Philosophers of Physics Proofs That P

(the original list of proofs, circa 1980, attributed to Hartry Field: http://consc.net/misc/proofs.html)

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.

Bacciagaluppi (variant 1)

The standard arguments for not-P do not take decoherence properly into account. Therefore P.

Bacciagaluppi (variant 2)

Not-P is a historical myth. Therefore P.

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, although it has its detractors. I offer irenic remarks on the subject in a spirit that, on first glance, appears reconciliatory. As I show in §XVII.D.12.f.iv, paragraph 23.A.ix.h, based on principle **EmAyWhyBeeEeePee**, one can have the qualitative features of not-P without denying P. Therefore P.

Castellani

P is invariant under reflection, rotation and translation. Therefore P.

Caulton

Orthodoxy holds that not-P. I'm too much of a sweetheart to criticize others directly, however, 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 (variant 1)

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.

Curiel (variant 2)

Not-P relies for its explication on the prior definition of Q and R. Many philosophers seem to still feel the grip of an old Aristotelian essentialism that demands a single, canonical, "natural" definition for such concepts. (Seriously, what the fuck is up with that?) But there are many reasonable ways to define those concepts, each fruitful in its place and for its own purpose. Therefore, P.

Curiel (variant 3)

Howard Stein beautifully and illuminatingly has asserted P. 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, according to some very famous physicists, they themselves cannot countenance any other proposition we've thought of as 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's a story going around that not-P. There is, however, 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, a Bayesian analysis yields a high posterior 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. P, however, relies only on crazy ontology, and so can stay. 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 (variant 1)

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 counter-example. My precise formulation of R does not have Minkowski spacetime as a counter-example. Therefore P.

Manchak (variant 2)

[silent display of elegantly minimalist image of a few black dots and curves arranged against a white background] 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.

Price

Take your favourite argument for not-P. If we apply it from the opposite temporal perspective it becomes an argument for not-Q. But concluding not-P without also concluding not-Q would be a temporal double standard. Therefore 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 'is the 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.

Stein

Before I give my proof that P, I must, because it is a mannerism of mine, quote the preface of Newton's *Principia*, so I will again: "I hope the principles here laid down will afford some light either to this or some truer method of philosophy." Newton's hope—although the recognition by philosophers of its true culmination has been impeded by the Halls' poor translation of several of Newton's unpublished manuscripts—has been signally borne out by the transformation of his system of mechanics into those of Lagrange and Hamilton, still visible in that most strange of Platonic Forms, quantum field theory. Why, then, did Poincaré not realize the brutally (or, as McDowell would have it, 'brutely') inconsistent treatment of his own theoretical principles would prevent him from seeing P by snacking on Hempel's intellectual nourishment? I believe reflection on Descartes' example of instructive foolishness in denying P (which Locke, without ever getting entirely clear on it himself, saw clearly that Huygens saw clearly without ever being able to articulate it clearly) shows that Leibniz's ghost posing to Kant the fundamental problem of P reveals Carnap to be a far more interesting philosopher than contemporary fads recognize. Let us therefore cherish Maxwell's mind, charged with Socratic skepticism, for *there* was a man, a serious man, who attended not to the mere words spoken but the λόγοι behind P.

One can now see how the proof that P would go. I should have liked to complete my proof that P, but editorial factors beyond my control have forced substantial excisions from the manuscript, and so I reserve the right to publish a more complete proof of P in the future that does, in fact, prove that P. Therefore, P.

Thébault

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 to reject P for that reason would rely on a double standard, as there is no good argument for P in any interpretation. Therefore P.

Weatherall

There is a sense in which Q allows us to think of R as precisely capturing the idea that P. R cannot be adequately explained by traditional philosophical accounts, particularly in the context of geometrized Newtonian gravity, whereas category theory lends Q the representational capacities to do so. 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 derived on the grounds of reasonable assumptions Q and R. (See the technical appendix.) I know of no good arguments for 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. Azhar
2. Baker
3. Bartels
4. Beisbart
5. Boyd
6. Brading
7. Brukner (*honoris causa*)
8. Bub
9. Callender
10. Calosi
11. Clifton
12. Crowther
13. Crull
14. Dardashti
15. De Baerdemaker
16. De Haro
17. Dewar
18. Dieks
19. DiSalle
20. Dizadji-Bahmani
21. Doboszewski
22. van Dongen (*honoris causa*)
23. Dorato
24. Dougherty
25. Dowker (*honoris causa*)

26. Dulani
27. D. Dürr (*honoris causa*)
28. P. Dürr
29. Elder
30. Esfeld
31. Feintzeig
32. Fine
33. van Fraassen
34. French
35. Frigg
36. Frisch
37. Galison
38. Goldstein (*honoris causa*)
39. Gomes (*honoris causa*, no longer)
40. Gryb (*honoris causa*, no longer)
41. Harper
42. Healey
43. Hoefer
44. Howard
45. Huggett
46. Janssen
47. Kuhlmann
48. Landsman (*honoris causa*)
49. Le Bihan
50. Linnemann
51. Loewer
52. Lyre
53. Margoni
54. Maroney
55. Martens
56. Mattingly
57. McKenzie
58. Menon
59. Meskhidze
60. Muller
61. Myrvold
62. Oriti (*honoris causa*)
63. Palacios

64. Pitts
65. Placek
66. Prunkl
67. Read
68. Redei
69. Redhead
70. Rickles
71. Roberts
72. Robertson
73. Rosenstock
74. Rovelli (*honoris causa*)
75. Ryckman
76. Rynasiewicz
77. Sebens
78. Sklar
79. Smolin (*honoris causa*)
80. Stöltzner
81. Struyve
82. Teh
83. Teller
84. Uffink
85. Vidotto (*honoris causa*)
86. Winsberg
87. Zuchowski