Lecture 2           Identity theory and eliminative materialism

1. The identity theory

Two main trends:

a) First trend: U. T. Place and Herbert Feigl- mental processes or events such as sensations = physical phenomena. Place restricts the identity theory to sensations and mental images. Intentionality, which is a major property of mental states, cannot be constructed as a property of brain structure. (Place 1988, p. 209)

- Place- the mind-body problem - not a philosophical problem but empirical → neuroscientists. (Place 1988, p. 211)

- Place - distinction between two expressions: the “is” of definition (“A square is an equilateral rectangle.”) and the “is” of composition (“A cloud is a mass of droplets or other particles in suspension.”) (Place 1956, p. 34) → From logical independence of expression to ontological independence of entities breaks down when we compare brain and consciousness.

- “Place spoke of constitution rather than of identity”. (Smart 2004, p. 2)

- Place - two examples: “This table is an old packing case” and “Lighting is an electric discharge”.

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• Smart’s comments on these analogies: For the objection that “sensation” does not mean the same as “brain process”, Place indicates that “this table” (or lighting, in the second case) does not mean the same as “this old packing case” (or “motion of electric charges”, in the second case). In different ways, we can distinguish that something is a table (lighting) or an old packing case (motion of electric charges). However, these “different ways” do not “prevent the table being identical to the old packing case”. (Smart 2004, p. 2) “Sensation” and “brain processes” differ in meaning but they have the same reference. (Smart 2004, p. 2)

• Smart - sensations = brain processes. If Place prefers constitution to identity, Smart considers this notion of identity as being similar to the notion of identity that appears in the axioms of identity from logic. (Smart 2004, p. 2)

b) Second trend - Armstrong (1968): mental states, in general, + propositional attitudes (believes, desires, etc.), in particular, = brain processes and structures. (Place 1988; Smart 2004) Smart agrees with this idea, while Place rejects it. (Smart 2004, p. 5)

• Smart (2004, p. 5) on Armstrong’s distinction between perception and bodily sensation. Armstrong defines perception as “coming to believe by means of senses”. Bodily sensations are perception of states of our body. (Smart, 2004, p.5)
• Smart: “visual sensations” that are not perception but something that occurs in perception. “So in this sense of ‘sensation’ there should be bodily sensation sensations.” (Smart 2004, p. 5) Bodily sensation would be perceptions which entail “introspectible ‘sensings’”.

• Against the idea of internal images of our mind, Place → the “phenomenological fallacy”: when the subject believes that the features they describes appear in their phenomenal field, on, as it were, an internal television screen. → The experienced quality is a subjective one and that we only indirectly describe external things.

• Place: This is wrong. We describe “our conscious experience” by reference to the properties of actual physical properties of objects that give rise to our conscious experience. (Place 1956, 38) There is no “television screen” in our mind or in our brain. Place considers that conscious experience is in fact described by means of qualities.

• Thirty years later, Place argues that the identity theory is stronger than ever. Empirical evidence → The identity thesis. (Place 1977 in Place 1988)

• Defining “is” in the sense of strict identity, Smart maintains that sensations are brain-processes. “Sensations are nothing over and above brain processes.” (Smart 1962/1959, p. 56)
• According to Heil, this strict identity is applied to processes, events and properties. (Heil 2004, p.79)

• Non-reductive philosophers - internal mental states and neural pattern? Which of these events exist? (Descartes- complete knowledge)

• Following Place, Smart: statements about sensations cannot be translated into statements about brain processes. Place, Feigl and Smart claim that even if “sensation” and “brain process” differ in meaning, they have the same reference. (Smart 2004)

• From my viewpoint: for two terms — a sensation and its corresponding neural pattern — to refer to the same thing? The identity theory- different conditions of observation for sensation and neural pattern, they refer to the same thing.

• What does “the same thing” mean? Is this thing a sensation or a neural pattern of activation? Or Spinoza or Wittgenstein → Is the mind-body problem a conceptual or linguistic problem? The identity theory: a conceptual difference.

• The identity - no ontological solution, but only a conceptual/linguistic solution. In the Kantian sense: one notion- is empty. Rorty eliminates sensation, the Churchlands eliminate the notions of folk psychology. (Carnap: language/conceptual framework is correct.)

• Descartes: what internal and external perceptions mean?
• Kant: the transcendental conditions for sensations and neural patterns? Which of these “phenomenal” things, sensations or neural patterns, really exists? Both cannot really exist in the same world. Otherwise → A contradiction: we cannot observe (or perceive, in Cartesian terms) two different things in the same place within the same world at the same time.

Diversion:
One larger framework regarding the debate between eliminative materialism (favoring neuroscience, as a particular science) and folk psychology (or psychology, as a particular science). This larger framework is an essential topic for philosophy of science: the relationship between two theories that explain the same phenomena and the relationship between two domains that explain related phenomena. In philosophy of science, there are different alternatives (from Hempel to Friedman) for this problem. The attempt to relate philosophy of mind to philosophy of science is not new. Several philosophers (from Quine to Churchland and Kim) have tried to do this. In recent years, because of the extraordinary development of neuroscience and the appearance of new domains, such as cognitive neuroscience, the relationship between these particular sciences (neuroscience and psychology) has become more and more complicated.

Regarding the reductionism relationship between two theories, there are in general two possibilities: either the old theory is reduced or it is completely replaced by a new theory. In the first case, the notions from both theories refer to the same things. The classical example is temperature and the molecular energy of molecules. In the second case, certain notions are rejected completely by the new
theory. For instance, Newton’s theory introduces absolute space and time. Einstein’s general theory of relativity rejects such notions. It is well known that certain philosophers from the middle of the last century are the pioneers of eliminative materialism. For instance, Rockwell shows that both Quine and Sellars (philosophy of science) reject the existence of mental states. (Rockwell 2003) If Quine considers that the foundation of science is not immediately given but that certain theoretical elements are involved (even for ordinary physical objects), Sellars pushes this idea further, maintaining that our internal states are theory-based. He draws a parallel between the relationship of mental and neuronal notions, on one side, and the relationship between the notions of two scientific theories that explain the same events. (Rockwell, 2003) Along the same line, Ramsey lists Sellars (with “the Myth of Given”), Feyerabend, Rorty and Quine as the pioneers of eliminative materialism. (Ramsey 2003) For instance, Quine asserts that "the bodily states exist anyway; why add the others?” (Quine 1960, p. 264 in Ramsey 2003).

Now let us integrate this problem of relationship between neuroscience and psychology within the larger framework of philosophy of science. In this sense, Rockwell emphasizes the disputes between Ernst Nagel (with his “‘Bridge Laws’, which established just the sort of connections between old and new theories that the identity theorists needed for brain states and mental states”, Nagel 1961) and Kuhn (1962), Feyerabend (1962) and Laudan (1977, 1981), who show that these bridge laws have no role in the progress of science. It seems that the new theory does not take concepts from the old one. Thus, from scientific
progress, Feyerabend (1963a and 1963b) and Rorty (1965) reject the usefulness of mental states in any theory of neuroscience. (Rockwell 2003)

2. Eliminative materialism

- An offshoot of materialism → The folk or common sense psychology is completely wrong. Notions from folk psychology such as belief, sensation, pain, desire, etc., or propositional attitudes and mental causation do not exist. In Kantian terms, these notions are empty.

- Early eliminativists- Feyerabend and Rorty: sensations do not exist.

- Later eliminativists (in the 1980s)- Stich, Paul and Patricia Churchland: the rejection of folk psychology (beliefs, hopes, etc.). → The denial of their irreducibility to the physical.

- The Churchlands: folk psychology/psychology – neuroscience → not reductionists but eliminativists.

- Against the intertheoretic reduction of the framework of folk psychology to the framework of neuroscience, Paul Churchland:

  As the eliminative materialists see it, the one-to-one match-ups will not be found, and our common-sense psychological framework will not enjoy an intertheoretic reduction, because our common-sense psychological framework is a false and radically misleading conception of the causes of human behavior and the nature of cognitive activity. (Churchland, 1988, p. 43)
• Employing strong arguments from neuroscience, the Churchlands: a better image of this framework, even if the full neural evidence is not available.

• Neuroscience will show that the concepts (learning, intelligence, memory) from folk psychology are wrong.¹ (Churchland, 1988, pp. 46-7) If the concepts of folk psychology are wrong then the statements that employ such concepts are false.

• The Churchlands eliminate both the mental states and the “I” from the scientific discourse.

• Even if Cartesian dualism is rejected, the proponents of folk psychology consider that mental and neural states exist at least in different conceptual frameworks or at different levels of reality. The methodology of describing the mind and the behavior of human being is characterized as “the top-down approach”. Eliminative materialism embraces “the bottom-up approach”, which means that human cognitive capacities can be explained only through neuroscientific knowledge. Cognitive neuroscience uses the bottom-up methods since the goal of this discipline is to explain cognitive abilities through neuroscience.

• Methods from neuroscience and connectionism, Churchland: different senses, (including the internal sense of that [in]famous qualia) pictured by the sensory coding vector.

¹ In Kantian terms, we can say that such notions are empty.
• Ex: human taste has its own vector code. If the brain uses such vectors for coding sensory inputs “then it must somewhere be performing computations so that the inputs are in some way guiding or producing the outputs”. This means that there are certain transformations of input vectors to output vectors. (Churchland 1988, p. 151) → Churchland applies knowledge taken from connectionism to the brain.

• The Churchlands: subjective sensory qualia is the easiest problem to solve. (Paul and Patricia Churchland, 1997) Notions such as subjective color qualia have to be replaced with the code of three types of visual opponent cells. The opponent-cell coding has a vector space. Such vector spaces would represent subjective color qualia. (pp. 166-72) Such vectors occur at all levels of the nervous system.

• From a neural networks viewpoint- consciousness can be, in this way, eliminated. To support their idea, they introduce Elman’s recurrent networks that can incorporate information from different sensory modalities, noticing that such a brain area is actually Damasio’s “convergent zone”. (Damasio 1988, pp. 172-6)

• The Churchlands: the intertheoretic reductionism. The reduction - from experiential properties of common objects to microphysical properties. (Paul and Patricia Churchland 1990, p. 69) Reduction - the old theory is vindicated and corrected by the new one.
• Examples from chemistry and physics: (1) the reduction can be “domain specific” and (2) the reduction of psychology to neuroscience is possible. (P.M. & P.S. Churchland 1990)

• McGinn: Paul Churchland shows that his anti-reductionist opponents confuse ontological issues with epistemological ones. From an ontological point of view, mental states may be identical with brain states and their properties, while from an epistemological point of view, folk psychology and cognitive neuroscience are “two distinct forms of knowledge (knowledge-by-acquaintance vs. knowledge-by-description)” that use two distinct vocabularies (Paul Churchland 1998, p. 156).

• Progress of science → to give up the mentalistic description provided by folk psychology.

• McCauley: the Churchlands conflate intralevel reductions with interlevel ones. (McCauley 1996 in Rockwell 2003) Intralevel reduction, which is, in fact, kind of eliminativism, refers to successive theories at the same level of analysis; interlevel thesis refers to the reduction of two theories from different levels of analysis. If intralevel reduction is quite common in science (because one theory can be wrong and replaced by a new one), interlevel reduction (the reduction of psychology to neuroscience) is quite a difficult process. (McCauley 1996, p. 31 in Rockwell 2003)
• Patricia Churchland: if some neural network properties are given by the interactions among neurons and certain rhythmic properties, then the “emergence” has a meaning. Neural behavior = non-linear → the properties of neural networks - complicated function of the properties of the parts, not a simple sum of the parts. → The neural high-level properties really exist and we need high-level descriptions to explain them. (Churchland 1996, p. 285) → The eliminative materialist - materialism = “probably true”.

“The possibility of nontrivial revision and even replacement of existing high-level descriptions by neurobiologically harmonious high-level categories is the crux of what makes eliminative materialism eliminative. (Churchland 1996, p. 286)

• Objection: Eliminative materialism = self-contradictory. When the proponents of a belief that there are no such things as beliefs, they contradict themselves. Paul Churchland: this argument contains observational judgments with notions that already belong to the framework of folk psychology. Moreover, he rejects the existence of Cartesian “I”.