What is the Language of Memory?

Peter Nwoye O. Mbaeyi

Division of Theoretical Chemistry
University of Tuebingen, FRG

ABSTRACT

This paper outlines the mutual beneficial analogies between
the structural dynamics of memory and machine translation,
both of which are extensively dependent on fundamental pat-
tern recognition problems. Basically, both processes are
faced with a similarly structured problem - namely, the
problem of condensing large quantities of data into
intelligently interpretable smaller volumes (comprised of
basic "information clusters"). For machine translation, the
alphabets and words of a language (that make up an essay)
define these data, while the multiplicities of
physico-chemical objects of sensory perception constitute,
amongst others, the data compression problem facing the mem-
ory functions of the brain. For the neural systems
(underlying the memory functions of the brain) recent
advancements in generalized quantum theoretical methods pro-
vide some bases. While these foundations will not be
discussed here in any detail, they are used to define the
components of a language compatible with memory dynamics.
Essentially, these culminate in associative (quantum) log-
ical problems with analogical counterparts in linguistics
and the use of compartmentalization cum associative logic in
essay interpretations. For purposes of computational lin-
guistics, this paper makes these analogies precise (on
quantitative analytical basis), with emphasis on discrete
recursive generation of larger structures, and equivalents
of coding and decoding for machine translation process.