

## On the interaction between lexis and grammar: the case of the progressive-partitive *an*-construction in German

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**Introduction** This talk explores the relationship between the meaning of individual verbs and their argument realization. I focus on the grammatical pattern with the preposition *an* 'on, at' exemplified in (1). This pattern of German has been analyzed in previous work as having a progressive-partitive interpretation (Engelberg (2007) among others). That is, the sentence in (1) is compatible with a scenario where only part of the song was created and does not specify if the song was finished later on. This interpretation is ruled out for the transitive usage of the verb *schreiben* 'write' (cf. *Paul hat einen Song geschrieben* 'Paul has written a song').

- (1) Paul hat an ein-em neu-en Song geschrieben.  
Paul has at.PREP a-DAT new song written  
'Paul was writing a song.'

**Research questions** Several studies suggest that verbs showing a strong affinity to a construction are indicative of its meaning (e.g. Stefanowitsch & Gries 2003). Detecting these verbs and determining the appropriate way to measure the association strength between them and the construction are, therefore, key questions of the current investigation.

**The corpus study** I conducted a comprehensive corpus study in a balanced subpart of the German Reference Corpus (DEREKO). Based on the verbs discussed in previous work, I created a list of 236 (near-)synonymous predicates. For every verb, I extracted a sample of up to 200 occurrences from sentences containing at least one mention of *an* (irrelevant uses of *an* within temporal, local expressions or MWEs were excluded in advance). For 88 verbs that occurred with the *an*-construction in my corpus I conducted a sample-based quantitative analysis.

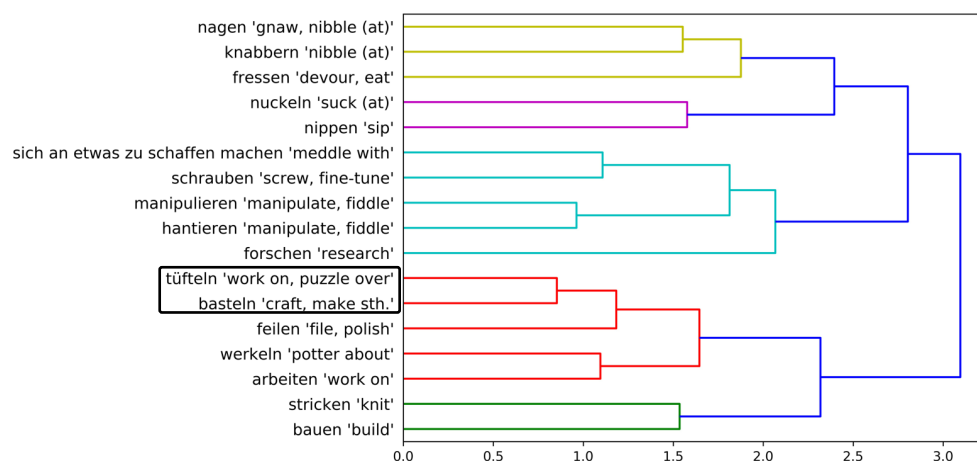
**Methodology** I calculated several scores that reflect the association strength between the verbs and the construction (Table 1): (i) *p*-value used in the collexeme analysis (Stefanowitsch & Gries 2003), (ii) relative frequencies of verbs in the construction and the proportion of the construction with respect to the overall use of the verb (Attraction and Reliance from Schmid & Küchenhoff (2013) respectively), and (iii) Odds Ratio that combines the information from Attraction and Reliance. Furthermore, to get a deeper understanding of the verbal behavior in the *an*-construction, I made use of the distributional information and clustered the verbs according to the nouns in the *an*-phrase (cf. Gries & Stefanowitsch 2010; see Figure 1).

**Results and discussion** First, the affinity to the *an*-construction is in fact mediated by certain semantic properties of the instantiating verbs. Within the group of consumption verbs, predicates that involve an iterative interpretation are very prominent in the construction (e.g. *nippen* 'sip', *knabbern* 'nibble'). In contrast, consumption verbs that usually do not refer to repeated actions are not attracted to the *an*-variant (e.g. *essen* 'eat', *trinken* 'drink' with Odds Ratio < 1). Second, the results strongly support the importance of applying different association scores for an adequate semantic generalization. In particular, the *p*-values indicate almost no difference between the analyzed verbs, whereas a comparison based on other scores reveals striking discrepancies between them. For example, the Odds Ratio values differ substantially for two creation verbs *basteln* 'craft, make sth.' and *bauen* 'build', 570 vs. 15 (see Table 1). Third, the proposed clustering of verbs not only helps to derive meaningful verb classes, but also to uncover non-obvious relations in the data. Contrary to the expectations, *basteln* is grouped with *tüfteln* 'work on, puzzle over' but not with other creation verbs (*bauen* 'build', *stricken* 'knit'). In contrast to its transitive usage, *basteln* selects more abstract entities like concepts or ideas in the *an*-variant and therefore behaves like *tüfteln*.

**Table 1.** Top 20 strongest collexemes of the progressive-partitive *an*-construction. *f* - overall frequency of the verb, *f in C* - frequency of the verb in the *an*-construction (estimated based on samples), *f in C exp.* - expected frequency of the verb in the *an*-construction, *% v in C* - proportion of the verb in the *an*-construction (Attraction; Schmid & Küchenhoff 2013), *% C in v* – proportion of the *an*-construction in all verb uses (Reliance; Schmid & Küchenhoff 2013), *Odds Ratio* - prior odds ratio, *p-value* – measure of the association strength in the collexeme analysis (Fisher’s exact test, Stefanowitsch & Gries 2003).

verbs	f	f in C	f in C exp.	% v in C (Attraction)	% C in v (Reliance)	Odds Ratio ↓ <sub>2</sub>	p-value ↑ <sub>1</sub>
<i>feilen</i> 'file, polish'	2128	1675	1	6,86	78,71	7524	0
<i>nippen</i> 'sip (at)'	600	471	0	1,93	78,53	7116	0
<i>tüfteln</i> 'work on, puzzle over'	1057	544	1	2,23	51,47	2057	0
<i>s. an etw. zu schaffen machen</i> 'meddle with'	628	232	0	0,95	36,91	1117	0
<i>werkeln</i> 'potter about'	1305	302	1	1,24	23,16	579	0
<i>basteln</i> 'craft, make sth.'	7886	1721	4	7,05	21,82	570	0
<i>knabbern</i> 'nibble (at)'	900	205	0	0,84	22,83	565	0
<i>arbeiten</i> 'work on'	149307	14056	79	57,55	9,41	463	0
<i>stricken</i> 'knit'	1944	186	1	0,76	9,59	202	0
<i>forschen</i> 'research'	4797	326	3	1,34	6,80	140	0
<i>bauen</i> 'build'	84016	643	44	2,63	0,77	15	0
<i>schreiben</i> 'write'	130963	562	69	2,30	0,43	8	8,58E-303
<i>nagen</i> 'gnaw, nibble (at)'	1577	157	1	0,64	9,95	210	3,65E-293
<i>schrauben</i> 'screw, fine-tune'	3101	138	2	0,57	4,45	89	2,47E-210
<i>manipulieren</i> 'manipulate, fiddle'	3308	100	2	0,41	3,03	59	4,83E-136
<i>hantieren</i> 'manipulate, fiddle'	1403	65	1	0,27	4,62	91	3,25E-99
<i>nuckeln</i> 'suck (at)'	123	37	0	0,15	29,88	795	9,86E-88
<i>deuteln</i> 'quibble (about)'	203	30	0	0,12	14,66	318	7,55E-61
<i>schlecken</i> 'lick (at)'	778	37	0	0,15	4,73	92	8,62E-57
<i>naschen</i> 'nibble (at), snack (on)'	608	29	0	0,12	4,76	92	1,76E-44

**Figure 1** Cluster analysis of 17 verbal collexemes of the progressive-partitive *an*-construction based on the nouns in the *an*-phrase (Ward’s method, squared Euclidean distance, L2 normalized; verbs with sample size > 8, nouns with f > 3)



**Selected references**

Engelberg, S. (2007). Konstruktionelle Varianten zwischen Wörterbuch und Grammatik. *Germanistische Mitteilungen*, 66, 11–27.

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Schmid, H.-J., & Küchenhoff, H. (2013). Collostructional analysis and other ways of measuring lexicogrammatical attraction: Theoretical premises, practical problems and cognitive underpinnings. *Cognitive Linguistics*, 24(3), 531–577.

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