Diachronic change in the syntax of English *ing* and German *ung* nominalizations

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1. Since Chomsky 1970 the syntax of derived nominals with argument structure by comparison to verbs has been the focus of intense theoretical debates. Recent research in the syntax of word formation has been concerned with identifying the verbal event structures that different nominalizers embed. English *ing-of* nominals have been argued to favor mono-eventivity, as they select atelic verbs or the process part of accomplishments (e.g., Borer 2013). In contrast, German *ung* nominals have been shown to reject mono-eventive verbs and involve bi-eventivity (Roßdeutscher & Kamp 2010). *Ing* and *ung* have a common Proto-Germanic source (*ingō/*ungō) and originally attached to both mono-eventive and bi-eventive verbs. We investigate the factors that have led to this difference in Present-Day English (PDE) and German (PDG), which allows us an insight into how morphological and syntactic-semantic aspects interact in language change.

2. Borer (2013) argues that PDE *ing-of* is atelic, which implies mono-eventivity given the lack of a result state: see incompatibility with achievements in (1) and telicity tests with accomplishments that choose *ion/ment/al/ance* nominals instead of *ing-of* to express telicity in (2). (Note that, e.g., *writing* in (2a) can express telicity, since *ion/ment/al/ance* are unavailable for *write*.)

(1) *Kim's reaching of the summit/*Robin's finding of (the) oil/*the arriving of the train
(2) a. his dissolving of the chemicals for/*in 3 hours (Cf. his *writing* of the letter in 3 hours)
   b. The separation/*separating of the pupils (by the teacher) took one hour.

The syntactic implementation of Rappaport Hovav & Levin's (2010) manner vs. result verb distinction (Embick 2004 a.o.) yields (3a) for mono-eventive verbs (*wipe the table*), whose roots introduce manner, and (3b) for bi-eventive verbs, whose roots express results (*clean the table*).

(3) a. \[ vP [the table] [\{WIPE \} v] \] manner/mono-eventive verbs
   b. \[ vP v [ResultP [the table] \{CLEAN\} ] \] result/bi-eventive verbs

Roßdeutscher & Kamp (2010) argue that PDG *ung* nominals can only be formed from result verbs (i.e., (3b)). They select simple or prefix/particle verbs that involve a result state introduced by an 'adjectival/nominal' root (*säubern 'to clean' < *sauber 'clean', auf-frischen 'to refresh', be-stuhlen 'to furnish'). They reject event-describing roots whether the verb is non-core transitive, unaccusative or unergative (*wischen 'wipe', *schreiben 'to write', *modern 'to rot', *gleiten 'to slide'). The latter can appear in the nominal infinitive: cf. *die Wisch-ung - das Wischen 'the wiping'.

In conclusion, PDE *ing* and PDG *ung* contrast in their event structure: *ing* favors mono-eventivity as in (3a) and *ung* only realizes bi-eventivity as in (3b). This tendency is especially prominent by contrast to nominal patterns that realize the disfavored structure: Anglo-Norman suffixes realize (3b) in English, while the nominal infinitive realizes (3a) in German (see Alexiadou et al. 2013).

3. In Old English (OE) and Old High German (OHG), deverbal *ing* and *ung* nouns had a similar aspectual behavior (Werner 2012). Hindorf (1985) notes that OE deverbal *ing* (and its OE *ung* allomorph) had less of a process reading than in PDE and could denote states. She invokes its ability to express emotional states and its standard use in the plural (which is excluded in PDE, Grimshaw 1990). Hindorf reports highly frequent (result) state-denoting nominals like *gitsung* 'greed' (< *gitsian* 'to desire/lust'), *geearning* 'merit', *willung* 'desire', while Kastovsky 1985 notes many result nouns as *beorning* 'incense'< 'burn', *hunting* 'game'< 'hunt', *forgising* 'dona-
tion‘< ‘give’, whose source are bi-eventive verbs from which ing nominalized some form of ResultP in (3b) (cf. Mateu & Acedo-Matellan 2011 for different syntactic forms of results). The frequency of plural ing nominals also supports this claim, since plural is unavailable with atelic/mass nouns (Alexiadou et al. 2010): see OE reedinga haligra boca ‘readings of holy books’, Middle English (ME) anonytngis of oyle of bawme ‘applications of balm oil’ (Crespo 2012), playings of balles ‘playings of balls’ (Visser 1972). Like OE ing, OHG ung is also known to have been aspectually flexible, since it easily attached to mono-eventive verbs as example pairs like OHG bellunga – PDG *Bellung ‘barking’, bibinunga – *Bebung ‘shaking’, fluochunga – Fluch/*Fluchung ‘cursing’, kochunga – *Kochung ‘cooking’ indicate.

4. We present two main factors that interact in triggering this aspectual change in ing and ung nominals: 1) the competition with other morphological patterns, and 2) the grammaticalization of the progressive. The first one concerns both ing and ung, modulo language-internal conditions, while the second applies only to English ing. As illustrated in (2b), in PDE bi-eventive readings are expressed by Latinate suffixes, which entered the language via Anglo-Norman during ME. We show that in late ME all these suffixes (ion/ment/al/ance) were productive (i.e. appeared with native verbs besides Latinate ones) and expressed telic events (Lloyd 2011). We argue that ing started losing its ability to denote result states/telicity due to the competition with ion/ment/al/ance and the parallel emergence of the progressive with its source in prepositional constructions with ing nominals (e.g. He was on/a hunting) (Alexiadou 2013; cf. Visser 1972). The progressive specialized as imperfective/atelic aspectuality and PDE ing-of has undergone the same specialization, as it is obvious in cases when Latinate suffixes can compensate. A precondition that may have favored this is the fact that in OE abstract ing nominals had feminine gender, which usually associated with a collective/mass denotation (Werner 2012). With the loss of gender in ME, the mass meaning grammaticalized for ing nominals in general.

We argue that German ung specialized for bi-eventive events as a result of its decline in productivity and the competition with the increasingly productive nominal infinitive (Ten Cate 1985, Demske 2002, Werner 2012). Demske shows that Early New High German (17-18th c.) still formed mono-eventive ung nominals like ansehung ‘looking at’, murmeltung ‘grumbling’, vertrawung ‘trusting’, which are replaced by infinitives in PDG. At the same time, she notes that ung nominals were often coordinated with infinitives in denoting processes, which illustrates the aspectual similarity of the two constructions at the time: e.g. das Stadische Kriegsvolck hat […] mit plündern vn Brandschatzung grossen schaden gethan ‘the estates’ soldiery caused a lot of damage […] by raiding and pillaging’. In PDG, this coordination is ruled out, the ung nominal must be replaced by an infinitive, i.e., mit Plündern und Brandschatzen (Demske 2002: 87).

5. Our study presents language change as a parallel interaction between morphology and syntax-semantics. The decreasing productivity of ung and the simultaneous increase of infinitive nominals correlate with a specialization of ung for result structures in German, while in English, the atelicity/mono-eventivity of ing-of emerges in the competition with bi-eventive Latinate suffixes and is supported by the grammaticalized imperfective use of ing in the progressive.