

Philosophers of Physics Proofs That P

Albert

Let us consider (while we are at it) why (say) P must be true (so far as we can tell). It is like this: suppose that P were not true. Suppose, that is, that it were not the case that P is true. (What we are assuming here (of course) is not what we (really) believe.) That would (as it happens) contradict everything that we do believe (including P). Therefore, P . And that is that. End of story.

J. Barrett (variant 1)

A physically realizable supertask is capable of deciding P in a Malament-Hogarth spacetime. Therefore P .

J. Barrett (variant 2)

Many philosophers have argued not- P . But to settle not- P would require a solution to the quantum measurement problem. Therefore P .

T. Barrett

Q implies P . I happen to like Q , but I like all propositions equally. (Performs yoga pose.) Therefore P .

Batterman

In every system in the basin of attraction of a fixed point, P obtains. Therefore P .

Belot

Classical spacetime theory has a possible-world model as an abstract metric space in which the best-systems approach to theories, with organizing principles Q , R and S , suggests that P holds. It is clear, however, that P would follow using any other set of organizing principles with *a priori* metaphysical warrant. Therefore P .

Brown

How is the explanation based on the postulation of not- P supposed to work? Therefore P .

Butterfield

In fascinating recent debates, the Greats have defended not- P . Agreed: Not- P is an interesting and compelling thesis, though it has its detractors. I would like to offer some irenic remarks on the subject. One can have the qualitative features of not- P without denying P . Therefore P .

Caulton

Orthodoxy holds that not- P . I'm too much of a sweetheart to criticize others directly, though, so I merely remark that the vagueness in the use of the identity-relation in not- P can be rectified with a reasonable supervaluation. Therefore P .

Curiel

Many philosophers have argued not- P on grounds that amount to no more than scholastic metaphysics. (It's really awful, isn't it?) But that doesn't respect actual scientific knowledge or practice. Therefore P .

Richard Dawid

There have recently been arguments for not- P which claim that P is a failed research program. It is true that there is no empirical evidence for P , and that P may remain forever impervious to empirical test. However, no other proposition we've thought of so far is a viable alternative to P . Therefore P .

Earman

Because I think it is a shame that the (often needless) technicality that philosophy of physics has in recent years become enmired in has distanced, indeed detached, it from the mainstream of philosophy, I will give my proof that P in simple terms that should be understandable by everyone. In the representation of gauge theories by the constrained Hamiltonian framework, one must work with a pre-symplectic rather than a symplectic form, yielding inevitable ambiguities in the construction of the reduced phase-space from the identification of mathematically distinct yet physically identical states on the gauge-orbits, even before one attempts to account for the subtleties introduced by the non-trivial co-homology groups induced by the (generally) non-simply connected topology of the constraint submanifold, and the problems are even more severe in the infinite-dimensional case...[†]

[†][Delivered as a public address to a general audience, the proof never completed. Some interpret the presentation as a work of performance art.]

Fletcher

In any reasonable topology, P . Therefore P .

Fraser (variant 1)

Wallace has argued that not- P . Therefore P .

Fraser (variant 2)

The argument for not- P is based on a formal rather than physical analogy. Therefore P .

Halvorson

There is a model of (non-interacting) algebraic quantum field theory, formulated in category-theoretic terms, in which the necessity of a syntactical supplement to itself implies P . Therefore P .

Hartmann

On the assumption of plausible prior Q , Bayesian decision theory predicts a high likelihood for P . It is clear, however, that the same prediction would follow from the substitution of any other prior. Therefore P .

Knox

One cannot make sense of P without fixing an inertial frame-field. One can always do that, however. Therefore P .

Ladyman

Not- P is just metaphysical, and so it must go. Therefore P .

Lehmkuhl

The generally accepted view that Einstein held not- P is controverted by the evidence of newly discovered writings found on his toilet-paper. Therefore P .

Manchak

P would almost certainly follow as a theorem from Q (precisely formulated); unfortunately, all previous attempts to give a precise formulation of Q have Minkowski spacetime as a counterexample. My precise formulation of R does not have Minkowski spacetime as a counterexample. Therefore P .

Malament

The status of not- P presents a delicate and interesting question in general relativity. I prove a modest proposition that there is no criterion for not- P that meets desiderata Q , R , and S in Gödel spacetime. Therefore P .

Maudlin

If someone complains that he does not understand that P , then I am tempted to respond with Dr. Johnson: “I have found you an argument, I am not obliged to find you an understanding.” That is, I cannot deny the possibility of a sort of cognitive blindness that would make someone unable to accept P , and I cannot offer a remedy for such blindness, since P appears as an irreducible posit. Therefore P .

Norton

There’s no formal principle that establishes P , but background facts assure it.

Pooley

See my forthcoming manuscript for the proof that P .

Ruetsche

There are several different, mutually exclusive ways of viewing P , each of interest in its own context. Therefore P .

Saunders

P and not- P are only weakly discernible by the irreflexive relation ‘negation of’, so anything true of one is true of the other; therefore, P .

Smeenk

A sensitive reading of Newton applied to current methodological problems in cosmology shows that not- P is problematic. Therefore P .

Thébeault

The problem of time in attempts to quantize general relativity can be resolved by assuming P . Therefore P .

Timpson

Not- P involves hypostatizing an abstract noun. Therefore P .

Valente

I offer you a proof that P you cannot refuse.

Wallace (variant 1)

Fraser has argued that not- P . Therefore P .

Wallace (variant 2)

Assuming the plausible axioms Q , R and S , it follows that it is a good bet that P holds in this branch of the universal wave-function. It is clear, however, that this would be true if one were to substitute for Q , R and S any other set of plausible axioms. Therefore P .

Wallace (variant 3)

There is no good argument for P given the Everett interpretation; but this relies on a double standard, as there is no good argument for P in any interpretation. Therefore P .

Weatherall

P cannot be adequately explained by traditional philosophical accounts, particularly in the context of geometrized Newtonian gravity. Therefore P .

Weinstein

So, I've been thinking a lot about P recently. (Plays guitar for a while.) I don't have a rigorous argument for it, but it is strongly suggested by the intuitively plausible assumption P . Anyway, not- P is just nuts.

M. Wilson

I recall once seeing in the days of my youth an encyclopedia in which the entry for "not- P " consisted entirely of "See Q ", where upon arrival one was then directed post-haste to the entry for R . Such a pattern persisted until one was circuitously routed back to the original entry for not- P , having learned not a whit about why not- P was true. Now it is true that among philosophers of a certain metaphysical bent, not- P is widely thought unobjectionable. Alas, such folk carry out their endeavors in blissful ignorance of the incongruence between the rigidity of their philosophical assumptions and the mathematical jiggery-pokery that forms a necessary part of the applied mathematician's day-to-day toolbox. In particular, they do not understand the wisdom in the following maxim of Oliver Heaviside: " P ". Therefore P .

Werndl

P can be argued for on the grounds of reasonable assumptions Q and R . (See the technical appendix.) I know of no proofs of Q and R , but they appear hard to deny, especially if one assumes P . Therefore P .

Wüthrich

When spacetime is treated as an emergent entity in quantum gravity, one cannot recover not- P . Therefore P .

The maintainer of this list requests that anyone who has access to proofs by any of the following philosophers (and any others missing from this list), not readily available in the literature, send it to him immediately (erik@strangebeautiful.com):

1. Bacciagaluppi
2. Bartels
3. Beisbart
4. Brading
5. Bub
6. Callender
7. Castellani
8. Dieks
9. DiSalle
10. Dizadji-Bahmani
11. Dorato
12. Fine
13. van Fraassen
14. French
15. Frigg
16. Frisch
17. Harper
18. Healey
19. Hofer
20. Huggett
21. Janssen
22. Lyre

23. Maroney
24. Mattingly
25. McKenzie
26. Muller
27. Myrvold
28. Pitts
29. Placek
30. Redei
31. Roberts
32. Rynasiewicz
33. Sklar
34. Stöltzner
35. Struyve
36. Teh
37. Teller
38. Uffink
39. Winsberg
40. Zuchowski