Philosophy of Mind and Metaphysics

Lecture XIV: Reductive and Nonreductive Physicalism

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I. REDUCTIVE AND NONREDUCTIVE PHYSICALISM

a. According to REDUCTIVE PHYSICALISM, "mental properties are reducible to, and hence ultimately turn out to be, physical properties" (p. 212).

b. According to NONREDUCTIVE PHYSICALISM, "mental properties, along with other "higher-level" properties, constitute an autonomous domain that resists reduction to the physical domain" (p. 212).

c. "[T]he most widely accepted form of physicalism today combines ontological physicalism with property dualism: All concrete particulars in this world are physical, but certain complex structures and configurations of physical particles can, and sometimes do, exhibit properties that are not reducible to "lower-level" physical properties" (p. 212).

d. WHY FAVOR REDUCTION?

i. "First, theory reduction when appropriately carried out provides us with *explanations* of the laws of the reduced theory in terms of the laws of the base theory [i.e. the theory to which the reduced theory is reduced]" (p. 216).

ii. "Second, there is the metaphysical payoff of *ontological simplicity*" (p. 216). "By reducing one theory to another, we reduce the number of independent assumptions about the world. ... [Reduction] shows that fewer basic laws, and fewer basic expressions, fully suffice for the description and explanation of the phenomena of a given domain" (p. 215).

II. WHAT IS REDUCTION?

a. THE NAGEL MODEL OF REDUCTION: A theory, T2, is *Nagel-reduced* to another theory, T1, just in case all the laws of T2 are logically (and mathematically) derivable from the laws of T1 augmented with appropriate "bridge principles" connecting the expressions of T2 with the expressions of T1.

III. Arguments against Mind-Body Reduction

a. Such arguments have emphasized "the unavailability of bridge laws of the biconditional form specifying for each mental term, or property, a nomologically necessary and sufficient condition in physical terms" (p. 217). The unavailability of such laws suggests that the mental (i.e. psychological theory) is not reducible to the physical (i.e. physical theory).

   i. Davidson's Anomalous Monism: If Davidson's view is correct—if psychophysical anomalism is true—then there are no laws to serve as mind-body bridge laws. (See the notes for Lecture XIII, Section I.c.i.)

   ii. Multiple Realizability: Since "any mental property can have diverse physical realizations in a wide variety of biological organisms" (p. 218), no mental property will be reducible to any particular physical property.

IV. Versions of Nonreductive Physicalism

a. Supervenience Physicalism

   i. The View: Higher-level properties—e.g., mental properties—are in some sense *dependent* on, or *determined* by, their lower-level properties—e.g., their physical properties. In particular, supervenience physicalists maintain that *the higher-level properties of a thing are supervenient on its lower-level properties*. But what does it mean to say that certain properties are supervenient on others? Here's how Kim most clearly puts it (see p. 224):

      (SP2) Mental properties *supervene* on physical properties in that if any *x* (in any possible world) and *y* (in any possible world) have the same physical properties (in their respective worlds), then *x* and *y* have the same mental properties (in those worlds).

   ii. Advantages of the View: Supervenience "provide[s] us with a relationship that gives us *determination, or dependence, without reduction*, just what those who reject mind-body reductionism but wish to retain the dependence of the mental on the physical have been looking for" (p. 223).

b. EMERGENTISM

i. THE VIEW: Emergentism consists of three doctrines:

1. ONTOLOGICAL PHYSICALISM, according to which all that exists in the spacetime world are the basic particles recognized in physics and their aggregates;

2. PROPERTY EMERGENCE, according to which when aggregates of material particles attain an appropriate level of structural complexity ..., genuinely novel properties emerge to characterize these structured systems;

3. THE IRREDUCIBILITY OF THE EMERGENTS, according to which emergent properties are irreducible to, and unpredictable from, the lower-level phenomena from which they emerge.

Emergentists might be quite happy with irreducibility of the sort we've been discussing. That is, they might have no problems "with biconditional bridge laws connecting emergent properties with lower-level properties" (p. 228). However, they insist on irreducibility of another sort, namely, of an *explanatory* sort. For, according to emergentists, the important questions are of this sort: *Why* do these higher-level properties emerge from these lower-level properties? (For example, why does pain—rather than itch or tickle or nothing at all—emerge when C-fibers are activated?) Emergentists maintain that these explanatory questions will forever remain unanswered, and so this is the sense in which higher-level properties are not reducible to lower-level ones.

ii. ADVANTAGES OF THE VIEW: Emergentism, just like supervenience, provides us with a relationship that gives us *determination, or dependence, without reduction*, just what those who reject mind-body reductionism but wish to retain the dependence of the mental on the physical have been looking for.