

Is *sonderlich* losing its NPI-status?

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Introduction: The development and decline of polarity sensitivity in NPIs has been observed across a range of languages. [1] observed an apparent loss of NPI-hood for Dutch *ooit* ('ever'), [2] documented the diachronic change in NPI and PPI status of indefinites from Old High German to Modern German. While [2] argues that the loss of NPI-hood can be categorized as losing the semantic [+affective] feature in a word's lexical specifications, [1] proposes that this process should be categorized as an instance of polysemy between the polarity-sensitive form and a new, often dialectal, polarity-insensitive form. We report new data that questions the NPI status of the German degree adverb *sonderlich* ('particularly'): *sonderlich* is typically classified as an NPI (<https://www.english-linguistics.de/codii/index.html>, accessed 01.11.2019). This categorization is supported by corpus data we report below. However, two experimental studies on the production and comprehension of *sonderlich* question this status.

Corpus data: We extracted all instances of *sonderlich* from the archive of morphosyntactically annotated corpora of the German reference corpus (Tagged-T archive of DeReKo, searched via COSMAS-II on 01.11.2019: <http://www.ids-mannheim.de/cosmas2/uebersicht.html>). The data (5188 instances in total) was manually categorized into licensed and unlicensed instances, including a subcategorization by licenser type (Table 1). The data show *sonderlich* mostly appears in NPI-licensing environments, including both strong and weak NPI licensers, with less than 1% having no licenser. The corpus data thus clearly support the NPI status of *sonderlich*.

Exp. 1: Rating study (subject N = 50, item N = 36, filler N = 72, mean subject age = 22.4)

Initially, this study was designed to investigate the processing of backward NPI dependencies. We thus fronted the adverbial phrase containing *sonderlich*. Our study used a 2 x 3 design: First, we either used the NPI *sonderlich* or a polarity-insensitive adverb (*besonders*, 'very'). Second, the sentence was either affirmative, or contained a negative quantifier at the subject or object position, respectively (1).

- (1) a. *Sonderlich*_{NPI} sorgfältig / hat / die Lehrerin / in den Ferien / die Hausaufgaben / korrigiert.
Particularly_{NPI} thoroughly / has / the teacher / in the holidays / the homework / corrected.
 - b. *Sonderlich*_{NPI} sorgfältig / hat / *keine* Lehrerin / in den Ferien / die Hausaufgaben / korrigiert.
Particularly_{NPI} thoroughly / has / no teacher / in the holidays / the homework / corrected
 - c. *Sonderlich*_{NPI} sorgfältig / hat / die Lehrerin / in den Ferien / *keine* Hausaufgaben / korrigiert.
Particularly_{NPI} thoroughly / has / the teacher / in the holidays / no homework / corrected
 - d. *Besonders*_{nonPI} sorgfältig / hat / die Lehrerin / in den Ferien / die Hausaufgaben / korrigiert.
Particularly_{nonPI} thoroughly / has / the teacher / in the holidays / the homework / corrected
 - e. *Besonders*_{nonPI} sorgfältig / hat / *keine* Lehrerin / in den Ferien / die Hausaufgaben / korrigiert.
Particularly_{nonPI} thoroughly / has / no teacher / in the holidays / the homework / corrected
 - f. *Besonders*_{nonPI} sorgfältig / hat / die Lehrerin / in den Ferien / *keine* Hausaufgaben / korrigiert.
Particularly_{nonPI} thoroughly / has / the teacher / in the holidays / no homework / corrected
- 'The/No teacher has corrected the/no homework very_{NPI/nonPI} thoroughly during school vacations.'

Subjects read the sentences in a moving-window self-paced reading (SPR) paradigm, with chunking as indicated through the slashes in (1a), and rated the naturalness of each sentence on a 1-7 Likert scale. Since the SPR data are not relevant to the current research question, we report only the naturalness ratings. The rating data indicate that for both nonPI and NPI, affirmative contexts were rated significantly more natural than either negative context ($p < .0001$). This is unexpected if *sonderlich* is an NPI. Further, we find an interaction between polarity item and context ($p < .01$): for the two negative contexts, ratings in nonPI and NPI conditions did not differ significantly from another; in the affirmative contexts, the NPI condition was rated less natural than the nonPI condition ($p < .01$). Overall, however, only 6 subjects rated the NPI-affirmative condition (1a) less natural than the NPI-negative ones (1b/c).

One may wonder whether these results are (i) a corollary of processing difficulties induced by the non-canonical word order in the SPR paradigm, or (ii) indicate a failure to check the licensing requirement in backward NPI licensing. Yet, a follow-up SPR study using the NPI *so recht* ('really') as

in (2), showed the effect we expected for NPIs: the NPI-affirmative condition was rated highly unnatural (mean rating = 1.95), while negative contexts were rated natural (mean rating = 5.66).

Licenser	Count	Percentage
<i>Nicht</i> (not)	4629	0.8923
<i>Kein</i> (no)	231	0.0445
<i>Nie</i> (never)	114	0.0220
<i>weder noch</i> (neither...nor)	77	0.0148
<i>Ohne</i> (without)	39	0.0075
<i>Niemand</i> (nobody)	27	0.0052
<i>Nichts</i> (nothing)	9	0.0017
Comparative	6	0.0012
<i>Keineswegs/-falls</i> (in no way)	6	0.0012
<i>Kaum</i> (barely)	5	0.0010
Question	4	0.0008
<i>Selten</i> (rarely)	2	0.0004
<i>Zweifeln</i> (doubt)	2	0.0004
<i>Nirgendwo</i> (nowhere)	1	0.0002
No licenser	36	0.0069

Table 1: All instances of *sonderlich* extracted from the tagged-T archive of COSMAS-II categorized by licenser.

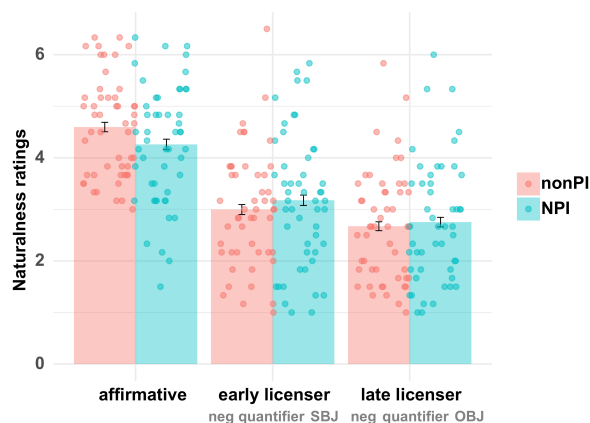


Figure 1: Naturalness ratings (1-7 Likert scale) for the 6 conditions of Exp. 1.

- (2) *So recht / hat / Anna / der Spielplatz / in der Innenstadt / (nicht) / gefallen.*
 So really / has / Anna / the playground / in the city-center / (not) / liked.
 ‘Anna did (not) really like the playground in the city center.’

Exp. 2: Production study (subject N = 26, item N = 4, filler N = 28, mean subject age = 20.38)

In a sentence-continuation task, we prompted subjects with fragments such as (3), asking them to complete the sentence.

- (3) *Sonderlich sorgfältig hat die Lehrerin...*
 Particularly thoroughly has the teacher...

Overall, 61.54% (n=64) of responses were affirmative sentences. The remaining 38.46% (n=40) contained a licenser (*nicht* (not) 32.69%; *kein* (no) 5.77%). Interestingly, we find that many subjects are consistent in their response: across the 4 repeated measures per subject, 6 subjects *always* produced a licenser, while 10 subjects *never* produced one. The remaining 10 subjects were inconsistent. An exemplary affirmative response is provided in (4). We also included filler items using the NPI *so recht*, for which a licenser was produced in 96.15% percent of responses.

- (4) *Sonderlich_{NPI} sorgfältig hat die Lehrerin die Biologie-Aufgabe erklärt.*
 Particularly_{NPI} thoroughly has the teacher the biology-exercise explained.
 ‘The teacher has explained the biology exercise very thoroughly.’

Discussion: Our study reveals an inconsistency between the distribution of *sonderlich* according to corpus data, on the one hand, and experimental data on its production and comprehension, on the other hand. While the corpus data clearly support the NPI status of *sonderlich*, the experimental data do not. We thus suggest that *sonderlich* is currently at the brink of losing its NPI status. Our data at the moment is unable to determine whether this phenomenon is to be explained as emergence of a new polarity-insensitive form of *sonderlich*, or rather relates to a loss of the semantic [+affective] feature. However, the infrequency of *sonderlich* in contemporary German suggest that improper acquisition of the polarity property, as proposed by [2], may indeed have contributed to the results.

Selected References: [1] Hoeksema, J. (1998). On the (non)loss of polarity sensitivity. In R. M. Hogg & L. van Bergen (eds.). *Historical linguistics 1995* (pp. 101-114). John Benjamins Publishing Company, Amsterdam/Philadelphia. [2] Jäger, A. (2010). Anything is nothing is something. *Natural Language & Linguistic Theory*, 28(4), 787-822.