Graphideas: a self-learning computer system?

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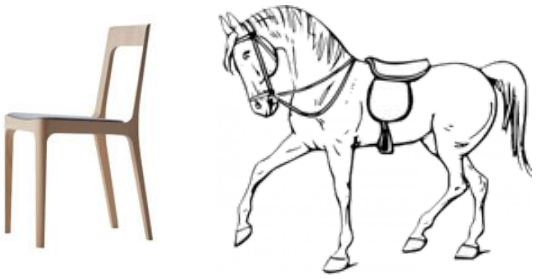
***Abstract*—This paper was given as part of the *Imagination WWW'P* conference, co-located with the WWW2016 conference, Montréal, April 2016**



Using computer already get its part of search paths, but we may want to enlarge the way the logic machine can be adapted to someone using it, like a brain learning by himself what connections are useful and which one of them open the mind to new concepts. And the ideas we are to present may help to obtain a pattern specific to the user.

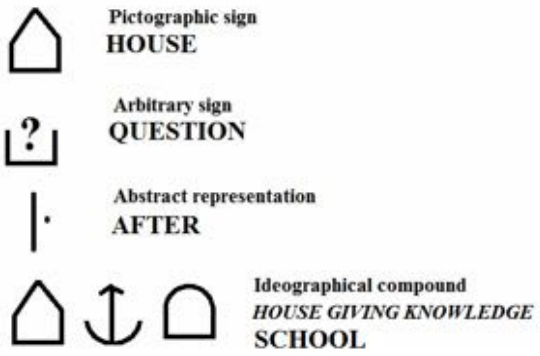
Because even if we're tempted to describe all brains as being similar, an individual's neurons don't associate their chains with the same sensations as another. Thanks to transcendent 'Pataphysics, they learn from the singular occurrences in our individual lives.

Among other ways, our perception of emotions and beings is expressed through words. Linguists give them definitions that they compile into dictionaries. These don't lay claim to truth, but allow us to communicate summarily between speakers in every language. Thus, every word defined by meaning units (lexemes) is connected with other ones without ever meaning exactly the same thing. A chair is a four-legged piece of furniture that can be distinguished from the horse, at least because the latter is a mammal that moves by itself. On the other hand, the armchair adds armrests to the chair, the sofa takes out its legs… But the chair is also defined as being used to sit, and this posture can also be adopted on horseback; from then on, one can say that the chair is an immoveable horse, or that the noble animal is a mobile chair. Knowing these traits authorizes the transition from one to the other by substituting a certain word for another which is defined likewise, if it has an equivalent. It can also be translate in another language, like : chaise/chair/silla/Stuhl cheval/horse/caballo/Pferd.

Now, various languages convey information from vocabularies and syntax linked with their native geographical and cultural contexts. Most are codified into writing, thanks to symbols referring to sound, but some of them, especially Asian, use ideograms by adding visual references to concrete realities and to the graphical signs that derived from them. Even if they are simplified nowadays, the Chinese signs, for example, keep traces of ancient pictograms and build new « words » by juxtaposing singular elements. The Japanese language, which stemmed from the same principles, recently chose, for usual communications, a syllabic writing, the kana, relegating the ancient ideograms to noble texts.

It's also well-known that ideograms have been used in ancient Egypt, and since then, the opportunity of going back to their constituents has been put to use in the design of many signs, a recent example targeted at paraplegics : the Bliss symbolics, developed in the 1970s for severely handicapped people, allowing them to show with a pointer on a dictionary-table, elements of sentences framed by precise rules in order to express temporal references and other usual syntactic functions.

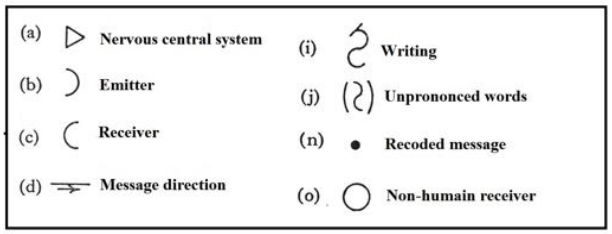
Bliss system (1970)



In general, these symbols remain relatively simple : their designers mostly emphasize their juxtaposition in syntactic sentences.

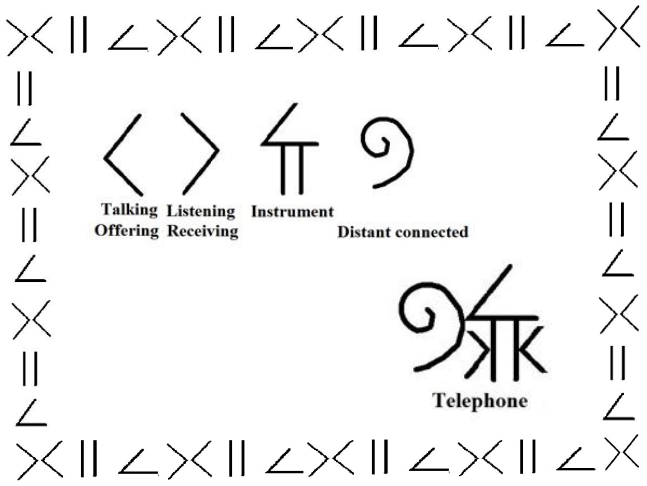
Now, some codes used as a substitution to speech already make use of graphics that recapture the concepts behind the words. It's the case of many codes, from which we will first retain a system evoking communication.

Communication symbols



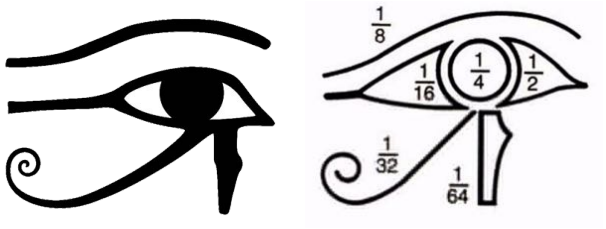
Based on this kind of simple system, also like the mathematical set theory, we found interesting the exploration of a series of graphs closer to Asian symbols that allow us to merge different meaning units into one sign. By juxtaposing traits comparable to lexemes, one can build graphemes that are sometimes wide-ranging, to whom one can assigned a dominant meaning, among a few parallel ones.

For example, by using the signs "talking," "listening," "instrument," and "distant connected", one can evoke the "telephone".



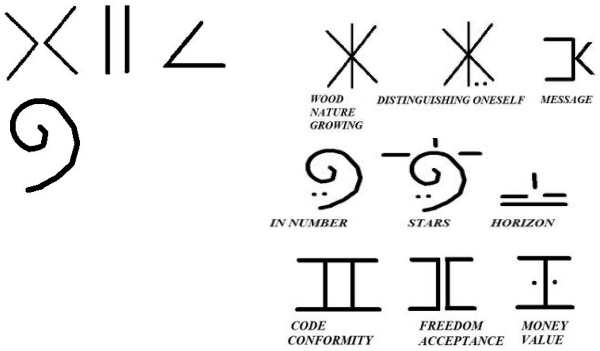
One can draw up a series of such symbols, list them and organize them into sentences, but the main interest of this project is a reading that splits the word-sign into junctions of lines, and each one can be associated with others. For example, this process that evokes other notions goes back to the system of symbolic components of the Eye of Horus, in which the Egyptians would see the main fractions of their mathematical calculations.

The Mathematical Egyptian Eye of Horus



Thus, our word-sign « telephone » can appear, among other things, as composed of elements like these ones that can also be found in word-signs like:

Signs with Similar Lines



The relationships created this way can then open the meaning "telephone" as much to the matter "wood" than to the notions of "conformity" or "liberty," which are contradictory concepts. A decomposing reading machine could then act as the equal to the animal brain which, upon receiving signals with different meanings, understands the limits of each association of ideas by accumulating experiences.

Applied to the image of our horse/mobile chair, the new associations could also emphasize the fact that the use of a telephone is conditional to knowing the numerical code that allows a connection, as well as the linguistic code used in the conversation, while offering freedom of talk. But also, it stresses on the fact that the telephones "grow" in numbers, like trees in the forest, in quantities comparable to the stars; or that they force us to require the sky (satellites, artificial stars) for communication.

Thus, a search engine equipped with a dictionary of such word-signs and able to dissect the lines could act as the equal of the animal brain, and associate a keyword with a series of others, some usually improbable. Chance is somewhat limited by the basic elements of the connected signs.

To these various uses, we add a literal system allowing us to "translate" the manner in which such symbols combine their elements. For example, and without referring to all the possibilities already listed, joining the symbols of *listening* and *talking* (communicating) would be described differently if one sees two inverted chevrons joined together (*véibé*) pointed down on pointed up (*sémdé*) or two oblique lines superimposed in their center (*féipé*).

Gathering Code

Such a code translating simple lines in a grammar showing the way they are joined can then offer writing specific names for every sign.

Depending on the way we see it is composed, the instrument graph can also be said as formed from an angled line (*tê*) plus an horizontal line (*zé*) then two (*l*) vertical lines (*té*) and be read

As for the telephone graph, among the thirty or so possible descriptions, the simplest one would be [bòvéktêzértré].

Translation Name of Gathering Lines

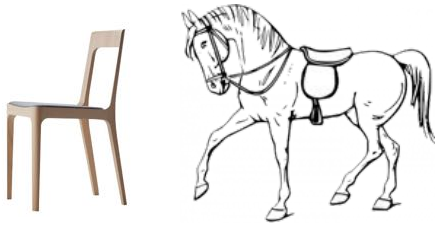
bòvétêmtlébé

TELEPHONE

Such reading by naming each one of these simple lines in the way it is joined to another can give a more "simple" access to those "words".

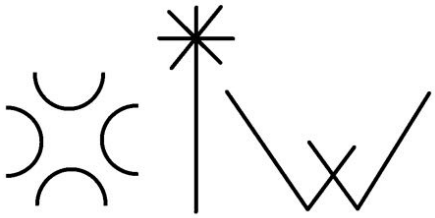
And if we take a new look at our walking chair horse, we can say that its sign, made from "holding", "animal" "used as" "walking", "house tool", "to sit on", could be read as *zakdéwpéwfé-pèltêkté-doué-déjdékzé.*

A horse as a walking chair



zakdéwpéwfé-pèltêkté-doué-déjdékzé

Thanks !



Good be (your) day = Have a good day