METAGAMES

GAMES OF PSYCHOLOGICAL, POLITICAL, SOCIOLOGICAL, AND EPISTEMOLOGICAL SIGNIFICANCE: ONE DOLLAR AND A HALF

What we refer to in English as knowledge is signified by two words in Greek: *gnosis* and *episteme*.

Gnosis refers to sense knowledge. It derives from *gignoskein*: to know, think, judge, and from *gnōmōn*: a judge or interpreter. A gnostic is concerned with such questions as what is that which remains constant?, what is its essence?, what is its form?.

Episteme refers to the acquisition of a skill. It derives from *epi* (above) plus *histamein* (to stand). While we *understand* in English, we *overstand* in Greek. An epistemic is concerned with such questions as how does it work?, how is the structure?, how is the process?.

Perhaps a feeling for these two types of knowledge can be generated by looking at some of the derivations of the key words associated with these concepts, form and structure:

form	structure
deform	destruct
inform	instruct
conform	construct
reformulate	reconstruct

The dichotomy in early Greek philosophy precipitated from schools defending either *gnosis* or *episteme* as true knowledge, leaving it to Plato to synthesize these two forms and reveal their relationship as it appears in his famous parable of the cave. Men are chained in the cave such that they can see only their shadows. Reality for these men constitutes a description of the behavior of the shadows, and only when one of these fellows breaks free from his chains and discovers that the shadows are formed by the obstruction of the sun's rays does he understand the relationship between the men and the shadows.

With Platonic spirit, this class endeavored not only to concentrate on what was said but also the observable processes by which the content was generated. Scribes took notes on the content and meta-scribes took notes on the accompanying interpersonal interactions. Portions of the descriptions and metadescriptions can be examined on this page.

The idea of generating a series of games arose from the desire to produce something that was both interesting and enjoyable which embedded the notions we had been discovering throughout the semester; that is, to reflect upon what had been said and reveal processes of human interaction.

We wish to extend our deep appreciation to Gordon Pask and Humberto R. Maturana for their invaluable criticisms and advice, and of course our mentor, Heinz Von Foerster, who serves to show us the possibilities of being human.

Steven Sloan

Scribe

After a few remarks by the Chairman, Sandy proposed the creation of a 'game box' as the class project, since most of the groups seemed to have an interest in this general area.

HVF then announced his coming trip to Europe, and explained the timetable that was passed out to the class. He stated the possibility of the game box being produced by the American Container Corporation, and suggested that the games should deal with problems - be teaching games, ruling 2nd-order concepts, if possible. He felt that Gordon Pask might be able to suggest some game structures for the teaching games, when he came to class.

Steve demonstrated the game he had talked about last week, explaining its possibilities in generating language between people.

Back to HVF who referred to the two kinds of questions we could ask Gordon Pask: a) notational; b) epistemological.

He himself would deal with the first type and Pask could discuss the latter. He went on to speak about what was going on in the class - whether he should start off from the reality question of last week, or return to the epistemological concepts he discussed two weeks ago. He wanted us to be constantly alert to what he was saying and to question him.....Then, a digression about the difficulties the meta-scribes were having.....a reference to communication as a Two-Brain problem. In reply to a statement by Charlie that 'Communication never breaks down, you only say it does when you don't get the response you expect', Judy responded with a dictionary definition of the word, and, after a brief comment on its inadequacy, HVF started to distinguish between form and structure. He carried this into Pask's models as different ways of knowing: 'How, why and what refer to three different ways of relating things.' From this statement HVF led into a discussion of the cause and effect relationship between two things, and the problem of which one comes first.

Metascribe

Almost forgot to start writing. Chairman mumbled a few notes about the directories he handed out, then led into Sandy Baron's presentation on creating a 'box' of 'goodies' at the end of the semester. Many possibilities.

New room. Very old-fashioned and comfortable, in 218 Ceramics Engineering Building. The class is quiet and relaxed. Sandy turns the floor over to Heinz.

Heinz once again has some suggestions about projects. Takes center of floor and explains timetable handout. He mentions his forthcoming trip to Europe and I begin daydreaming. When I returned, he was still talking about the schedule of projects for the class.

I can't figure out why we all sit in a circle and pay attention to whatever happens in the middle. Is this biological?

Heinz is talking about games which would be designed and possibly produced by the American Container Corp. He addresses us to 2nd order games - learning of learning, etc. Suggested Gordon Pask may help. I know now I'd like to contribute something to the box. I think Heinz is getting disappointed with the interaction of the class. I'm getting nervous. Am we able to deal with the subject of dealing with things? I feel a bit disoriented.

Heinz is up again with some questions about Pask's paper, especially notational questions. More object matter.
Why don't we cut off all discussion in the object language? This is the fourth meeting and we are still a class and still talking about knowledgable topics.

Heinz is talking about vague things. I think he is giving the nonsense lecture we suggested at the last meeting. No, I take that back. He is...People are dropping their jaws. One girl is asleep. People are getting jittery. Cigarettes are being lit. People are *receptive*. I'm not sure anything is being perceived or communicated. Al Oberteuffer is trying to pick up on something. Heinz is saying nothing to the topic he is supposedly talking about. Charles DeCoster threw a thought on communication, Judy Stern picks it up with him. Heinz shut up for a while.

It would be interesting to know if all the meta-scribes who were at yesterday's meeting where it was proposed that Heinz give a nonsense lecture as an experiment to see how long the class would sit and take it, realize themselves that this is now being done or are the meta-scribes themselves wrapped up in the object language....if this is after all, the nonsense lecture and I am not the mistaken meta-scribe. People are waking up and going to sleep on different levels. This is now a straight lecture on cause and effect.

Heinz is acting strangely. He is not talking with his usual vigour and clarity. He's hesitant and unsure. Alan Oberteuffer questions something he says. A simple reply. Another question from someone else. Questions on the object matter are popping up.

A lecture followed on effect and cause. We took a break.
I'm tired.

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Electrical Engineering 272, 490; Biophysics 491

The Departments of Electrical Engineering and of Physiology and Biophysics offer each semester general topic courses (EE 272, EE 490, and Biophysics 491). Since electrical engineering owes its existence to a large extent to discoveries in physiology (Luigi Galvani, 1737-1798; Allessandro Volta, 1745-1827; etc.), I proposed to the students of my section of these courses to coalgulate into one class in which we would discuss recent discoveries in neuro-physiology, particularly those in the Central Nervous System which may be associated with a general concept of computation. A holistic point of view was taken, and the discussion moved from sensation to perception and cognition, and finally to problems of language and communication. The interaction situation of a "game" was recognized as a useful paradigm for the understanding of human cooperation.

In order to explore their grasp of conditions that constitute a "game", the students decided to try their hand at creating themselves various solutions to this problem. The result of these experiments is this volume.

While the students worked independently, in angles or in groups, the responsibility for letting these results be seen by a larger audience rests, of course, solely with me.

Heinz Von Foerster

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What game is reality?

Most certainly not solitaire!
One needs somebody else to play it.

Who says *there is* somebody else? Who says there is anything else but "I" and my thoughts?

It is clear that the senses aren't sensing a "world". There is no color; there are only electro-magnetic waves; there is no sound; there are only variations in the air pressure; there is no heat; there are only a bunch of fast-moving molecules; etc., etc. Moreover, sensory receptors do not transmit the physical cause of their activity, only the intensity of the cause. They transmit only "how much" but not "what".

Worse, there are even no objects, for to have objects they must have properties (for instance, saying "moo" and giving milk). But such properties are not "out there" as we have seen. Whatever they are, they must be "in here", somewhere within one's skin.

What game is reality?

Despite all this,
most certainly not solitaire,
as the gentleman
in the bowler hat
is now to demonstrate.

He insists that he is the sole reality, while everything else appears only in his imagination. However, he cannot deny that his imaginary universe is populated with apparitions that are not unlike himself. Hence, he has to grant them the privilege that they themselves may insist that they are the sole reality and everything else is only a concoction of their imaginations, their fantasies, dreams or nightmares. On the other hand, they cannot deny that their fantasies are populated by apparitions that are not unlike themselves, one of which may be *he*, the gentleman with the bowler hat!

But this is a paradox: For he who assumes to be the sole reality, he shall be somebody else's imagination who, in turn, insists that *he* is the sole reality.

How to get out of this, and where does it lead?
It leads to an "out there" that can be witnessed by somebody else, that can also be known by another:
This is *con-scientia* ("together-knowledge", consciousness).

Now, what game is reality?

First, there must be at least two players who want to play it. They create a large board with lots of objects on it which they agree to call "The World". Then they put themselves on this board and invent a set of rules for the objects. These rules they agree to call "The Laws of Nature". If, during the game, it turns out that the rules they applied in creating the objects don't jive with the rules they invented to play with the objects, they either ignore these objects or change "The Laws of Nature".

Now they can play. The goal of the game is for both to agree on how they, themselves, shall move on the board, even under disagreement. It is clear that "A" can win only when "B" wins, and *vice versa*, for if "B" looses, "A" is lost, too. Then reality disappears and the nightmares begin.

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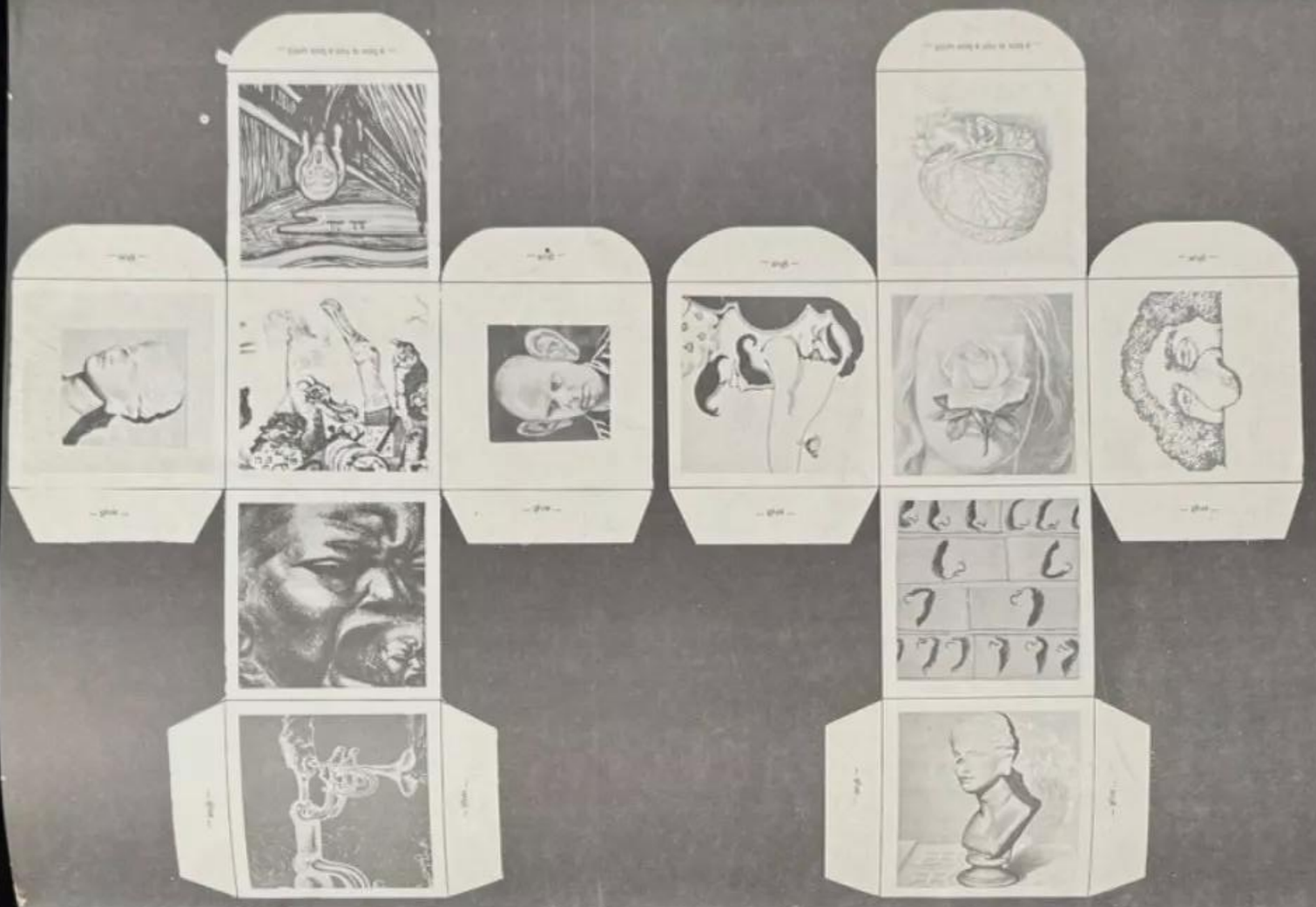
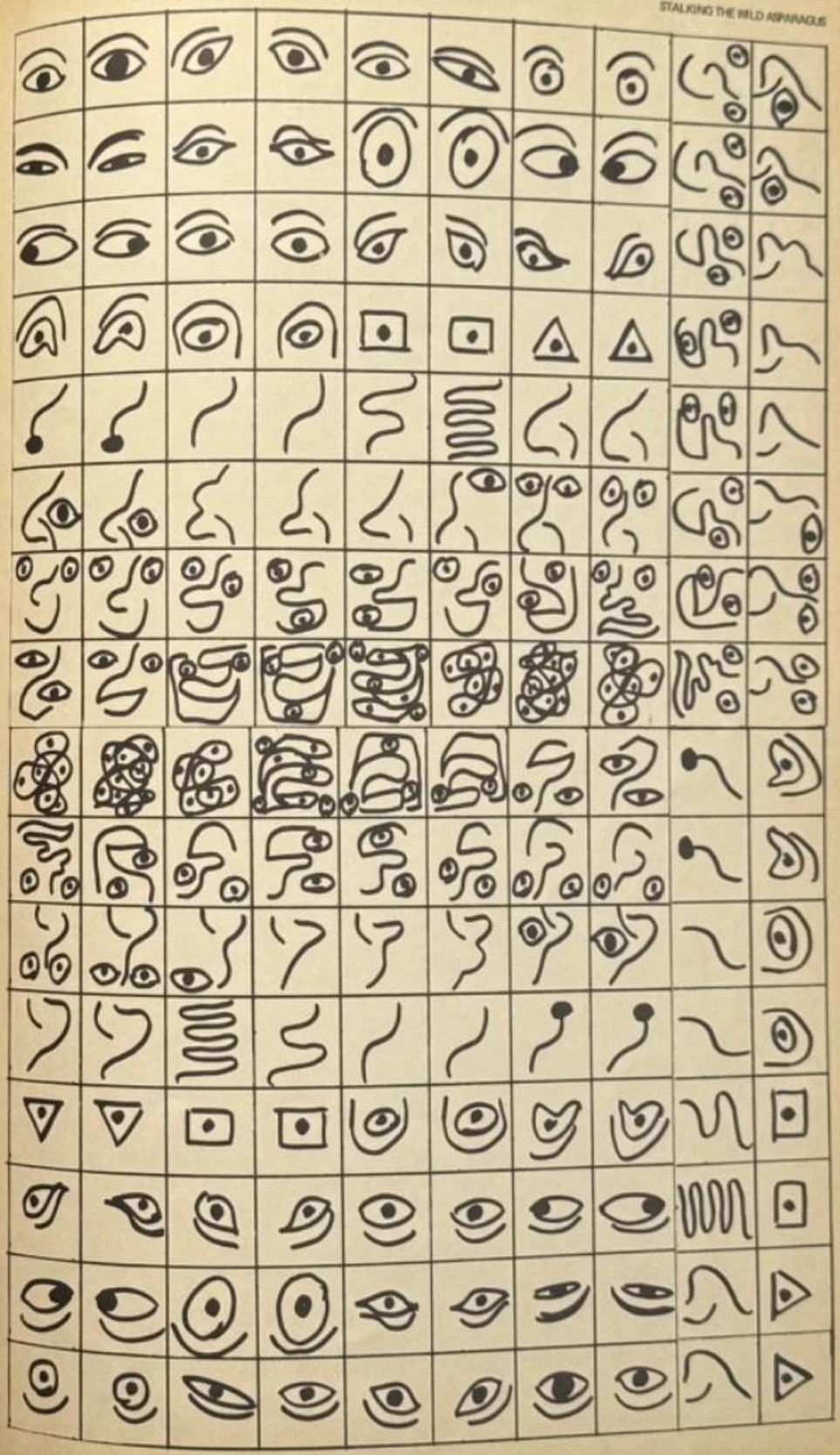
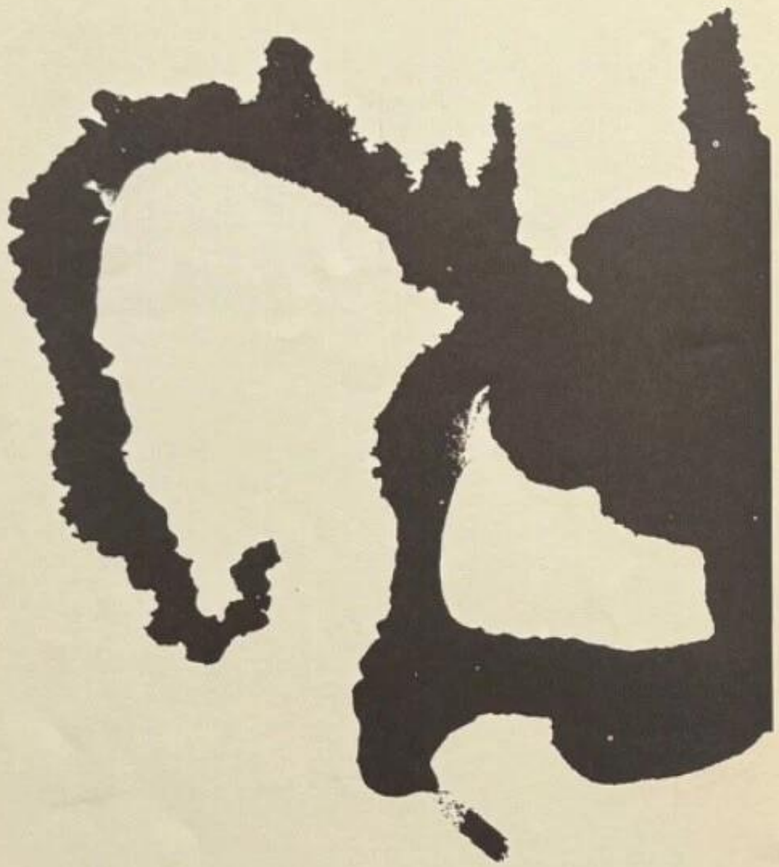
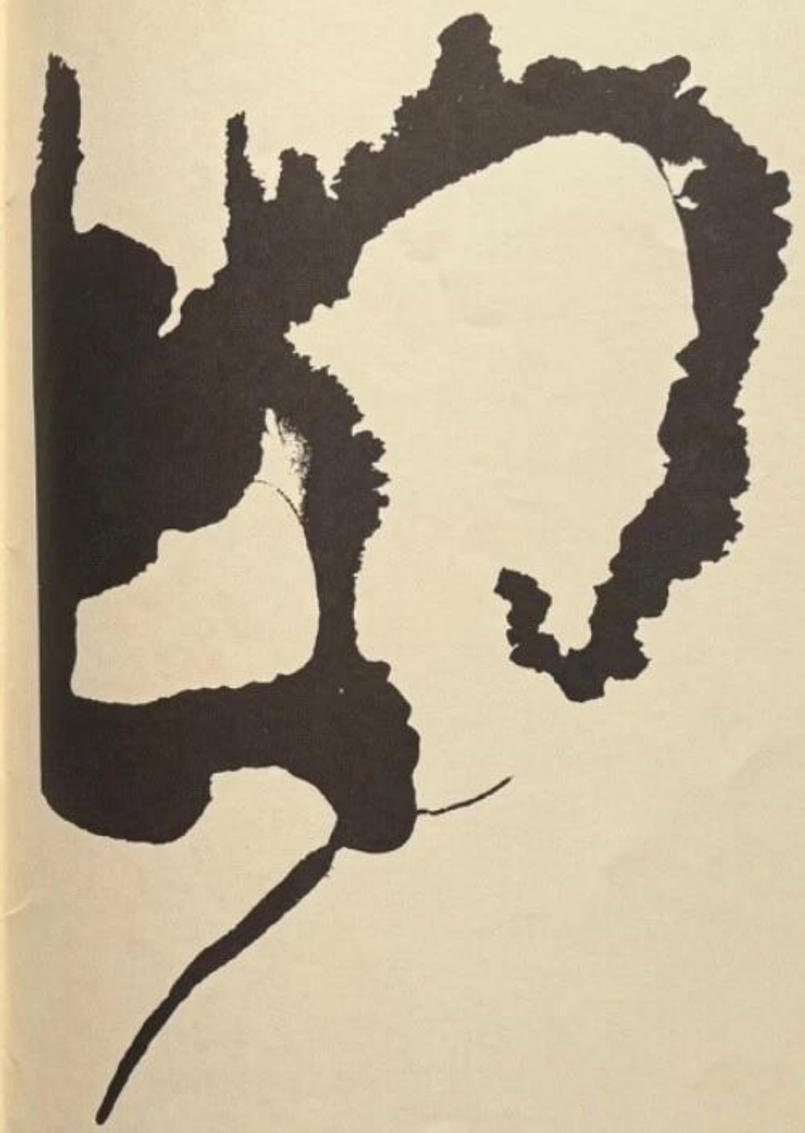


6.421 It is clear that ethics cannot be put into words.

Ludwig Wittgenstein, ***Tractatus Logico-Philosophicus***







6.422 When an ethical law of the form "thou shalt..." is laid down, one's first thought is, "and what if I do not do it?" It is clear however, that ethics has nothing to do with punishment and reward in the usual sense of the term. So, our questions about the ***consequences*** of an action must be irrelevant.

Ludwig Wittgenstein, ***Tractatus Logico-Philosophicus***