a certain class of observations to qualify as scientific
- We make our construct into an ultimate cause and forget the undivided unity of consciousness from which it arose

Conclusion

- The universe and everything in it, including our bodies, is only known through the patterning of sense
- The sensory streams are already experienced as having a basic spatio-temporality before the perception of any world
- As we learn to perceive we transform and unify the regularities in the sensory streams to produce the experience of a world

Conclusion

- This transformation projects the basic spatio-temporal forms of the sensory streams into a spatially three-dimensional world existing in a present moment of time containing persisting objects that undergo predictable changes
- Perception is the fact of conscious experience, not the underlying sensory streams, therefore we can only infer the underlying patterns from our conscious experience of perception within which the world is already formed

Conclusion

- It is the patterns in the sensory streams that are the ultimate material of science – science does not work with the objects and events of perception but with the fundamental structure of the patterning that underlies these perceptions
- Hence it finds molecules, atoms, quarks and quantum fields

Conclusion

- Despite this we remain locked in our belief that our perception of the world is 'really real' rather than a representation of something unknown that has been 'stepped down' into spatio-temporally patterned sensory streams from which we create a world according to the forms of consciousness
- Whether these forms are the 'true' forms of 'that which produced experience' we cannot say. But we have good reasons to doubt it. Firstly because spatio-temporality breaks down at the quantum level and secondly because our spatio-temporal model of a physical universe provides us with no adequate understanding or explanation for the existence of consciousness