Chemistry of the Psychical

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Here I reviewed an article on Philosophy of Chemistry and Tried to find a place for it in the Philosophy of Mind.

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Reduction, Causation and Mental Events

Centred on a belief that a new logic of parts and wholes should be made,[1] Joseph Earlyâ s polemics start with a dialogue with microphysics. Three themes in philosophy of mind: reduction, Causation and Mental Events, are still of significance in which centuries old problems and dilemmas were not yet solved. The argument of Jaegwon Kim is concerned with the classic Humean scepticism, concerning events and causation. Looking for a â hingeâ between mental events and physical events, he sought to try logically proving for what he called â pairing relation.â [2] He saw the difficulty resulting in finding this pairing relation between two events. The simple event, relating that: â Socrates drinks hemlockâ (S1) and â Socrates diedâ (S2); as S1 is followed by S2, must fulfil the requirements dictated by a logical formulae to prove R(x, y), the pairing relation. The evaluation of the simple pairing relation could be complicated to a diverse construction of formulae to find the necessary relation to S1, S2, S3...Sn. This logical dilemma, we see in Kimâ s work is transferred to philosophy of mind between the relationship of mental and physical properties.

Between two mental properties (m1 and m2) and physical properties (p1 and p2), two physical events can be said to follow a cause and effect relationship. Since Kim accepted a physicalist stand, physical properties determine the mental one. So if p1 implies p2 in a cause and effect relation, then since p1 determines m1 and p2 determines m2, therefore m1 implies m2. On the contrary, such is not the case. Since m1 is determined by p1 as well m1 and p2, then the statement that the two mental properties do not follow since the connection between the two mental properties are not determined by physical process.[3] Only physical entities have causal power.

Mental properties and events do not necessarily have connection with each other being individually determined by physical properties. By laws of physics, what comes up comes down. In the area of the psychical, such is not the case. The movement is reversed and mental phenomena are only means to understand and explain the physical as they are determined by physical properties. Kim views mental properties as separate from other mental properties as they are determined by another physical event or property. Kimâ s problem as we have traced back to his article *Causation, Nomic Subsumption and the Concept of Event*, is focused in this sole problem of two events as implying each other or related. We mend this incapability throughâ mereological independence.â [4]

Mereology, a theory which dealt with part whole relation, is altered in Kimâ s context, asserting that parts alter or determine the whole. In a nutshell, the whole is the sum of its parts. In Kimâ s view, they apply to physical parts determining mental properties. Mental properties are â defined in terms of the causal roles in behavioural and physical contexts.[5] The cause therefore of every mental phenomenon can be traced back to a single physical phenomenon which made the mental property exist in the first place. Early sees this as a synchronic move to explain causation. He observed that Kimâ s description of mental events followed microphysics.[6] The trend in physics to analyze uniform laws of nature in sub-atomic levels became famous during the 20th century. Our notion of what is elementary changed over the course of time. Today, simpler particles in quantum physics replaced molecular physics. Particularly in Kim, his scientific approach followed the older paradigm of microphysics in the molecular level. His assumption, following the paradigm of microphysics, is that causality is determined vertically not horizontally.[7] Although Early highlights two

other presuppositions like materialist ontology and single causation at certain time, the third one above shows Kimâ s microphysical paradigm at work. An upward surge from the elementary to the complex, Early sees no basis for this view. Affirming the first presupposition of physicalism i.e. a materialist ontology, his attack on mental events and phenomena come from a different scientific paradigm.

Philosophy of Chemistry at Work

Kimâ s analyses utilize a standard mereology. He saw physical particles automatically as causes or determinants of mental phenomena. Early however sees that standard mereology which sees individual as part of one fusion with no room for individual modification.[8] That entails â the whole is the sum of its partsâ is inadequate to explain mental phenomena. From a chemistâ s point of view, molecules and substances are like micro-universes with an inherent structure, also following certain laws of physics to hold particles together. Chemical structures are not the same. Although both a piece of diamond and a piece of coal are made of carbon, their configuration is different producing a different material at all. Instances such as this prove that Kimâ s mereology does not apply to chemical combinations.[9] Earlyâ s philosophy of Chemistry goes through the weakness of a microphysical paradigm.

As we have indicated above, Early still accepts a materialist ontology. Furthermore, he observes that nature is stratified, displaying many structural levels.[10] It might appear that Early dismisses the other lower level components; but,. We have to see this as a diachronic approach rather than synchronic.

Cognitive operations from a physicalist point of view come from a neurological framework of understanding mental properties. A synchronic approach would be to reduce mental properties to stimuli reaction; one stimulus, one reaction. Unlike a sort of mental atomism (A way to describe Kimâ s philosophy of mind), the structure of neurological connections exhibit regularities that are horizontal rather than vertical. The products of neurological operations lead to perception, reaction, speech, motor movements, etc. Chemical reactions occur a lot in the mind especially the mixture of proteins, amino acids, neurotransmitters, etc. Chemical reactions exhibit different behaviour than physical reactions. *Explanans* in physics although they study dynamic objects, have a static *explanandum* which if verified becomes a law of physics. Chemical *explanans* on the other hand are studied under probabilistic lens; the *explanandum* therefore has to adjust to this property. In the synthesis of common table salt, N2SO4 and CaCl2 are ingredients to synthesize NaCL. Let us say a novice student of chemistry without being aware of it, place a large amount of Sodium Sulfate into the mixture. Without checking if the mixture is contaminated with potassium (there will be a lilac coloured flame), he burns the mixture. Does he come with table salt? The equation N2SO4 and CaCl2 is not enough; but gives us a probability of sodium chloride if we put in the exact amount of the said chemicals. Chemistry unlike physics rests on a â probabilistic explanationâ of dynamic properties. Chemicals in certain mixtures exhibit different properties and to recreate them requires seeing the result as the first determinant of a possible antecedent.

Mental properties like other biological functions and operations are caused by various causal processes.[11] Using the above framework, various causal processes could be determinants of mental properties. Therefore, Kimâ s atomism is insufficient to explain the cause of mental properties. A philosophy of chemistry founded on probabilistic explanation as an epistemological framework, gears towards recognizing higher level structures of physical properties. Humans use up energy at rapid rates because of auto-motion and cognition.[12] The continuous cycle from one energy form (e.g. electrical as with neurological connections) to other forms (e.g. mechanical energy used to pull the muscles) oscillates at high speed. Energy transfer then is complex. Early calls us to understand the structure behind these complex

movements. Because of their complexity, the operations of a particular systems could be described albeit their dynamism. Their regular dynamic movement encloses a system revealing the real and measurable changes in â their closed reaction systems.â [13]

In response to Kim, Early recognizes dynamism and complexity in nature, exhibited by chemical reactions. Changes in energy forms are much seen in chemical reactions. We can therefore see that Earlyâ s rejoinder to Kimâ s analyses requires deeper examination microphysical paradigms. Chemistry and microphysics are two different paradigms in science. Examination of paradigm requires defining each otherâ s specialization and epistemological limitations. In microphysics, we may observe linear vertical movement from the atomic to the molecular and then to the complex structures of material stuff. However, at the level of the molecular changes in movement can be seen. Early thus recognizes both microphysics and chemistry; but stresses the need for clarification and compartmentalization.

Since a philosophy of chemistry contains an epistemological paradigm based on probability, a philosophy of mind scanned through Earlyâ s framework might be able to clarify certain issues brought by reductionist accounts. We can see that a probability plays an important role in determining the exact course of a mental property. Experiments on various drugs like mescaline boost our capacity to understand certain mental operations in focus. In mescaline research, studies show altered perception and suspension of oneâ s consciousness of space and time.[14] This effect was clearly shown in Aldous Huxleyâ s book *The Doors of Perception.**[15]*** In this simple memoir of his mescaline experience, Huxley was able to describe the transcending effects of mescaline altering his spatial and temporal consciousness. Huxleyâ s dosage however was oral. Jean Paul Sartreâ s case was a different one. Injected with mescaline, Sartre was able to see different animals and entities flying over his head.[16] In Kimâ s paradigm, both individuals should have the same experience determined by the chemical mescaline. However, the phenomenon itself is different. Both Huxley and Sartre took mescaline and the two had different experience. So we can now see the weakness of Kimâ s claim. The probabilities of altered perception and hallucination were products of the same drug taken in differently. Suppose that X would take mescaline orally and some other day injected, would he have the same mental properties of Sartre and Huxley. Will he experience the same altered perception and hallucination? Since it is probable that he might experience altered consciousness or hallucination, the cause of Xâ s mental property is not only mescaline but a myriad of causes that created different sensations on Huxley and Sartre. Earlyâ s project clarifies Kimâ s dilemmas on causation through probability and recognition in the discontinuity in causes of the brainâ s chemical activity. Clarification of paradigm therefore is a valuable instrument to avoid the hegemony of one paradigm on such complex discussion as the mind.

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[1] Joseph E. Early, Sr., â How Philosophy of Mind Needs Philosophy of Chemistry,â in *Hyle: International Journal for Philosophy of Chemistry* vol. 14 no. 1 (2008): 19.

[2]Jaegwon Kim, â Causation, Nomic Subsumption and the Concept of Event,â in *The Journal of Philosophy* vol. 70 no. 8 (April 26, 1973): 229.

[3]Early, 2-3.

[4]Jaegwon Kim, â Explanatory Knowledge and Metaphysical Dependence,â in *Philosophical Issues* no. 5 (1994): 67; quoted in Early, 2.

[5]Kim 1994, 14; Early, 2.

[6]Early, 7-9.

[7]Early, 7.

[8]Early, 9.

[9]Early, 11.

[10]Early, 11.

[11]Early, 14.

[12]Early, 19.

[13]Early, 18-19.

[14]â Peyote and Mescalineâ http://www.cesar.umd.edu/cesar/drugs/peyote.pdf (accessed on March 4, 2013)

[15]Aldous Huxley, *The Doors of Perception* (London: Vintage, 2004).

[16]John Gerassi, *Jean Paul Sartre: Hated Conscience of His Century,* vol.1, *Protestant or Protester* (Chicago: University of Chicago Press, 1989), 123.

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