U-SIT And Think News Letter - 72

Unified Structured Inventive Thinking is a problem-solving methodology for creating unconventional perspectives of a problem, and discovering innovative solution concepts, when conventional methodology has waned. Heuristic Innovation is an extension of **USIT**.

Subject Keys

PD = Problem definition

H = **Heuristics**

T = Theory

M = Metaphors

A = Analysis

BH = **Brain hemispheres**

Dear Readers:

. A workshop on Heuristic Innovation based on USIT is in development. Suggestions for material to be covered to aid better the understanding and practice of these methodologies would be appreciated.

. This newsletter continues the brief series on using both cognitive hemispheres as tools for innovation.

Mini USIT Lecture – 72

Two Brains Are Better – III

A mid-stream correction

On the wall in my study hangs a poster picture of Albert Einstein with part of one of his quotes: “Imagination is more important than knowledge.” (www.einsteinyear.org/facts/physicsFacts/) I like it because it seems to excuse some daydreaming in the midst of study – a favorite pastime of mine. But I’ve been caught short with too much imagination and need to do some explaining.

This series of mini-lectures began by examining personal mental reactions to three questions regarding birds on a wire. The initial idea was to present a query that would elicit instantaneous intuitive reaction based on an image forming as words were being read. Deducing intuition at work, in this case, is based on its speed. By comparison, logical reasoning, with its dependence on processing of words, would necessarily trail intuition. Presumably, both intuitive and logical hemispheres could produce *a numerical answer*, but logic should be delayed by more mental processing required to generate a concept.

The italicized phrase is where I slipped in reasoning. I offer the following quote to set things straight. “You have two brains: a left and a right.

Modern brain scientists now know that your left brain is your verbal rational brain; it thinks serially and reduces its thoughts to numbers, letters, and words … . Your right brain is your non-verbal and intuitive brain; it thinks in patterns, or pictures, composed of ‘whole things’, and does not comprehend reductions, either numbers, letters, or words.” (* Bergland)

Thus my allusion to the intuitive brain using numbers is incorrect. I apologize for that and will make corrections as appropriate.

As Bergland confirms it is appropriate to consider the intuitive brain as using and providing images while the logical brain uses and provides language. That makes the reading and visualizing of the five birds on the wire problem the more impressive. As we read the words, “five birds on a wire”, intuition instantly paints the picture – a different picture for each of us. The number idea (5) is now implanted in the logical brain. In the next sentence the phrase, “shoot one of them”, introduces potential changes for both intuition and logic to handle. Logical thinking produces the trial numbers used mentally to test answers for the problem.

Figure 1

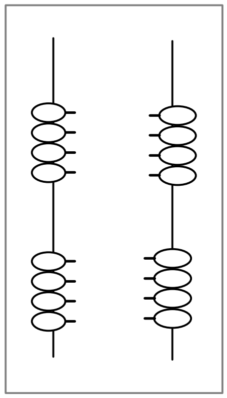

Image clues

Not all cues are reacted quickly by either hemisphere. Metaphors, which I argue are the more creative thinking cues, can be slow in developing meaning. (Has the stylized logo I drew for the website announcement of the heuristic innovation textbook and for this series of mini-lectures caught your attention?) We experience graphic metaphors long before we become professional problem solvers. As children seeing faces in the clouds, the man in the moon, and many others, we are reacting to accidental graphic metaphors. We mentally *make something from nothing*. This is an important observation for it is a clue to intentionally forming effective metaphors to use in problem solving. It fits the concept of the intuitive brain seeing whole things; i.e., making sense of them – making something from nothing.

The sketch in Fig. (1) above is a graphic metaphor from my early school days. It’s a drawing of a bear climbing a tree from the other side. You probably knew that. But can you now associate the cartoon with any other images?

Difficult, isn’t it? Why is that? I think, in part, it’s due to being overly drawn for the proposed image, which is now ensconced in our minds. It leaves little for further imagination. Little else comes to mind as needed to complete the cartoon. That is, unless you are familiar with bears and your logical hemisphere complains for lack of realism in the sketch of a bear’s paws. However, on first reading that it was a bear on the back side of a tree, you probably visualized the short black bars as claws and the groups of four as equivalent to hands grasping from the other side, and then accepted the idea.

If I take off the claws (Fig. 2, p.3) do ideas come to mind for new meaning to the cartoon? Think a moment and try to make something out of the cartoon before reading mine. It seems that less detail in the cartoon offers more freedom to make associations from experience.

(It made me think of an abacus; children seen from above queuing at a two-sided lunch counter; four caterpillars; and spider egg-cases on a board.)

Graphic metaphors

Where and how are graphic metaphors introduced into problem solving? I use graphic metaphor to represent all visual information except language. Initially, when we set out to solve a problem, we collect a variety of physical objects, photographs, engineering drawings, graphic data, models, and sketches needed to assemble the facts. These can be inspirational toward generating solution concepts as one studies and understands them. But they have only moderate metaphorical value because they are over defined.

As we begin to analyze a problem we find it convenient to make sketches of select components. These become useful reminders of the more complex things they represent. Already we are using the golden heuristic of problem solving – simplify! We are creating graphic metaphors. Our sketches are hints, suggestions, and approximations that are sufficient to remind us of the real objects. They're analogous to the abbreviated notes we take at a lecture.

While problem solvers understand their value, and use them when provided, they often do not introduce their own sketches. Or they make detailed engineering drawings having little value as metaphors. I think Betty Edwards** may have put her finger on the problem when she studied the difficulties children have trying to draw. Up to ages nine to eleven children often develop limited skills and then quit learning. They carry these limited skills into adulthood with no further improvement, but wishing they could learn to draw. Essentially children start out with the goal of creating realistic drawings. When they become dissatisfied with their efforts they give up.

These same children become technologists who still have difficulty making satisfying sketches. When working in problem-solving teams they often are too self conscious or embarrassed to offer their own sketches. Instead they defer to a volunteer within the group.

If the value of metaphors lies in their ambiguity, which I hold is true, then sketches should not be of engineering drawing quality but should be simple line drawings. They should not be subjected to artistic criticism. Presumably, the details of accurate drawings and models have already been assimilated upon beginning analyses of a problem. Personal sketching brings one face-to-paper with decisions of what is important and what is not, what do I understand and what do I not. With less logical criticism maybe we can capture some of intuition's whole-picture imagery.

"Chinese proverb" from a streetcar advertisement. The quotation has wrongly been translated as: A Picture Is Worth One Thousand Words**.** In fact, the literal translation is: A Picture's Meaning Can Express Ten Thousand Words**.*****

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* From *The Fabric of Mind*, Richard Bergland, New York, Vicking Press, Inc. 1985, p.1. and cited in

** *Drawing on the Right Side of the Brain*, Betty Edwards, Penguin Putnam Inc., New York, 1999.

*** http://commfaculty.fullerton.edu/lester/writings/letters.html

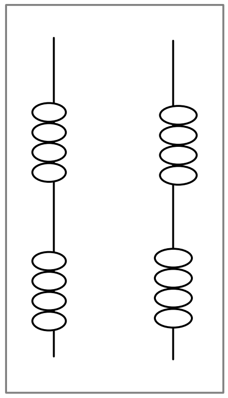

Figure 2.

Other Interests

1. Have a look at the USIT textbook, "Unified Structured Inventive Thinking – How to Invent", details may be found at the Ntelleck website: www.u-sit.net
2. See also "Heuristic Innovation", and register for multiple resources.

Publications	Language	Translators	Available at …
1. Textbook: Unified Structured Inventive Thinking – How to Invent	English	Ed Sickafus (author)	www.u-sit.net
2. eBook: Unified Structured Inventive Thinking – an Overview	English	Ed Sickafus (author)	www.u-sit.net
	Japanese	Keishi Kawamo, Shigeomi Koshimizu and Toru Nakagawa	www.osaka-gu.ac.jp/php/nakagawa/TRIZ/
	Korean	Yong-Taek Park	www.ktriza.com/www/usit/register_form.htm
"Pensamiento Inventivo Estructurado Unificado – Una Apreciación Global"	Spanish	Juan Carlos Nishiyama y Carlos Eduardo Requena	www.u-sit.net
3. eBook "Heuristics for Solving Technical Problems – Theory, Derivation, Application" -- HSTP	English	Ed Sickafus (author)	www.u-sit.net
"Heurísticas para Resolver Problemas técnicos – Teoría Deducción Aplicación"	Spanish	Juan Carlos Nishiyama y Carlos Eduardo Requena	www.u-sit.net
4. U-SIT and Think Newsletter	English	Ed Sickafus (Editor)	www.u-sit.net
	Japanese	Toru Nakagawa and Hideaki Kosha	www.osaka-gu.ac.jp/php/nakagawa/TRIZ/
	Korean	Yong-Taek Park	www.ktriza.com.
Mini-lectures from NL_01 through NL_67	Spanish	Juan Carlos Nishiyama y Carlos Eduardo Requena	www.u-sit.net click on Registration

Please send your feedback and suggestions to Ntelleck@u-sit.net and visit www.u-sit.net

To be creative, U-SIT and think.