Powerful semantics can make language processing more robust

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Abstract: Human language is an inferential coding system which means that not all information to interpret an utterance is explicitly communicated, it must be inferred. Moreover the meaning of human language passes by intermediary of rich conceptualizations of the world which are culture and language dependent. These two features make natural language processing very difficult and introduce a glass ceiling for statistical language processing. This talk describes a computational framework for embodied cognitive semantics that is grounded in the sensori-motor intelligence of (humanoid) robots. We have used this in language game experiments that examine how open-ended robust language processing is possible by exploiting as much as possible meaning. Concrete examples are given of cognitive functions needed in conceptualization, the representation of spatial and temporal categories, the configuration of new conceptualization strategies by recruiting cognitive functions, and the mapping of conceptualization to language.