On nominal event arguments: experimental evidence for a meaning-based perspective
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In this talk, we address the question of which part of world knowledge is linguistically represented by taking a closer look at adjective-noun constructions. We argue that deverbal nouns (e.g. *dancer*) as well as certain non-deverbal individual nouns (e.g. *ballerina*) have an event argument as part of their semantics (Rapp 2015), since they are linked to typical activities. In this, they contrast with personal stative nouns such as *person*. Our experimental results support this meaning-based perspective. Our results show that the deverbal and non-deverbal nouns in question pattern with each other in terms of acceptability of adjective-noun combinations such as *skillful dancer*, *skillful ballerina*, and *skillful person*.

1. Theoretical Background Larson (1998) assumes that certain nouns have an event argument. While this may capture the ambiguity of adjective-noun constructions like *beautiful dancer*, it raises the question for which nouns an event argument can be assumed. An event argument is mostly assumed to be present in deverbal nouns only (Larson 1998, Winter&Zwarts 2013, Alexeyenko 2015, Maienborn 2020). Rapp (2015), on the other hand, assumes that deverbal as well as non-deverbal nouns can semantically be associated with events, together making up the class of eventive nouns. From a meaning-based perspective, this seems appropriate. In noun pairs like *dancer – ballerina* and *piano player – pianist*, it seems hard to justify why the deverbal noun should have an event argument, but not the non-deverbal noun. Importantly, both types of nouns can lead to a default reading when combining with adjectives like *skillful* and *talented*, which we assume are underspecified regarding what the respective skill/talent is. *Skillful dancer* and *talented ballerina* can be paraphrased as 'skillful as a dancer' and 'talented as a ballerina', respectively, which indicates that these nouns can resolve the underspecification of the adjective. However, not all nouns are capable of doing so: *skillful woman* and *gifted boy* cannot be paraphrased as 'skillful as a woman' and 'gifted as a boy'. We therefore take the interaction of the noun and the adjective to serve as a "window" into the noun meaning.

2. Analysis We propose that the adjective's underspecification can be captured by a context-dependent parameter *R* (a relation between events and individuals, corresponding to an activity the individual performs in the event) in the adjectival semantics. Since they are gradable, these adjectives also have a context-dependent comparison class *C* as a parameter.

$$(1)\ \|skillful\| = \lambda x.[skillful_w(R)(C)(x)]$$

A pragmatic principle from Maienborn (2020) ensures that information provided by the modified noun is generally given preference when determining the value of the adjectival parameter. However, to be able to do so, the noun must allow the derivation of a typical activity. We propose that the ability of a noun to fulfill this requirement is reflected in its semantics: since they may provide a default for the adjectival parameter, *dancer* and *ballerina* have an event argument. The AP and the NP (both of type *et* after the nominal event argument is bound by a generic quantifier) intersect. In (4), *R* can be identified with the noun. This is not possible in (5), which is not even well-formed. Since there is no default interpretation when they combine with the adjective, nouns like *woman* and *person* do not have an event argument. *R* must thus be found in the context in these cases.

$$(2)\ \|ballerina\| = \lambda e.\lambda x.[ballerina_w(e)(x)] \qquad (3)\ \|woman\| = \lambda x.[woman_w(x)]$$

$$(4)\ \|skillful\ ballerina\| = \lambda x.[skillful_w(R)(C)(x) \wedge GENe\ ballerina_w(e)(x) \wedge R = ballerina]$$

$$(5)\ \|skillful\ woman\| \neq \lambda x.[skillful_w(R)(C)(x) \wedge woman_w(x) \wedge R = woman]$$

3. Experiment We tested the predictions of our analysis given above in a speeded acceptability judgment task with a 2x3 design with the conditions *adjective* and *noun class*. Following Rapp (2015), we tested three noun classes, namely deverbal eventive, non-deverbal eventive, and personal stative nouns. (6) shows some sample items.

(6) a. Mary is skillful/talented as a dancer.   (deverbal eventive noun)
    b. Susan is skillful/talented as a ballerina.   (non-deverbal eventive noun)
    c. Dan is skillful/talented as a person.   (personal stative noun)

The experiment was conducted online using PCIbex Farm (Zehr&Schwarz 2018). We asked 36 speakers of American English to rate 36 items (and 36 filler items) that were presented to them in a word-by-word display. Subjects rated the items as acceptable (by keying 'f') or unacceptable (by keying 'j'). We predict that English adjective-noun combinations involving *skillful*-type adjectives and an eventive noun (both deverbal, e.g. *dancer*, and non-deverbal, e.g. *ballerina*) are rated as acceptable, in contrast to personal statives (e.g. *person*). We do not predict any differences between the more frequent adjective *talented* and the less frequent adjective *skillful*.

4. Results & Discussion Acceptability judgments for the items are shown in Figure 1. We analyzed the responses with a logistic mixed effects model with *adjective* and *noun class* as fixed effects and *item* and *participant* as random effects. The presence of a per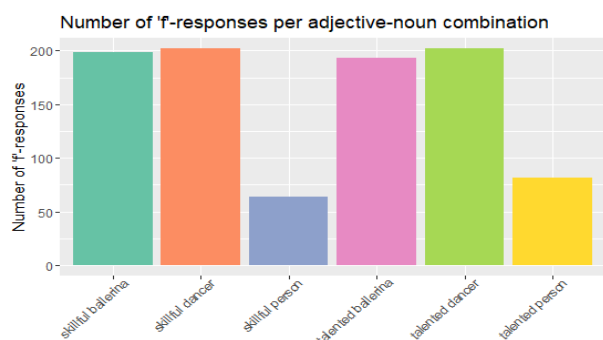sonal stative significantly increased the number of 'j'-keypresses (logit≈5.06, z≈14.15, p<0.05). No other significant main or interaction effects were found.

Figure 1: Number of 'yes'-responses per adjective and noun class (total n of responses: dancer = 416, ballerina = 413, person = 416)

The results point towards the stark difference between eventive nouns and personal statives. This is captured in (4) and (5), where the presence or absence of an event argument makes the default interpretation of the adjective-noun construction either available or unavailable. This is reflected in our results in decreased acceptability.

5. Conclusion & Outlook Our results suggest that not only deverbal, but also certain non-deverbal nouns are linked to typical activities, so we propose that an event argument is part of their semantics. Future work will focus on adjectives such as *beautiful*, where the literature assumes that an ambiguity only arises in constructions with deverbal nouns (*beautiful dancer*, either interpreted as 'beautiful and a dancer' or 'beautiful as a dancer'), but not with non-deverbal nouns (*beautiful ballerina*). Given our results, we predict an ambiguity for the latter cases, too. Regarding the connection between world knowledge and linguistic representation, our results indicate that activities linked to eventive nouns are not only salient in world knowledge, but also linguistically represented in the form of an event argument. However, world knowledge is difficult to quantify. We are thus planning to run an artificial language learning experiment as a further follow-up. Using artificial lexical items, we will be able to tell apart the effect of linguistic properties such as deverbality and event arguments in contrast to world knowledge associated with eventive nouns even further.

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