Special sciences – J.A. Fodor

- A typical thesis of positivistic philosophy of science is that all true theories in the special sciences should reduce to physical theories in the long run.
- What has traditionally been called 'the unity of science' is a much stronger, and much less plausible, thesis than the generality of physics.

Reductivism is the view that all the special sciences reduce to physics. The sense of 'reduce to' is, however, proprietary. It can be characterized as follows.

Let

(1) S1x -> S2x

Be a law of the special science S ((1) is intended to be read as something like 'alll S1 situations bring about S2 situations'

- A necessary and sufficient condition of the reduction of (1) to a law of physics is that the formulae (2) and (3) be laws, and a necessary and sufficient condition of the reduction of S to physics is that all its laws be so reducible.

(2a) S1X <- -> P1X
(2b) S2X <- -> P2X
(3) P1X -> P2X

- P1 and P2 are supposed to be predicates of physics and (3) are supposed to be a physical law.
    - Formulae like (2) are often called "bridge" laws.
    - If bridge laws are not identity statements, then formulae like (2) claim at most that, by law x's satisfaction of a P predicate and x's satisfaction of an S predicate are causally correlated. It follows from this that it is nomologically necessary that S and P predicates apply to the same things.
    - If the bridge laws express event identities, and if every event that falls under the proper laws of a special science falls under a bridge law, we get the truth of a doctrine ca;;ed 'token physicalism'
- There are three things to notice about token physicalism
    1. First, it is weaker than what is usually called 'materialism'. Materialism claims both that token physicalism is true and that every event falls under the laws of some science or other
    2. Second, token physicalism is weaker than what might be called type physicalism', the doctrine, roughly, that every property mentioned in the laws of any science is a physical property mentioned in the laws of any science is a physical property, Token physicalism does not entail type physicalism because the contingent identity of a pair of events presumably does not guarantee the identity of the properties whose instantiation constitutes the events; not even where the event identity is nomologically necessary.

3. Third, token physicalism is weaker than reductivism. But, as a first approximation, reductivism is the conjunction of token physicalism with the assumption that there are natural kind predicates in a ideally completed physics which correspond to each natural kind predicate it any ideally completed special science.