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Folk Aesthetics on Computer Metaphor

Here, I would like to propose a new aesthetic paradigm called „Folk Aesthetics" by which the western modern aesthetics since A. Baumgarten is to be replaced, based on the philosophical metaphor brought by state-of-the-art computer science and, in addition, to make a brief mention to the Japanese traditional idea of art education from the same viewpoint.

Nowadays, aesthetics is getting an important role in contemporary computer science. One reason can be found in the popularization of human-interfacing computer with audio-visual multi-media. But, more important is the growth of a new idea of parallel-distributed processing (PDP) in computer systems. Compared with the classic von Neumann computer which has only one central processor and works sequentially by a preset, complete program in a top-down way, the PDP computer has a society-like network architecture, where distributed multi-micro processors embedded with a specialized local function work in parallel, and to make a decision as a whole, they interact mutually through message-passing communications, and try to get it in cooperation with each other.

Now, applying this PDP idea to the human mind, we can get to M. Minsky's mind model called „the society of mind" in his book of the same title[1], where he says as follows: „To explain the mind, we have to show how minds are built from mindless stuff. What could these simpler particles be - the agents that compose our mind? What kind of smaller entities cooperate inside your mind to do your work?" And then, to see how minds are like societies, Minsky shows an example of the Tea-Drinker who picks up a cup of tea and drinks it. Inside the Tea-Drinker as a society, there live the following four agents.

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[1] M. Minsky: The Society of Mind, Simon & Schuster (1985)

GRASPING agent who wants to catch a cup,
BALANCING agent who wants to keep the tea from spilling out,
THIRST agent who wants to ingest the tea through the mouth,
MOVING agent who wants to take a cup to the mouth.

When each agent does his own proper micro-job respectively and exchanges his message in such a way as shown in figure (*), the whole job of tea-drinking can be attained as a society, where these four agents communicate and cooperate with each other. As a result, we can see how the society of mind is to be built as the agency on message-passing communication among the individual, independent PDP agents. That is, the society of mind as the agency consists of plural agents, each of whom has his own local world and his own proper micro-job as the society's member, where the active agents driven by their world-needs interact mutually by message-passing, but the other useless agents remain dormant. And the result of mutual communications among the active agents makes a world image as the society's decision. So, we should notice that a society formation like this is, in principle, ad hoc and opportunistic depending on the environmental world (**).

The similar computer metaphor can be found in the object-oriented program (OOP). A computer program is usually a representation of the whole algorithm to solve a given problem and attain the goal before its execution. The OOP, however, has no such final goal image, and it is only a toy-box-like collection of some specialized program-parts (object), which are distributed in the program beforehand and can work independently in parallel, whenever driven by data of the problem environment. By mutual exchange of message concerning their objects among these activated objects, the OOP driven by a problem is to attain the solution as the agency like the above mentioned Minsky's Tea-Drinker. Thus, we can summarize the characteristics of the OOP as follows: (1) Independent objects are all indifferent and have no hierarchical ranking order like a traditional program: FORTRAN, and the program is uncertain and indefinite as a whole, and so it is formed flexibly

depending on the surrounding problem world. Interesting to say, G. Entsminger found the Chinese Taoism in the philosophy of this OOP's software mechanism[2].

Such a computer model will bring us the two key concepts such as (1) plural micro-agents and (2) synthesis of an agency a posteriori. Each micro-agent driven by his local world performs his own micro-job, interacting with the other neighboring agents who are also driven by their own micro-world. So, important to say, he needs not to have any intelligence which can take a survey of the whole world by means of a kind of universal logic or concept a priori, and what is needed by him is locally bound, lower senses covering only his micro-world, such as touch or body-movement, etc. The so-called near-sight which A. Riegl took as the art-will of the ancient Orient can also be considered as such a lower sense, that means a local cognition of the micro-agent. The micro-agents can catch only a small part of the world. However, these fragmentary objects are full of reality, such as vividness, certainty and detailed distinctness.

Thus, these objects as agent which P. Picasso called „objét" or M. Duchamp called „the ready-made", can have a stable self-independence and the unique property obtained from the body-experience in its own micro-world, which we could compare to Heidegger's so-called „Existenz", provided that the agent and his objective property are kept constant and invariant, due to being bound with the commitment to his micro-world, even during the dynamic process of message-passing and formation of society. Nevertheless, the generated society is variant and flexible, ad hoc and opportunistic, depending upon the real world which always drives the agents inside a society. Here we can see an ontological contrast between the strong agents and the weak agency. This ontology of agents and agency shows us a kind of paradoxical philosophy which, compared with the object in everyday life keeping his invariant property as the ready-made, the whole world which has been supported by its objects dynamically mutates and metamorphoses on the way to their commitments and mutual interactions. That is, the whole is beyond the sum of

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[2] G. Entsminger: The Tao of Objects, M & T Books (1991).

its parts. Here is the characteristic of the world image, being quite different and far from the agents' properties.

Regarding this ontological gap between agents and agency, D. Hofstadter tells us the following interesting story[3], where, although ants fear their common enemy=ant-eater, Aunt Hillary who is the personalized ant-colony composed of the ants has a favorable friendship with the anteater. Someday, by the request of Aunt Hillary, the anteater picked up and ate some sweet ants of the colony. Then, all the individual ants ran around with fear trying to escape from the anteater, while Aunt Hillary said satisfactorily „Thank you so much, Dr. Anteater!" Strange to say, here we can see the paradox that, in spite of the frightened ants (agents), their whole colony=Hillary (agency) expresses thanks and pleasure (***).

Now, how can these micro-agents build a whole world image in this manner? For the agents who are all independent and different from each other, to attain the whole society-like synthesis keeping their proper individualities, I would like to introduce the method of negotiation and compromise between them, where a solution can gradually be formed as on a bargaining market. Through negotiation, a relational connection or a shared compromise will be ad hoc generated among the different agents. In such a synthesis, it is important that the generative formation is solely done preferentially between neighboring active agents, and therefore this local synthesis will be gradually propagated. Accordingly, this opportunistic formation of the whole world image which I wish to call „bottom-up synthesis", needs no complete blueprint designed from top-down a priori.

Then let me show one example of the bottom-up synthesis of a cup imaging. The society of mind has, in this case, two kinds of agents: (1) agent A with a side view and (2) agent B with a bird's eye view. Looking at a cup, agent A says „it's a rectangle", while agent B says „it's a circle". Here occurs a conflict, but it is to be solved, when agent A comes to a compromise with B by dismissing the top line

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[3] D. Hofstadter: Gödel, Escher, Bach, Ant Fugue, Basic Books (1979)

which is one-fourth of the rectangle, and agent B weakens his assertion from circle to ellipse, giving way to A. As a result, the whole world image of a cup is to be formed (****).

Let me show another example. Having picked up the ready-made objects such as a bowl, an iron-plate with a hole and a piece of protruded triangle, a cup and a vase out of garbage boxes in his everyday life, Picasso made a lady's face by looking on the bowl as a head, the iron-plate as a front-face, the cup turning sideways as a mouth and the inverted vase as a neck, and then by putting these objects together into some face-like relation. Perhaps, inside his mind, the four ready-made micro-agents exist at first, and, after their negotiation and compromise, the whole image of the lady's face as a social agency might newly emerge, so to speak, from nothing.

Contrary to the traditional art where signifiants are looked for after signifié, signifiants exist in advance and then signifié emerges by the bottom-up synthesis among the ready-made signifiants. Here we can see the inverted use of metaphor by Picasso. In the interview with A. Warnod he said: „You remember that bull's head I exhibited recently? Out of the handle bars and bicycle seat I made a bull's head which everybody recognized as a bull's head. Thus, a metamorphosis was completed; and now I would like to see another metamorphosis take place in the opposite direction. Suppose my bull's head is thrown on the scrap heap. Perhaps someday a fellow will come along and say: 'Why there's something that would come in very handy for the handle bars of my bicycle ...'."[4] This would be the creation of new handle bars (agency) which never existed before the existence of the scrapped art-work of the bull's head (agent). A more radical example can be found in the „Tsurezuregusa (徒然草)" which is a famous Japanese essay written in the medieval age.[5] The story is as follows: There was a buddhist priest named „Josin" at Shinjoin, Kyoto. Someday, pointing at his curious fellow, he nicknamed him „SHIROURURI". People asked him „what is SHIROURURI?" Answering it, he said „I don't know it. If you want to know what SHIROURURI is, you had better to

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[4] H. Chipp: Theories of Modern Art, UC Press (1968).

look at that man. He looks just like the SHIROURURI." Thus, SHIROURURI which never existed in the world, was newly created from nothing, triggered by Joshin's curious fellowman. Signifié of SHIROURURI (agency) emerges after signifiant (agent), which is nothing but the ready-made existence of Joshin's fellowman.

Next, what kind of style and structure does the agency have, which is generated by bottom-up propagation of ad hoc association among the neighboring agents? As we have discussed so far, the whole world as an agency cannot help being said to be generated unreasonably like an abiogenesis of a natural organization and, as a result, to have a new, different face, transcending the ready-made agents' one in everyday life of the micro-world. Such an emerged image could be safely said to be able to present the real world image in spite of it's dissimilated strangeness like Picasso, primitive folk art or children's art, lacking of empathy, subjective idealization and compositional centralization, including the geometric per-spective. The post-modern poet W. Auden, who found the characteristics of such a real world in P. Brueghel's painting „Landscape of the Fall of Icarus", wrote a poem „Musée des Beaux Arts" as shown in (*****). Here, we can see the dehumanized world, where the distributed agents such as ploughman, shepherd, sun, ship as well as Icarus's leg appear in parallel being indifferent from each other, as if there were no tragedy.

We can, now, reach to a new idea that, based on the computer model of PDP, the society of mind and OOP, the ready-made micro-objects are to be synthesized from bottom-up, by C. Lévi-Strauss's so-called „bricolage" which originally means the patchwork of waste pieces to make clothes, into the whole world image which shows an objective reality, grimly rejecting our human empathy. Therefore, the world cognition seems to be beyond our modern aesthetics.

Can we not find a philosophical implication, brought up by the above mentioned computer metaphor, in the Eastern philosophy? According to Rao-Tsu, Tao is a

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[5] Kenko Yoshida: Tsurezuregusa, Chap. 60 (1330).

naked nature as it is and it is defined as follows: „Before formation of the universe, there is a mixture of things which is poor (寂) and desolate (寥). It is invariant in spite of changing in dynamic transitions, and so it must be the mother of the universe. I don't know what it is. Let me call it 'Tao' ...It's savage (夷) because of not having an ordered visible form, it's scarce (希) because of not having an audible tone, and it's faint (微) because of being unrecognizable ... It is the mixed One .... So, it is to be called „idle (惚 恍)."[6] Now, how do the individual objects work in such an uncertain universe? Driven by each own micro-world, they are all different from each other. Nevertheless, they are all indifferent in the status of agent as a supporter of the universe. Chuang-Tsu says, answering to his pupil's question „Where is Tao?" as follows: „It is everywhere ... Not only humans, but also mole-crickets and ants have it, even Deccan grass and roofing-tile also have it, ... furthermore, Tao is even in feces and urine, too."[7] Chuang-Tsu's idea was introduced into the Zen-Buddhism, where it's believed that even wood and stone can become Buddha as well as humans. Nowadays, we can see the afterglow of this Taoism in post-modern art such as Dada and Pop. There it was also tried to create a new world image by using objects of everyday life, apart from the traditional idea of beauty. In Japan, the philosopher Shoeki Ando who lived in the Edo period, rejecting the heavenly God's ruling over the universe, proposed the bottom-up synthesized world-view of people's everyday life which consists of the following two ideas, (1) the individual commitment to his micro-job (Chokko 直 耕) and (2) the neighboring cooperation by mutual interaction and communication (Gosei 互 性).[8] Thus, as shown, for example, in incompletely deformed Shino tea-cups or disordered, naive Karesansui gardens, Japanese Zen-arts produced the original Yugen (幽 玄) style with the bottom-up synthesized composition of scrapped objects, where we can see the bare universe which looks obscure by hiding Tao. Here, I would like to propose a new folk aesthetics as a new epistemology to catch the obscure world image (agency) composed of distinct Chokko (agent) and it's message-passing Gosei, which can be brought by the shift of an aesthetic paradigm

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[6] Rao-Tsu: Chap. 25, 14.
[7] Chuang-Tsu: Chap. 22.
[8] Shoeki Ando: Shizenshineido (自 然 真 営 道) (1752).

from cognitio clara et confusa since A. Baumgarten to our new aesthetics, cognitio obscura et distincta, taking over the tradition of European modernism.

Lastly, in the Japanese tradition of art education the imitation of an excellent work of art has been considered more important, than learning the general rules of art-work. While the general rule is mastered as an intellectual knowledge, the imitation of an example is done by body-experience. This emphasizes the importance of physical experience when acquiring and realizing partial modules. The Zen Buddhist states as follows: Jump into water first before you know how to swim, if you want to swim well in water. Thus, the learning and the accumulation of body-experienced modulesplay a very important part in Japanese traditional art education. We can easily understand that the module is to be acquired by the above mentioned agent's micro-job. S. Papert tells about the modular learning of cascade-juggling as follows[9]: It is difficult to be skilled in a whole juggling at one stretch. But it can be in short time attained by combining the following three modules: (1) TOSSLEFT (or TOSSRIGHT) which is to throw up a ball from the left (or the right) hand over to the right (or the left) and to catch another ball when it falls down, (2) WHEN TOPLEFT TOSSLEFT which is TOSSLEFT when the top ball is flying toward the left, and and (3) WHEN TOPRIGHT TOSSRIGHT as the inverse action of (2). That is, the juggling can be realized by letting the modules (2) and (3) run in parallel, after the module (1) started initially. Each of these three modules can be easily acquired, respectively corresponding to each agent's micro-learning.

Now, how is a final art-work generated from a set of is learned modules? As stated hitherto, the art-work as agency is to be produced by the bottom-up synthesis of agents. But there is no general rule of the synthesis. It is only done ad hoc in a data-driven way, where the eventually activated agents interact mutually to make a social integration, while the other agents keep dormant. Therefore, there seems to be no way but to learn from an example in order to master the art-work. As the example is a concrete existence, the idiomatic modules and relations among them, which we

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[9] S. Papert: Mindstorms, Basic Books (1980).

can learn from example by body-experience, are local and finite. Nevertheless, they are open and propagatable. Thus, the art-work created by body-experience shows such an idiomatic as D. Hume's so-called „habitus" of generative idea which is empirically associated with sensuous impressions. This also means that the art-work essentially has its roots in everyday life. From this viewpoint, the method of learning from an example, which effectively stimulates the above mentioned bottom-up synthesis of agency in Japanese traditional art-education, might be pretty suggestive. In this way, our idea of folk aesthetics on computer metaphor seems to be valid to the method of a creative art education, too.

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message-passing in the Tea-Drinker

1 GRASPING agent comments

"I've had success in <my job>" ..... A

2 BALANCING agent comments

"<my job> is going on successfully" ..... B

(hearing the message A or C)

3 MOVING agent comments

"<my job> is also going on now C

(hearing the message B)
and
(when it touched the mouth)

"I've finished <my job>" ..... D

4 THIRST agent

drink after hearing the message: D
and
comments
"<my job> causes me a pleasure" ..... E

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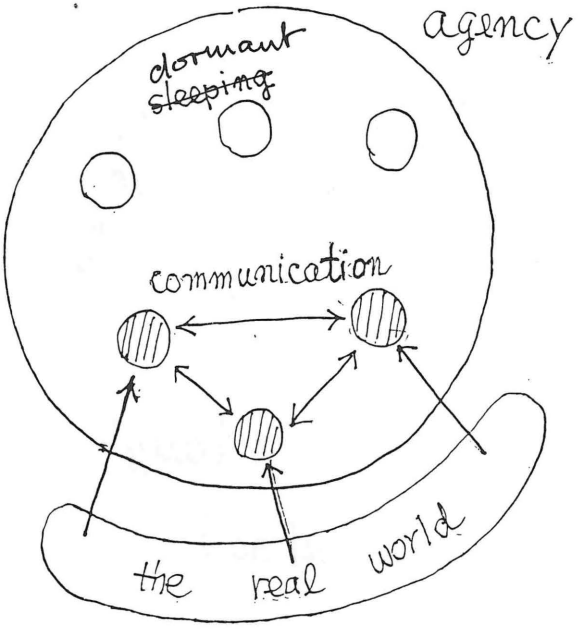

active agent

dormant
~~sleeping~~ agent

The Society of Mind

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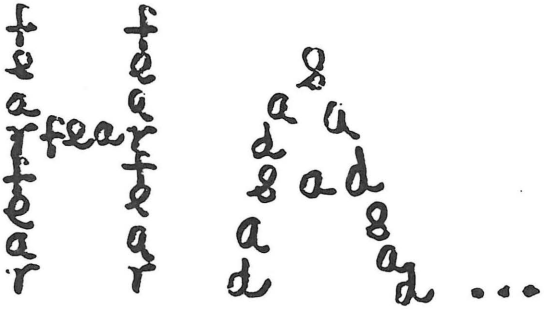

Aunt Hillary laughs,
while ants feel sad and fear

Ant Fugue in:
Gödel, Escher, Bach
D. Hofstadter

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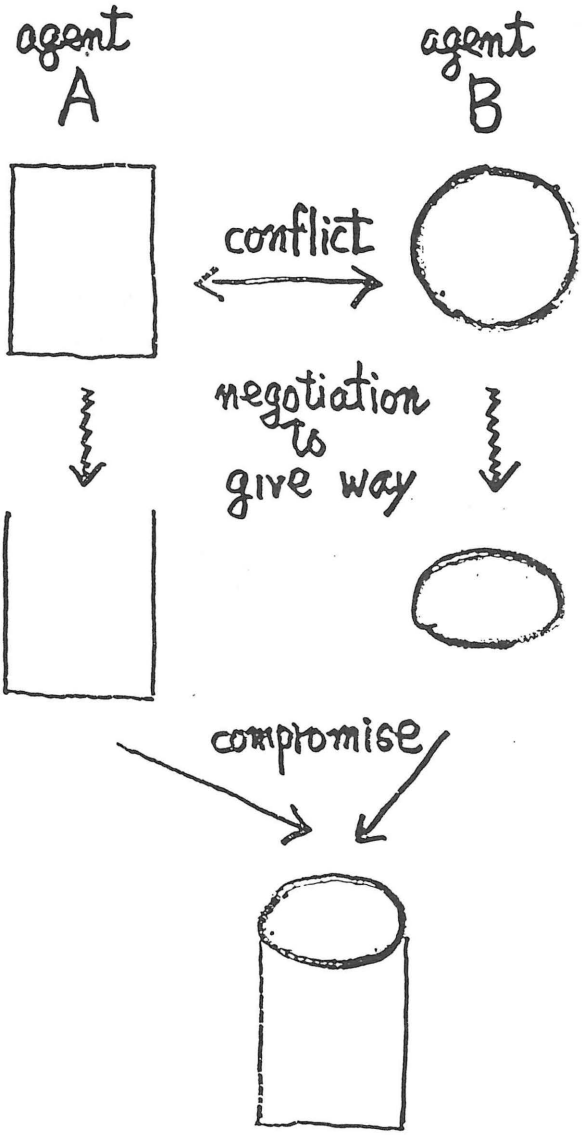
agent
A
agent
B
conflict
negotiation
to
give way
compromise

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W. Auden

Musée des Beaux Arts

About suffering they were never wrong
The Old Masters: how well they understood
Its human position; how it takes place
While someone else is eating or opening a window
or just walking dully along;
How, when the aged are reverently, passionately waiting
For the miraculous birth, there always must be
Children who did not specially want it to happen, skating
On a pond at the edge of the wood:
They never forgot
That even the dreadful martyrdom must run its course
Anyhow in a corner, some untidy spot
Where the dogs go on with their doggy life and torturer's horse
Scratches its innocent behind on a tree.
In Brueghel's *Icarus,* for instance: how everything turns away
Quite leisurely from the disaster; the ploughman may
Have heard the splash, the forsaken cry,
But for him it was not an important failure; the sun shone
As it had to on the white legs disappearing into the green
Water; and the expensive delicate ship that must have seen
Something amazing, a boy falling out of the sky,
Had somewhere to get to and sailed calmly on.

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