

Discourse referents for nonspecific entities of described nonfactual situations

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There is wide agreement in text comprehension research that entities that are mentioned within the descriptions of factual situations are represented by unique discourse referents. But how about entities that are mentioned within descriptions of nonfactual situations? Take for example a sentence such as *Antoine wants to marry a hairdresser*, which describes a nonfactual, desired situation. There are two readings of this sentence depending on how the indefinite noun phrase *a hairdresser* is interpreted. On the specific interpretation, Antoine wants to marry a particular woman who is known by him and merely happens to be a hairdresser. That is, the hairdresser is already an element of Antoine's factual situation. Accordingly, the hairdresser should be represented by a unique discourse referent, just as an entity that is mentioned within the description of a factual situation. On the nonspecific interpretation, Antoine wants to marry some woman who should meet the condition of being a hairdresser. That is, *a hairdresser* does not refer to a specific entity, but merely denotes a condition to be satisfied. Hence, one may assume that nonspecific entities of nonfactual situations are not represented by unique discourse referents (cf. Chafe, 1972). Yet, it is possible to anaphorically refer to such nonspecific entities. For example, the sentence about Antoine could be continued with *He would ask her every day to do his hair*. Crucially, the pronominal anaphor *her* seems to be easily resolvable, even with a nonspecific interpretation of *a hairdresser*.

However, anaphoric reference to a nonspecific entity is licensed only within sentences describing nonfactual situations; it is not licensed within sentences describing factual situations. The different anaphora licensing potential seems to suggest that, discourse referents for nonspecific entities of described nonfactual situations are limited with regard to accessibility for anaphoric linkage. This is exactly what one would expect when adopting the *simulation view* of language comprehension (e.g., Barsalou, 1999). According to this view, language comprehension involves mentally simulating the described states of affairs. Applied to the issue of described nonfactual situations, this implies that comprehenders would understand the sentence about Antoine by mentally simulating the nonfactual, desired situation. Hence, the representation of the sentence would be a representation of a part of a world in which Antoine's desire has come true. Accordingly, this

representation should contain a unique discourse referent, standing for the hairdresser who would exist, if Antoine’s desire world is fulfilled. Thus, anaphoric reference to the nonspecific hairdresser should be in principle as easily resolvable as anaphoric reference to a specific entity of a described factual situation. However, as elements of reality are available in nonfactual situations but not vice versa, the discourse referent for the hairdresser should be accessible for anaphoric linkage only when the reference is made within an elaboration of the nonfactual situation. Remarkably, this limited-accessibility account derived from the simulation view is quite similar to how the formal semantic *Discourse Representation Theory* deals with the issue of nonspecific entities of described nonfactual situations (e.g., Roberts, 1989; see also Karttunen, 1976: *short-term discourse referents*).

To test the limited-accessibility account, two reading-time experiments were conducted. In both experiments, participants read short narrative texts, sentence by sentence, self paced, from a computer screen. Each experimental text contained a critical sentence pair consisting of an *introducing sentence* and a *test sentence*.

In Experiment 1, there were two versions of the introducing sentence. An entity was mentioned within the description of either a desired or a factual situation, as in (1). In addition, there were two versions of the test sentence. The test sentence referred to the entity within the description of either a desired or a factual situation.

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| (1) Introducing | ‘desired’ | <i>Tim wants to buy a bike.</i> |
| sentence | ‘factual’ | <i>Tim has bought a bike.</i> |
| Test | ‘desired’ | <i>He wants to go on a bicycle tour with the bike.</i> |
| sentence | ‘factual’ | <i>He goes on a bicycle tour with the bike.</i> |

As expected, there was a significant interaction between the mood of the introducing sentence and the mood of the test sentence. Reading times for the ‘desired’ test sentence did not differ in the two conditions of the introducing sentence, whereas reading times for the ‘factual’ test sentence were significantly longer if the preceding introducing sentence had described a desire world compared to if it had described the factual situation. This result is consistent with the limited-accessibility account. However, one might object that the reading-time difference for the ‘factual’ test sentence does not reflect a difference in accessibility for anaphoric linkage, but is solely due to a bridging inference (e.g., a bike buying) to establish local coherence between the ‘desired’ introducing sentence and the ‘factual’ test sentence. This issue was addressed in Experiment 2.

In Experiment 2, both versions of the introducing sentence described a desired situation. The versions differed with respect to a relative clause that implied either a nonspecific or a specific interpretation, as in (2). The test sentence was not varied; it always described a factual situation.

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| (2) Introducing | ‘nonspecific’ | <i>Tim wants to buy a bike that should have at least 20 gears.</i> |
| sentence | ‘specific’ | <i>Tim wants to buy a bike that he saw in a bicycle store.</i> |
| Test sentence | | <i>He wants to go on a bicycle tour with the bike.</i> |

Hence, in both versions a bridging inference was required to establish coherence between the introducing sentence and the test sentence. However, according to the limited-accessibility account, there should nevertheless be a reading-time difference for the test sentence. After reading the nonspecific version of the introducing sentence, the nonspecific desired entity should be represented by a discourse referent which is located in the representation of the desired situation and is inaccessible from the representation of the factual situation. Hence, the bridging inference requires adding a new discourse referent into the representation of the factual situation (e.g., for the bought bike). This is not required with the specific version of the introducing sentence. The specific desired entity should be represented by a discourse referent that is located in the representation of the factual situation. Thus, when inferring the bike buying, an appropriate discourse referent is already available. Accordingly, processing times for the test sentence should be prolonged if the preceding introducing sentence implied a nonspecific interpretation. Consistent with this prediction, reading times for the test sentence were significantly longer after the nonspecific version of the introducing sentence than after the specific version. This result points to a representational difference between nonspecific and specific entities. Moreover, the result implies that the reading time difference observed in Experiment 1 was not solely due to the bridging inference.

The results of the two experiments support the view that nonspecific entities of described nonfactual situations are represented by unique discourse referents which are limited with regard to accessibility for anaphoric linkage such that they are accessible only within descriptions of nonfactual situations.

References

- Barsalou, L.W. (1999). Perceptual symbol systems. *Behavioral and Brain Sciences*, 22: 577-609.
- Chafe, W.L. (1972). Discourse structure and human knowledge. In R.O. Freedle & J.B. Carroll, eds., *Language comprehension and the acquisition of knowledge*, pp. 41-69. Washington.: Winston.
- Karttunen, L. (1976). Discourse referents. In J.D. McCawley, ed., *Syntax and semantics*, Vol. 7, pp. 363-386. New York: Academic Press.
- Roberts, C. (1989). Modal subordination and pronominal anaphora in discourse. *Linguistics and Philosophy*, 12: 683-721.