U-SIT And Think News Letter - 49

Updates and Commentary

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Unified **S**tructured **I**nventive **T**hinking is a problem-solving methodology for creating unconventional perspectives of a problem, and discovering innovative solution concepts, when conventional methodology has waned.

Dear Readers:

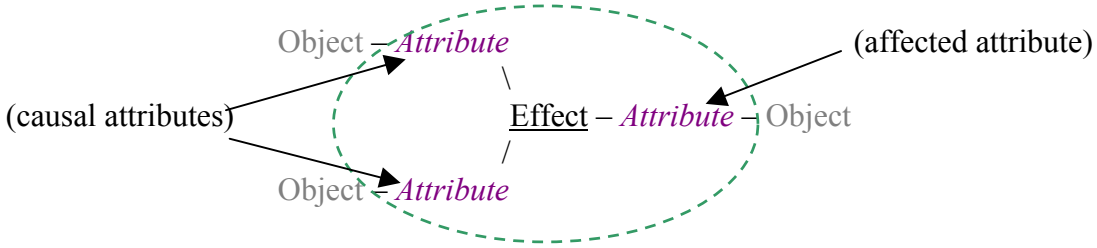
. The mini-lecture of this newsletter is devoted to attribute-pair association with a third attribute as a focus for inspiration. Examples submitted by two readers are highlighted.

. Three reprints are now available. Their clickable links are listed in section (7. Papers and essays).

3. Mini USIT Lecture – 49 USIT – a Method for Solving Engineering-Design Type Problems

Cognitive Plasticity in Problem Solving

Graphic heuristic for object interaction through attributes



The first application of the above graphic heuristic (NL_41) was to illustrate its use in sparking concepts of effects by simply considering pairs of attributes. In that example exercise you were shown the results of my deliberations. Below I want to show you the results of other efforts. Juan Carlos Nishiyama and Carlos Eduardo Requena submitted the following examples of attribute triplets. I find this work to be an interesting example of inventive thinking sparked by creative structure. A sampling of their examples is shown.

As you read these examples, bear in mind that they began as an arbitrary pairing of attributes taken from a list of not necessarily related attributes. The challenge was to think of one of these pairs and see what third attribute comes to mind and note any connection they have via an effect. None of these attributes may fit together logically as interacting attributes in the graphic model above. That is the point of this exercise. We are looking for inspiration even from arbitrarily associated pairs of attributes.

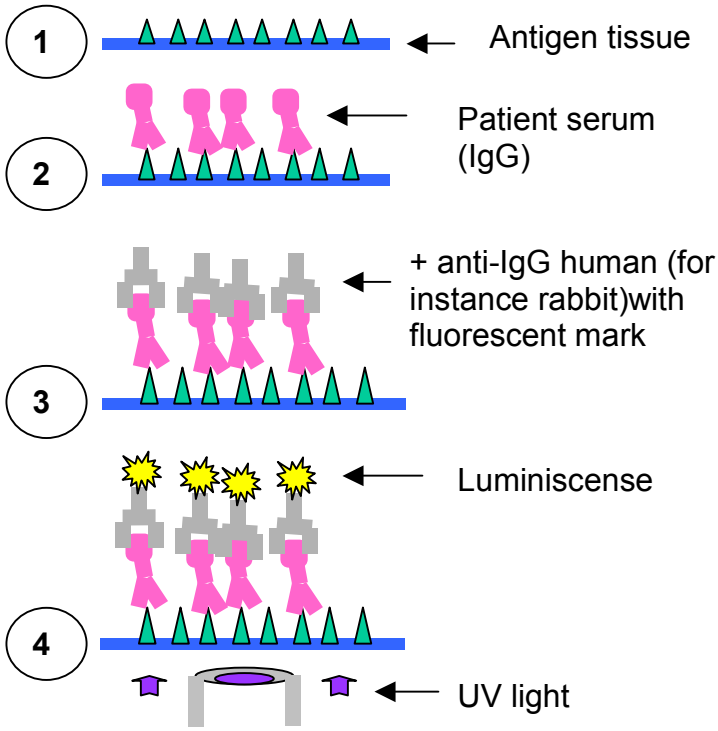
- Friction/translucence: *Friction* between dust and car sidelight housing *translucence* produces unwanted visual perception by *opacity*.
- Friction/translucence: *Friction* between dust and *translucence* material produces static electricity causing sticking of dust with resulting loss of *legibility*.
- Friction/translucence: *Friction* of a jet of air against a *frosted* glass (*translucence*) increases its *transparency*.
- Loudness/humidity: *Humidity* of inert gas in gas metal arc welding (MIG) and *loudness* of sound like bacon frying indicate bad welds with *porosity.*
- Loudness/humidity: *Porosity* of wood and changing *humidity* of environment cause expansion/contraction of wood producing *loudness* of creaking.
- Loudness/humidity: *Crisp* foods and *humidity* cause damping of *loudness* expected from crunching.
- Luminescence/brightness: *Invisible* objects and *luminescent* paint produce warning in *dark* places.
- Luminescence/brightness: *Luminescence* and *brightness* control improve the visuals perception of TV images.
- Oiliness/graininess: *Oiliness* of a floor and (lack of) *graininess* of the sole of footwear reduce *traction*.
- Oiliness/graininess: *Oiliness* of mirror and emery cloth graininess produce smoothness of a *mirror.*
- Randomness/density: *Randomness* of phone calls and *density* of population affects the *quantity* of phone cables.
- Porosity/oiliness: *Porosity* of brass and *oiliness* of lubricant produce *impregnated* pores (oil-impregnated bearings).
- Taste/reflectivity: *Reflectivity* and *solar* photons interact to cook food affecting *taste*.
- Taste/reflectivity: Fruit *shown* for sale is polished to improve *reflectivity* and perception of *taste*.
- Translucence/periodicity: A *translucent* light made *periodic* by rotation gives *early* warning of emergency vehicles.
- Transparency/weight: Precision scale is covered with *transparent* box avoiding incidence

externals factors. (Editor: I suspect that "scale" came to mind from "weight" being determined by scales.)

- Transparency/weight: *Transparency* and *weight* create *value* of diamonds.
- Volume/aspect ratio: *Aspect ratio* of an object affects *visual* perception of its *volume*.
- Symmetry/taste: *Symmetric* cooking of food from both *sides* improves (uniformity of) *taste*.

I like the next example because it reveals in inspiration the power of verbal metaphors.

- Graininess/luminescence: Immunofluorescence is a laboratory technique used to identify antibodies or specific antigens. The identification of the antibodies in general is carried out in the blood (serum). If the serum of a person presents antibodies that are *linked* to cells, they can *fluoresce* revealing their *locations*.



It is an interesting experience in introspection to be given two arbitrarily paired attributes and be asked to identify a third attribute that is related in some logical way and then describe the results. For a moment we consciously think of two words that characterize unspecified objects. Sometimes from our subconscious arises a forgotten logical example of the pair. Sometimes we find ourselves trying to force a relationship. At other times we begin with one attribute of a pair and identify various objects that might have that attribute. With each of these we then try to imagine the other attribute of the pair interacting with the found attribute/object pair. Surely this is as promising an exercise for RB thinking as it is for LB thinking.

The results of this extended exercise (my results, Nishiyama's and Requena's results, and yours) are offered as evidence of unusual perspectives in innovative thinking. They also give evidence of a level

of abstract thinking. I believe that objects are key elements of concretized thinking while attributes are more abstract and play strong roles as metaphors. We are seeding the subconscious with attribute-generated metaphors and reaping the results in concretized concepts involving objects.

In the next mini-lecture I would like to contrast this rather abstract use of the graphic heuristic with a more rigorously logical one as applied in searching the phenomenological roots of an effect.

---------- To be continued ----------

7. Papers and essays

The following materials can be read by clicking on their titles. Links are also available on the USIT website (www.u-sit.net click on Publications)

1. "Injecting Creative Thinking Into Product Flow**"**
2. "Problem Statement"
3. "Metaphorical Observations"

8. 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 (*Note*; not at www.ic.net)
2. USIT Resources Visit www.u-sit.net and click on Registration.

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/
"**Pensamiento Inventivo Estructurado Unificado – Una Apreciación Global**"	Spanish	Juan Carlos Nishiyama y Carlos Eduardo Requena	www.u-sit.net
3. eBook "**Heuristics for Solving Techncial 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_47	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.