

Properties at Work Armstrong's universals are supposed to explain naturalness, that is, why some classes would be more natural than others. Lewis thinks that's an explanation we can do without; some properties just are more natural and that's all there is to it. For him the importance of naturalness lies not in how you explain it, but what it explains, or helps to explain. Three examples: intrinsicness, laws of nature, supervenience.

Intrinsicness. A property is intrinsic iff it pertains to what a thing is like in itself, independently of what may be going on around it. So, roundness is the paradigm of an intrinsic property, while being five miles from a burning barn is extrinsic. Other examples?

First attempt at an analysis was Chisholm and Kim in the 1970s. They say roughly: P is intrinsic if it's possible for something to have it in the complete absence of other things, that is, while being completely alone in the universe. That rules out being five miles from a burning barn. But what about the disjunctive property of being round OR five miles from a burning barn? That can be had alone. Worse, consider the property of loneliness (existing alone) itself. It's highly extrinsic but it can certainly be had alone; that's the only way it can be had.

Second try: P is intrinsic iff it's compatible both with loneliness and accompaniment. That rules out loneliness but not the property of being lonely or round.

Third try: Call a property *disjunctive* iff it is the disjunction of two much more natural properties. P is *basic intrinsic* iff it and its negation are non-disjunctive and both are compatible both with loneliness and accompaniment. P is intrinsic iff it supervenes on basic intrinsic properties. (Lewis & Langton.) But consider the property of being a diamond (Sider). This is extrinsic because diamonds need to be surrounded by non-diamond, or at any rate not by more diamond of the same type. But it and its negation are non-disjunctive. And clearly diamonds and non-diamonds can exist either alone or accompanied.

Lewis's theory. P is intrinsic iff necessarily, when x and y are duplicates, x has P iff y has P; that is, P never distinguishes between duplicates. Now we have to define duplicates, and can't use intrinsicness on pain of circularity. Duplicates are defined as things alike in all their perfectly natural properties. Lewis says, "On my account, all perfectly natural properties come out intrinsic. That seems right" (216). It may be right that they are intrinsic, but the account makes them automatically, definitionally intrinsic. Couldn't quantum mechanics surprise us in this regard? Maybe being *entangled* is natural.

Laws. Contrast with accidental generalizations; all the coins in my pocket are copper vs. copper conducts electricity. Armstrong treats laws as "necessitation" relations between universals. Lewis finds that unintelligible. He opts for a regularity theory. But not any old regularity is a law. One idea is: *All As are Bs* when A and B are natural properties. But

compare: hunks of uranium are less than 10 miles across, hunks of gold are less than 10 miles across. First could be a law, second a fluke. Lewis:

a given regularity might hold either as a law or accidentally, depending on whether other regularities obtain that can fit together with it in a suitable system...I take a suitable system to be one that has the virtues we aspire to in our own theory building...It must be entirely true; it must be closed under strict implication; it must be as simple in axiomatization as it can be without sacrificing too much information content; and it must have as much information content as it can without sacrificing too much simplicity. *A law is any regularity that earns inclusion in the ideal system* (222).

Problem: the same content can be expressed in different ways, some simpler than others. "Given system S, let F be a predicate that applies to all and only things at worlds where S holds. Take F as primitive, and axiomatize S...by the single axiom $\forall x Fx$." His solution: compare the competing systems when each is formulated in a *natural* way: "let the primitive vocabulary that appears in the axioms refer only to perfectly natural properties" (222).

Supervenience A supervenience thesis is a denial of independent variation. There can be no difference in respect of say, beauty, without difference in underlying natural properties. Would like to apply this to "materialism" but how? .

M1: Any two possible worlds that are alike in physical respects are alike in all respects.

But this makes materialism a necessary truth and that seems wrong. As far as the materialist is concerned, there could be worlds with ghosts and spirits

M2: Any two materialistic worlds that are alike in physical respects etc....

But this can't explicate materialism because it uses it. The idea must be that any worlds physically like ours can only avoid being entirely like ours by containing something *extra*, something not present here. Call a property *alien* if it is not actually instantiated.

M5: Any two worlds free of "alien" natural properties are exactly alike if physically alike.

A more recent version of the same basic idea lets the "extra" thing take any shape whatsoever. By a *minimal physical duplicate* of world w, let's mean a physical duplicate with nothing extra, nothing not necessitated by the physics. Materialism holds at a world w iff

M6: A minimal physical duplicate of w is exactly like w in all respects.