Definites, Representations, and E-types

Peter Bosch
pbosch@uos.de

- Anaphora is typically taken as a relation between a linguistic expression and a discourse referent, and associative anaphora is typically seen as a relation between
  - an anaphorically used definite NP and
  - a discourse referent associated with an NP antecedent

(1) A car stopped. The driver got out.
   The engine sounded funny.
   The wheels were painted white.

The noun car would here denote the concept CAR, which presumably contains the information that cars are vehicles, (CAR ∈ VEHICLE) & inherits the features and roles of VEHICLE, such as HAS_WHEELS, HAS_ENGINE, HAS_DRIVER.

The discourse referent of a car in (1) would thus introduce, implicitly, further associated discourse referents, like wheels, an engine, and a driver, etc. which become available as referents for anaphoric reference by definite NPs.

- This conception must be wrong: As it stands it would lead to the activation of practically all knowledge that may be connected to concepts denoted by antecedent expressions, the car with driver, wheels, engine, spare parts and all as discourse referents. This is not a plausible model for processing.

- Löbner’s approach to definiteness: The nominals of the definite NPs, driver, engine, etc. are interpreted as denoting functional concepts, like λy.λx.DRIVER(x,y), with an unarticulated argument y. The discourse referent that is introduced by the antecedent expression a car, would then fill this argument slot, and the function correctly yields the driver of the car mentioned as the referent of the driver.

But how does our function know that it is to pick the discourse referent of a car as its argument? Discourse referents are plain instances of the lexical denotations of the nominals that introduce them into discourse, like λx∈D_e.CAR(x), and this on its own does not suggest any relation to driver, engine, or wheels.

- A possible solution: Read the lexical concept CAR as a pointer to a concept that is more fully represented in the general (non-linguistic) conceptual representation, which has all the information about driver, engine, and wheels.

This maintains the semantic-pragmatic or linguistic- conceptual boundary, does not add spurious discourse referents, but still gives access to the information we need.

- Still, this can’t be the full story, because of examples like (2) and (3).

(2) A Jaguar E-Type was just sold on ebay.
   b. The price was ridiculous.
   b’. The sound was terrific.

(3) A Jaguar E-Type has just been passing.
   b. The price was ridiculous.
   b’. The sound was terrific.

- Where do the denotations of the definite NPs the price and the sound find a value for their unarticulated argument y? How do they locate the thing that is the price of or the sound of?

- The discourse referent introduced by the NP a Jaguar E-Type is the same in either case: Specified only as [Jaguar E-Type]. Only the VPs in the two sentences are different: was sold and was passing. The functions that are denoted by the VPs require arguments that are respectively of the types COMMODITY and PHYSICAL_EVENT and would coerce the denotation of Jaguar E-Type into a subsumption relation to these types: Anything that passes is a PHYSICAL_EVENT and anything that is sold is a COMMODITY. This yields different discourse referents for (2) and (3): [Jaguar E-Type] ⊑ COMMODITY or [Jaguar E-Type] ⊑ PHYSICAL_EVENT.

- Assuming that COMMODITY provides for a role HAS_PRICE and PHYSICAL_EVENT provides for a role HAS_SOUND, the respective discourse concepts of Jaguar E-type would inherit these roles and thus provide the required discourse referents for the NPs the sound and the price.

Lesson learnt:
- Discourse referents, as introduced, e.g., by indefinite NPs, are neither bare referents nor do they activate all conceptual knowledge that may be connected to the denotation of the NP. They are better modelled as instances of semantic types, while their typing may be modified by further knowledge available during the discourse.