Mathematical Problems of Computer Science 38, 87--88, 2012.

On Models of Meaning Processing

Edward Pogossian

Cognitive Algorithms and Models Laboratory of
the Institute for Informatics and Automation Problems of the Academy of Sciences of Armenia,
State Engineering University of Armenia
epogossi@aua.am

1. What follows, is an explanation of my understanding of certain meanings tended to provide a theoretically consistent specification of what I mean by "meanings" generally.
2. We, a community, have meanings, and we present them via explanations.
   Explanations of a meaning m are either the activated m itself, or the units of communications (counits) corresponding to m, or are models of *durables*.
   Whatever causing in us prints are *our realities* (recall "thing in itself" by Kant), while the totality of realities is *our universe*.
   We do store prints, reveal there *regularities* (regs) (say, rules by A.A. Markov) and compose meanings as assembles of regs.
   Durables are realities that cause prints with certain regs that are quasi stable in time.
   Classes of prints matching to regs of meanings imply corresponding classes of durables.
   Realities R' are the *models* of realities R if the meanings mR and mR' have equal parts, and *R and R' are equal* if have equal meanings.
3. Totalities of counits of some types comprise languages of those types while syntaxes of languages are parts of their meanings that present common constituents of counits of languages required for correct communications.
   Since we acquire meanings and corresponding counits in certain languages of our communities, the structure of meanings obey to the syntax of those languages.
   Thus, meanings, say in English, have to be structured by *have, be, do, time, aspects, voice, mood* and other syntax categories and the completeness of explanations depends on their presence in meanings and their presentations in explanations.
4. We do process meanings to promote our utilities. By meanings we model strategies promotion and estimate their consequences to choose strategies with the most perspective impacts to our utilities.
   The better meanings present our realities, i.e. the more *adequate* they are, the more effective the modeling can be.
   The scale we use to evaluate meanings is induced by the explanations we are able to put in correspondence to the meanings, which includes the following increasing degrees:
   be activated for a person, have language explanations, have model explanations,
   be a specification, be a theoretically consistent specification, have theoretically consistent models reproducible by certain communities.
5. In the presentation we are going to refine the above and consequent categories and provide the results of experiments in chess and other applications.

References

1. Brutyan Ch., Zaslavski I., Mkrtchyan L. On Methods of Automated Synthesis of Positional Strategies in Games , *Problemi Kibernetiki,* Moscow, 1967.
2. E.Pogossian. On Modeling Cognition. *Proceedings of CSIT , 2011,pp194-197*
3. G. Atkinson Chess and Machine Intuition. *Ablex Publ. Corporation*, New Jersey, 1993.
4. Mandler J. The Foundations of Mind: Origins of Conceptual Thought. *Oxford Univ.,* 2004.
5. T.Winograd, F.Flores. Understanding Computers and Cognition. A new foundation for design Publishers*, Huntington, NY,* 1986.
6. J.Flavell. The Developmental Psychology of Jean Piaget, *D.VanNostrand Comp. Inc., Princeton,* N.J., 1962
7. Z. Pylyshyn Seeing and Visualizing: It's Not What You Think, An Essay On Vision And Visual Imagination, http://ruccs.rutgers.edu/faculty/pylyshyn.htm,l2004.
8. J.Searle Is the brain's mind a computer program? *Scientific American* 262, pp26-31, 1990.
9. 11–59, Huntington, NY, 1986.
10. R. Feynman. The Meaning of it All. *Addison Wesley, Massachusetts,* 1998
11. E. Pogossian, V. Vahradyan and A. Grigoryan. On Competing Agents Consistent with Expert Knowledge, *Lecture Notes in Computer Science, AIS-ADM-07: The International Workshop on Autonomous Intelligent Systems - Agents and Data Mining*, St. Petersburg, Russia, 229-241pp, June 6-7, 2007.
12. E.Pogossian. On Measures of Performance of Functions of Human Mind. *6th International Conference in Computer Sci. and Inf. Technologies, CSIT2007,* Yerevan, 2007, 149-154
13. E.Pogossian. Specifying Personalized Expertise. International Association for Development of the Information Society (IADIS*): International Conference Cognition and Exploratory Learning in Digital Age* (CELDA 2006), 8-10 Dec., Barcelona, Spain (2006) 151-159
14. E Pogossian. On a Transparent Presentation of Written English Syntax. *5th International Cognitive Linguistics Conference, Vrije Universiteit,* Amsterdam, July ,209-14
15. E.Pogossian. On Measurable Models of Promotion of Negentroping Strategies by Cognition, *New Trends in Information Technology,* Sofia, 161-169,2010
16. E.Pogossian. Adaptation of Combinatorial Algorithms. Acad.emy of Sci. of Armenia, Y., 293, 1983 (in Russian)