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A SEMANTIC 'ENGINE' FOR UNIVERSAL TRANSLATION

Abstract

My Research to-date has focused on the understanding of language structure, with particular reference to the problems in communicating with ET (e.g., Elliott, 2002, 2003, 2005; Elliott et al, 2001); central to this has been the universals that may provide the key to detecting and deciphering such a message. Work has involved designing and developing a range of methods, models and algorithms, to provide the 'bricks' of scholarship, to undertake one of the most difficult problems posed in SETI's portfolio: "Of all the problems challenging man in the modern realms of space and communication, perhaps the most intriguing is the one that lies at their juncture: how to solve messages from other worlds. The detection of a communications from another planet in another solar system would be one of the greatest events in human history." (Kahn, 1967).

Having dedicated prior research to identifying a range of methods for detecting the hierarchical layers of language, which also incorporate unsupervised learning toolkits and a Corpus that represents the entire 'Human Chorus', this paper outlines the concepts behind providing the last piece in the jigsaw: the ability to decipher meaning, without a crib or primer; a technique that, if perfected, will also have a profound impact on developing a universal translator for everyday translation issues and crypto-palaeography.

Communication is a tool by which we exchange information about our 'world' for a variety of purposes. However, irrespective of the language [shared codebook] we adopt to facilitate this information exchange, we all draw from a common linguistic space of 'world' descriptors and logical operators: a concept supported in the Sparseness Principle (Minsky, 1984). The initial challenge is therefore, to develop a universal linguistic space that will provide a super-set for all intelligent communicators, irrespective of the galactic region they emanate from. In the human language chorus, we witness a variety of sub-sets of the human linguistic space adopted through both linguistic and cultural development; examples of these sub-sets can be seen in pidgin languages and remote tribes that have not encountered outside contact with the developing world. Nevertheless, these languages still draw from the same linguistic space. This paper outlines the methodological pillars that define a semantic representation based on a universal meta-language; pillars by which we can develop and implement a system that ultimately addresses the critical phase of semantic interpretation and translation of an unknown language.

References

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