Bottomless determination: How Yablo can get proportionality from gunk

ROY SORENSEN

To escape epiphenomenalism, Stephen Yablo (1992) appeals to the principle that causes be proportional to their effects. Consider Sophie, a pigeon trained to peck at red triangles to the exclusion of all other colours. Sophie will peck at a scarlet triangle. But that does not mean that the triangle being scarlet is the cause of Sophie’s pecking. She would have pecked at any red triangle. The cause is the most specific property that makes a difference.

Red is a determinable of scarlet. Determinables necessitate systematic resemblances between their determinates – as detailed by a sequence of studies inaugurated by W. E. Johnson (1921) and most recently refined by Eric Funkhouser (2006). This organization of determinable properties makes them more plausible causes than disjunctive properties. Sophie’s peck was not caused by the triangle being either scarlet or burgundy. That would be double-counting causes. After all, scarlet was doing all the work. Given the Eleatic principle that only causes exist, many go further and deny that there are any disjunctive properties. This parsimony stops the proliferation of disjunctive properties.

The determination relation is relative. Red is a determinable of scarlet but it is a determinate of colour. Aside from those who think reality might be vague, such as David Sanford (1970), all experts on the determination relation assume that all chains of determination bottom out with superdeterminate properties. Metaphysicians such as Tim Crane (2008) latch on to these superdeterminate properties as the only causally efficacious properties. From this lemma, Carl Gillett and Bradley Rives (2005) go on to apply the Eleatic principle. They conclude that only superdeterminate properties are real.

This consensus that determination relations are always grounded in superdeterminate properties is jeopardized by the analogy between superdeterminates and atoms. Atoms sit at the bottom of the constitution relation. They are parts that lack proper parts. But physicists respect the possibility of gunk (objects with parts that always have proper parts). There is no guarantee that there are super-constituents. Accordingly, Ted Sider (1996) reasons that since there may be no atoms and yet there is something rather than nothing, physical constitution must be possible. If objects can be composed of gunk, then they can be composed of atoms. And once we permit a little composition, why not help ourselves to as much as is suggested by common sense and science?
Let us emulate Sider’s possibility result. Since there is some causation by determinates and there may be bottomless determination, causation by determinables is possible.

The possibility of bottomless constitution shows that there may be no fundamental layer of reality with respect to objects (Schaffer 2003). The possibility of bottomless determination shows that there may be no fundamental level of reality with respect to properties.

According to Alfred North Whitehead (1929), what goes for objects goes for space. Each region could be comprised of proper sub-regions.

Similarly, what goes for objects goes for their properties. The ‘space’ for the determination relation might be Whiteheadian. Consider the beginning-less sequence: ‘... being less than .01 grams, being less than .1 grams, being less than 1 gram, being less than 10 grams.... There is no super-determinate in this chain’ (although there is a super-determinable – having a mass in grams).

This possibility of bottomless determination provides a two-stage argument for Yablo’s principle of proportionality. The destructive phase closes a loophole in his earlier demolition efforts. According to the exclusion principle, if A is causally sufficient for B, no distinct C is causally relevant. Yablo (1997) objects: If determinate A and determinable C are both causally sufficient, then the exclusion principle would exclude both! This collective self-defeat might be avoided with ancillary assumptions that let precise determinates universally trump their vague determinables. With this lubricant, the superior specificity of determinates now carries us down a slippery slope to an absolutist conclusion: ‘Only superdeterminate properties are causes.’ That is a thrilling descent for admirers of physics. For physicists appear to have a monopoly on these properties. However, there is a sickening secondary drop. If the chain of determination is bottomless; there are no causal properties. So escaping Yablo’s problem of collective self-defeat by according universal precedence to determinates over determinables still leads to over-exclusion.

Here is the constructive follow-through: at some juncture in a causal but bottomless world, determinables must be credited as causes. Since we must extend the credit sooner or later, why not sooner? True, we ought not to do it immediately for just the reason that Yablo cites: causes must be difference makers. But as soon as this requirement is met, we should make the attribution where intuition suggests (or fairly close if we need to accommodate supplementary concerns).

This support for Yablo’s proportionality principle reinforces a recent extension of his philosophy of mind to the problem of omissions in action theory. Phil Dowe (2010) notes that the exclusion principle leads metaphysicians to deny that omissions can be causes. Omissions have a suspicious resemblance to disjunctive properties. Recall Jean Paul Sartre’s slogan ‘To not act is to act’. This suggests that each omission reduces to a disjunction of
positive actions. The Eleatic principle implies that these omissions (and all other reducible absences) are unreal.

But if omissions stand to these positive actions as determinables to determinates, then Eleaticism metamorphoses into a solution to the problem of proliferating absences. We need only postulate omissions that satisfy Yablo’s proportionality principle.

Those who wish to assuage common sense and the social scientists argue that mental properties can be causally relevant without being causally efficacious (Jackson and Pettit 1990: 108). An impotent property can explain an effect by guaranteeing that there is some efficacious property in the offing. For instance, fragility explains why the vase broke by programming for the presence of a molecular structure that does real work.

Programming entails causal relevance for finite domains. But if the programming is bottomless or asymptotic, ‘causal’ explanation may progress endlessly.

Gottfried Leibniz might have welcomed this ungroundedness. So might have Bertrand Russell (1913: 1) when he announced that physicists had replaced causation with functional dependencies.

Causal relevance introduces paper money into the economy of explanation. The substitutes are backed by the pledge of redemption in efficacious gold. Infinite programming takes us off the gold standard.

The absence of efficacy would blunt invidious comparisons between determinates and determinables. But this path to equality is unavailable to those who believe absences can be causes. Helen Beebee (2004) suggests that they instead settle for causal relevance. With bottomless determination, however, we friends of absences need not settle for Beebee’s consolation prize.1

Washington University in St Louis
Campus Box 1073, One Brookings Drive
St Louis, MO 63130-4899, USA
sorensen@wustl.edu

References


1 Although W. E. Johnson and A. N. Whitehead were unreachable by email, everyone else in my bibliography responded generously and efficaciously. Thanks also to my metaphysical colleagues John Gá Gabriel and Tom Sattig.


