

Redundancy

My old friend Lena Ginsburg was reading through JAW27 tonight, and was puzzled by Chomsky's expression "redundant principles, with overlapping empirical coverage" . First, she wondered what was meant by this, and second, she wondered why redundant principles are usually, in Chomsky's words, "wrongly formulated" .

So first, what is meant by "redundant principles, with overlapping empirical coverage" ? As far as I can tell, this means "distinct principles, which share predictions and consequences" . If my formulation has not improved things, an example might be: two separate laws of physics, each of which predicts the law of gravity.

Though redundant principles have shared consequences, they do differ in some way as well, for otherwise they wouldn't just be redundant, they'd be the exactly the same! When we have redundant principles in a scientific theory, it is always the case that each principle is motivated independently of the other. It "just so happens" that they are redundant; the redundancy is "by accident" .

And second, why are redundant principles usually "wrongly formulated" ? Well, the last sentence of the previous paragraph hints at the reason: being accidental, redundancy is often a sign of a flawed design. After all, there is nothing bad about redundancy on the face of it; if anything, redundancy should mean that you can be extra certain about the "overlapping empirical coverage" ! Indeed, I am sure that there are cases of "well-designed redundancy" out there, perhaps in computer system design. (I cannot provide an example, because I am largely ignorant of this area.)

But more often redundancy is just entanglement, a failure to separate separable concerns, a failure to modularize sufficiently. And thus it boils down to inefficiency and sloppiness: in short, a symptom of error.

Eindhoven, 26 November 2005

Jeremy Weissmann
11260 Overland Ave. #21A
Culver City, CA 90230
USA
jeremy@mathmeth.com