

Discourse versus sentence topic: The case of German personal and demonstrative pronouns

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The choice of referential expressions has been shown to depend on the discourse status of referents, as captured in various hierarchies (e.g., Ariel, 1990). A simplified referential hierarchy is given in Kaiser & Fedele (2019, p. 313): “null forms > (unstressed) pronouns > demonstratives > full nouns ...”. Since topics are highly accessible, they are typically referred to by expressions high on this hierarchy, i.e., personal pronouns in languages without null pronouns, such as German. Demonstrative pronouns are positioned lower than personal pronouns on the hierarchy and have been claimed to preferentially refer to non-topics (e.g., Comrie, 1997; Bosch & Umbach, 2007). There is no single notion of topic, however, since prior research reveals that *discourse* and *sentence topics* need to be distinguished. Discourse topics represent the common theme of the previous context and are therefore more salient/prominent (e.g., Asher, 2005). Sentence topics are what sentences are about. Per default, the sentence topic is the referent that is coreferent with the subject of the preceding clause (Grosz et al., 1995; Reinhart, 1981). Previous studies show that topics are pronominalized more often in subsequent utterances, but they have not taken into account the distinction between discourse and sentence topics. It is therefore unknown how a mismatch in topic status – a referent that is a discourse but not a sentence topic or vice versa – influences the choice between personal and demonstrative pronouns.

To address this issue, and in addition to compare the effect of topic-hood with other factors known to affect pronominalization (e.g., animacy, ambiguity), we ran a series of picture description experiments with German-speaking participants. In order to uncover potential dependencies between expressions used for different referents, all pictures depicted transitive events with an agent referent acting on a patient referent. One experiment investigated the (joint) influence of being discourse vs. sentence topic on the production of German personal and demonstrative pronouns. Each picture was preceded by a written context consisting of a headline and three sentences. The contexts preceding each picture varied according to a 2 × 2 design. A complete example is shown in (1), (2), and Figure 1. The factor Discourse Topic varied whether the agent or the patient of the depicted event was established as discourse topic in the previous context. The factor Sentence Topic varied whether the agent or the patient of the target description was the sentence topic. This was achieved by varying which referent was the subject or the object within the final context sentence.

(1) Discourse Topic = Agent

Der beste Arzt In unserem Viertel gab es **einen sehr guten Arzt**. **Dieser Arzt** konnte fast immer helfen. ‘The best doctor – A very good doctor was practicing in our quarter. This doctor could help almost always.’

Sentence Topic = Agent:

Einmal musste **er** **einen scheinbar schwerhörigen Klavierlehrer** behandeln.
‘Once he had to treat a seemingly hearing-impaired piano teacher.’

Sentence Topic = Patient:

Einst suchte **ihn** **ein scheinbar schwerhöriger Klavierlehrer** auf.
‘Once a seemingly hearing-impaired piano teacher visited him.’

(2) Discourse Topic = Patient

Sorgen eines Klavierlehrers In unserem Viertel gab es **einen guten Klavierlehrer**. **Dieser Klavierlehrer** hatte eine Zeit lang Probleme beim Hören. ‘Sorrow of a piano teacher – A good piano teacher was living in our quarter. This piano teacher was having hearing problems for quite a while.’

Sentence Topic = Agent:

Einmal musste **ihn** ein **angesehener**
Ohrenarzt behandeln.

‘Once a respected ear specialist had to
treat him.’

Sentence Topic = Patient:

Einst suchte **er** einen **angesehenen**
Ohrenarzt auf.

‘Once he visited a respected ear special-
ist.’



Figure 1: Example picture
from Experiment 1.

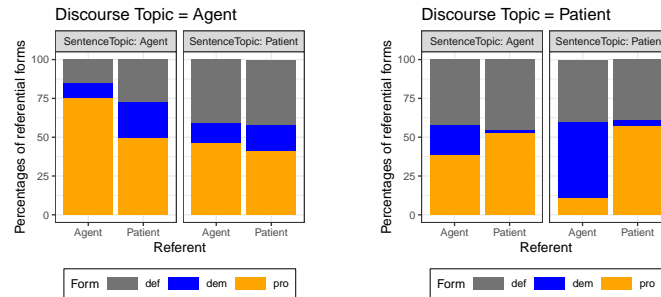


Figure 2: Referential forms used for referring to agent and patient in Experiment 1 (def = definite NP, dem = demonstrative, pro = pronoun).

Figure 2 shows how often agent and patient were referred to by a pronoun, a demonstrative, or a definite NP. Rates of personal pronouns show that discourse topics were pronominalized more often than non discourse topics and sentence topics more often than non sentence topics, as evident in main effects of both factors without an interaction. When discourse and sentence topic status align, pronoun rates are much higher than for non-topics; with a mismatch between discourse and sentence topic, pronominalization rates for agent and patient are of about equal size. Thus, discourse and sentence topic jointly determine the use of pronouns in an additive way. Demonstrative pronouns were mostly used for non sentence topics. The rate of demonstratives was particularly high for agent referents that were neither discourse nor sentence topics. Participants strongly preferred descriptions such as *Der hat ihn untersucht* (DEM examined him) over *Er hat ihn untersucht* (He examined him). Since a subject pronoun preferentially refers to the topic, which is the patient in this case, a demonstrative may be used for the agent in order to counteract this preference. Since this issue arises due to having two referents of the same gender, we ran a further experiment manipulating gender ambiguity. Results show a small decrease in the use of personal pronouns in gender ambiguous conditions, but no difference for demonstratives.

We discuss implications of our results with regard to how discrete discourse notions (topichood) are mapped to gradient mental notions (accessibility). More specifically, we will propose how the Bock-Levelt-model of language production must be modified to account for our results.

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