Construction Driven Language Processing

Jerry T. Ball (Jerry.Ball@mesa.afmc.af.mil)
Human Effectiveness Directorate, Air Force Research Laboratory
www.DoubleRTheory.com

A basic mechanism of language comprehension that involves the *activation*, *selection* and *integration* of *constructions* corresponding to the linguistic input is put forward. During the processing of the sentence

He is kicking the ball

the following constructions are likely to be accessed:

he → [$he_{3\text{-}sing\text{-}male\text{-}human\text{-}pron}$] nominal
is → [$be_{3\text{-}pres\text{-}sing}$] verb
he is → [$Ref\text{-}Pt_{comp}$ be_{spec} $Predn_{head}$] clause
kicking → [$kick_{v\text{-}ing}$] verb
kicking → [$Subj_{comp}$ $kick_{head}$ Obj_{comp}] proposition
kicking → [V_{head} Obj_{comp}] predication
is kicking → [be_{spec} $V\text{-}ing_{head}$] predicator
the → [the_{spec} Head] nominal
the ball → [the_{spec} $ball_{head}$] nominal

The $[he_{3\text{-}sing\text{-}male\text{-}human\text{-}pron}]_{nominal}$ construction encodes the knowledge that pronouns like "he" (3rd person, singular, male, human) function as full nominals, encoding both a referential specifier function and an objective head function (see Ball, 2005, "A Bi-Polar Theory of Nominal and Clause Structure and Function", this proceedings). The $[be_{3\text{-}pres\text{-}sing}]_{verb}$ construction encodes the status of "is" as the 3rd person, present tense, singular form of the verb "be". The $[Ref\text{-}Pt_{comp}\ be_{spec}\ Predn_{head}]_{clause}$ construction captures the use of a reference point complement and a referential specifier (be_{spec}) to tie a predication functioning as head of a clause to the larger discourse situation via the reference point and referential specifier. This construction is related to the basic *subject-predicate* form of a clause with be_{spec} and $Predn_{head}$ together constituting the *predicate* (which is not a distinct functional element in this construction) and $Predn_{head}$ alone constituting a *predication* (i.e. head, and post-head complements—syntactically a VP when the head is a verb). In the case of a tensed verb without a separate auxiliary (e.g. "kicked"), the construction has the form $[Ref\text{-}Pt_{comp}\ Pred_{head}]_{clause}$ where $Pred_{head}$ constitutes a *predicate* (and distinct constituent) which encodes the tensed verb and post-head complements and $Ref\text{-}Pt_{comp}$ corresponds to the *subject*. The $[kick_{v\text{-}ing}]_{verb}$ construction captures the "V-ing" (i.e. progressive) verb form of "kicking". The $[Subj_{comp}\ kick_{head}\ Obj_{comp}]_{proposition}$ construction captures the basic relational meaning of the verb "kick" which combines with a subject and object complement to form a proposition. This construction is closely related to the basic SVO form of a clause. The $[V_{head}\ Obj_{comp}]_{predication}$ construction captures the combining of a tenseless verb head with an object complement to form a predication that functions as the head of the $[Ref\text{-}Pt_{comp}\ be_{spec}\ Predn_{head}]_{clause}$ construction. The $[be_{spec}\ V\text{-}ing_{head}]_{predicator}$ construction captures the combining of the auxiliary verb "be" functioning as a specifier with the progressive form of a verb functioning as the head in forming a *predicator*. The $[the_{spec}\ Head]_{nominal}$ construction captures the encoding of a referential specifier and objective head to form a nominal. The $[the_{spec}\ ball_{head}]_{nominal}$ construction captures the encoding of "ball" as the head of the $[the_{spec}\ Head]_{nominal}$ construction.

Assuming the activation, selection and integration of these constructions during the processing of this linguistic input, the following linguistic representation is suggested: