Why not homputers?

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Is it vague indeed?

In the past centuries of philosophy and linguistics, it has been a widely accepted view that natural languages are vague and ambiguous. It is usual to guess that expressions in the natural languages bear multiple meaning while simply realizing the problems with communication and understanding or magnifying them in Werther's style. Doubtlessly, a word, an idiom or a text, particularly taken out of its actual context, may have more meanings *for a listener or a reader*. In this case, he can think at more than one things (each discernible) while listening or reading. Believing deficiencies of present-day computers to be their virtues, computational linguists frequently strive for disambiguation. In several situations, disambiguation of the text without the co-operation of the author is hopeless. The listener may accept conjunction of the particular meanings as the meaning of the text. At the same time, a text may not be considered ambiguous or inexact for the speaker or writer. As far as speech and script is a necessary con- sequence of the processes taking place in the brain these phenomena may not be kept ambiguous or vague. Texts should exactly but not entirely reflect these processes i.e. operation of the brain, state of the communicating person. This is a remarkable asymmetry in vagueness.

Reproducing human intellect

The intention to construct devices with human or superhuman capabilities is at least as old as mankind. Traditionally theorists have created conceptual foundation and methodology and then experimentalists implemented the superb machines theorists had envisaged. This approach needs theorists smart enough to create their own theory, which might be too much. Another approach is to invent the way, how one's mind could be stepwise copied without any prior comprehension of the whole. Copying may need less intelligence. Supplied with an appropriate technology we would be able to build homputers. Intellectual activities of an experimental person were used as a series of blueprints. When doing so, outputs as utterances, metacommunicative acts and writings would be applied to control copying. This would be a vain enterprise if active communication were considered vague. Neither is this idea new. However, nobody could find a practical implementation, because devil hides in the details

Three paradigms in AI

There are three main research paradigms in AI. The first bases upon logic and logical programming. Its representatives try to formulate cognitive capabilities and behavior as precisely as possible in a logical language. Another approach sets out from neural

networks. Logical programming schools have to face lack of transparency, which hampers the development of really high performance devices. The behavior of large learning neural networks can also not be foreseen and planned in human terms. They have no functional units; their functions are distributed among the neurons of the net. A third direction is the investigation of brain injuries and their consequences in mental performance. These efforts to localize faculties have contributed to a better understanding of the wiring within brain. However, nobody can claim that all architectural principles of the intellect were discovered in this way. Obviously, researchers have no tools smart enough to record, represent and formulate experimental findings in a comprehensible form. Very good and detailed studies with a tremendous quantity of data have not lead to significant results in formulating adequate theories. To get to a breakthrough a radically new technology and synthesizing approach is needed. I suggest a new way along which a synthesis of the results achieved in these directions is reached along language. The new direction can be called *reproducing and synthesizing linguistics* which deals with the information that language bears for its generator i.e. "the machine behind" [1]. The copies, to be made in this way, can be called homputers after Homo and computer..

Isomorphisms

If natural languages are not ambiguous then the words and claims referring to the human intellect have also reference, meaning and sense, which may vary in various persons. If mind is able to discern people, dogs and odors with a surprising effectivity, it may be able to discern some of its own constituents as well. If mind is able to diagnostise and call quite correctly what it hears, sees etc., why would not be able to recognize and call (name) correctly its own parts and processes. The essence of the assumed and used isomorphism between language and mind is that there would be a set of common elements in the brain to any language element that would be active whenever the language element is uttered (written etc.). This element may be a firing pattern, a neuron or a neural group. This isomorphism would provide an excellent opportunity to denote and identify the patterns and neurons in one's brain. The language element itself may serve as their implicit identifier. This implies that inferences can be made from the containment relations between the concepts denoted by intellectual nouns for the spatio-temporal relations between the respective structures in the brain. One cannot allocate brain organs, but can decipher the relations between them which is satisfactory for our purposes. Furthermore, a machine with human capabilities should call and refer correctly to its own intellectual capabilities and faculties. Our effort is a necessary step in this direction. Anyway, to get to an isomorphism, first an architecture both being able to copy, and to be the copy is to be built. If language will be used to plan this architecture as well, then it is obvious to choose the intellectual terms as referring to hopefully elementary places, events, states and processes.

Intellectual terms in Hungarian

In the frames of a pilot project, all intellectual terms (nouns) were selected from the 65000 word Great Hungarian Concise Dictionary [2]. The relations between senses of

these terms have been studied with test sentence patterns. Comprehensive testing has proved that Hungarian terms for psyche can be classified into a few classes. Obviously, not all psychical brain objects can be taken into account, some of them may remain unidentifiable, and some domains and functions may prove a taboo for language. If language is as deeply autosemantic as assumed, psychical verbs represent the spatio-temporal relations between the objects that are denoted by the terms representing the processes and events of the information processing in the mind.

Human psyche as reflected in the Hungarian

As a result of testing, isomorphic models of the human intellect can be built up. There are approximately twenty elementary domains referred in the Hungarian. These domains can tentatively be called in English as "I", "mind", "reason", "sense", "universe", "memory", "world of emotions", "world of communications", "world of concepts", "fantasy", etc. These domains are not disjoint, a fact that renders more difficult to recognize their role and significance. The firing patterns in each elementary domain have a specific class name translatable like "thought", "emotion", "feeling", "idea", "belief" etc. As far as this model - being the model of intellect as reflected in Hungarian - wouldn't be comprehensible for English speaking readers, a simplified frame-like model of intellect as is thought to be reflected in English will be presented here, though this is a risky enterprise for the author being a non-native language-user. A simple model of these realms is shown in Figure 1. Considerable attention was paid to such morphemes like prepositions, suffices, negative particles, articles, interjections etc. calling them "non-concept words", "stopwords", "words without meaning" etc.. These words may play a central role in synthesizing linguistics because they indicate and control the processes of synthesis. The "universal" non-concept words, which can be found in several languages, may refer to the most important events of navigation among domains. It has been known for a long time that human reason is mostly governed by logic, which is not the case in the sphere of emotions and memory. However, folk psychology makes several everyday-language-statements for this world. Love and hate are gradual; objects can be ranked according to our grade of their love or hating. Illogical behavior of emotions manifests in their unpredictable ensuing and not in impossibility of making valid or true statements for our spiritual state. Formally, this means that we are not able to formulate statements, which might function in quality of premises. This means that no direct logical connections exist between various feelings. Emotions may distort statements but may not be reflected by statements.

References

[1] Dienes I. On the proper treatment of human intellect. Manuscript. 1989, Budapest. 129 p.
[2] A magyar nyelv értelmező szótára. Ed.: MTA Nyelvtudományi Intézet, 3rd edition, I. 1978, II-IV. 1979, V-VII. 1980. Akadémiai Kiadó, Budapest.