

# Reduction & Realization

Searle on irreducibility of  
consciousness

# Reductionism

- Trend in Positivist Philosophy of Science
- X is **defined** as Y , in other words,
- X is *nothing but* Y
- **x is reduced to y iff x is nothing but y**
  - (Searle, “The Irreducibility of Consciousness” 1992)

### *approach*

- “Traditionally, physicalism has taken the form of reductionism – roughly, that all scientific terms can be given explicit definitions in physical terms. Of late there has been growing awareness, however, that reductionism is an unreasonably a strong claim.”

- (Hellman & Thompson 1975)

# Realization

- “Doubts are arisen especially in connection with functional explanation in the higher level sciences (psychology, linguistics, social theory) etc. Functional predicates may be physically realizable in heterogeneous ways, so as to elude physical definition.”
  - (Hellman & Thompson 1975)
  - Cf. J. Kim, “Multiple realization and metaphysics of reduction,” *Philosophy of Mind*, ed. John Heil, Oxford University Press, New York, 2004.

# Multiple Realization theory

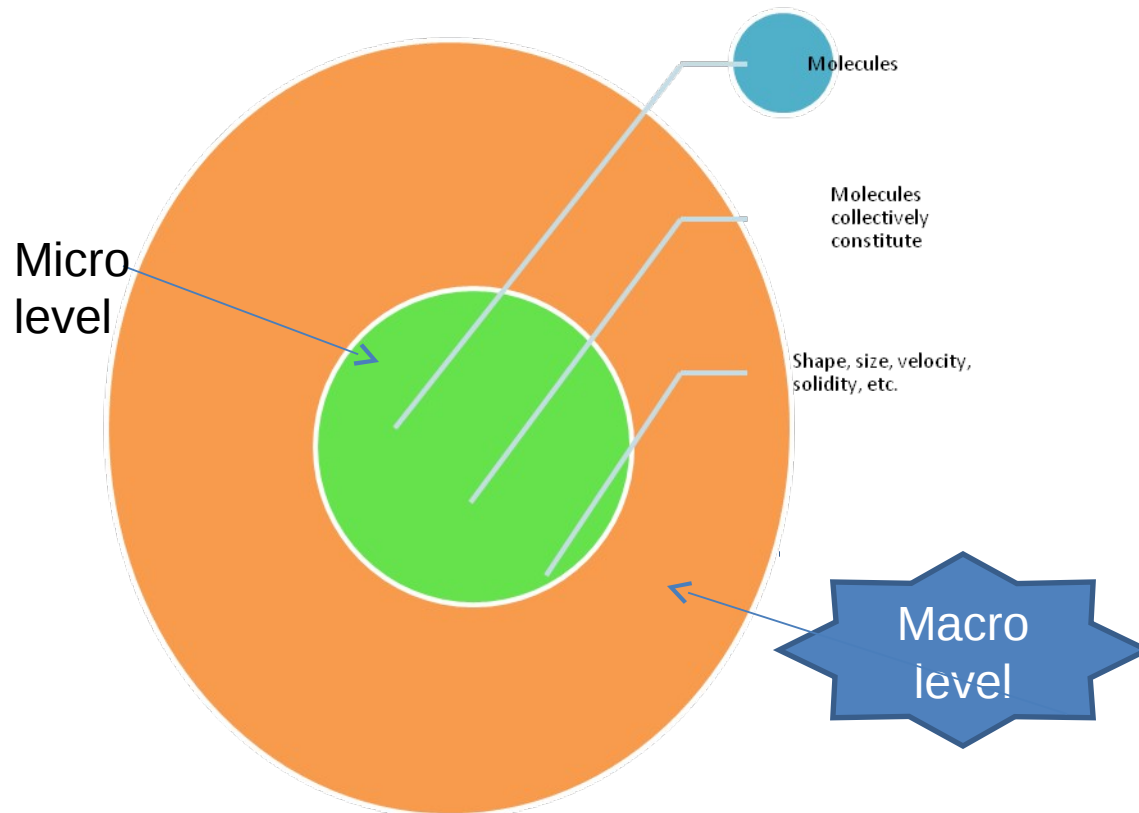
- Psychological states are multiply realizable.
- Neurobiological structure varies from species to species
- MR refutes psychological reductionism
  - (Jaegwon Kim “Multiple Realization and Metaphysics of Reduction” 1992.

# Searle's hypothesis revisited

- Consciousness is **caused by** the brain process and **realized in** the brain process.
  - (Searle, *Intentionality* 1983)
- “It is practically received wisdom among philosophers of mind that psychological properties (including content properties) are not identical to neurophysiological or other physical properties is that the latter **realizes** the former.”
  - (LePore and Loewer, “More on Making Mind Matter” 1989)

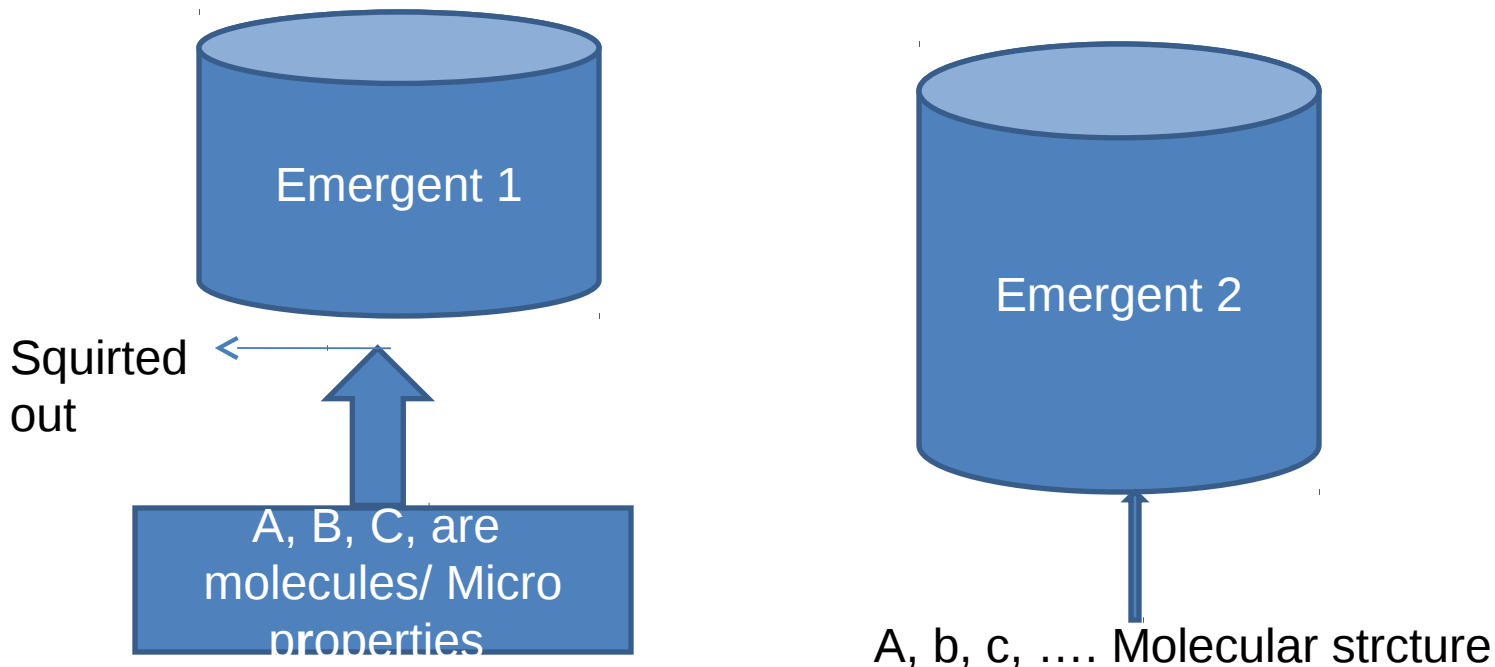
# Searle's Hypothesis Illustrated

- A System made of molecules



# Types of Emergentism

- Causally emergent property of system





# Reductionism

- Ontological
- Property
- Theoretical
- Logical or definitional
- Causal

# Ontological

- Object of *X type* consists of objects *nothing but* collection of object *Y type*
- E.g. **Genes** consist of **DNA** molecules

# Property Reductionism

- **Heat** is nothing but **mean kinetic energy of molecule movements**

» Properties corresponding to theoretical terms

Result of theoretical  
Reduction



# theoretical Reduction

- Scientific explanation
- Theories and laws

X (gas laws)



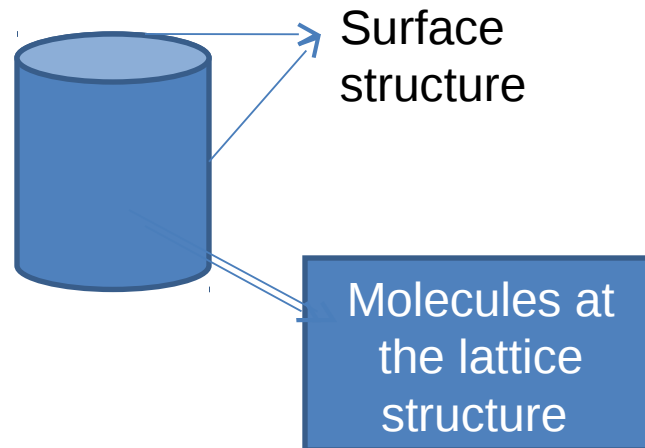
(Y) **Statistical laws** of thermodynamics

# Logical Reduction

- ‘A relation between words and sentences, where words and sentences referring to one type of entity can be translated without any residue into those referring to another type of entity.’
- E.g. **number** can be reduced to **sets**.

# Causal Reduction

- *Causal power* of **x** can be explained by the *causal power* of **Y**



# Why Searle is shocked?

- “...it seems so shocking – a perfect science of the brain would still not lead to an ontological reduction of consciousness in the way that our present science can reduce heat solidity, colour, or sound.”

# Multiple Realization

- A classic reductive theory presupposes the following naïve picture –
  - **correlation** between
    - **Events of psychological kind** and **events physical kind**
- **“For each psychological kind M there is a unique physical (presumably, neurobiological) kind P that is *nomologically coextensive* with it (i.e. as a matter of law, any system instantiates M at t *iff* that system instantiates P at t.”**
  - (Hilary Putnam “Psychological Predicates” 1967)



# Correlation Thesis

- Co-occurrence of the *physical events* and the *mental events*.



# Status of Correlation Thesis

- *Correlation thesis is empirically false*
  - Putnam
- Raise only a **conceptual point**
  - **Psychological properties** that they are **second order physical properties**, and that their specification does not include constraints on the manner of their physical implementation.
    - (Ned Block)

## Thesis

- “If anything has mental property  $M$  at time  $t$ , there is some physical structure type  $T$  and physical property  $P$  such that it is a system of type  $T$  at  $t$  and has  $P$  at  $t$ , and it holds as a matter of law that all systems of type  $T$  have  $M$  at a time just in case they have  $P$  at that time.”
  - (Kim, “The Metaphysics of Reduction”1992)

# neutral?

- Since ***mental properties*** and realized or implemented by ***physical properties***
- MP is ***derivative*** and ***dependent***
- MP is extrinsically characterized in terms of its causal role.

# What follows?

- *Mental properties* are not the **first order properties** In their own right.
- Mental property do not have **nominally coextensive** physical property
- So, no hope of reduction.

if we assume that  $M$  is realized by

$P...?$

- **Explanatory Connection**
- Not every physically **necessary** connection is **explanatory**.
- $P$  to explanatory implies that  $P$  is **necessary** and **sufficient** condition for  $M$ .

# Fodor's Argument

- To reduce a special science theory  $T_m$  to physical theory  $T_p$  , each kind in  $T_m$  (presumably, represented by a basic predicate of  $T_m$  ) must have nomologically coextensive 'kind' in  $T_p$ .
- A disjunction of heterogeneous kind is not itself a kind.

# Possibility of forming law

- Property Identities
- Property Correlations
- **Higher level properties** are identified with **complex lower level properties**.
- Identity thesis
  - Eliminativism
  - appropriately modalized coextensivity.



# Irreducibility: Dualism & Materialism

- Dualists treat irreducibility of consciousness as incontrovertible proof of the truth of dualism.”
- “Materialists insist that consciousness must be reducible to material reality, and that the price of denying the reducibility would be the abandonment of our over all scientific world view.”

Why consciousness is

irreducible?

- Conscious sensation and experience form a reality which is different from the physical events that it is linked with.
- E.g. pain is nothing but neural firings (simulation in the c-fiber)

Does it have deep level

## consequence?

- Surface feature ( as matter of subjective appearances)
  - “hot is what feels hot to us, cold is what feels cold. Similarly, with colours: Red is what looks red to normal observers under normal conditions. ...”
- The cause to produce the surface feature
  - **Molecular movements causing** sensations of heat and cold
  - Molecular movements are **observer independent**

# Actual Patterns of Facts

- ‘it is hot here in this room’ → (temperature) → (physical fact)
- The subjective *experience* of heat → (mental fact)
- “Once we know all facts about heat – facts about molecules movement, impact on sensory nerve endings, subjective feelings, etc. – the reduction of heat to molecule movements involves no new fact whatever. It is simply a trivial consequence of the redefinition.”

## Why it is trivial?

- “We don’t first discover all the facts and then discover a new fact, the fact that heat is reducible; rather, we simply redefine heat so that reduction follows from the definition. But this redefinition does not eliminate, the subjective experience of heat (or color, etc.) from the world. They exist as same as ever.”

# Appearance and Reality

- Consciousness as a surface level reality – *subjective appearance*
- *Objective reality* → *molecular brute facts*
- “consciousness consists in the *Where appearance is concerned we cannot make the appearance-reality distinction, because appearance is the reality appearances themselves..*”

# Subjective experience

- Reductionism **eliminates** the *subjective experience*
- *Is consciousness a mysterious reality?*
  
- “Given its existence, its irreducibility is a trivial consequences of our definitional practices. Its irreducibility has no untoward scientific consequences whatever. Furthermore, when I speak of the irreducibility of consciousness, I am speaking of its irreducibility according to standard patterns of reduction. No one can rule out a priori the possibility of a major intellectual revolution that would give us new – and at present unimaginable – conception of reduction, according to which consciousness would be reducible.

# Contemporary Issues in **Philosophy of Mind & Cognition**



# Contemporary Issues in **Philosophy of Mind & Cognition**

# Contemporary Issues in **Philosophy of Mind & Cognition**

# Contemporary Issues in **Philosophy of Mind & Cognition**

# Contemporary Issues in **Philosophy of Mind & Cognition**

# Contemporary Issues in **Philosophy of Mind & Cognition**

# Contemporary Issues in **Philosophy of Mind & Cognition**

# Contemporary Issues in **Philosophy of Mind & Cognition**

# Contemporary Issues in **Philosophy of Mind & Cognition**



# Contemporary Issues in **Philosophy of Mind & Cognition**

# Contemporary Issues in **Philosophy of Mind & Cognition**

# Contemporary Issues in **Philosophy of Mind & Cognition**

# Contemporary Issues in **Philosophy of Mind & Cognition**

