

# The Eleatic hangover cure\*

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It's well known that one way to cure a hangover is by a "hair of the dog" — another alcoholic drink. The drawback of this method is that, so it would appear, it cannot be used to completely cure a hangover, since the cure simply induces a further hangover at a later time, which must in turn either be cured or suffered through.

But, if you think about it, there *is* a way to completely cure a hangover using a hair of the dog. Suppose (1) that there is a simple and direct relationship between the amount of alcohol consumed and the duration of its effects, so that, for example, a pint of beer induces an hour's drunkenness, followed by an hour's hangover, with smaller quantities of alcohol corresponding to proportionally shorter periods of drunkenness followed by shorter hangovers. Suppose also (2) that a hair of the dog works because drunkenness masks the pain of a hangover. I will speak loosely: when a hangover is masked in this way, I will say that the hangover is "cured", though perhaps it would be fairer to say only that its symptoms have been relieved.

To cure a hangover using a hair of the dog, start drinking at a time when you are not drunk, and have no hangover. Drink a half a pint of beer, and wait for half an hour until you are just about to get a hangover. Then drink quarter of a pint of beer. Wait quarter of an hour, until you are just about to get a hangover. Then drink an eighth of a pint of beer. And so on... After an hour, you have drunk a pint of beer and it has not given you a hangover. Every incipient hangover you might have had was cured by a further drink.

**Objection:** No publican will sell you the infinite number of drinks that you require, or stock 1/64th pint glasses!

**Reply:** You don't have to buy an infinite number of beers, just take an infinite number of sips out of an ordinary pint.

**Objection:** But seriously, somewhere along the line you'll have to do something physically impossible. You'll have swallow beer ever faster, until beer passes down your throat at greater than light speed. For that matter, owing the atomic nature of beer, eventually you'll reach a point

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where you can't divide the remaining beer in two without ending up with something that is no longer beer, or no longer contains alcohol.

**Reply:** What this shows is that you won't quite be able to finish the cure. It is, as they say, a "medical impossibility". But by the time you get to the point where you can't continue, you will only be incurring a very very short hangover with your last sip of beer. You don't mind suffering a milli-second's hangover. Besides, isn't it worth speculating about whether the cure would work, on the counterfactual supposition that you can swallow at any finite speed, and that alcoholic beverages are made out of infinitely divisible gunk? Such speculations can tell us a lot about our concepts of infinity and matter.

**Objection:** The cure can't work, even on that supposition. You said that every hangover you had was cured, so when you finish drinking, you don't have a hangover. But, by the same reasoning, every cure induced a fresh hangover, so when you finish drinking, you have a hangover. That's a contradiction, so, by *reductio*, the cure is impossible.

**Reply:** That's an instance of the Black (1950) / Thomson (1954) argument for the impossibility of supertasks. The hangover cure *is* a supertask, but, as Benacerraf (1962) has taught us, the Black / Thomson argument is unsound.

In this case, it's easy to see why. Suppose you start drinking at 11, when the sun is over the yardarm. At 12, you have drunk your beer, and (I claim) cured your hangover. The cure is contrived so that none of the drinks determine anything about your state at 12 — all the periods of drunkenness you incur end before 12, and all the hangovers end at 12. So, nothing about your drinking between 11 and 12 determines either that you do have a hangover after you finish, or that you don't.

**Objection:** Earlier, you said: "Every incipient hangover you might have had was cured by a further drink". Given that you repudiate the Black / Thomson argument, that's a non-sequitur — you've given me no reason to think that I don't have a hangover after 12.

**Reply:** When I said that every hangover was cured, it was a rhetorical flourish, not an argument. If you need an argument, here goes: first, I'll show that you don't have a hangover after 12, and then that you don't have a hangover at any time between 11 and 12.

Every drink you take, if you follow the hangover cure, induces a hangover due to end at 12 (and which is cured by the next drink). So regardless of whether any of the cures work, you haven't incurred any hangover after 12. To be more careful: you haven't incurred any hangover after 12 *because of your drinking after 11*. I take it that a hangover can only be caused by drinking, and only in accordance with supposition (1). So you can only have a hangover after 12 if you were drunk, or had a hangover before you started drinking at 11. Hence my advice only to begin drinking at a time when you are not drunk, and not hung over.

You don't have a hangover between 11 and 12 because you're drunk at every time within that hour, and, according to supposition (2), drunkenness masks the effect of (and so "cures", in the sense I am using) any hangover you might have during that time.

**Objection:** Well, there's something very conceptually weird about this sort of thing.

**Reply:** True, but nothing conceptually impossible.

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## **References**

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- Black, M. (1950). Achilles and the tortoise. *Analysis* 11, 91–101.
- Thomson, J. (1954). Tasks and supertasks. *Analysis* 15, 1–13.