

Congress Theme: **"Diversity in Harmony: Insights from Psychology"** International Congress of Psychology ICP2016 Yokohama July 26<sup>th</sup>, 10:20~10:35 Conference Center 3F 318: Cognition; OR26-22-6

**A Theoretical Consideration on Abstraction and Concretization from a Phenomenological Psychological and Educational Perspective.** By Mr. YOSHIDA, Akihiro. Ph.D. Prof. Emeritus. The University of Tokyo, Homepage: <http://yoshidaakihiro.jimdo.com/>

**Abstract:**

1. **Science: Going back and forth between Discontinuity and Continuity: "Scientific research consists in making what is discontinuous continuous and in making what is continuous discontinuous"**
2. **From Abstraction to Concretization: An Artistic Concretization on Discontinuity and Continuity**
3. **The Importance of the problem. Viewed from a phenomenological psychological and educational perspective, "Abstraction and Concretization" is recognized as an issue of great importance, in Phenomenology, Psychology and Education. : Cognition and Communication in Science, Art and Life.**
4. **Going up and down the Dimensionally higher and lower Spaces: "Incompatible!" and "Ambiguous!"**
5. **Two Laws of the "Dimensional Ontology" help us.**
6. **For the integrative understanding of the two traditions of understanding Abstraction.**
7. **For expanding the historically restricted views of "Abstraction and Concretization".**
8. **Criticisms on the limitation as originating from Empiricism: (S.L.Rubinstein/ E.Husserl).**
9. **On the spot mini-experiment on Doing Observation and Abstraction**
10. **There are many kinds of Abstraction, and, correspondingly, many ways of Classifying Abstraction**
11. **Abstraction and Concretization in view of the Intentional Structure of Consciousness:  
"The Near Term" and "The Far Term"**
12. **Many kinds of Abstraction for many kinds of the Abstracts. The same with Concretization.**
13. **The same remarks can be made on Concretization.**
14. **Let me mention two of my own articles on "Abstraction and Concretization".**
15. **"One-to-Many Correspondence" both ways between Abstraction and Concretization: The two are  
"both sides of a coin", like addition and subtraction, multiplication and division,  
differentiation and integration, coding and decoding.**
16. **Hegel, G.W.F. raised the problem of "going from Abstraction to Concretization" for the first time in the history of philosophy. However, even today, we still notice the unbalance between the two.**
17. **From "One-way", "Circular", "Spiral", "Double-spiral" to "Multi-spiral" in Abstraction and  
Concretization movements.**
18. **A hint on the similarity between <"the original Concrete" and "the integrated Concrete"> and  
<the "Absolute One" and the "Integrated One">.**
19. **Two seemingly incompatible views on the Essence as two shadows:  
"common because essential" (Realism) and "essential because common" (Idealism).**
20. **Mathematics, the Science of formal-structural essences, the "Queen of Sciences", is still in  
Disharmonious Diversity in view of her own Ontology and Epistemology, just as ours is.**
21. **Could the Abstract discussion be always easier than the Concrete one? Or the other way round?  
Not necessarily, either way. Strangely, Mathematicians tend to prefer Abstract one.  
Mathematicians also use models, privately.**

22. Abstraction depends upon its contextual situations. Abstraction is never just one kind.
23. Concretization by both raising the dimension and varying the perspectives: A little surprising example. A print sheet is available later, if wished.
24. Could  $\times$  and  $\circ$  be integrated?: “Yes or No”. What is discontinuous becomes continuous.
25. What would you do with this chaotic state of affairs? : “Diversity in Harmony”? But, how?
26. Rudolf Arnheim’s Comment on “Conic Sections”: Abstraction and Concretization
27. Just the same with “Free Imaginative Variation ” in Phenomenology
28. ”Metaphor, Analogy and Model” as “MAM”, thus “M”. “M” as an acronym for “Mediator, Moderator, Middle, Midway, the Medley-relay, and/or the Muse and so on.” And “Half-concrete and Half-abstract”.
29. W.Ross Ashby’s Set-theoretical formulation of Abstraction and Concretization, and its modification by Akihiro YOSHIDA, one of his students in his 1965-66 Cybernetics class.

The schema mathematically formulates the essential formal structure represented by the concepts such as: Representation, Expression, Metaphor, Analogy, Model, Simulation, Simulation games, Simulation experiment, Symbol, System, Structure/Function, Similarity, Isomorphism/ Homomorphism, Montage, the Concrete and the Abstract, the detour, the roundabout way, the avoidance of the obstacle, the substitute, and so on.

**Similarity and Simplicity is the essence of MAM.** An extremely detailed Map, however accurate and exact to the reality it may be, will not succeed in guiding travelers being overwhelmed with too much of the details (cf. An Allegory by Jorge Luis Borges in *De La Infama*, 1954).

30. Toward a Category-theoretical formulation of MAC: “M” with Abstraction and Concretization

We notice that the Set-theoretical formulation of the Structure of the MAC, the Abstraction, the Concretization and the M (Metaphor, Analogy and Model) becomes isomorphic with the Category-theoretical formulation. An attempt had been made to show that “category theory provides a number of broadly useful, and yet surprisingly specific, guidelines for organizing, generalizing, and discovering analogies among and within various branches of mathematics and its applications”

(A Categorical Manifesto, by Joseph A. Goguen, 1989, p.12 ),

25. In short, “MAM with MAC is Essential for Knowledge and Wisdom.”

26. Examples of MAM with MAC.:

The essence of Phenomenology: “To see oneself is to see the world, and to see the world is to see oneself. That is the fundamental attitude of Phenomenology.” ( by Jiro Watanabe, 1978)

The essence of Education: “Let us grow together!” ( by Enosuke Ashida, 1952)

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**My message: Simultaneously (1) by “Seeing the world and ourselves”, (2) by “Abstracting and Concretizing” with “MAM” (Metaphor-Analogy-Model): “MAM with MAC”, and also (3) by “cognizing and communicating”, “Let us grow together!” to embody Knowledge and Wisdom for enjoying Life to live “Diversity in Harmony” together!**

**MAM with MAC! Thank you for your coming and listening.  
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PP 42 The essence of “**Happiness and Misery**” by Charles Dickens.

“My other piece of advice, Copperfield,” said Mr. Micawber, ”you know. Annual income twenty pounds, annual expenditure nineteen nineteen six, result happiness. Annual income twenty pounds, annual expenditure twenty pounds ought and six, result misery.”

(From Charles Dickens *David Copperfield*. 1952/1849, p.176.)

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**N.B.**

**Abstraction and Concretization are the facts, the necessity and the possibility for human beings, partly as well as for living organisms in general. This is because they live their physical bodies being embedded in time and space, and thus, they must and can only live here and now. How limited their lives would be, however, if they can live only here and now! Fortunately, however, simultaneously, they can psychologically live and travel to visit, in their lively imagination, everywhere spatially in the universe, and temporarily, both near and far, into the past and the future. And, they can experience and perceive similarity even between the totally different things/ events and lived experiences, to enjoy the difference as well as the sameness, and the similarity. Thus the Abstraction and the Concretization enrich the Human Life, with Knowledge and Wisdom (Husserl, Ricouer, Gadamer, Laing, Lorenz, Scheler, Frankl, Ortega, Zahavi, Arnheim, Rubinstein, Black, Oppenheimer, 正岡子規、寺田寅彦、木田元、庄司和晃、and so on. To name only a few.)**