

## **German and Dutch in Contrast**

# Konvergenz und Divergenz

Sprachvergleichende Studien zum Deutschen

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Herausgegeben von  
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# German and Dutch in Contrast

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Synchronic, Diachronic and  
Psycholinguistic Perspectives

Edited by  
Gunther De Vogelaer, Dietha Koster and  
Torsten Leuschner

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## **Introduction – German and Dutch in contrast: synchronic, diachronic and psycholinguistic perspectives**

The present volume is a contribution to Contrastive Linguistics (= CL), a branch of comparative linguistics whose remit is the fine-grained, potentially holistic comparison of a small number of socioculturally and/or genealogically related languages with a focus on divergences rather than convergences (Gast 2013). Unlike typological comparison, which draws on large samples of diverse languages in search of constraints on linguistic diversity (Croft 2003), Contrastive Linguistics came into being in the mid-20th century in the context of foreign-language pedagogy. Its earliest supporters (Fries 1945; Lado 1957) started from the “Contrastive Analysis Hypothesis” (Wardhaugh 1970), i.e. the belief “that a detailed comparative and contrastive study of the native (L1) and the second (L2) language might reveal exactly which problems learners with the same L1 have in learning the L2” (Ringbom 1994: 737). While this assumption soon proved untenable in its original form (ibid.: 738–740), a later, more moderate version known as Error Analysis (James 1998) was more successful. Treating the learner’s first language as just one factor among many in the complex process of language acquisition/learning, it continues to play an important role in language pedagogy alongside related approaches, not least in contexts such as second-language teaching in multicultural societies (Leontiy (ed.) 2012). The recent surge in the development of learner corpora (Gaeta 2015) has also helped keep the pedagogical implications of CL in focus.

Even as early optimism regarding Contrastive Analysis gave way to disillusionment and then realism, the practice of contrastive research was taking hold in linguistics. Involving a large number of European languages on either side of the Iron Curtain, often in combination with English, many of the respective projects and conferences yielded impressive results that were quite independent of their original pedagogical objectives (Ringbom 1994: 741f.). This process of emancipation reached its apex with John Hawkins’ aptly titled monograph *A comparative typology of English and German: Unifying the contrasts* (Hawkins 1986), in which the comparison of two genealogically related, yet in some ways markedly different languages was re-cast as an application of linguistic typology. Looking beyond

individual contrasts between German and English for potential generalisations, Hawkins suggested that these two languages were located at opposite poles of “a typological continuum whereby languages vary according to the degree to which surface forms and semantic representations correspond” (ibid.: 123). According to this hypothesis, German grammar is semantically more transparent than English grammar in part because German inflectional morphology clarifies the functional roles of “noun phrases (NPs)” in the clause (ibid.: 121–127, 215–217; cf. Fischer 2013 and Hawkins 2018 for recent discussion). Although a more mixed picture is now presented in König and Gast’s survey *Understanding German-English contrasts* (König/Gast 2018, first published in 2007 and today in its fourth, repeatedly revised and expanded edition), Hawkins’s approach was able to highlight two strengths of CL: its ability to serve as “small-scale typology” (König 2012: 25) or “pilot typology” (van der Auwera 2012), and its capacity to unify specific contrasts in a broader, potentially holistic perspective. This ensures the continuing relevance of CL, not only for language pedagogy and linguistic typology, but also for other disciplines with an intrinsic interest in contrastive comparison such as translation studies (Vandepitte/De Sutter 2013) and psycholinguistics, given the role of crosslinguistic evidence in the language-and-cognition debate (cf. below).

Besides these affiliated fields, a particularly close ally of CL is historical-comparative linguistics. A well-established line of research on the borderline between CL and historical-comparative linguistics is the sustained trilingual comparison of German and English with Dutch. First conceived by van Haeringen (1956) in his book *Nederlands tussen Duits en Engels* (‘Dutch between German and English’), its aim is to profile Dutch through a comparison with German and English, a configuration aptly labelled the “Germanic Sandwich” (see inter alia Ruigendijk/van de Velde/Vismans 2012). Van Haeringen’s main observation is that Dutch holds the middle between German and English, systematically and for historical reasons, in domains of the linguistic system as diverse as the relationship of orthography to phonology, the amount of foreign influence on the lexicon, the richness of nominal and verbal morphology, the productivity of nominal compounding, and the flexibility of word order. The desire to test this hypothesis against new phenomena or data, and indeed to expand it to new combinations of languages as long as Dutch remains in focus, has spawned the now well-known Germanic Sandwich conference series which began in Berlin (2005) and then moved on to Sheffield (2008), Oldenburg (2010), Leuven (2013), Nottingham (2015), Münster (2017) and Amsterdam (2019), with Cologne (2021) waiting in the wings. It has also produced publications such as the volume commemorating the fiftieth anniversary of van Haeringen’s original monograph (Hüning et al. (eds.) 2006), several thematic journal issues (*Journal of Germanic Linguistics* 22.4, 2010, and 28.4, 2016; *Leuvense Bijdragen/Leuven Contributions in Linguistics and Philology* 98,

2012, and 101, 2017) and indeed the present volume, which brings together papers that were mostly presented at the 2017 conference in Münster.

The book is organized in three sections, reflecting different perspectives on the contrastive comparison of German, Dutch, English and/or other Germanic languages. They include a section of synchronic studies in the tradition of CL, a section of diachronic studies in the historical-comparative tradition and, for the first time in a Sandwich-related volume, a section on psycholinguistics, a multi-disciplinary field which has recently come to focus increasingly on processes of acquisition and on the use of experimental data from a contrastive perspective.

## 1 Synchronic perspectives

While tackling topics already addressed by van Haeringen (1956) such as the distinction between weak and strong verbs, nominal number morphology, and the grammatical gender system, contributions to the Germanic Sandwich meetings and collections have been broader in scope, often including linguistic phenomena outside the analytic-synthetic dimension as traditionally defined. Citing at random examples from the relevant collections, we find discussions of phenomena from the expected domains of phonology, morphology and syntax like impersonal pronouns (Weerman 2006; van der Auwera/Gast/Vanderbiesen 2012), the formation of clippings (Leuschner 2006), combinations of modal particles (Braber/McLelland 2010) and voice onset in the laryngeal system (Simon/Leuschner 2010), but also sociolinguistic topics such as lexical borrowing from French (Hunter/Foolen 2012; cf. Sapir 1921: 140 on a possible link with the analytic-synthetic dimension) and learners' perceptions of interlinguistic distance (Vismans/Wenzel 2012). While some papers refer only to two of the three original languages, the total set of languages in focus has become broader than van Haeringen had envisaged and now includes languages like Swedish or Afrikaans. Not surprisingly, the extent to which Dutch appears to hold an intermediate position between German and English (or indeed between any other pair of contrasting languages) differs between individual papers, and so does the apparent strength of any links between the contrasts observed and more general typological differences between the languages in focus. The range of theories and methodologies is markedly broader, too, drawing routinely on cognitive frameworks, corpus data and psycholinguistic methods.

As for the synchronic perspective on contrastive research, the present volume opens with two papers revealing classic Sandwich patterns in linguistic domains not previously investigated from this perspective. Sebastian Kürschner examines German, Dutch, and English nickname formation through a contrastive corpus

of nicknames as found in the online profiles of amateur athletes. As prototypes, parallels and divergences in the formation and creation of nicknames are highlighted, Dutch turns out to hold an intermediate position between German and English in several respects. In the second article of this section, Tanja Mortelmans and Elena Smirnova address the English *way*-construction [SUBJ<sub>i</sub> V POSS<sub>i</sub> *way* OBL] and its reflexive analogues in German and Dutch from a cognitive point of view, arguing that the different constructions are best compared using conceptual terms describing middle situations in the domain of autocausive motion. Again, a Sandwich pattern emerges, with Dutch part-way between the extremes of English, where the *way*-construction has come to predominate at the cost of the historically prior reflexive resultative construction, and German, which has no schematic *Weg*-construction at all. Next, Tom Bossuyt compares the distribution of English *-ever*, German *immer* and/or *auch*, and Dutch (*dan*) *ook* in universal concessive-conditional and free relative subordinate clauses (e.g. German *was immer du auch willst* ‘whatever you want’) and in their elliptically reduced versions (e.g. Dutch *of wat dan ook* ‘or whatever’), based on more than 38,000 example sentences from a combination of large language-specific corpora with the smaller multilingual *ConverGENTi* corpus. Although a sandwich-like pattern emerges in this case, too, it has German between Dutch and English rather than Dutch between German and English. In the closing paper of the synchronic section, Peter Dirix, Liesbeth Augustinus and Frank Van Eynde investigate the “infinitivus pro participio” (IPP) effect, a type of construction in which some verbs select an infinitive instead of a past participle to form the perfect in Dutch, German and Afrikaans. Using corpus data to identify the verbs which (obligatorily or optionally) show the IPP effect in Afrikaans, they compare the verb classes showing the IPP effect in Afrikaans with those in Dutch and German, pinpointing crosslinguistic similarities and differences without any clear Sandwich pattern emerging.

## 2 Diachronic perspectives

A landmark in the contrastive study of Dutch, van Haeringen’s (1956) book was not written primarily with pedagogical applications in mind, nor did van Haeringen engage directly in historical research. Instead, he set out to broadly compare the structures of Dutch, German and English and thereby seek insights into diachronic divergences leading to synchronic contrasts. His key diachronic concept in explaining the divergences is *analytische verbrokkeling* (‘analytic crumbling’), i.e. the process by which the West Germanic languages shifted from the synthetic to the analytic type. This process, he shows, has progressed further in English than

in Dutch and further in Dutch than in German, which still displays significant similarities to the West Germanic ancestor language (cf. also König 2012 for a broader Germanic view).

The holistic nature of van Haeringen's account and its explanatory aspirations are reminiscent of typological work by linguists like Sapir (1921). Seeking to identify more general, abstract structures in languages so as to develop more powerful hypotheses on the causes of language change, Sapir identifies three parallel "drifts of major importance" in Indo-European languages (ibid.: 134), viz. the reduction of the case system, the tendency towards fixed word order and, finally, the "drift toward the invariable word" which Sapir regards as the dominant development of the three (ibid.: 139). Although van Haeringen (1956) does not mention Sapir by name, the similarities are striking, as indeed are the affinities with Hawkins (1986), who interprets the apparent lack of semantic transparency in English grammar as the synchronic consequence of a diachronic realignment of form-meaning mappings resulting from case syncretism (ibid.: 123, citing Sapir 1921), i.e. again from the drift towards the invariable word. At the same time, van Haeringen's close comparison of Dutch, German and English challenged any too sweeping categorisations in holistic typology. First, Dutch resists a straightforward synchronic classification as either synthetic or analytic; in fact, it does so to such an extent that van Haeringen (1956: 36) labels it "artistically unsystematic" (*artistiek onsystematisch*). Second, although van Haeringen (ibid.: 22–23) adopts the traditional view that the reduction of final syllables as observed in 'analytic crumbling' is diachronically linked to the fixation of Germanic word accent on the first syllable, he also points out that the typological status of Dutch casts doubt on any straightforward causal, indeed mechanical relationship between, on the one hand, the fixation of word accent or the resulting reduction of morphological richness, and compensatory developments in the realm of syntax on the other hand (ibid.). He therefore leaves open the possibility of a reverse causal relationship, with greater restrictions on word order potentially creating room for morphology to become redundant (ibid.; see Hüning 2006 for a more detailed analysis of van Haeringen's account and its place in the history of linguistics). From the perspective of modern historical linguistics, compensatory developments involved in 'analytic crumbling' invite an explanation in terms of grammaticalisation, a process which in many cases led to the replacement of cognate synthetic structures with language-specific analytic ones in West Germanic. Examples are the rise of auxiliaries fulfilling functions associated with verbal morphology (e.g., Landsbergen 2006; Poortvliet 2016) and of prepositions replacing case endings (e.g., van der Wouden 2006).

Apart from identifying and comparing structures based on functional equivalence, some research has tried to link diachronic variation to aspects of linguistic cognition, including factors like processing efficiency and linguistic complexity

(Hawkins 2004). Deeper functional or cognitive explanations of cross-linguistic variation and change figure increasingly in computational simulations of language change, such as Van Trijp's (2013) study of the effects of cue reliability, processing efficiency and ease of articulation on syncretism in the German definite article, and Pijpops/Beuls/Van de Velde's (2015) study of the rise of the weak preterite in Germanic. Some factors are rooted in the social environment in which language is used. For instance, referring to work by Thomason/Kaufman (1988) on English and Boyce Hendriks (1998) on Dutch, Weerman (2006) hypothesizes that deflection in West Germanic languages intensified in periods of language contact, when there were more L2 learners.

The three explicitly diachronic articles in the present collection illustrate the most recent developments in the field. Mirjam Schmuck's comparison of the use of the definite article in German, Dutch and English shows that the German article's functional domain has been expanding into generic usages and combinations with proper nouns, suggesting a more advanced grammaticalisation process than in Dutch and English. While confirming the position of Dutch between German and English, Schmuck's account stands out because in this case it is German grammar that allows the more progressive options within West Germanic, casting doubt on any straightforward characterisations of German as a conservative language. The article by Joachim Kokkelmans uses the diachronic comparative perspective to relate *s*-retraction in /rs/ clusters, a well-known phonological development in Middle High German, to a broader typological feature of the language. By extending his scope to include non-standard varieties of German, Dutch and English, and indeed data from beyond (West) Germanic, Kokkelmans links *s*-retraction to the general development of sibilant inventories, which are more conservative in Dutch and Low German than in varieties having previously phonemised /ʃ/ as a second sibilant. Finally, Jessica Nowak's article on the sentence-internal capitalisation of nouns shows how the diffusion of innovations across German and Dutch, although driven by linguistic factors (i.e. initially emphatic and/or honorific use, then animacy and concreteness of the referent), is linked to cultural contact and standardisation processes.

### 3 Psycholinguistic perspectives

Whereas the synchronic and diachronic papers in this volume are concerned with the analysis and explanation of contrasts and changes in surface structure, the psycholinguistic papers employ CL in the explanation of human behavior (Gardner 1985; Tervoort et al. 1987). Psycholinguistics, a multidisciplinary field,

came into being in the 1950s with the rise of cognitive science, which aims to “characterize human knowledge – its forms and content – and how that knowledge is processed, acquired used and developed” (Gardner 1985). Human language can be regarded as a cognitive system (Sloan Foundation 1978) that is either treated as universal and relatively autonomous (Chomsky 1980; Pinker 1994) or as closely interrelated with and mutually affected by other processes like cognition, consciousness, experience, embodiment, brain, self, and human interaction (Tomasello 2003; Robinson/Ellis 2008).

After an early surge of empirical studies on language and color perception in the 1950s and 1960s (see Gentner/Goldin-Meadow 2003; Everett 2013; Athanopoulos/Bylund/Casasanto 2016 for overviews), issues of language-and-cognition have again become an area of active investigation over the past few decades. Semantic analyses carried out in the 1970s by Talmy (1975), Langacker (1976), Bowerman (1980) and others brought to light major differences in the way languages carve up the world, not only in the domain of color terms but also, for example, through spatial prepositions (Gumperz/Levinson (eds.) 1996) and grammatical aspect (Comrie 1976). Follow-up studies based on acquisition data or psycholinguistic experiments showed that some of this typological diversity carries over to sets of related languages (see e.g., Garnham et al. 2016 on gendered articles and nouns in European languages; Coventry et al. 2018 on spatial prepositions), including pairs of Germanic ones (e.g., Athanopoulos/Bylund 2013 on aspect in Swedish and English; and Mills 1986 on grammatical gender in German and English). This diversity was taken by some to imply a refutation of the universalist view of language and conceptual structure, and by others as an indication that semantic and conceptual structure operate independently of one another (see above). This debate is still unresolved today. While empirical data provide little support for universalist views of language and conceptual structure (Dabrowska 2015; Ibbotson/Tomasello 2016), some authors continue to argue in favor of universalist stances (Everaert et al. 2015; Boxell 2016).

Bilinguals, a term used here to refer to any individuals employing multiple languages, started to receive attention as a favorable testing case for effects of language on cognition during the 1960s and 1970s. After 1980, bilingualism was consolidated as a field of research (see e.g., Baker 1993; Grosjean 1982), and the subsequent rise of new empirical methods such as eye-tracking, EEG, and fMRI resulted in several volumes also addressing non-linguistic behavior in bilinguals (Kroll/De Groot 2005; Pavlenko 2014). In addition to studies comparing L1 and L2 production, empirical studies with behavioral measures (memory accuracy, speed of reaction, eye movement) have documented cognitive effects associated with bilingualism in certain conceptual domains (e.g., Koster/Cadierno 2018 on recognition memory for object position in German/Spanish placement events).

In line with the topic of the present volume, all contributions in the psycholinguistic section focus minimally on German and Dutch, and some on additional languages as well. Leah Bauke examines whether L1 verb-second word order affects how German, Dutch and Norwegian learners respond to a grammaticality judgment task in L2 English. Her data reveal a representational conflict in terms of competing grammars, with Norwegian or English learners behaving differently from Dutch and German learners. Gunther De Vogelaer, Johanna Fanta, Greg Poarch, Sarah Schimke and Lukas Urbanek examine regional similarities and differences in the production and perception of Dutch pronominal gender by both Dutch and German speakers. Besides pointing out intra- and cross-linguistic differences, their data shows that increased uncertainty with respect to grammatical gender is leading to a resemanticization of Dutch pronominal gender. Paz González and Tim Diaubalick examine representations of tense in German and Dutch learners of L2 Spanish. They argue that the different options of expressing aspect in L1 German or Dutch may have profound effects on L2 tense production. Finally, Dietha Koster and Hanneke Loerts provide an up-to-date review of empirical studies on the perception of gender language in L1 and L2 German and Dutch speakers. They identify gaps in psycholinguistic research on the topic and define three fields of future inquiry to move the study of language, bilingualism and cognition forward.

Like the earlier parts of the volume, the psycholinguistic section testifies to the diversity of present-day contrastive research, addressing questions relating to the description and explanation of cross-linguistic differences, the understanding of patterns found in various L2s, or the language-and-cognition debate. Interestingly, some contributions address phenomena that were earlier investigated in synchronic and/or diachronic research, illustrating the potential of an ever closer integration of the three perspectives in the future. The strong cognitive orientation of present-day linguistics has increasingly brought psycholinguistic explanations for synchronic and diachronic variation into the limelight, and will continue to do so. At the same time, future interaction can help bring psycholinguistics “out of the lab” (cf. Speed/Wnuk/Majid 2017), with the rich empirical tradition in both synchronic and diachronic contrastive research on German, Dutch, English, and (West-)Germanic at large lending psycholinguistic theorizing a greater “ecological validity”.

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Sebastian Kürschner (Eichstätt)

## Nickname formation in West Germanic: German *Jessi* and *Thomson* meet Dutch *Jess* and *Tommie* and English *J-Bo* and *Tommo*

**Abstract:** German, Dutch, and English nickname formation is examined using a contrastive corpus of nicknames which were found in the online profiles of amateur athletes and are compared with the same individuals' first and last names. We study the word formation and word creation of nicknames, either based on the athletes' legal names or coined freely, pointing out parallels and divergences between the three languages. Two prototypes are identified crosslinguistically as relevant bases for output schemas: disyllabic trochees ending in *-i* (cf. German *Conni*, Dutch *Passie*, English *Thanny*) and monosyllabics ending in a closed syllable containing a single sonorant (*Sash*, *Bous*, *Maze*). These structures are then interpreted in terms of preferred sound patterns and sex marking. Dutch turns out in many respects to hold an intermediate position between German and English.

**Zusammenfassung:** Anhand kontrastiver Daten zum Deutschen, Niederländischen und Englischen wird der Bildung von Spitznamen nachgegangen. Grundlage des Korpus sind Spitznamen von Amateursportlerinnen und -sportlern, die internetbasiert anhand von Steckbriefen erhoben wurden und mit den Ruf- und Familiennamen der betreffenden Personen abgeglichen werden. Anhand der Wortbildungen und -schöpfungen auf Basis der offiziellen Namen sowie der freien Schöpfungen werden Parallelen und Divergenzen von Spitznamen in den drei Sprachen herausgearbeitet. Zwei Prototypen werden sprachübergreifend als Grundlage von Output-Schemata identifiziert: zweisilbige, trochäische Namen auf *-i* (vgl. dt. *Conni*, nl. *Passie*, engl. *Thanny*) sowie Einsilber auf geschlossene Silbe mit einfachem Sibilanten (*Sash*, *Bous*, *Maze*). Die Daten werden in Hinblick auf Lautstrukturpräferenzen und Geschlechterkennzeichnung interpretiert. Das Niederländische nimmt dabei in vielerlei Hinsicht eine mittlere Stellung zwischen Deutsch und Englisch ein.

# 1 Introduction

In addition to a legal name, people usually bear a couple of unofficial names, some of which may be characterized as nicknames.<sup>1</sup> In this chapter, we examine personal nicknames based on first names such as German *Jessi* < *Jessica* or *Thomson* < *Thomas*, and nicknames based on last names such as Dutch *Hoegie* < *Hoegarts*, *Siem* < *Simons*. We also consider freely coined nicknames, cf. English *Ders*, *Loofa*.

The objective of this chapter is to identify parallels and divergences in the formation of nicknames in three closely related West Germanic languages, viz. German (G.), Dutch (D.), and English (E.), based on a comparable set of data. The data stems from amateur athletes' internet profiles and was gathered analogously for the three languages. We compare the data in terms of the broad variation and the distribution of frequencies where the patterns observed in nickname formation are concerned.

As the examples in the title show, different kinds of nicknames are formed based on first names. G. *Jessi* and *Thomson*, D. *Jess* and *Tommie*, and E. *J-Bo* and *Tommo* are all based on *Jessica* (in the case of *J-Bo* also integrating the beginning of the last name *Bowden*) and *Thomas* or *Tom*, respectively. There is thus variation in the formation of nicknames between these languages. However, most of these forms could just as likely stem from the other two languages, thereby indicating parallels between them as well.

Our knowledge of nicknames differs between the three languages: While monograph studies and other publications exist regarding G. (cf. Kany 1992; Naumann 1976, 1977) and E. (cf. Morgan/O'Neill/Harré 1979; Busse 1983; de Klerk/Bosch 1996, 1997; Starks/Leech/Willoughby 2012), our main insights into D. stem from studies on specific dialects (cf. Leys 1968; Mennen 1994; Van Langendonck 1978), while no systematic studies on Standard Dutch have been found. The present study seeks to tackle this deficiency. At the same time, contrastive studies of nicknames are rare, and we therefore wish to provide new information on nicknames in the three languages and their current relation from a contrastive perspective. We focus entirely on phonological and morphological aspects, since these have proven particularly relevant in earlier studies (cf. Naumann 1976, 1977 for G.; Taylor-Leech/Starks/Willoughby 2015 for E.).

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<sup>1</sup> Thanks are due to two anonymous reviewers, to Pia Fischl, Erik Lutz and Patricia Rawinsky for their valuable help in data collection and preparation, and to Paul Gahman and Torsten Leuschner for comments and proofreading.

## 2 Nicknames: definitions and characteristics

Nicknames are usually defined as being a) bound to an individual in addition to her or his legal name, b) specific to a certain group of people with which an individual regularly interacts (e.g., a school class, a sports team, a choir, etc.), c) not suitable for legal or outsider use, and d) usually chosen by other people, i.e., not self-given (cf. Nübling/Fahlbusch/Heuser 2015: 171–172). Apart from these main characteristics, no consensus has been reached for the definition of nicknames (cf. Brylla’s 2016 handbook chapter discussing the lack of a common terminology in Germanic linguistics and even within the linguistics of specific Germanic languages). In certain definitions, for instance, the use of the term *nickname* is restricted to bynames, which usually stem from the lexicon and are based on a relation to the name bearer’s person, physique, lifestyle, etc. (e.g., *Smiley*, *Angry*), while formations based on the individual’s legal name are regarded as so-called pet names.<sup>2</sup> Other definitions offer different categories. Lawson (1973) separates so-called short names (such as *Dave* < *David*) from what he calls nicknames with an affective suffix (such as *Davey*), and corroborates this separation by asserting that different stereotypes of the two types of names exist: While most short names are associated with positive values (‘good’, ‘active’, ‘strong’) even more than the corresponding full forms, the derived nicknames are rated comparatively low according to these values.<sup>3</sup>

While problems in the definition of nicknames will remain, we use a broad definition of the term, following a recent G. textbook on onomastics (Nübling/Fahlbusch/Heuser 2015: 172). We define a nickname on emic grounds as what is defined as such by G., D., and E. language users. As will be shown below, the data reveals that a very comparable and broad definition of nicknames is accepted among language users, including bynames, modifications of existing (legal) names, and

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<sup>2</sup> As shown below, this definition does not match what linguistic laymen consider nicknames. This is corroborated by other studies of nicknames such as Starks/Leech/Willoughby (2012: 140), who suggest “that researchers who ignore variants of names as nickname types fail to consider the views of large numbers of individuals who see variants of names as nicknames”. In fact, in many of the existing studies on G. and E. approximately 50–60% of the nicknames collected in sample and survey studies are based on the individuals’ legal names. This tendency is in line with our data, see section 4.

<sup>3</sup> Note that a repetition of the study might result in different outcomes given the changes in society over the past 44 years. Other distinctions, like that of Van Buren (1977), further contribute to the terminological confusion: in his terms, forms like *Dave* are nicknames and forms like *Davey* are affectionate nicknames. Cf. the discussion in Wierzbicka (1992: 225–237) who sheds doubt on the appropriateness of such classifications.

newly coined names without an overt basis in existing words or names. With our emic definition, we provide a widely comparable set of nicknames that are based on a commonly accepted (and mostly parallel) concept of nicknames in the societies from which the data stems.

Note that the term nickname (or G. *Nick* for short) also appears in names specific to internet uses in forums, chats, games, etc. (cf. Gkoutzourelas 2015; Kaziaba 2016). These names are different from nicknames according to our definition, mainly because they are specifically chosen by the individuals themselves for use online.

### 3 Data and methodology

To provide comparable sets of data, samples of nicknames were collected from websites in an analogous fashion for G., D., and E. We found that clubs connecting a group of people such as sports clubs, choirs, youth associations etc. often offer lists of their members' personal profiles. Such personal profiles provide a common source of nicknames, particularly in sports teams since nicknaming in team sports is "one way of fostering team spirit" (Chevalier 2004: 128). Nicknames thus serve a special integrating function within teams and are often uniquely used by the team members. In-group interaction through nicknames was similarly reflected in online communication via internet profiles. Since this observation held for all three language communities examined, we chose to collect nicknames from athletes' online profiles.

Personal profiles usually consist of systematic information collected in a team-internal survey. The athletes are asked to provide personal information about specific categories usually including first and last name, age, occupation, position played, and other personal information like hobbies. For this study, only personal profiles that had "nickname" as a category were considered. Such profiles and the corresponding teams were identified via online queries containing the term *nickname* in the respective language (G. *Spitzname*, D. *bijnaam*) in combination with search terms like *team*, *soccer*, *basketball* etc. Per profile, information on the nickname, first name, last name, sex, and location were extracted into a database.

In order to obviate nicknames from children,<sup>4</sup> we ignored nicknames from children's teams and used nicknames from young adult (starting from approxi-

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<sup>4</sup> Studies with individuals at differing ages showed that the bases and forms of nicknames change with age during childhood and adolescence, cf. Kany (1999), Morgan/Leech/Willoughby (1979), Naumann (1976, 1977).

mately age 16) and adult teams only. Professional teams were also left out of consideration because they may employ nicknames that were not coined within the team but in the media. Additionally, only nicknames that deviated from the official first and last name were included in the dataset. We included only one token per nickname type, unless the nickname type referred to differing legal names; thus *Em* is listed twice as the short form of either *Emma* or *Emily*, whereas four other cases of *Em* for *Emily* were deleted from the list. For each language, several hundred nicknames were collected as equally as possible across men and women. Table 1 shows the exact number of nickname types collected for each language.

**Table 1:** Number of nicknames per language and across sexes

	German			Dutch			English		
	Sex		All	Sex		All	Sex		All
	M	F		M	F		M	F	
	Number of Nicknames	415	335	750	323	320	643	567	413

Since the data were collected using major internet search tools such as Google, they constitute a random collection of names.<sup>5</sup> This is also reflected in the variation of the number of nicknames per team, the variation of sports included (with soccer teams being the main source in all three samples), and the regional and national distribution (German and Austrian for G.; Dutch and Belgian for D.; US and UK for E.).<sup>6</sup>

The analysis is predicated on the assumption that the athletes provided their nicknames themselves or at least gave consent to publishing them on their team’s website. The collection therefore consists of nicknames that the bearers were

<sup>5</sup> The specific algorithms in such search tools provide the basis of the URLs returned. Therefore, the collection may not be fully random. However, we used several different search tools and a broad variation of search terms, and the results reflect no identifiable patterns related to the use of specific search engines. We therefore assume that biases caused by the algorithms are negligible.

<sup>6</sup> Note that the data is not suitable for comparing national distributions to the same extent. The G. sample stems mainly from Germany, with only 39 of 750 entries from Austria. The D. sample is mainly from the Netherlands, with only 31 of 643 entries from Belgium. The E. data, by contrast, is distributed more or less equally across British (462 entries) and US websites (518 entries).

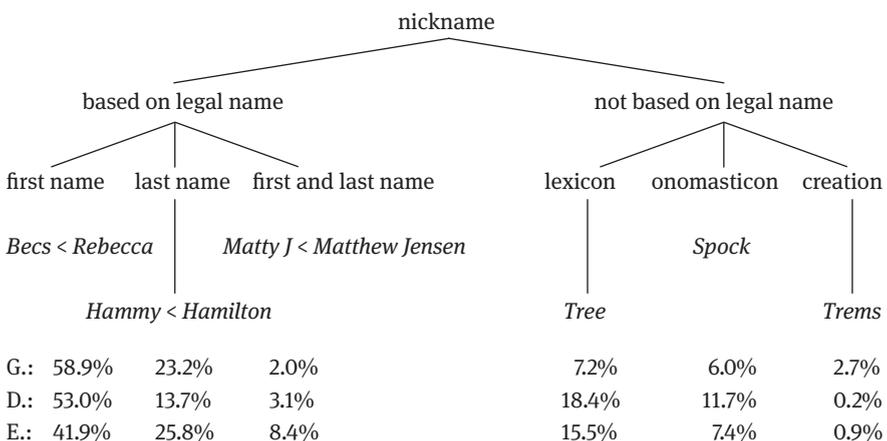
aware of and accepted as positive nicknames. Derogatory names or nicknames evaluated negatively by their bearers for any other reason are unlikely to appear in the material and would demand a different approach.

Despite the limited number of nicknames in the database, the data can be considered representative of (positive) nicknames in current amateur sports teams. They provide the foundation for studying structural characteristics of nicknames and comparing them across the three languages. Unlike many other studies on nicknames (most of which were based on survey or experimental data), we will be able to discuss the social aspects behind nicknames to a limited extent only since background and context information about the nicknames' origin and use was not on hand. However, apart from geographical information, we have reliable information about the nickname bearer's sex, which has been identified as particularly relevant in earlier studies.

Section 4 will introduce the spectrum of nicknames in our data and identify those parts of the dataset that are suitable for identifying structural characteristics. The structural analyses themselves are presented in the subsequent sections 5–7.

## 4 The spectrum of nicknames

Whereas some nicknames are based on a person's legal name, others do not formally resemble their legal name at all; both types are found in the data. Within these two categories more specific subtypes may be differentiated as shown in Figure 1.



**Fig. 1:** The spectrum of nicknames

The relative frequencies per language show that the number of nicknames based on legal names is higher than that of freely coined nicknames in all three languages, with most nicknames being based on first names. The legal name as a base is particularly strong in G. (84.1%) while D. and E. leave more room for other types (69.8% and 76.1% based on legal names, respectively). The simultaneous use of both parts of the legal name as a basis for the nickname is notably more frequent in E. (8.4%) than in G. and D., with a high number of nicknames formed as acronyms of the legal name (e.g., *AB* < *Alex Brown*).

First names form the predominant base for nicknames in all three languages. By contrast, the use of last names as a base for nicknames varies among the three languages: D. uses such nicknames to the lowest extent (13.7%), while G. (23.2%) and E. (25.8%) exhibit higher frequencies. Interestingly, last names are used far more frequently as a base for male than for female nicknames in all three languages (G.: M 34.0% F 9.9%; D.: M 19.8%, F. 7.5%; E.: M 32.3%, F 16.9%).<sup>7</sup> This is, of course, not an inherent characteristic of nicknames but an effect of culture: last names are more strongly associated with males rather than females in all three language communities because of a long patriarchal history of familial names being inherited along the male line.<sup>8</sup> An additional sex-based difference is observed regarding the use of nicknames that are not based on legal names: these are consistently associated more frequently with men than with women (G.: M 21.0% F 9.6%; D.: M 39.0% F 21.3%; E.: M 31.6% F 13.3%).<sup>9</sup>

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<sup>7</sup> M = male, F = female.

<sup>8</sup> There is a striking difference between the British and the American data concerning the use of first and last names. While in the British data nearly as many nicknames are based on first names (34.0%) as on last names (33.5%), first names as a base of nicknames are clearly dominant in the US (49.0% vs. 18.9%). The difference in nicknames based on last names with respect to sex, however, is more pronounced in the American data (M 27.2% F 11.2%) than in the British data (M 36.3% F 27.6%); this is in conformity with American studies by Busse (1983), amongst others. Note that a parallel sample of Swedish nicknames showed that last names are used more or less equally as a base of nicknames for both sexes in Swedish (cf. Kürschner 2014). This is in contrast to the languages considered here.

<sup>9</sup> De Klerk/Bosch (1996) found that female nicknames are much more often coined by family members or retained from childhood and then adopted by fellow peers. This is in stark contrast to male nicknames, which are much more often coined within specific peer groups. Since nicknames within families are often coined based on the individual's first name, this could explain why such nicknames are more often found among women than among men. Among men, in contrast, there is a higher chance for newly coined nicknames to be based on personal, physical, or contextual characteristics or on the person's last name.

In subsequent sections, parallels and divergencies in the formation of nicknames are analysed according to phonological and morphological characteristics. We describe what new, freely coined nicknames look like, assuming that nearly anything is possible in the formation of nicknames. In order to prevent the results from reflecting inherent characteristics of lexemes, we restrict ourselves to cases in which the product of nickname formation is truly free from the limitations of the lexicon. For this reason, we base our analyses on nicknames that stem from the processes of word formation or word creation only, ignoring all nicknames that are transferred from the existing lexicon or onomasticon. We therefore exclude nicknames that are homonymous with lexical items (like *Son* or *Bird*), unless they are the result of formation processes such as clipping (e.g., *Mass* < *Massey*).<sup>10</sup> Also excluded are nicknames that are overtly identical to existing lexical items (e.g., *Lizard* < *Liz*, *Strudel* < *Strudwick*) or include the legal name in a syntagmatic construction (*Geiger the Tiger* < *Geiger*). Additionally, we exclude nicknames homonymous with existing names (*Spence* < *Spencer*), including those of well-known people (*Tom Hanks*), figures (*Ali Baba*), products (*Q-tip*), and the like. Table 2 shows the resulting number of nicknames used for the analyses provided in the subsequent chapters.

**Table 2:** Reduced data used for phonological and morphological analyses

	German			Dutch			English		
	Sex		All	Sex		All	Sex		All
	M	F		M	F		M	F	
Number of nicknames	249	207	456	126	149	275	249	224	473

In sections 5–7, we provide an exploratory analysis of the data. We elaborate observations derived from a thorough review of the data, including frequency measures of observed patterns. Section 5 first examines syllabic characteristics to illuminate which syllable numbers, syllable types and segmental features shape nicknames in the three languages. Next, in section 6 we investigate the morphological mechanisms behind nickname formation. The creation of free forms is described in section 7. Finally, section 8 presents the results of the contrastive analysis.

<sup>10</sup> In such cases, the relation to the lexicon is considered secondary, without knowing whether it was intended in the first place.

## 5 Syllabic characteristics of nicknames

Nickname formation is a very creative process in language which enhances our understanding of the shape of possible words:

Nicknames, because they act as an avenue for creativity and the expression of some of the pure enjoyment that the sounds and meanings of words can give, provide name-users and name-bearers with considerable freedom in manipulating and bending linguistic resources. They provide evidence of the ongoing enjoyment that human beings find in playing with language and creating new words which experiment with patterns of sounds. (de Klerk/Bosch 1997: 293)

In other words: nicknames show what words can look like without (or nearly without) the restrictions imposed by lexical patterns. Changes in other lexical items, by contrast, reflect general constraints on processes of language change; loan words fail to be revelatory in this respect, and new word-formation products are restricted by word formation processes. Nicknames therefore provide insights into the potential structure of entirely new words (cf. Kürschner 2018).<sup>11</sup> In order to determine the spectrum of nicknames in the three languages, their identifying characteristics, and whether they differ between the sexes,<sup>12</sup> their syllabic characteristics will now be explored. An in-depth study of more specific sound patterns would be valuable for each of the languages examined, but cannot be provided here.

The mean length of the nicknames in our sample is two syllables or less in all three languages (G: 2.0; D.: 1.7; E.: 1.8 syllables). The legal names from which nicknames are derived are on average longer than the associated nicknames (G.: 1.2; D. and E.: 1.3 times longer than the corresponding nicknames), with female names on average being more readily shortened than male ones. The reason for this distribution is that male first names are generally shorter than female first names (cf. Whissell 2001: 108 on E.; Nübling 2012 on G.). In D. and E., female nicknames also tend to be slightly shorter than male ones (D: F 1.6; M 1.9; E.: F 1.7; M 1.8 syllables). In fact, there are more monosyllabic female nicknames in D. and E. than disyllabic ones, whereas disyllabic structures are more clearly favoured in male nicknames (cf. Table 3, which compares the number of syllables in nicknames). This tendency in D. and E. not only contradicts many earlier studies which found

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<sup>11</sup> Other valuable data of this kind are provided by short words (Ronneberger-Sibold 1995) and product names (Ronneberger-Sibold/Wahl 2013).

<sup>12</sup> Cf. Cutler/McQueen/Robinson (1990) on E., Oelkers (2003) and Nübling (2012) on G. Their work has shown that sound patterns assist in the association between names and their possible bearers' sex, which might be relevant for nicknames, too.

that shorter names (specifically monosyllabics, cf. Elsen 2016: 121) are typically masculine and longer names feminine (cf. de Klerk/Bosch 1996: 536–539), but also contrasts starkly with G.: while a tendency towards disyllabic nicknames can be observed across all three languages, D. and E. use monosyllabic nicknames much more readily than G., where disyllabic nicknames are used extensively. In the following sections, the structures of the two frequent groups, viz. mono- and disyllabics, are presented in detail.

**Table 3:** Syllable length in nicknames

Syllable length	German			Dutch			English		
	Sex		All (456)	Sex		All (275)	Sex		All (473)
	M (249) <sup>13</sup>	F (207)		M (126)	F (149)		M (249)	F (224)	
1	10.4%	11.6%	11.0%	20.6%	49.0%	36.0%	30.9%	47.5%	38.8%
2	80.7%	78.3%	79.6%	65.1%	46.3%	54.9%	59.4%	42.6%	51.5%
3	6.0%	7.7%	6.8%	13.5%	3.4%	8.0%	6.8%	6.7%	6.8%
4	2.8%	2.4%	2.6%	0.8%	1.3%	1.1%	2.4%	1.8%	2.1%
5 or more	–	–	–	–	–	–	0.4%	1.3%	0.8%

## 5.1 Structural aspects of monosyllabics

Monosyllabic nicknames are mostly products of shortening. Since the sound patterns specific to nicknames are of particular interest here, the parts of the names that do not simply reflect the characteristics derived from the legal names form the core of the current discussion. In shortening processes, the number of clipped sounds is unpredictable. Since shortening mostly affects the end of the respective base (end clippings, cf. section 6.2 below), we focus on final sounds.<sup>14</sup> The three languages show a parallel tendency towards closed, i.e. consonant-final, syllable-

<sup>13</sup> Percentages are used in this and the following tables to assure comparability. The number of items analyzed per category is provided in parentheses with the column names.

<sup>14</sup> Final sounds often reflect a sound provided by the base (unless a suffix is added) and thus a characteristic thereof. However, when a nickname is coined, a choice is made with regard to a new final sound, which is reflected in the nickname. For instance, for *Kerstin* back clippings can result in, among others, *Kersti*, *Kerst*, *Kers*, and *Ker*. These each provide a different final sound,

bles in monosyllabic nicknames, cf. Table 4. This tendency is more pronounced in D. and E. than in G., where open syllables are more often used. However, we find a sex-based distribution in G., as closed syllables are especially frequent in male monosyllabics (*Det* < *Detlef*), while female nicknames of this kind much more often appear with a final vowel (*Co* < *Corinna*, *Bo* < *Borton* vs. *Ker* < *Kerstin*). This corroborates studies on first names showing that male names tend to end in closed syllables, while female names tend to end in open syllables (cf. Nübling 2012: 333–334; Oelkers 2003: 185–189) and that monosyllabics generally bear a male connotation (cf. Nübling 2012: 345–346; Oelkers 2003: 145–151, for E. also Cutler/McQueen/Robinson 1990: 475–478).

**Table 4:** Syllable types in monosyllabics

Syllable type	German			Dutch			English		
	Sex		All (50)	Sex		All (99)	Sex		All (183)
	M (26)	F (24)		M (26)	F (73)		M (77)	F (106)	
Closed	80.8%	58.3%	70.0%	84.6%	84.9%	84.8%	88.3%	79.2%	83.1%
Open	19.2%	41.7%	30.0%	15.4%	15.1%	15.2%	11.7%	20.8%	16.9%

Final sounds in closed monosyllabic nicknames are predominantly fricatives. While this predominance is readily observable in E. (67.8%), a greater divergency in the use of final sounds is evident in G. (42.9%) and D. (38.1%). In E. (52.6%)<sup>15</sup> just as in D. (25.0%), -s is used most often as the final sound (D. *Rens* < *Renske*, *Jikks* < *Jikke*; E. *Becs* < *Rebecca*, *Klepps* < *Kleppe*). G. uses a greater variety of sounds, with /j/ and /f/ being the predominant choice (17.1% each, cf. *Jänsch* < *Janina*, *Scheuf* < *Scheufler*). Fricatives are slightly more common as final sounds in G. and E. male nicknames than in female ones (G.: M 47.6% F. 35.7%; E.: M 72.1% F 64.3%). The opposite tendency can be found in D. (M 18.2% vs. F 45.2% fricatives), where 45.5% of all male nicknames end in a sonorant and 36.4% in a stop; this

amongst which the nickname creator can freely choose. By contrast, when considering the beginning of nicknames, only the structural characteristics of bases' initial sounds would be reflected.

<sup>15</sup> -s is realized as [s] or [z] in E., depending on the sonority of the previous sound. In G. and D., it is always pronounced as [s] in the final position.

difference coincides with a stronger presence of final -s in female nicknames in D. (M 9.1% F 30.6%), while -s is slightly more frequent with male names in E. (M 58.8% F 47.6%).

Studies of sound symbolism have found obstruents to be associated with masculinity, sonorants with femininity (cf. Whissell 2001: 106). As for nicknames, however, our results contradict these associations with respect to D. and E. Not only are many female nicknames monosyllabic, D. in particular often uses obstruents to create female nicknames, possibly as a playful way to subvert common sex-role based associations. This is supported by Wierzbicka (1992: 375–383), who describes the onymic suffix -s in Australian English as having an “anti-diminutive” function that is often used by adolescent girls: “the speaker wishes to dissociate himself or herself emphatically from the kind of emotional attitude associated with diminutives” (Wierzbicka 1992: 378). In Wierzbicka’s study, the diminutive function is associated with names ending in /i/ which are often retained from childhood. Considering that many of the names in our data stem from adolescents, nicknaming can be interpreted as a playful manner of dealing with adolescence and sex roles.

The three languages also differ in the number of final consonants in closed syllables. In G. and E., monosyllabic nicknames end in a single consonant about as often as they end in a two-consonant cluster (G.: 51.4% vs. 48.6%, E.: 52.0% vs. 48.0% for single vs. two consonants, respectively), while D. shows a clear tendency towards single final consonants in monosyllabic nicknames (82.1% vs. 17.9%). Across the three languages, clusters appear particularly often with final -s and, in G., /ʃ/. In most cases, these sounds provide clusters that run counter to the sonority hierarchy. For example, in G. *Sabs* < *Sabrina*, D. *Rox* < *Roxanne*, and E. *Lyds* < *Lydia*, the order of sounds in the syllable coda contradicts expectations based on sonority: although /s/ is more sonorous than the stop, it is placed behind the stop in the syllable coda and thus forms an extra-syllabic element. This may evoke an expressive effect, enhance salience, and subvert sex-role stereotypes as suggested above.

Considering vowel-final monosyllabic nicknames, E. shows a strong preference for final /i:/ (*Si* < *Sierra*), and /i:/ and /o:/ for G. (*Fi* < *Fiona*, *Flo* < *Florian*), whereas D. does not show any specific tendency at all.

## 5.2 Structural aspects of disyllabics

As Table 5 shows, disyllabic nicknames prototypically end in an open syllable in G. Open syllables are also characteristic of, though not as frequent in, the other two languages.

**Table 5:** Syllable types and frequent final sounds in disyllabics

syllable type – final sound	German			Dutch			English		
	Sex		All (363)	Sex		All (151)	Sex		All (243)
	M	F		M	F		M	F	
	(201)	(162)	(82)	(69)	(148)	(95)			
closed	12.9%	14.8%	13.8%	25.6%	23.2%	24.5%	18.2%	34.7%	24.7%
- fricatives	5.0%	0.0%	2.8%	8.5%	7.2%	7.9%	6.8%	14.7%	9.9%
- sonorants	7.0%	13.0%	9.6%	14.6%	11.6%	13.2%	8.1%	14.7%	10.7%
- stops	1.0%	1.9%	1.4%	2.4%	4.3%	3.3%	3.4%	5.3%	4.1%
open	87.1%	85.2%	86.2%	74.4%	76.8%	75.5%	81.8%	65.3%	75.3%
- <i>-i</i>	50.2%	61.7%	55.4%	43.9%	49.3%	46.4%	58.1%	38.9%	50.6%
- [ə]	21.4%	8.6%	15.7%	17.1%	15.9%	16.6%	–	–	–
- <i>-o</i>	8.0%	4.3%	6.3%	4.9%	5.8%	5.3%	13.5%	12.6%	13.2%
- <i>-a</i>	5.0%	9.3%	6.9%	6.1%	4.3%	5.3%	3.4%	4.2%	3.7%

With respect to the specific final vowel, /i/ is dominant in all three languages (G. *Fabi* < *Fabienne*, D. *Winski* < *Elwin*, E. *Welly* < *Llwelyn*). While *-i* is more commonly present in female nicknames in G., it is particularly predominant among male names in E.,<sup>16</sup> with D. showing no such tendency. G. and D. also frequently have the schwa vowel ([ə]) as final sound, whereas this is not used in English (G. *Tobse* < *Tobias*, D. *Ceke* < *Cedric*). In G., male nicknames end in final schwa much more frequently than female nicknames, whereas the schwa is used equally for both sexes in D. In all languages, *-o* and *-a* are next in the list of frequent final vowels (G. *Mazlo* < *Mazalovic*, D. *Roffa* < *Rovers*, E. *Haylbo* < *Haley*), both with a much lower frequency than *-i*. However, the frequency of *-o* is comparatively high in E. Section 6 shows that the presence of these final vowels results either from clipping (*Emi* < *Emily*) or from suffixation (*Emi* < *Emma*).

In E., female nicknames are much more often found with closed syllables than male ones, again contrasting with findings on the structure of first names from earlier nickname studies (see discussion above in section 5.1). Across the three languages, closed syllables in nicknames mostly end in sonorants and only very seldom in stops. Sonorants predominate abundantly in G. (*Heinzen* < *Hein*), and the fricative *-s* is also strongly represented in D. and E. (D. *Laris* < *Larissa*, E. *Megggers* < *Megan*), as indeed with monosyllabics. Any fricatives apart from *-s* are very rare.

<sup>16</sup> This contrasts strongly with the findings of de Klerk/Bosch (1996) for South African English, where final *-i* is regarded as prototypically feminine.

Summing up the results from the analysis of mono- and disyllabics with regard to final sounds, G. generally seems to prefer sonorant endings for nicknames, while D. and E. tend to end in -s (sonorants apart). In G., a final fricative evokes a masculine connotation in nicknames, especially monosyllabics.

Apart from the final sound, it is interesting to observe how the two syllables are linked in disyllabics. The tendency is for the link to consist of a single consonant that is either the onset of the second syllable or ambisyllabic. Consonant clusters are found in a number of nicknames, most often in D. (36.3%), less so in E. (30.0%), and least often in G. (21.2%). Most clusters are remnants from the legal name on which the nickname is based. While such clusters are often reduced in G. (54.2% of all cases in which the legal name contains a cluster, cf. *Wale* < *Walter*) and D. (48.9%, cf. *Possie* < *Postulart*), this is somewhat less often the case in E. (36.4%, *Shelly* < *Shelbi*). Cluster reduction is particularly frequent in female nicknames in G. and D., where it can be interpreted as a simplification of syllable structure resulting in a CVCV-nickname. Although consonant clusters are a typical phenomenon of G. lexical items generally, nicknames clearly deviate from this characterization. As a result they appear softer and, if sonorants are involved, more sonorous.<sup>17</sup>

On the other hand, when no cluster is present in the legal name, new clusters are occasionally created, potentially contributing to expressivity. Clusters appearing more than once are combinations of a voiceless stop and a sibilant in G. (*Britschi* < *Britta*, *Natze* < *Nadine*, *Robser* < *Robin*), combinations of a nasal and a voiceless stop in D. (*Dompie* < *Dom*, *Jonko* < *Jon*), combinations of a consonant and a sibilant in E. (*Bailzo* < *Baillie*, *Natson* < *Natalie*); G. and E. thus share the use of sibilant-final clusters. Apart from these clusters, G. and D. form clusters that are also typical of diminutives; these reflexes of morphology are discussed below in sections 6.3–6.4.

## 6 Processes of nickname formation

In this section, we examine morphological and extra-grammatical processes that are applied in the creation of nicknames. In analysing these processes, we only consider nicknames that are based on legal names. Table 6 provides an overview of the fundamental processes found in the data.

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<sup>17</sup> As Nübling (2012: 342–343) notes, consonant clusters in popular German first names have been diminishing since 1945, resulting in softer names. If sonorants are involved, their sonorous quality is even more obvious in the absence of other consonants (*ibid.*: 336–338).

**Table 6:** Nickname formation processes with examples (per process type, first example based on first name, second example based on last name)

process type	German		Dutch		English	
	base	nickname	base	nickname	base	nickname
acronym formation	<i>Marion</i>	<i>MP</i>	<i>Patricia</i>	<i>Pe</i>	<i>Helen</i>	<i>H</i>
	<i>Peter</i>					
	<i>Florian</i>	<i>Floka</i>	<i>Hannah</i>	<i>HB</i>	<i>Alex Brown</i>	<i>AB</i>
	<i>Kienberger</i>		<i>Bikker</i>			
clipping						
– back	<i>Julia</i>	<i>Jul</i>	<i>Marianne</i>	<i>Mari</i>	<i>Riley</i>	<i>Ri</i>
	<i>Kleefeld</i>	<i>Klee</i>	<i>Touten- hoofd</i>	<i>Tout</i>	<i>Primmer</i>	<i>Prim</i>
– fore	<i>Janine</i>	<i>Nine</i>	<i>André</i>	<i>Dré</i>	<i>Rebekah</i>	<i>Bekah</i>
– edge	–	–	<i>Simone</i>	<i>Moon</i>	<i>Natasha</i>	<i>Tash</i>
– middle	<i>Georg</i>	<i>Gorg</i>	–	–	<i>Garret</i>	<i>Gart</i>
suffixation	<i>Maik</i>	<i>Maiker</i>	<i>Jorrit</i>	<i>Jorrito</i>	<i>Tom</i>	<i>Tommo</i>
	<i>Schulz</i>	<i>Schulzi</i>	<i>Mik</i>	<i>Mikkie</i>	<i>Berg</i>	<i>Bergie</i>
clipping + suffixation	<i>Tobias</i>	<i>Tobse</i>	<i>Arthur</i>	<i>Arti</i>	<i>Jordyn</i>	<i>Jordo</i>
	<i>Ulbrich</i>	<i>Ulle</i>	<i>Duijkers</i>	<i>Duiky</i>	<i>Hocknell</i>	<i>Hockers</i>
reduplication	<i>Teresa</i>	<i>Tete</i>	<i>Jolanda</i>	<i>Jojo</i>	<i>Cole</i>	<i>Coco</i>
compounding	<i>Karl</i>	<i>Partykarl</i>	<i>Loes</i>	<i>Loesbal</i>	<i>Kayla</i>	<i>Kaylabug</i>
	<i>Kock</i>	<i>Keilriemen</i>	<i>Maas</i>	<i>Maaskantje</i>	<i>Bower</i>	<i>Bower</i>
		<i>Kock</i>				<i>Power</i>
blending	<i>Alexander</i>	<i>Skandalex</i>	<i>Romboud</i>	<i>Rombocop</i>	<i>Mika</i>	<i>Mikattack</i>
				–		
	<i>Miriam</i>	<i>Schmiri</i>	–		<i>Fuller</i>	<i>Fulldog</i>
	<i>Schmitz</i>					
defamiliarization and word play	<i>Marco</i>	<i>Darco</i>	<i>Nico</i>	<i>Nocci</i>	<i>Shannon</i>	<i>Shewan</i>
	<i>Sarah</i>	<i>Sārah</i>	<i>Flendrie</i>	<i>Flen3</i>	<i>Donagan</i>	<i>Dank-sho</i>
other	<i>Ulf</i>	<i>Mulf</i>	<i>Van de Kreeke</i>	<i>Kreeke</i>	<i>Ben</i>	<i>Been</i>
free forms	–	<i>Pötzi</i>	–	<i>Sjiemelle</i>	–	<i>Udzy</i>
	–	<i>Tuff</i>	–		–	<i>Guence</i>

In order to compare nickname formation in the three languages more closely, several processes will be examined in detail along with the frequency with which they are applied.<sup>18</sup> Table 7 outlines the relative number of items associated with each of the processes introduced above.

**Table 7:** Processes involved in nickname formation

process type	German			Dutch			English		
	Sex		All (456)	Sex		All (275)	Sex		All (475)
	M (249)	F (207)		M (126)	F (149)		M (251)	F (224)	
acronym formation	1.6%	1.4%	1.5%	4.0%	4.0%	4.0%	20.5%	11.7%	16.3%
clipping	18.1%	21.3%	19.5%	19.0%	49.7%	35.6%	16.5%	29.9%	22.9%
– back	16.9%	17.4%	17.1%	15.9%	46.3%	32.4%	14.5%	25.6%	19.7%
– fore	–	3.9%	1.8%	3.2%	–	1.5%	1.2%	2.2%	1.7%
– edge	–	–	–	–	3.4%	1.8%	0.4%	1.8%	1.1%
– middle	1.2%	–	0.7%	–	–	–	0.4%	0.4%	0.4%
suffixation	11.9%	10.1%	11.2%	23.0%	4.7%	13.1%	21.3%	8.5%	15.3%
clipping + suffixation	52.2%	48.8%	50.9%	35.7%	29.1%	32.4%	28.1%	37.7%	32.6%
– reduplication	0.8%	1.0%	0.9%	–	1.3%	0.7%	1.2%	3.6%	2.3%
compounding	1.6%	–	0.9%	0.8%	2.0%	1.5%	1.2%	3.1%	2.1%
blending	1.2%	1.9%	1.5%	0.8%	–	0.4%	2.8%	2.7%	2.8%
defamiliarization and word play	6.8%	11.6%	9.0%	11.9%	9.4%	10.5%	5.2%	3.6%	4.4%
other	0.4%	1.9%	1.1%	4.0%	0.7%	2.2%	1.2%	2.2%	1.7%
free forms	6.0%	2.4%	4.4%	0.8%	–	0.4%	3.2%	0.4%	1.9%

<sup>18</sup> Free forms are described separately (cf. section 7) because they do not result from the manipulation of a base and therefore cannot be described as a product of morphological or extra-grammatical processes. They are listed in Tables 6 and 7 for purposes of comparison with the other processes in terms of form and frequency.

## 6.1 Acronym formation

Acronyms are most commonly formed by reducing names to initials based on the first letters of the legal name or parts thereof (G. *MP* < *Marion Peter*). Whereas G. and D. use such initialisms less frequently (1.5% and 4.0%, respectively), they are relatively frequent in E. (16.3%). Furthermore, acronyms from E. names are used much more often in forming male nicknames than female ones. In the three languages, they are found in multitudinous forms: i) A single initial based on the first or last name (*J* < *Jack*, *G* < *Gibbons*; uncommon in G.); ii) two initials based on double first names or the first and last names (*HW* < *Hans-Werner*; *AG* < *Alex Gilbert*); iii) three or more initials (*ABC* < *Alex Benjamin Carr*; in Dutch, the last name *van den Tol* is clipped to *VDT*); and iv) initials in combination with a full name or shortening (*JYau* < *Jason Yau*; *D-Mo* < *David Mott*). Letters are sometimes written as pronounced (*Floka* (see Table 3), with *ka* /ka:/ as the pronounced form of the letter <k>; cf. also Dutch *Pe* < *Patricia*).

Certain cases of nicknames in which clippings are combined by using sounds or syllables instead of letters are quite similar to many acronyms, especially when the first and last names are merged (G. *MiGrü* < *Michael Grünwedel*; D. *Snoord* < *Sander Noordink*). We will, however, treat them as clippings, see section 6.2 immediately below.

## 6.2 Clipping

Clipping is a major process of shortening words in all three languages and equally used to form nicknames. In this section, we discuss “pure” clipping (for combined clipping and suffixation, see section 6.4 below), starting with the observation that D. employs pure clipping the most (35.6%), followed by E. (22.9%) and G. (19.5%).

The most frequent type of clipping is back-clipping, which is expected in Germanic languages due to their word-initial accent. Back-clipping varies in the number of sounds deleted and usually involves a reduction in the number of syllables. We first calculated the back-clipping frequency with respect to the number of syllables: in D. (81.6%) and E. (89.8%), most of the resulting nicknames are monosyllabic (D. *Tout* < *Toutenhoofd*, E. *Ri* < *Riley*), whereas in G., most are disyllabic (66.3%). The last sound of many disyllabic G. nicknames is a vowel homonymous with one of the many suffixes that are popular in nickname formation, namely, schwa (*Ale* < *Alexander*), *-a* (*Katha* < *Katharina*), *-o* (*Karo* < *Karolin*), and, most frequently, *-i* (*Fabi* < *Fabian*), cf. section 6.3 below.

Other types of clippings are rather marginal in all three languages. Interestingly, fore-clipping in G. is only found in female nicknames, while the situation in D. is the exact opposite. On the other hand, fore-clippings are restricted to first names in both languages and reflect first names whose first syllable is unstressed (G. *Nine* < *Janine*, *Resa* < *Maresa*, *Bekka* < *Rebekka*, *Nessa* < *Vanessa*; D. *Dré* < *André*, *Thieu* < *Matthieu*, *Mon* < *Ramon*). Female nicknames with this structure in D. are occasionally clipped at both ends (edge clipping, *Les* < *Celeste*, *Ris* < *Mariska*, *Moon* < *Simone*).

Pure clipping is used less often for male nicknames than for female nicknames in D. This is probably a reflection of female first names being longer on average (2.4 syllables) than male first names (1.9 syllables). The fact that the opposite holds in first name suffixation (cf. section 6.3 below) supports this view: female names generally tend to be shortened, while male names occasionally undergo lengthening. The length of first names shows the same asymmetry in G. and E., yet there is no sex-based asymmetry in clipping vs. suffixation; instead, these languages make more use of a flexible combination of clipping and suffixation (cf. section 6.4 below).

In summary, clipping is productive in all three languages, especially D., with back-clipping being most productive across the three languages. Clipping mostly results in monosyllabics in D. and E., while G. shows many disyllabic clippings. D. exhibits a strong distinction in sex-based use, with clipping being most productive in female rather than male nicknames.

### 6.3 Suffixation

With percentages ranging from 11 to 15, suffixation is not a predominant process of nickname formation in any of the three languages (unless combined with clipping, see section 6.4 below). While clipping is primarily employed with rather long first and last names in our data (on average G. 3, D. 2.5, E. 2.4 syllables), suffixation mostly affects short legal names (average G. 1.7, D. 1.4, E. 1.1 syllables) and is thus mostly a means of lengthening. This may be why D. and E. apply suffixation mostly with male names, as male first names are generally shorter than female.

Various types of suffixes are involved in suffixation. Some suffixes are homonymous with derivational suffixes like *-er*, which is typically used to construct agent nouns (G. *Maiker* < *Maik*, D. *Schrager* < *Schrage*; E. *Lopper* < *Lopp*) or inflectional suffixes like *-(e)s* (G. *Rammes* < *Ramm*; E. *Pontins* < *Pontin*).<sup>19</sup> We also find existing

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<sup>19</sup> In E. *Youngen* < *Young*, *-en* may have been inspired by the unproductive plural suffix *-en* (*oxen*), but could just as well have arisen by mere chance.

onymic suffixes, predominantly loan suffixes, being used in the formation of last names (G. *Klausson* < *Klaus*; E. *Wayneski* < *Wayne*, *Jordanovic* < *Jordan*) and the Portuguese diminutive suffix *-inho* which is well-known from the names of various Brazilian soccer players like *Ronaldinho* (G. *Nansyinho* < *Nansy*, D. *Robinho* < *Robin*).<sup>20</sup>

While E. has no productive diminutive suffix, G. and D. do. Compared with G. and its diminutive suffix *-chen*, D. takes much more advantage of the equivalent suffix *-je* in nickname formation (D. 27.8% and G. 15.7% of all names in this category, respectively). The allomorphy rules of D. mostly apply: the allomorph *-tje* is used if the legal name ends in an alveolar sonorant or a vowel (*Carooltje* < *Carola*, *Guytje* < *Guy* vs. *Rikje* < *Rik*). In G., umlauts are employed in established names or homonyms of lexical items (*Simönchen* < *Simone*, *Wölfchen* < *Wolff*, a last name homophonous with *Wolf* ‘wolf’), although not necessarily (*Julchen* < *Julia*, *Karlchen* < *Karla*).

The use of diminutive suffixes fits well with the hypocoristic nature of positive nicknames. The most frequent suffix in all three languages is *-i* (G. 51.0%, D. 41.7%, E. 72.2%), mostly realized graphically as <i>, <ie> or <y> (G. *Schulzi* < *Schulz*, *Kimmi* < *Kim*, D. *Mikkie* < *Mik*, *Derkie* < *Derk*, E. *Bergie* < *Berg*, *Quinny* < *Quinn*). This extremely popular suffix is clearly associated with prototypical nicknames in all three languages. It has been described as hypocoristic in all three languages and is also used productively in shortenings in G. (*Compi* < *Computer* ‘computer’, *Studi* < *Student* ‘student’; cf. Köpcke 2002). While *-i* is slightly more popular in female nicknames than male ones, but nevertheless highly frequent with both sexes, the suffix *-o* is reserved for male nicknames (G. *Daniello* < *Daniel*, D. *Jorrito* < *Jorrit*, *Kanto* < *Kant*, E. *Tommo* < *Tom*, *Willo* < *Will*).<sup>21</sup> The suffix *-o* is also used in G. shortenings, where it carries a pejorative meaning (*Anarcho* ‘anarchist’, cf. the full form *Anarchist*). This connotation may account for its preference for male nicknames, supporting the stereotype of roughness and toughness.

Apart from derivational, inflectional, and onymic suffixes, a few infrequent suffixes are nickname-specific. Largely extensions of *-i* and *-o* (G. *Timbo* < *Tim*, D. *Jonko* < *Jon*, E. *Taitso* < *Tait*), these suffixes help form expressive consonant clusters (cf. section 5.2 above) and may be regarded as allomorphs of vowel-based suffixes.

<sup>20</sup> Cf. also the G. feminization suffix *-ine* (*Olafine* < *Olaf*) and the E. suffix *-ers* from last name formation (*Lovers* < *Lovegrove*).

<sup>21</sup> For Australian English, Taylor (1992) reports that *-o* and *-i* are used for distinguishing between first and last names as bases of nicknames, cf. *Stevie* < *Stephen* vs. *Stevo* < *Stephenson*. There is no such distribution with *-o* and *-i* in our data.

## 6.4 Clipping and suffixation combined

The two processes introduced above are often used in combination. While suffixation can only lengthen names and clipping only shorten them, both processes in combination are able to produce nearly any kind of desired output. In G., their combination is by far the most frequent source of nicknames (G. 50.9%); in D. (32.4%) and E. (32.6%), the two processes are combined less frequently, but still quite often.

The variety of suffixes is much stronger when combined with clipping. In G. and D., the *i*-suffix is equally as dominant as in pure suffixation (55.6% and 43.8%, respectively; only 26.6% in E.). By contrast, E. exhibits a strong preference towards suffixes with *-s* when combined with clipping. The *-s* suffix (30.5%) is most commonly used for creating monosyllabic nicknames (*Tins* < *Tina*, *Bex* < *Becca*) while syllabic forms ending in *-s* (most frequently with *-ers*, 7.1%) are found in disyllabic ones (*Hockers* < *Hocknell*, *Meggers* < *Megan*, *Strudders* < *Strudwick*). The *-s* suffixes constitute the most frequent type for forming female nicknames in E., with *-i* being the most frequent type for male nicknames.<sup>22</sup> It should be noted that *-i* occurs more frequently in male rather than female nicknames, the opposite of which holds true for G. and D.; cf. the frequencies of final sounds in sections 5.1 and 5.2. Both syllabic and unsyllabic types of *-s* suffixes are found in G. and D., too, but are used rather marginally.

All languages use the suffix *-o* in combination with clipping (although only marginally in D.), without being fully restricted to male names (G. *Julo* < *Julia*, E. *Kelso* < *Kelsey*). However, its frequency with male names in G. is considerably higher (M 7.7% F 1.0%).

G. and D. also use two types of suffixes that do not exist in English. 1) Diminutive suffixes are found in a stronger variety of forms than in pure suffixation. Apart from the Standard G. *-chen*, the dialectal *-le* (*Djole* < *Djordje*) and *-(e)l* are also used (*Xandl* < *Alexandra*, *Resel* < *Theresa*) in addition to the written dialectal pronunciation *-sche* [ʃə] for *-chen* (in *Sofflsche* < *Sophia* even in combination with an *-l* suffix). In D., the standard form *-je* is accompanied by dialectal or Frisian forms as *-(e)ke*, cf. *Miranneke* < *Miranda*, *Ceke* < *Cedrik*. Diminutive forms provide 2.6% of all G. and 13.5% of all D. nicknames of this type. 2) The schwa suffix is rather strong in both languages (G. 9.5%, D. 5.6%) and primarily used for the formation of male nicknames (G. *Sebbe* < *Sebastian*, *Lense* < *Lensing*; D. *Joene* < *Jeroen*).

<sup>22</sup> This is in stark contrast to earlier nickname studies where *-i* was clearly more frequent in female names, cf. Cutler/McQueen/Robinson (1990: 478), de Klerk/Bosch (1997: 298).

Reduplication occurs more frequently in English (2.3%) than in the other two languages (E. *Lele* < *Leia*, *Du-Du* < *Du Frane*), but is still rather marginal. Occasional rhyme pairs have also been found (G. *Reusel Meusel*<sup>23</sup> < *Reusing*, D. *Ellebel* < *Ellen*).

We finally consider the frequency of the suffixes when no distinction between regular suffixation and suffixation combined with clipping is made. Table 8 provides an overview of the most frequent suffixes with their percentage values.

**Table 8:** Suffixes and their frequencies in pure suffixation and in clipping combined with suffixation (percentage among all suffixed nicknames in the database)

Type	German			Dutch			English		
	Sex		All	Sex		All	Sex		All
	M	F		M	F		M	F	
-i	51.9%	58.5%	54.8%	45.9%	39.2%	43.2%	50.4%	30.1%	41.2%
-o	6.9%	0.8%	4.2%	5.4%	–	3.2%	12.2%	6.8%	9.7%
-[ə]	13.1%	3.3%	8.8%	5.4%	2.0%	4.0%	–	–	–
-s	0.6%	0.8%	0.7%	–	5.9%	2.4%	14.6%	30.1%	21.7%
-ers	–	–	–	–	–	–	4.1%	7.8%	5.8%
Diminutive suffixes	1.9%	16.3%	8.1%	16.2%	21.6%	18.4%	–	–	–

We can derive a number of general tendencies from the distribution: a) The *-i* suffix is dominant across the three languages. b) While G. and D. mainly use syllabic suffixes, E. uses the non-syllabic suffix *-s* with greater frequency. c) The *-s* suffix is marginal in G., and in D. and E. it is much more frequent with female nicknames than with male ones. d) Diminutive suffixes are mostly reserved for female names in G. but appear more often and with both sexes in D. e) The *-o* and schwa suffixes have a male connotation and are rare in female names.

<sup>23</sup> *Meusel* might be a diminutive form of *Maus* ‘mouse’ (*Mäusel*) in which the umlaut is obscured in writing. Thanks to an anonymous reviewer for this observation.

## 6.5 Compounding

In compounding, the legal name is used in combination with a lexeme to form a compound, a strategy which is rather infrequent in all three languages (G.: 0.9%, D.: 2.0%, E.: 2.1%). Interestingly, G. compounds are usually formed with the legal name in final position (*Partykarl* ‘party’ + *Karl*, *Keilriemen Kock* ‘fan belt’ + last name *Kock*, *Drogen Marc* ‘drugs’ + *Marc*, etc.), while English displays the reverse order (*Clare Bear*, resembling *care bear*, *Cole World*, *Zoebug*, *Danny Boy*, *Kayla Bug*, *Bower Power*, *Mika-mouse*, resembling *Mickey Mouse*, etc.). In terms of traditional, i.e. standard, determinative compound formation, in G. the name is determined by a lexical item (*Partykarl* ‘Karl is frequently found at parties’), while in E. the name determines a class of items (*Kayla Bug* ‘a bug of the Kayla type’). Nicknames are interpreted differently, of course, but the relative position of the items in compounds may account for G. allowing a greater variety of words in first position, whereas E. mainly has terms for animals and human beings in final position. In D., both types are found with similar frequencies (*Boemboem Mikey*, *All-in Adam* vs. *Loesbal* “*Loes* + ‘ball’”, resembling *voetbal* ‘soccer’, *Maaskantje* “last name *Maas* + *kantje* ‘edge’”, *Tonygoal*).

## 6.6 Blending

Blending is rather marginal in all three languages. While D. has just one blend in the entire dataset, 1.5% of all G. and 2.8% of all E. nicknames are blends. While there are blends from both parts of the legal name (G. *Schmiri* < *Miriam Schmitz*, E. *Wex* < *Alex Wendler*), most blends consist of a name and a noun (or another personal name). The parts derived from the legal name may come first in the blend (G. *Ankaninchen* < *Anika* + *Kaninchen* ‘rabbit’; D. *Rombocop* < *Romboud* + *Robocop*; E. *Mikattack* < *Mika* + *attack*, *Eveready* < *Everett* + (*ever*) *ready*, *Fullldog* < *Fuller* + *bulldog*) or last (G. *Promillhard* < *Promille* ‘ppm (alcohol level)’ + *Gebhard*, *Skandalex* < *Skandal* ‘scandal’ + *Alex* < *Alexander*; E. *Zeustas* < *Zeus* + *Ustas*). While G. uses both types, E. nickname blends are mostly of the former.

Regarding the formation of the blends, we use Ronneberger-Sibold’s (2006) typology. According to this typology, most blends in the sample are transparent, viz. so-called complete blends: both parts are maintained in full and coalesce, with the end of the first part overlapping with the beginning of the second (a so-called telescope blend), cf. *Mika* and *attack* in *Mikattack*. Additionally, so-called contour blends are frequent: in *Machinez* < *Martinez*, for instance, the trisyllabic form and rhythmic structure of *Martinez* is used as a matrix word which incorporates *machine*. Shortened forms are sometimes used for such processes,

cf. *Rombocop*, which incorporates the shortened form *Romb* < *Romboud* into the matrix word *Robocop*, or *Promillhard*, combining the matrix word *Promille* with the shortened form *hard* < *Gebhard*.

## 6.7 Defamiliarization

On occasion, names are found in a deliberately defamiliarized forms. Defamiliarization that results in homonymy with an existing noun or name (G. *Aldi*, otherwise a supermarket chain < *Altmann*; D. *Kaas*, otherwise ‘cheese’ < *Keesjan*) is not part of the present study (see the restrictions mentioned in section 4 above). However, some kinds of defamiliarization occur without resulting in homonymy with an existing name or lexeme. In some cases the outcome is clearly related to the base but cannot be assigned to any of the categories introduced above (G. *Tiffi* < *Stephanie*, *Tinna* < *Tina*). Some defamiliarization affects only the written form (cf. D. *Flen3* < *Flendrie*, with *drie* ‘three’), in other cases it affects the pronunciation. While many instances of defamiliarization appear to be rather idiosyncratic (E. *Shewan* < *Shannon*, *Dank-sho* < *Donagan*), a degree of systematicity can be identified, e.g. in the use of specific variants (G. dialectal *Kerschdin* < *Kerstin*) or languages: G. *Sārah* < *Sarah*, *Änna* < *Anna*, *Däif* < *David*, likely inspired by corresponding E. first names with a fronted /a/; G. *Darco* < *Marco* may be a blend of E. *dark* and *Marco*; D. *Rows* < *Rosan* with a graphic indication of the diphthong as pronounced in English. Curiously, the umlaut <ä> is frequently used in the creation of G. nicknames even when they are not related to an English form (*Päskä* < *Pascal*, *Süb* < *Sabrina*, *Jänsch* < *Janina*, *Mäthe* < *Mathias*).

In D., there are cases where the onset consonants of the first and the last name are switched (*Wim Tielns* < *Tim Wielens*, *Raaf Doelofs* < *Dave Roelofs*), again suggesting the highly creative and playful character of nickname formation. This is also evident in D. nicknames swapping vowels (*Nocci* < *Nico*) and E. nicknames using letters from parts of a name or mere syllables, cf. *B-Ry* < *Bryan*, *B-ren* < *Brenna*, *Ba-la-ke* < *Blake*. Defamiliarization and word play are used more frequently in G. (9.0%) and D. (10.5%) than in E. (4.4%).

## 6.8 Other cases

There are certain nicknames in all three languages (G. 1.1%, D.: 2.2%, E.: 1.7%) that do not correspond to any of the formation types listed above. For example, a few nicknames are formed by changing the beginning of the base, somewhat like prefixation although no prefixes are involved, occasionally including shortening

(G. *Mulf* < *Ulf*, *Spritta* < *Britta*, D. *Flaris* < *Caris*, E. *Crim* < *Tim*). In D., a number of last names incorporating a preposition and an article of the *van de(r) X* type are reduced to forms lacking these parts, cf. *Sluis* < *van der Sluis*, *Kreeke* < *van de Kreeke*.<sup>24</sup> Other cases are again rather idiosyncratic and do not show any recognisable pattern (cf. E. *Been* < *Ben*).

## 7 Word creation in nicknames without a base

The dataset contains a number of nicknames that do not resemble the corresponding legal names, but are not homonymous with other lexical or proprial items either. They do not seem to have any recognizable base and are therefore likely to represent entirely innovative name creations.<sup>25</sup> Strikingly, the D. data contain just one name of this kind (*Sjiemelle*), whereas E. has nine cases of such freely formed nicknames (1.7%) (cf. (1) below) and G. 20 (4.4%) (cf. (2) below), with considerably higher frequencies of male nicknames.

- (1) English nicknames without a base
  - a. male: *Chegs*, *Ders*, *Guence*, *Joogs*, *Nandy*, *Stoff*, *Udzy*, *Walzy*
  - b. female: *Patoonch*
- (2) German nicknames without a base
  - c. male: *Babba*, *Bane*, *Buggi*, *Ji-C*, *Knusterich*, *Negaaaaa*, *Nosti*, *Palo*, *Patzi*, *Piwi*, *Pötzi*, *Quixxen*, *Rasi*, *Zaern*, *Zotze*
  - d. female: *Issi*, *Sagankl*, *Tudt*, *Tuff*, *Vogal*

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**24** Whether these kinds of names are regarded as nicknames or not is a matter of definition. Since names starting in *van de* (similar to names starting only with a determiner like *de* or a preposition like *van*) are characterized by a clear pattern with only one variable part, nicknames based on the only truly individual part of the name may conceivably be regarded, not as nicknames, but rather as simply the relevant part of the last name. Their linguistic status is therefore unclear. However, since such names were provided as nicknames in the internet profiles, they were included as such in the database.

**25** These items were identified as freely coined, but we cannot be fully certain whether this is invariably correct. Nicknames that look as if they had been created from scratch may in fact reflect words from varieties or names that were unknown to the team of linguists working on the database. Although internet searches were conducted for all words that were not clearly categorisable, some uncertainty remains because of the great variety of vernaculars and styles on which the coinages may conceivably be based.

Despite strong idiosyncrasies, some tendencies can be identified, and certain general characteristics of nickname formation as described above are reflected in freely formed nicknames. In G., most such names (15 of 20 names) are disyllabic, whereas in E. monosyllabics (5 of 9) outweigh the disyllabics (4 of 9). E. monosyllabic nicknames end in *-s* in 4 of 5 cases (*Ders*, *Joogs*), whereas G. monosyllabic nicknames end in closed syllables. In both languages, many disyllabic nicknames end in a full vowel. While *-i* is a popular ending in both G. (7 of 15 disyllabic free nicknames, cf. *Nosti*, *Buggi*) and E. (3 of 4 names, cf. *Nandy*, *Walzy*), *-a* and schwa each occur twice at the end of G. nicknames (*Babba*, *Bane*). The number of nicknames containing consonant clusters in *-s* is conspicuous (E. *Chegs*, *Udzy*; G. *Patzi*, *Pötzi* (players from different teams), *Quixxen*, *Zotze*). On the other hand, there are also nicknames with simple, ambisyllabic consonants (*Babba*, *Buggi*, *Issi*).

Occasionally, such nicknames resemble existing lexical items, either formally (cf. *Babba*, reminiscent of *Papa* ‘dad’) or by using word formation elements such as diminutive (*Sagankl*) or moving suffixes (G. *Knusterich*). This again underscores the uncertainty of categorization associated with this type of nickname (cf. footnote 25).

In sum, while the free formation of nicknames is generally unrestricted, most such nicknames conform to the syllabic characteristics as outlined above for nicknames based on legal names. Others reflect the general characteristics of lexical items.

## 8 Results

Our data show that nicknames are formed in a great variety of ways in the three languages under consideration. Given the narrower scope of data that is not homonymous with lexical items or existing names, the diversity is even greater than it appears here. And yet, there are clear, highly frequent patterns in the data. While nearly anything is possible in nickname formation in principle, nickname formation does seem to be governed by prototypes. Actual nicknames may instantiate the prototypes entirely or in part, or an ad-hoc solution may be applied.

As Köpcke (2002) has suggested for *i*-shortenings in G., the prototypes are organized according to cognitive schemas. Such schemas are defined by bundles of phonological-prosodic and semantic characteristics which together circumscribe a prototype structure. Nicknames may be coined with reference to such schemas, whose prototypical characteristics they instantiate either entirely or to a given degree. Two schemas can be identified as particularly relevant in the data: the schema of disyllabic nicknames ending in *-i* (*Conni*) and the schema of monosyllabic nicknames ending in a fricative (*Megs*).

In all three languages, nicknames most frequently instantiate disyllabics with final *-i* (cf. Fig. 2). They are all hypocoristic, suggesting a positive, friendly relationship between name giver and bearer, and associated with softness and tenderness rather than roughness and toughness (cf. Wierzbicka 1992: 378).<sup>26</sup> Although prosody cannot be read off the names in their written form, earlier studies and our experience with nicknames in the three languages suggests that a great majority of the disyllabics form trochees, i.e. they are stressed on the first syllable. The link between the two syllables usually consists of a single consonant.

prototype				
disyllabic trochee open syllable final <i>-i</i> linked by a single consonant +hypocoristic –tough <i>Conni, Passie, Thanny</i>	+ multisyllabic ending in a trochee		<i>Manolo</i>	
	<i>Ini-Bini, Boltini, T-Dougie</i>		<i>Erline</i>	
	<i>Alanjo</i>		<i>Carooltje</i>	
	final full vowel	final vowel	+ closed syllable	<i>Tobse</i>
	+/-tough	+/-tough	+/-tough	<i>Robser</i>
	<i>Joha, Jojo, Robbo</i>	<i>Päde, Joene</i>	<i>Tibis, Hannek, Darbis</i>	<i>Genkes</i>
+ linked by consonant cluster			<i>Nankers</i>	
<i>Basti, Brancii, Mortsy</i>			<i>Mortel</i>	
			<i>Bettschgo</i>	

Fig. 2: The schema of disyllabic nicknames ending in *-i*

Many nicknames that refer to this prototype instantiate all its characteristics, while others diverge to a certain extent, e.g. in terms of the number of syllables, the final sound, or the link between the syllables. In Figure 2, such more peripheral items are placed on the right. To save space, only the diverging features are mentioned; any unmentioned characteristics are in line with the prototype. Divergences from the prototype can also result in changes in the connotation of nicknames. For instance, final *-o* or schwa<sup>27</sup> can produce a ‘toughness’ interpretation in addition to hypocorism. At the right-hand side of Figure 2 are also names

<sup>26</sup> Although we avoid using ‘feminine’ and ‘masculine’ in this context, the associations are clearly linked to sex role stereotypes.

<sup>27</sup> *-o* is used as a pejorative suffix in G., for example. Schwa endings have been interpreted as augmentative in D. (historically *-en* with *n*-apocope), e.g. in Van Langendonck (1978: 6; 1999: 249).

that diverge from the prototype in various ways at once. The idea behind this representation is that nicknames are formed with reference to this specific prototype, with broader schemas (e.g., ending in a full vowel) at hand that allow for the formation of nicknames still resembling the main prototype to a certain degree.

Conjecturing why this specific schema has become so popular across the three languages, an initial consideration may be that the prototype diverges from the structure of “normal” lexical items and therefore produces salient words.<sup>28</sup> For example, “normal” lexical items in West-Germanic languages are usually mono- or disyllabic and either end in a closed syllable or (often in G., more rarely in D.) in schwa. Full vowels are infrequent in unstressed syllables because of the weakening of unstressed vowels that all three languages underwent during the medieval period. As shown above, when language users are free from the restrictions of the lexicon, words that are very different from traditional lexical items seem attractive. On the other hand, the less a nickname resembles the main nickname prototype, the more it tends to resemble traditional lexical items (cf. the types *Päde*, *Robser*). Such items often have a strikingly sex-based distribution, e.g. disyllabics ending in schwa in G. male nicknames. Any resemblance to traditional lexical items seems to be acceptable when such a connotative effect is to be obtained.

A second schema that can be observed in the three languages produces monosyllabics ending in a sibilant. This type, which is very productive in D. and E. but barely in G., carries a connotation of toughness and roughness in E. according to earlier studies (cf. Wierzbicka 1992: 378) and stands in a complementary relationship with its disyllabic counterpart. Figure 3 again shows the distribution of nicknames in accordance with this prototype. Nicknames that diverge from the prototype end in, e.g., a consonant cluster or other types of consonants, with fricatives and other obstruents being closest to the prototype. While the disyllabic prototype shown in Figure 2 is represented across all three languages, the individual languages show different preferences here: D. and G. prefer monosyllabics ending in any kind of fricative rather than specifically in a sibilant. The principle of organization, however, is the same.

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**28** In her comparison of German shortenings with other, more typical lexical structures, Ronneberger-Sibold (1995) similarly identifies a prototype which is maximally dissimilar from the traditional lexicon; cf. also Kürschner (2018), where nicknames and product names are added to the comparison. Note that disyllabics ending in *-i* are also far from the usual structures of legal first names, at least in G. and D., thus distancing the nicknames from traditional lexical items as well as from the legal names on which they are based.

prototype →

monosyllabic closed syllable	+ final consonant cluster <i>Sabs, Rens, Drinks</i>			<i>Marv</i>
final sibilant				<i>Jord</i>
final single consonant +hypocoristic +tough <i>Sash, Bous, Maze</i>	final fricative +/-tough <i>Jev, Daph</i>	final obstruent +/-tough <i>Flip, Mriek, Clayt</i>	final consonant +/-tough <i>Böm, Vaan, Hil</i>	<i>Corn</i>

**Fig. 3:** The schema of monosyllabic nicknames ending in a sibilant

Having introduced the two main prototypes, let us recapitulate how nicknames are formed. Firstly, formation seems to be output-oriented rather than input-oriented. As found by Köpcke (2002) in his analysis of *i*-formations in G., the orientation towards the output described by the schemas can be achieved by differing morphological means such as clipping, suffixation, or (particularly useful) combinations of both. It is not the morphological process itself but rather the conformity of the output with the schema that is at the core of nickname formation. This accounts for the flexibility of nickname formation. Given the base form *Dominik* in G., likely output forms are *Mini* (by clipping), *Domi* (by suffixation) and *Niki* (by clipping and suffixation together), as are *Dome*, *Mino*, *Nika* (all by clipping and suffixation) and many others. Alternatively, language users may coin more individual, less schema-oriented nicknames using other types of name manipulation such as compounding or blending. Despite overall orientation towards the schemas, the phonetic and morphological freedom in the coining of nicknames is considerable.

In contrast to E. and D., G. makes strikingly little use of the second schema. A reason may be this prototype's relation to sex-role stereotypes, which seems to be reflected less in nicknaming in G. than in the other two languages. In her comparison of the sound structure of G. nicknames with the sound structure of regular first names, Nübling (2014) finds that the typical differences between male and female first names (final sound, number of syllables, word accent, relative number of vowels/consonants) are only marginally reflected in nicknames. Trochees in *-i* are mainly associated with femininity in first names, but in nicknames this structure is as productive with men as it is with women (as indeed confirmed by our data). Nübling suggests that the in-group character of nicknames makes the phonological marking of sex unnecessary: while first names are used when introducing new people and can be used without any knowledge of the referent (thus making the marking of sex more necessary), nicknames are usually coined among groups of users who know each other well. Nicknames

therefore do not need to carry sex-related information, whereas more subjective information such as the positive attitude suggested by a hypocoristic form, for instance, is highly relevant.

Nevertheless, certain patterns in our data are related to the sexes. Although specific patterns are rarely reserved exclusively for either sex, some are clearly preferred in male over female nicknames or vice versa. Frequency distributions in our data suggest that patterns may indeed evoke at least a vague sense of femininity or masculinity. For example, disyllabics in *-o* have an analogous tendency to occur in male names across all three languages. Where specific patterns are concerned, however, the apparent sex-orientation of nickname patterns is cross-linguistically far from rigid. A final schwa in disyllabics, for instance, often occurs in male names in G., but with no gender-related distribution in D. Final *-s* occurs in female monosyllabic nicknames in D., but is more or less sex-neutral in E. Monosyllabic nicknames (specifically of the second prototype) tend to be female in D. and E., male in G. This runs counter to existing studies of sound symbolism and suggests that otherwise “male” structures are used for women’s nicknames as a playful way of breaking the mould of sex-based role expectations.<sup>29</sup> As we saw, structures associated with any particular sex also vary and there is no clear association of specific patterns with any one sex. Culture- and language-specific patterns do arise, even in such closely related languages as G., D. and E.

Summarizing the contrastive results from this study, there are a great number of parallels between the three Germanic languages, confirming their close linguistic ties, but also numerous divergences. What do the parallels and divergences suggest about the relationship between the three languages? For example, does the picture of D. between G. and E., as proposed by van Haeringen (1954) on the basis of morphosyntactic properties, hold for the formation of nicknames? Table 9 lists a few parallels and divergences between all three languages or pairs of them.

The table shows that D. shares some characteristics with E. and some with G. The strong use of monosyllabic output is characteristically absent in G., whereas E. similarly lacks the phonological characteristic of allowing schwa suffixes and the morphological use of diminutive markers that are shared by G. and D. A few features are shared between G. and E. but not D., for instance the dominant use of monosyllabics ending in final fricatives for male nicknames. Mostly, however, features are shared between G. and D. or between D. and E. Based on these observations, it is indeed appropriate to say that D. occupies an intermediary position

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<sup>29</sup> Since our data stems from sports teams, the factor that most of them are single-sex teams might play a role here.

between G. and E. in terms of the main characteristics of nickname formation. In certain respects it clusters with both languages, while G. and E. tend to be keep more distance from one another.

**Table 9:** Parallels and divergences in the formation of German, Dutch, and English nicknames (dashed line and empty cell: phenomenon much rarer in the language with the empty cell)

	German	Dutch	English
Frequent Output 1	disyllabic trochees in final <i>-i</i> / full vowel		
Frequent Output 2		monosyllabics in final <i>-s</i> / fricative	
Endings	schwa, diminutive suffixes		–
Processes	defamiliarization and word play		
Acronym formation	seldom	occasional	often
Monosyllabics in fricative	male	female	male

In summary, despite the considerable phonetic and morphological freedom with which nicknames can be coined in G., E. and D., they seem largely to be formed according to just two prototypical schemas. These schemas may serve as a starting point for future studies, for instance by including diachronic data to examine the historical development of the schemas described in our study. The main schema for positively connotated nicknames in our data, viz. the disyllabic trochee in *-i*, is unlike typical lexical items and therefore well-suited to makes nicknames recognizable as such. Various (mostly language-specific) patterns allow the nicknames to bear sex-based connotations.

Between them, the three languages in focus exhibit clear parallels in the formation of nicknames but also diverge from each other in various respects. D. shares a number of features with E. and others with G., but E. and G. only rarely cluster together against D. Based on these observations, it is fair to conclude that a Germanic sandwich, with Dutch between German and English, exists in the realm of nicknames.

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# Analogue of the *way*-construction in German and Dutch: another Germanic sandwich?

**Abstract:** This paper addresses the English *way*-construction [SUBJ<sub>i</sub> V POSS<sub>i</sub> *way* OBL] and its reflexive analogues in German and Dutch. We argue that the different constructions are best compared using conceptual terms describing middle situations in the domain of autocausative motion (Kemmer 1993). Two dimensions are especially important: path traversal and goal-directedness (or telicity). It will be shown that *way*-constructions and their analogues can be arranged along these dimensions. Moreover, there is a general parallel tendency for newer constructions to occupy the domain of ‘path traversal’. In English, this development has resulted in the *way*-construction being dominant at the cost of the historically prior reflexive resultative construction. In Dutch, the *weg*-construction, which expresses path-traversal, competes with the more generally established Transition-to-Location Construction, which specialises in the expression of telic transition of location. In German, finally, there is no schematic *Weg*-construction: the entire conceptual space of autocausative motion is covered by reflexive constructions – either instantiations of a more general reflexive construction [SUBJ V *sich* OBL] or inherently reflexive verbs.

**Zusammenfassung:** Der vorliegende Beitrag behandelt die englische *way*-Konstruktion [SUBJ<sub>i</sub> V POSS<sub>i</sub> *way* OBL] und die äquivalenten Reflexivkonstruktionen des Deutschen und des Niederländischen. Es wird gezeigt, dass sich diese unterschiedlichen Konstruktionen am besten mithilfe von Kategorien vergleichen lassen, die für die Beschreibung von Medialsituationen im Bereich der autokausativen Bewegung entwickelt wurden (Kemmer 1993). Vor allem zwei Dimensionen erweisen sich dabei als wichtig: Zurücklegen eines Pfades und Zielgerichtetheit (oder Telizität). Außerdem wird gezeigt, dass die *way*-Konstruktionen und ihre Äquivalente entlang dieser Dimensionen geordnet werden können und dass jüngere Konstruktionen dazu neigen, zunächst die Domäne des ‘Zurücklegens eines Pfades’ zu besetzen. Im Englischen hat dies dazu geführt, dass die *way*-Konstruktion die historisch ältere reflexive Resultativkonstruktion weitgehend verdrängt hat. Im Niederländischen befindet sich die *weg*-Konstruktion, die das Zurücklegen eines Pfades ausdrückt, in Konkurrenz mit einer bereits etablierten Konstruktion, die auf den Ausdruck eines telischen Ortswechsels spezialisiert ist. Im Deutschen gibt es schließlich keine schematische *Weg*-Konstruktion: Hier wird

die konzeptuelle Domäne der autokausativen Bewegung vollständig von Reflexivkonstruktionen abgedeckt – sei es von Instanziierungen der allgemeineren Reflexivkonstruktion [SUBJ V *sich* OBL] oder von inhärent reflexiven Verben.

## 1 Introduction

In this paper, we address the English *way*-construction as exemplified in (1), one of the classic constructions of English described in Goldberg (1995), and its analogues in Dutch and German, which differ from the English one in at least two respects. First, both involve the obligatory presence of the weak reflexive marker *zich/sich*, which is not present in the English construction. And second, although Dutch allows the NP *een weg*, cf. (2), German does not have a productive construction with a *einen/den/seinen/ihren Weg* NP. Instead it makes use of a reflexive construction (3) to render the meaning of the English *way*-construction.

- (1) *He swam his way into the final.*
- (2) *Hij zwom zich (een weg) naar de finale.*
- (3) *Er schwamm sich ins Finale.*

That German and Dutch use a reflexive marker while English does not reflects a more general trend, as it is well-known that the use of reflexive markers is more constrained in English than in Dutch and particularly in German. Steinbach (2002: 46ff.), for instance, notes that the English reflexive cannot be used as a middle marker at all (on our use of the notion ‘middle’, see section 3.1), whereas both Dutch and German allow the weak reflexive *zich/sich* in so-called anticausative constructions, see (4), and only German has reflexive *sich* in facilitative constructions of the type illustrated in (5) (for similar observations, see also Oya 2002, 2003).

- (4) *The door slowly opened / De deur opende zich langzaam / Die Tür öffnete sich langsam.*
- (5) *The book reads easily / Het boek leest (\*zich) gemakkelijk / Das Buch liest sich leicht.*

In the same vein, only in German can *sich* be used with reciprocal meaning, whereas both English and Dutch make use of other strategies to express reciprocity.

- (6) *They greet each other / Ze begroeten elkaar/mekaar / Sie grüßen sich.*

This seems to suggest the existence of a (kind of) reflexive cline on which English occupies the leftmost position and German the rightmost. It is this cline which we will try to make more specific in this paper, as we will use it to account for the different constructions used in Dutch and German to render the English *way*-construction.

The paper is organized as follows. In section 2, we will address the English *way*-construction and its main alternatives in Dutch and German in detail. Section 3 zooms in on the meaning potential of reflexives in English, Dutch and German, especially in the domain of autocausive motion (see Kemmer 1993; Geniušienė 1987), and tries to link this potential to the constructions discussed in section 2. Section 4 presents a short conclusion and outlook.

## 2 The *way*-construction and its equivalents in Dutch and German

English has several means to describe goal-directed motion along a path, and the *way*-construction is one of them. Its formal and semantic properties as well as the differences between the *way*-construction and a less common but semantically related reflexive resultative construction will be discussed in the following section. Sections 2.2 and 2.3 will address counterparts of the *way*-construction in Dutch and German respectively.

### 2.1 The *way*-construction in English

The English *way*-construction is a productive, non-compositional construction with idiosyncratic syntactic and semantic properties that were described in Jackendoff (1990) and Goldberg (1995, 1996), among many others. It consists of a (typically agentive) subject, a verb, and two post-verbal elements: a noun phrase containing the noun *way* following a possessive pronoun that is co-referential with the subject on the one hand, and a directional adverbial describing the path that is created by the action expressed in the verb on the other. Typical instances of this formal pattern are presented in (7a–c):

- (7) a. *Frank dug his way out of the prison.*  
 b. *Sam joked his way into the meeting.*  
 c. *The hikers clawed their way to the mountain top.*

These examples illustrate some of the peculiarities of the construction. First, it is clear that the NP containing *way* cannot (any longer) be regarded as a straightforward direct object of the verb since the verb in the *way*-construction can be intransitive, as in (7b) and (7c). Second, although the *way*-construction always denotes motion along a path, it is perfectly compatible with verbs that do not express motion at all, as example (7b) demonstrates. The construction can therefore be regarded as a non-compositional “constructional idiom” (Jackendoff 1990: 221) whose meaning cannot be predicted on the basis of its components, but is directly associated with the construction itself. Regarding this meaning, Goldberg (1995: 207) argues that the *way*-construction prototypically involves both creation of a path<sup>1</sup> and movement along this path. Since the path is mostly not pre-established, but created by the subject referent, the movement along the path is often perceived as difficult or hindered by obstacles. Note that there is no consensus in the literature with respect to (the classification of) the meanings expressed by the *way*-construction. Goldberg (1995, 1996) distinguishes a more basic (and hence much more frequent) **means** interpretation, in which case the verb denotes the means by which the path was created, from a derived (and hence less frequent) **manner** interpretation, with the verb denoting an action that merely accompanies the motion (without the implication that a path is being created), as in (8):

- (8) *They were clanging their way up and down the narrow streets.*  
(Goldberg 1995: 209)

In his paper on the diachrony of the *way*-construction,<sup>2</sup> Israel (1996), on the other hand, distinguishes between three senses: a **means** (or path-creation) sense, in which the construction expresses the idea that the subject creates a path and moves along it, often with some difficulty; a **manner** sense, in which the verb is a motion verb that specifies aspects of the way motion occurs (see example (9), taken from Israel 1996: 222); and a so-called **incidental activity** sense, whereby the verb codes “some incidental activity that happens to accompany motion” (Israel 1996: 225). This incidental activity often involves the production of a particular sound along with the motion, as in (10) (example from Israel 1996: 225).<sup>3</sup>

<sup>1</sup> This is consonant with the fact that the most frequent verb in the present-day *way*-construction is *make*.

<sup>2</sup> Detailed information on the rather complex historical development of the construction can also be found in Traugott/Trousdale (2013: 76–91).

<sup>3</sup> Somewhat confusingly, Israel’s incidental activity sense equals Goldberg’s manner sense, whereas his manner sense is subsumed in the means category in Goldberg’s account. In the remainder of this paper, we will follow Israel’s more precise classification.

What unifies the three senses is the fact that they all involve **motion along a path**. Note that both the manner and the incidental activity sense have a considerably lower token frequency than the more central means sense (see Perek 2018).

(9) *She fumbled her way down the dark stairs.*

(10) *He whistled his way to the main front door.*

Before we turn to the Dutch and German analogues of the English *way*-construction, an English ‘competitor’ of the *way*-construction should be introduced. Mondorf (2011) describes the division of labor between the English *way*-construction and an older reflexive construction, which she terms ‘resultative’, as illustrated in (11b).

(11) a. *She worked her way to the top.*

b. *She worked herself to the top.*

In fact, Mondorf (2011) argues that the reflexive resultative construction is being progressively ousted by the *way*-construction, given that the *way*-construction is about four times as frequent as the reflexive one in Mondorf’s present-day English corpus material (ibid.: 405). The reflexive construction still survives in what Mondorf describes as ‘abstract’ environments where the nouns in the directional NPs refer to abstract entities, as in (12):

(12) *Alex worked himself into a crimson-faced rage.*

Based on an analysis of the competition of both constructions in four time periods between 1470 and the present, Mondorf (ibid.: 412) concludes:

The *way*-construction consistently has a higher proportion of concrete rather than abstract uses throughout all four periods. By contrast, reflexive *self* scores consistently lower on concrete than abstract meanings. This distribution is indicative of a division of labor. Concrete uses are a domain of *way*, but abstract ones are more closely associated with *self*. The emergent substitution of *self* by *way* is more advanced in the concrete domain. In particular with abstract meanings, *self* can still to some extent stand its ground. But even here it is continually declining in use.

Unfortunately, Mondorf (2011) does not provide many examples for the abstract uses. A Google-search<sup>4</sup> for combinations of *work* (one of the verbs in Mondorf’s

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<sup>4</sup> Google-search “works herself into” – 170 hits, first 40; Google-search “works her way into” – 180 hits, first 40, conducted on February 4<sup>th</sup>, 2018.

survey) with either (*her*)*self* or *way* in present-day English helps refine the characterization offered by Mondorf. The search reveals that what seems to be at stake is the difference between (concrete or abstract) motion along a path (in the *way*-construction) and subject-internal change (in the reflexive construction)<sup>5</sup> rather than the opposition between concrete and abstract entities in the directional NP.

**Table 1:** *works her way into* vs. *works herself into*: Google-search

	<i>her way into</i>	<i>herself into</i>
<b>works</b>	<p>[motion towards concrete location]: <i>her father's library, a prison cell, the back row, a home, the nest</i></p> <p>[motion towards more abstract location]: <i>a review, a show, the picture, Criminal Girls 2;</i></p> <p>[motion in rankings, sport contexts]: <i>WNBA, Bistaff, the lead in Mumbai, starting line-up, more lineups, varsity lineup, bigger role for Buffs, into the final round</i></p> <p>[emotional, social upward movement]: <i>the hearts of her adoptive parents, his heart, the Allanson household; her neighbor's graces; the industrial segment of town, high society, Karl's circle, New York's upper echelon, prominence, increasingly powerful positions;</i></p> <p>[internal change]: <i>relaxation; an elite swimmer</i></p> <p>[other]: <i>an army marching chant, the piano's low notes</i></p>	<p>[internal change]: <i>the ground, a state, a frenzy, an orgasm, a minor frenzy, a (fine) lather, a frenzy of grief, enthusiasm, a religious ecstasy, a light daze, a fit, a state of enthusiasm, a frenzied state, some blisters, a tantrum, a panicked frenzy, exhaustion, a panic, a tizzy thinking</i></p>

The reflexive resultative construction in present-day English therefore can be said to denote resultative, internal changes of state of the grammatical subject, whereas the *way*-construction is primarily associated with motion (i.e. traversal along a path), be it concrete or abstract. We will return to this observation in section 3.

<sup>5</sup> Both constructions are also compared in Christie (2011). As one of the differences between them, Christie discusses the inability of the prepositional phrase in the reflexive resultative construction to denote a path.

## 2.2 Dutch analogues of the *way*-construction

The Dutch analogues of the *way*-construction have been addressed by Verhagen (2002, 2003), van Egmond (2006) and Poß (2010). The main findings can be summarized as follows. First, contrary to what is claimed in Goldberg (1995), there is a formally similar Dutch analogue containing the NP *een weg* ‘a way’, as in (13).

- (13) *Ze baant zich een weg door de menigte.*  
 ‘She makes her way through the crowd’

Still, this immediate analogue differs from the English *way*-construction in two respects: it contains a weak reflexive pronoun *zich* in indirect object position (instead of a possessive pronoun within the *weg*-NP as is the case in English) and it is much more strongly tied to the verb *banen* than its English pendant, i.e. the type frequency of the verb slot seems to be considerably higher for the English *way*-construction than for the Dutch *weg*-construction (compare Verhagen 2002, 2003 with Perek 2018). Let us go into these two differences in more detail.

Verhagen (2002, 2003) shows that the Dutch *weg*-construction has its origins in a ditransitive construction with the verb *banen* ‘to flatten, to level’, an NP containing the noun *weg* (either definite or indefinite) in direct object position, and a benefactive indirect object, which could, but did not need to be co-referential with the subject, see (14).

- (14) *Koomt gy my een weg tot groeter droefheid baanen?*  
 cometh thou me a way to greater sorrow pave  
 ‘Are you coming to pave me a way to greater sorrow?’  
 (Verhagen 2002: 423)

According to Verhagen (2002), parts of this construction became entrenched over time, resulting in the formation of the highly specific schema *zich een weg banen door* ‘pave oneself a way through’, in which both the indefinite NP *een weg* ‘a way’ and the preposition *door* ‘through’ are fixed elements. However, some generalization takes place as well, resulting in the storage of the higher order schema [V *zich een weg* OBL], in which other verbs and other prepositional phrases can occupy the verb and the directional slot respectively. So the Dutch *weg*-construction became compatible, not only with *banen* and semantically similar verbs of path creation, but also with more abstract verbs denoting the **means** of creating a (metaphorical) path such as *bluffen* ‘bluff’, *vechten* ‘fight’, *vreten* ‘eat’, *zingen* ‘sing’, etc.

It is important to emphasize that in combination with verbs like *bluffen* ‘bluff’ or *zingen* ‘sing’, the reflexive pronoun can no longer be interpreted as benefactive.

This is shown by the fact that a periphrasis by means of a *voor*-phrase seems to be impossible, whereas this is still, albeit only marginally, acceptable with *zich banen*, as in (15). Poß (2010) also stresses the strong preference for the weak reflexive *zich* in the Dutch construction (instead of strong *zichzelf*, cf. (16)), a clear indication of the fact that the reflexive “is not a semantic argument of this construction, but merely a formal position that needs to be filled” (Poß 2010: 91).

- (15) *God baant voor zichzelf een weg in onze geschiedenis.*  
 God makes for himself a way into our history  
 (<http://opvoedkunde1av.khleuven.be/DIDACTIEK/2REFERENTIEKADER/OPVPROJ/VSKOopvproject.htm>)  
 ‘God makes for himself a way into our history’
- (16) *Ze zong (\*voor zichzelf)/ zich een weg naar de top.*  
 She sang \*for herself / herself a way to the top  
 ‘She sang herself to the top’

In present-day Dutch, the preferred and most frequent verb in the construction is *banen* (Verhagen 2002: 412). This holds for both Netherlandic and Belgian Dutch, as Table 2 shows.<sup>6</sup> We can also infer from Table 2 some of the characteristics of the verbs: their subjects are agents performing an intended action. (Manner of) motion verbs are also allowed (e.g. *dansen* ‘dance’, *kronkelen* ‘twist’, *wurmen* ‘wiggle’), as are verbs that clearly do not express motion (e.g. *zingen* ‘sing’, *vreten* ‘eat’).

**Table 2:** The verb *slot* in the Dutch *weg*-construction

<b>[<i>zich een weg</i> V OBL]</b>	<b>Volkskrant (NL)</b>	<b>CONDIV (B) (newspapers)</b>
	<b>n: 43</b>	<b>n: 24</b>
<i>banen</i> ‘make’	23	13
<i>vechten</i> ‘fight’	5	1
<i>snijden</i> ‘cut’	3	7

<sup>6</sup> The Netherlandic Dutch data from the second column (Volkskrant) are from Verhagen (2002: 412), the Belgian Dutch data are based on occurrences of the *weg*-construction in the Belgian Dutch newspaper part of the written CONDIV-corpus, searched using AntConc. The search string was *zich een weg*; irrelevant examples were removed manually.

<b>[zich een weg V OBL]</b>	<b>Volkskrant (NL)</b>	<b>CONDIV (B)</b> (newspapers)
	<b>n: 43</b>	<b>n: 24</b>
<i>bluffen</i> 'bluff'	2	0
<i>vreten</i> 'eat'	2	1
<i>wurmen</i> 'wriggle', <i>boren</i> 'drill'	1	1
<i>beitelen</i> 'chisel', <i>graven</i> 'dig', <i>knagen</i> 'gnaw', <i>kronkelen</i> 'twist', <i>ploegen</i> 'plough', <i>slaan</i> 'hit'	1	0
<i>bijten</i> 'bite', <i>dansen</i> 'dance', <i>zingen</i> 'sing', <i>kreunen</i> 'moan', <i>ploeteren</i> 'to plug', <i>wroeten</i> 'root', <i>roefelen</i> 'poke, browse'	0	1

The other Dutch analogue of the English *weg*-construction is the so-called Transition-To-Location Construction (in the following TLC), which contains a weak reflexive pronoun and a directional phrase, but no *weg*-NP.

- (17) a. *Ze zingt zich naar de top.*  
'She sings her way to the top'
- b. *De kankercel vreet zich door het lichaam.*  
'The cancer cell eats its way through the body' (Poß 2010: 98)

Examples (17a–b) show that the TLC – while denoting some kind of motion – does not itself have to contain a motion verb. In fact, the verbs occurring in the TLC are similar to those in the *weg*-construction.<sup>7</sup> They denote volitional action on the part of an agentive subject. Note that the verb *banen* is possible in the TLC as well, as shown in (18a–b), although *banen* occurs considerably more often in the *weg*-construction than in the TLC.

- (18) a. *Iedereen springt snel in de voertuigen en baant zich met loeiende sirenes door het drukke verkeer.*  
'Everyone quickly jumps into the vehicles and, with roaring sirens, works his way through the busy traffic'  
([www.bol.com/nl/serie/playmobil-brandweer/9200000045845976](http://www.bol.com/nl/serie/playmobil-brandweer/9200000045845976), last accessed: 17-7-2019)

<sup>7</sup> Van Egmond (2006: 91) notes that 86% of the verbs she found in her corpus of TLCs also occur in the *weg*-construction.

- b. *De rivier baant zich door de bourgondische bossen van het natuurpark.*  
 ‘The river runs through the Burgundian forests of the natural park’  
 (www.raftingadventure.be/raften-morvan-bourgogne, last accessed:  
 17-7-2019)

Both van Egmond (2006) and Poß (2010) compare the Dutch *weg*-construction with the TLC. Whereas van Egmond (2006) highlights the differences, Poß (2010) seems to focus more on their similarities. For van Egmond, the main difference between the Dutch *weg*-construction and the TLC is that the former describes the **incremental traversal of a path** by means of or during the action described in the verb, whereas the TLC denotes the **transition to a location**<sup>8</sup> by means of the action denoted in the verb, but without motion along a path. The TLC is therefore obligatorily telic (i.e. the endpoint is reached), whereas the *weg*-construction, which focuses more on the path-traversal, is not specified for telicity (van Egmond 2006: 104). Another difference pertains to temporal structure. Both constructions evoke two temporal sub-events, i.e. the actual or metaphorical motion on the one hand, and the means of motion, as described by the verb, on the other hand. With the *weg*-construction, the sub-events occur simultaneously, whereas the TLC allows interpretations in which the action denoted by the main verb and the motion, i.e. the transition to a particular location, are consecutive (van Egmond 2006: 102). A third difference is that only the *weg*-construction expresses incremental progress along a path. The TLC, by contrast, does not evoke an incremental reading: the location in the directional phrase can be reached by a single instance of the action described in the verb (van Egmond 2006: 103).

It is clear that the expression of a path – by means of the NP *een weg* – has a considerable impact on the meaning of the construction in van Egmond’s account. Poß (2010), on the other hand, plays down the semantic contribution of the NP *een weg*: “the *weg*-element does not play a role in the [...] semantic structure of the construction [and therefore] the entire ‘creating and traversing a path’-part can be skipped” (ibid.: 99). For Poß, both constructions mainly differ with regard to their aspectual properties: whereas the *weg*-construction evokes either an iter-

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<sup>8</sup> Van Egmond (2006: 114f.) argues that the TLC cannot be equated with the so-called (fake) reflexive resultative construction, in spite of their strong formal resemblance or even formal identity (e.g. *Ze schreeuwde zich hees* ‘She yelled herself hoarse’, *ze zong zich in trance/aan flarden/te pletter* ‘She sang herself into a trance/to pieces’/*ze zoop zich in coma* ‘she boozed herself into a coma’). According to her, the reflexive resultative denotes a transition to a state that does not exist independently of the subject, whereas the location the subject moves to in the TLC exists without the subject. This is strongly reminiscent of the English reflexive resultative construction, which, as we argued in section 2.1, denotes a subject-internal change of state.

ative reading (with verbs denoting punctual events, e.g. *springen* ‘jump’) or a durative one, it is not specified for telicity. The TLC, on the other hand, is necessarily telic, but not specified with respect to either iterativity or durativity. When a telic reading is evoked by the directional phrase, e.g. *naar de finale* ‘into the finals’ in (19), and the situation denoted is not punctual, the actual difference between the two constructions can be quite small.

- (19) *Ze danste zich (een weg) naar de finale.*  
 ‘She danced her way into the finals’

Still, there is a functional difference between the two constructions, and this is reflected in the frequency with which they code particular constellations. The inherent telicity of the TLC accounts for the fact that the construction is preferably used to express situations that are strongly goal-directed (e.g. in combination with the directional preposition *naar* ‘to’), whereas the *weg*-construction is more common to denote situations in which the subject (metaphorically) moves along a path (e.g. in combination with the path-denoting prepositions *door* ‘through’ or *over* ‘over’). Table 3 presents the results of several Google-searches involving either more strongly goal-directed (telic) or path-oriented constellations with the same verbs.

**Table 3:** different preferences for *weg* and the TLC<sup>9</sup>

<b>V REFL</b>	<b>+ GOAL</b> <i>naar</i> ‘to’	<b>+ PATH</b> <i>door</i> ‘through’ <i>over</i> ‘over’
danst/dansen/danste/dansten zich ‘dances/dance/danced REFL’	weg: 99 vs. <u>TLC: 143</u>	<u>weg: 92</u> vs. TLC: 61 ( <i>door</i> )
bokst/ boksen/bokste/boksten zich ‘boxes/box/boxed REFL’	weg:21 vs. <u>TLC: 76</u>	weg: 10 vs. <u>TLC: 36</u> ( <i>door</i> )
zwemt/zwemmen/zwom/zwommen zich ‘swims/swim/swam REFL’	weg:10 vs. <u>TLC: 147</u>	<u>weg: 9</u> vs. TLC: 6 ( <i>door</i> )
zingt/zingen/zong/zongen zich ‘sings/sing/sang REFL’	weg: 62 vs. <u>TLC: 78</u>	<u>weg: 68</u> vs. TLC: 61 ( <i>door</i> )
vecht/vechten/vochten zich ‘fights/fight/fought REFL’	weg: 197 vs. <u>TLC: 265</u>	<u>weg: 24</u> vs. TLC: 15 ( <i>over</i> )

<sup>9</sup> Google-search, conducted May 25<sup>th</sup>, 2018.

In each case, the goal-directed constellation favors the TLC, whereas the path-oriented constellation occurs more frequently in the *weg*-construction.<sup>10</sup> These findings also account for the fact that Dutch speakers sometimes prefer the TLC in cases where English uses a *way*-construction. A nice illustration is provided by the following small-scale contrastive study based on Nicci French's novel *Sunday Morning Coming Down* (translated into Dutch as *Zondagochtend breekt aan*).<sup>11</sup> The English original contains 19 instances of the *way*-construction, five of which are translated by means of a *weg*-construction in Dutch (20a). Additionally, two instances are translated using a TLC (20b).<sup>12</sup>

- (20) a. *Josef munched his way through the pile of food in front of him, occasionally wiping his hand across his mouth.* (French 2017a, 61, 10)  
*Josef kauwde zijn weg door de berg eten voor zich en veegde zo nu en dan met zijn hand over zijn mond.* (French 2017b, 61, 8)
- b. *Now he can't stop imagining a worm softly winding its way down the ear and into his head.* (French 2017a, 35–36, 1)  
*Nu kon hij de gedachte dat er een worm in zijn oor zit en zich langzaam naar binnen wringt niet uit zijn hoofd zetten.* (French 2017b, 35–36,1)

Fully in line with the analysis presented here, four out of five *weg*-constructions in the Dutch translation contain the preposition *door*, whereas both TLCs contain goal-directed *naar*.

A third alternative rendering English *way*-constructions into Dutch is by means of a simple intransitive motion verb, as in the following three randomly selected examples from various sources. As this option (which to our knowledge has not been discussed in the literature so far) is quite straightforward, we will not further discuss it in the remainder of this paper.

**10** The only exception is the preference for *boksen* 'to box' to occur in combination with the path-denoting preposition *door* in the TLC. A closer look at the hits, however, reveals that many TLC-examples involve the telic particle *heen*, which emphasizes the endpoint of the path and hence induces a telic interpretation, as in [*hij*] *bokste zich door een burn-out heen* 'he overcame a burn-out' (lit. 'he boxed REFL all the way through a burn-out').

**11** Electronic versions of both the English original (French 2017a and its Dutch translation (French 2017b) were used.

**12** In the remaining cases, other construction types occurred in Dutch, the majority of which involved the use of intransitive verbs.

- (21) a. *I'm sorry, Mr Feltz, they just pushed their way in* (Fargo 3, episode 2, The principle of restricted choice)  
*Het spijt me, Mr Feltz, ze banjerden gewoon binnen* [Dutch subtitles]
- b. *The actual work starts once the sun has set. He then forces his way into the locus delicti of his choice, armed with tripod and camera.*  
*Het eigenlijke werk begint als de zon onder is. Dan dringt hij gewapend met statief en camera binnen bij de locus delicti [sic!] van zijn keuze.*  
 (<https://www.hanswilschut.com/en/blog/2012/12/07/the-miami-series-hanswilschut-edo-dijksterhuis/>, last accessed 23-1-2018 [English and Dutch version of the website])
- c. *It took longer for Karlsson to edge his way out of the car and raise himself on to his crutches.* (French 2017a, 1, 8)  
*Bij Karlsson duurde het langer voordat hij was uitgestapt en zich op zijn krukken had geheesen.* (French 2017b, 1, 7)

To summarize, Dutch features three constructions rendering English way-constructions: (i) a *weg*-construction, which resembles English *way* in typically evoking the notion of moving along a path, (ii) the so-called Transition-To-Location Construction, which is reflexive in form but does not contain a *weg*-NP and gets a telic interpretation, and (iii) an intransitive construction with a (mostly non-reflexive) movement verb.

### 2.3 German analogues of the way-construction

At first sight, German seems to have only one straightforward option to render the English *way*-construction, i.e. by means of a reflexive construction containing a (normally non-reflexive) verb, a weak reflexive pronoun *sich* and a directional phrase, e.g. *durch die schmale Straße* in (22a), *ins Finale* in (22b), and *zum Sieg* in (22c).

- (22) a. *Ein riesiger Bagger gräbt sich durch die schmale Straße.*  
 'A giant excavator digs its way through the narrow street'
- b. *Sie schlägt sich ins Finale.*  
 'She hits her way into the final'
- c. *Er stöhnt sich zum Sieg.*  
 'He moans his way into victory'

As argued by Smirnova/Mortelmans (subm.), there are no compelling reasons to assume the existence of a (schematic, non-compositional) *Weg*-construction in

German. A corpus study (ibid.) reveals that instances of the pattern with the noun *Weg* are indeed very rare and occur almost exclusively with the verb *bahnen* ‘to pave’. Most importantly, the pattern can be given a compositional interpretation, with the reflexive pronoun expressing a benefactive indirect object and the *Weg*-NP a straightforward direct object, as e.g. in (23):

- (23) *Ich bahne mir meinen Weg durch Smog und Baustellenlärm ...* (taz, 17-9-2009)  
 ‘I pave (me.DAT) my way through the smog and the noise of the construction site ...’

In contrast to the Dutch *weg*-construction, there is still considerable variation with respect to the form of the *Weg*-NP: as shown in Table 4, we find combinations with the definite article, with the indefinite article and with possessive pronouns. The combination of *sich* with a possessive pronoun (*seinen/ihren*) seems to be the preferred one, hinting at a certain degree of entrenchment and conventionalization. This combination of a reflexive pronoun with a co-referential possessive pronoun is odd in present-day German (compare *Ich wasche mir die Hände* with ?*Ich wasche mir meine Hände*). This suggests that the reflexive pronoun is losing some of its purely reflexive meaning in the construction.

**Table 4:** *Weg*-modifiers in the German *Weg*-construction

DEREKO (W-öffentlich)	<i>sich seinen/ihren Weg</i> ‘REFL his/her way’	<i>sich den Weg</i> ‘REFL the way’	<i>sich einen Weg</i> ‘REFL a way’
<i>bahnt</i> (form)	<i>seinen</i> : 356; <i>ihren</i> : 181	237	151
<i>bahnen</i> (lemma)	<i>seinen</i> : 531; <i>ihren</i> : 686	530	346

As *bahnen* is the only verb occurring in this construction, the construction may be considered a fixed idiomatic expression with a high degree of entrenchment and lexicalization. This is the fundamental difference between the German *Weg*-construction and its Dutch and English counterparts: whereas the latter display a medium to high degree of schematicity and productivity and allow a variety of verbs in the verbal slot, the former is restricted to one verb only.

The German reflexive construction as exemplified in (22) above, on the other hand, may be regarded as a non-compositional, schematic, and productive construction in present-day German (cf. Smirnova/Mortelmans subm.). The verb slot may be filled with verbs from different semantic groups and syntactic classes, for example transitive verbs such as *graben* ‘dig’ in (22a), *schlagen* ‘hit’ in (22b) and *lesen* ‘read’ in (24a), as well as intransitive verbs such as *stöhnen* ‘groan’ in (22c)

and *spielen* ‘play’ in (24b). In each case, the construction describes the traversal of a (metaphorical) path by means of or during the action described by the verb, although the verbs do not express motion.

- (24) a. *Ich habe mich jetzt durch den kompletten Thread gelesen ...* (DECOW14)  
 ‘Now I have read my way through the complete thread’  
 b. *... Musik, die sich da luftig und leicht in die internationalen Top 10 spielte.*  
 (DECOW14)  
 ‘music which played its way into the international Top 10 lightly and softly’

The German reflexive construction may receive the same two interpretations that are typical of its English and Dutch counterparts, i.e. telic (22b, 22c; 24a, 24b) or unspecified with respect to telicity (22a). These readings are mostly dependent on the larger context of the utterance and on the preposition used in the directional phrase. The corpus study in Smirnova/Mortelmans (subm.) reveals that prepositional phrases with *durch* ‘through’ usually favor the atelic interpretation, whereas other prepositions such as *in* ‘in, into’, *zu* ‘to’ etc. are more compatible with the telic interpretation, implying that the goal has been reached. The reflexive construction in German may therefore be regarded as a counterpart to the English way-construction as well as to both Dutch constructions, i.e. the *weg*-construction and the TLC.

It must be noted, however, that the German reflexive construction is often difficult to delineate from reflexive patterns in which a verb is accompanied by a weak reflexive and a directional phrase, cf. e.g. (25). Some of these verbs obligatorily combine with a weak reflexive (see below) and a directional phrase, making it difficult to draw a line between a non-compositional reflexive construction as a counterpart of the English way-construction on the one hand, and a lexical reflexive verb with a directional phrase in its subcategorization frame on the other hand (see Smirnova/Mortelmans subm. for detailed discussion).

- (25) a. *Er stürzte sich aus Verzweiflung in das Ägäische Meer.* (DWDS-Kernkorpus, schwanit1999)  
 ‘In despair, he plunged into the Aegean Sea’  
 b. *Aida, die sich in die Gruft geschlichen hatte ...* (DWDS-Kernkorpus, oper1998)  
 ‘Aida, who slipped her way into the tomb’

In section 2.1, we noted that manner of motion verbs frequently appear in the English way-construction. As typical representatives of this category, Perek (2018)

notes the following verbs, for which the Oxford Duden German dictionary provides reflexive translations: *edge* (German *sich schieben*), *thread* (German *sich schlängeln*), *trail* (German *schleifen, sich hinziehen*), *weave* (German *sich schlängeln*) and *wind* (German *sich winden, sich schlängeln*). In general, German has a much higher number of lexicalized or inherently reflexive verbs, often associated with motion, e.g. *sich begeben* ‘go’, *sich verkriechen* ‘sneak away’, *sich verkrümmeln* ‘sneak off’, *sich trauen* ‘dare to go’, *sich wagen* ‘dare to go’, etc. And indeed, as already pointed out in Pedersen (2013), the English *way*-construction is mostly translated into German using an inherently reflexive verb rather than a reflexive construction. This is demonstrated by Pedersen (2013) on the basis of a parallel corpus consisting of original English texts and their translations into Spanish, German and French. (26) shows examples from English and their German translations (ibid.: 245–246):

- (26) a. E *he barged his way past Hillary Clinton*  
 G *konnte er sich an Hillary Clinton vorbeidrängeln*  
 b. E *if you try to bob and weave your way ... towards an end game*  
 G *wenn man versucht, sich ... auf ein Endspiel zuzuschlängeln*  
 c. E *we may be able to manage our way through it*  
 G *sind wir vielleicht in der Lage, uns hindurchzumanövrieren*

Above, we argued that the German reflexive construction [V *sich* OBL] may be seen as a counterpart of the English *way*-construction. In fact, the situation appears to be more complicated than that: in view of the high number of German inherently reflexive verbs, together with the fact that the English *way*-construction is often translated into German using such an inherently reflexive verb, as illustrated in (26), we can conclude that there are two different construction types in German to render the English *way*-construction. On the one hand, there is the schematic and relatively productive reflexive construction as illustrated in (22) and (24) above, which accommodates non-reflexive verbs in its verb slot. On the other hand, there are numerous lexical verbs which obligatorily feature a weak reflexive, as exemplified in (25)–(26). As both types of constructions, i.e. the schematic one and the substantial lexical ones, resemble each other in form and semantics, the boundary between them is not always clear.

In the next section, we will look more closely into the semantics of **auto-causative motion**, a conceptual domain in which the English, Dutch, and German constructions described above seem to occupy different regions.

### 3 Autocausative motion

#### 3.1 Middle situations

In this section, we will focus on the conceptual semantics of middle situations, using mainly the typological distinctions introduced by Kemmer (1993). Under such an onomasiological approach, well-known from typological research on semantic maps, functionally equivalent constructions from different languages are compared as to their positions in the same semantic space. The English *way*-construction and the analogous reflexive constructions in Dutch and German encode middle situations, i.e. situations in which the initiator of the event (i.e. the subject) is also its endpoint (ibid.: 337). In contrast to straightforward agent-patient situations, the patient is therefore co-referential with the actor, or in the words of Maldonado (2009: 70), “the subject’s action cannot be distinguished from the object’s affectedness” and the event “remains in one participant” (ibid.). The *way*-construction and its analogues specifically encode middle situations within the conceptual sub-domain of motion events such that the mover (the grammatical subject) is also the participant that undergoes motion, i.e. is affected by it.

In the semantic map of middle situations proposed by Kemmer (1993: 202) it is the dimension of autocausative motion that is particularly important for our purposes, cf. Table 5:

**Table 5:** Reflexive – middle cline (Kemmer 1993: 224)

REFLEXIVE SITUATION	NON-TRANSLATIONAL MOTION	CHANGE IN BODY POSTURE	TRANSLATIONAL MOTION
	<i>nod, bow, turn, stretch</i>	<i>sit down, stand up</i>	<i>go, move, climb</i>
	two-participant events		one-participant events

The cline in Table 5 represents the conceptual continuum of autocausative situations. In an autocausative situation a referent (usually human or animate) performs an action and undergoes a change of state at the same time. Autocausative situations are often motion events, and Table 5 shows a continuum of motion events in the domain of autocausative situations.

The continuum covers the semantic space between reflexive situations on the left, with two distinguishable but co-referential participants, and translational motion on the right, representing ordinary intransitive situations like *go, move, climb, fly* etc., in which only one participant is involved. The domain of non-trans-

lational motion with events like *nodding*, *bowing*, *turning*, *stretching* is located near the reflexive pole; in these events, the active participant, e.g. a person, may still be distinguished from the participant on which the action is performed, which is usually the participant's own body or parts of it. Further towards the one-participant end of the cline, there is the domain of body posture change with situations like *sit down*, *stand up*, *lay down* etc. in which it is even more difficult to distinguish between active and affected participants.

From a typological point of view, languages differ in how they employ different markers along this continuum. The right part of the table is likely to be coded by simple intransitive verbs, the left part of the continuum is likely to be coded by transitive verbs with reflexive morphemes signaling the co-reference of the participant roles.

In the next two sections, we will look at reflexive markers and the analogues of the *way*-construction in Dutch and German with respect to how they cover the semantic space represented in Table 5 above.

### 3.2 Weak reflexives in the autocausative domain

It is well known that many languages distinguish between strong and weak forms of the reflexive morpheme (cf. Kemmer 1993; Steinbach 2002). Dutch has both, German has only one form which serves both functions, and English has only the strong form:

(27)		weak form		strong form
	E	–		<i>-self</i>
	G	<i>sich</i>	=	<i>sich</i>
	D	<i>zich</i>		<i>zichzelf</i>

In Dutch, the strong forms are used in typical reflexive situations, see (28), whereas the weak forms occur with lexicalized inherently reflexive verbs, see (29a), with verbs of grooming (29b) and in some middle situations (see below).

(28)	D	<i>ik hoor mezelf</i>	G	<i>ich höre mich</i>	
	E	<i>I hear myself</i>			
(29)	a.	D	<i>zich schamen</i>	G	<i>sich schämen</i>
		E	<i>be ashamed</i>		
	b.	D	<i>zich kammen</i>	G	<i>sich kämmen</i>
		E	<i>comb</i>		

Unlike Dutch, German is a one-form language, as it does not distinguish between weak and strong reflexive forms (cf. Steinbach 2002: 47). In German, the reflexive pronoun *sich* is thus used not only in typical reflexive situations as in (28), but also with inherently reflexive verbs in (29). English makes use of a morphologically strong reflexive (*herself* etc.) that is not in opposition with a weak one. Generally, the use of the strong reflexive form in English is restricted to typical reflexive situations, see (28) (but see Siemund 2010, 2014 for exceptions).

The West-Germanic languages differ with respect to the middle properties of the reflexive markers. For instance, the middle properties of German *sich* are considerably more pronounced than those of its English and Dutch counterparts, especially in the domain of motion events. With respect to the continuum of the middle situations introduced in the previous section (see Table 5), the German reflexive marker *sich* is used in all sub-domains, cf. (30). The verbs given in (30) are lexicalized reflexive verbs; the weak reflexive pronoun is obligatory and cannot be omitted (without a considerable change in meaning).

(30) NON-TRANSLATIONAL MOTION

*sich bücken, sich (ver)beugen, sich (um)drehen, sich (aus)strecken*

CHANGE IN BODY POSTURE

*sich (hin)setzen, sich (hin)legen, sich erheben, sich anlehnen*

TRANSLATIONAL MOTION

*sich bewegen, sich begeben, sich entfernen, sich nähern*

In Dutch, the situation is more complicated, cf. (31). The weak reflexive *zich* occurs in all sub-domains of autocausative motion, but its use is by no means obligatory and subject to variation. Verbs denoting non-translational motion like *bukken* ‘stoop’ or *buigen* ‘bend’ for example mostly occur with a reflexive marker, but non-reflexive uses are also found, depending on the context. In the subdomain of translational motion, on the other hand, non-reflexive intransitive uses seem to be dominant, but reflexive uses are not completely excluded (*zich bewegen, zich begeben*).

(31) NON-TRANSLATIONAL MOTION

*De aarde draait rond de zon.*

‘The earth revolves around the sun’

*Ik kan niet meer bukken*

‘I cannot bend anymore’

*Hij buigt voor de koning.*

‘He is bowing to the king’

*Hij draait zich om in zijn graf.*

‘He turns over in his grave’

*Ze bukte zich om de post op te rapen.*

‘She bent down to pick up the post’

*Hij buigt zich naar voren.*

‘He is bowing forward’

## CHANGE IN BODY POSTURE

*gaan zitten, gaan liggen*  
 ‘to sit down, to lie down’

*zich neerzetten, zich neerleggen*  
 ‘to sit down, to lay down’

## TRANSLATIONAL MOTION

*Hij kon niet meer bewegen*  
 ‘He couldn’t move anymore’

*De danser bewoog zich over het podium.*  
 ‘The dancer moved across the stage’  
*Hij begeeft zich naar huis.*  
 ‘He goes home’

Duinhoven (2001: 109) argues that the presence of the reflexive marker is associated with intentionality: if the subject of the sentence is conceptualized as an intentional actor (especially in the domain of translational motion), the reflexive is used. According to Oya (2003: 220), the reflexive signals that the body is somehow affected by the action denoted by the verb. We would like to propose an additional semantic component that accounts for the presence of the reflexive in the domain of autocausative motion, namely the **goal-directedness** of the coded situation. If a reflexive marker is used in situations of non-translational motion, i.e. in situations which do not necessarily involve the movement of the subject towards a fixed endpoint (e.g. *draaien* ‘turn’), the situation is interpreted as **directed** towards the **goal** or the **endpoint** of the **motion**. Instances of the lemma *draaien* ‘turn’ accompanied by the reflexive pronoun *zich*<sup>13</sup> in the Corpus of Spoken Dutch (CGN<sup>14</sup>) either involve the prefix *om* (*zich omdraaien* ‘to turn around’), denoting a fully completed turn, or a directional prepositional phrase (e.g. *naar mij toe* ‘towards me’, *op zijn buik* ‘onto his belly’). Intransitive instances without *zich*, on the other hand, are perfectly compatible with situations that do not evoke an endpoint, as in the following examples, again taken from the CGN.

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**13** The entire CGN was searched for the lemma *draaien* ‘turn’ accompanied by *zich* (distance: from 0 to 3 words). We found 140 relevant instances, 119 of which contain the separable prefix *om* ‘around’. One instance contains the prefix *weg* ‘away’. In the remaining 21 instances, *draaien* combines with prepositional phrases introduced by *naar* ‘to(wards)’ (11 instances), *op* ‘on(to)’ (7 instances), *in* ‘in(to)’ (1 instance) and *tot* ‘towards’ (1 instance), all of them clearly indicating the goal of the movement.

**14** We conducted searches in the entire CGN, also including component *o*, (/comp-o/) which contains written material read aloud. In the corpus references, /nl/ refers to Netherlandic Dutch, /vl/ to Belgian Dutch (Flemish).

- (32) a. *ja ja oh ja ja nou z ja dat zijn auto's die draaien*  
 'yes yes oh yes yes well yes that are cars that are running'  
 (CGN/comp-a/nl/fn000747.sea#fn000747.94)
- b. *kun je effe draaien en zoeken naar de stoel*  
 'can you turn for a second and look for the chair'  
 (CGN/comp-a/nl/fn008549.sea#fn008549.132)

In a similar vein, reflexive instances of non-translational *buigen* 'bend, bow' in the CGN<sup>15</sup> typically combine with prepositional phrases indicating the movement's endpoint (this is the case in 81 out of 82 instances in the CGN, see examples (33a–d)), whereas intransitive, non-reflexive *buigen* typically evokes situations in which the subject moves his or her body without focussing the movement's endpoint or direction (see examples (34a–c)).<sup>16</sup> This explains why reflexive *sich buigen* equals English *bend down/over (towards)*, while non-reflexive *buigen* must be translated by simple *bow* or *bend* (typically *to someone/something*).

- (33) a. *ik buig me iets naar voren.*  
 'I am bending forward a little'  
 (CGN/comp-o/nl/fn001200.sea#fn001200.123)
- b. *Rufus' oma links van hem boog zich naar 'm toe.*  
 'Rufus' grandma on his left bent towards him'  
 (CGN/comp-o/nl/fn001564.sea#fn001564.41)
- c. *m'n moeder boog zich over me heen.*  
 'My mother bent over me'  
 (CGN/comp-o/nl/fn001256.sea#fn001256.83)
- d. *Daniël boog zich voorover [...]*  
 'Daniel bent forward'  
 (CGN/comp-o/nl/fn001531.sea#fn001531.1)
- (34) a. *hij boog toen ik hem complimenten maakte.*  
 'He bowed when I paid him compliments'  
 (CGN/comp-o/vl/fv801022.sea#fv801022.6)

<sup>15</sup> The verb *buigen* occurs 235 times in the CGN, of which 82 instances are reflexive and 47 intransitive and non-reflexive.

<sup>16</sup> This does not imply that intransitive non-reflexive *buigen* cannot occur with prepositional phrases like *voorover* 'forward' or *naar voren* 'forward'. Such uses do occur, but less frequently than the reflexive use of the verb (*buigt zich naar voren* (7) vs. *buigt naar voren* (3); *buigt zich voorover* (14) vs. *buigt voorover* (9)).

- b. *in de kwartfinale van de Heineken Trophy moest de Limburger met zes drie en zes vier buigen voor de Spanjaard Tommy Robredo.*  
 ‘In the quarter finals of the Heineken Trophy the Limburger lost to [lit. had to bend to] his Spanish opponent Tommy Robredo with 6-3 and 6-4’ (CGN/comp-k/nl/fn003726.sea#fn003726.2)
- c. *z’n eigen kinderen bogen voor hem en kusten z’n oude handen.*  
 ‘His own children bowed to him and kissed his aged hands’ (CGN/comp-o/vl/fv800926.sea#fv800926.11)

Likewise, sentences with reflexive *bukken*<sup>17</sup> ‘stoop, bend’ evoke situations in which the subject assumes a bent-down position in order to do something in this position. Not surprisingly, 10 out of 22 instances of *zich bukken* in the CGN are accompanied by a final clause introduced by *om* ‘in order to’, see examples (35a–b). Another typical example of *zich bukken* is (35c), in which reflexive *bukken* is accompanied by a directional prepositional phrase (*te ver over de reling* ‘too far over the guard rail’).

- (35) a. *ze bukte zich om de post op te rapen*  
 ‘she stooped to pick up the mail’  
 (CGN/comp-o/nl/fn001214.sea#fn001214.24)
- b. *als we naar de wei gingen dan moesten we ons bukken hé om niet aan die draad te komen.*  
 ‘when we went to the meadow, then we had to stoop in order not to touch the wire’  
 (CGN/comp-a/vl/fv400204.sea#fv400204.256)
- c. *daar buk je je te ver over de reling*  
 ‘there you are leaning too far over the guard rail’  
 (CGN/comp-a/nl/fn007993.sea#fn007993.40)

Non-reflexive *bukken*, on the other hand, is used to describe the movement *an sich*, as in (36a). Interestingly, 5 out of 13 non-reflexive *bukken*-instances occur as infinitival complements of negated modal verbs (as in (36b–c)) and thus imply that the stooping position cannot, need not or is not intended to be achieved, whereas none of the 22 reflexive instances of *bukken* contains a negator.

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<sup>17</sup> The verb *bukken* is attested 48 times in the CGN. Leaving adjectival uses aside, the verb is used 22 times in reflexive constructions, while it occurs 13 times as an intransitive non-reflexive verb.

- (36) a. [...] *ik was net aan m'n knie geopereerd en [...] ik mocht [...] niet bukken.*  
 'I had just been operated on my knee and I was not allowed to stoop'  
 (CGN/comp-a/nl/fn000616.sea#fn000616.230)
- b. *uh nou uh golfen is uh knikkeren voor grote jongens die niet willen bukken.*  
 'uh well uh playing golf is uh (like) playing marbles for big boys who do not want to stoop'  
 (CGN/comp-a/nl/fn000616.sea#fn000616.230)
- c. *nou 't was er allemaal wel maar niet echt goed uh nagedacht en zij zegt ik wil dan ook een ijskast waarbij ik niet hoef te bukken [...]*  
 'well everything was there but not really well considered and she says then I also want a fridge for which I don't have to stoop'  
 (CGN/comp-a/nl/fn000640.sea#fn000640.51)

We therefore argue that the function of the Dutch weak reflexive in the middle domain of motion is to mark **the goal-directedness** of an action. Since this is the core meaning of the reflexive, we suggest that the notions of intentionality, resultativity, and telicity often associated with the reflexive variants of the verbs in the domain of autocausive motion as in e.g. (31) represent possible extensions and context-induced interpretations of this core meaning.

To conclude, in Dutch the weak reflexive can be used in situations of auto-causive motion, in which it is clearly associated with the notions of goal-directedness and resultativity, i.e. the very notions that are also evoked by the TLC.

### 3.3 Autocausive motion in English

In English, which lacks a weak reflexive form, the strong reflexive may be used in resultative constructions which resemble middle situations involving autocausive motion to some degree, see (37) (examples are taken from Oya 2002).

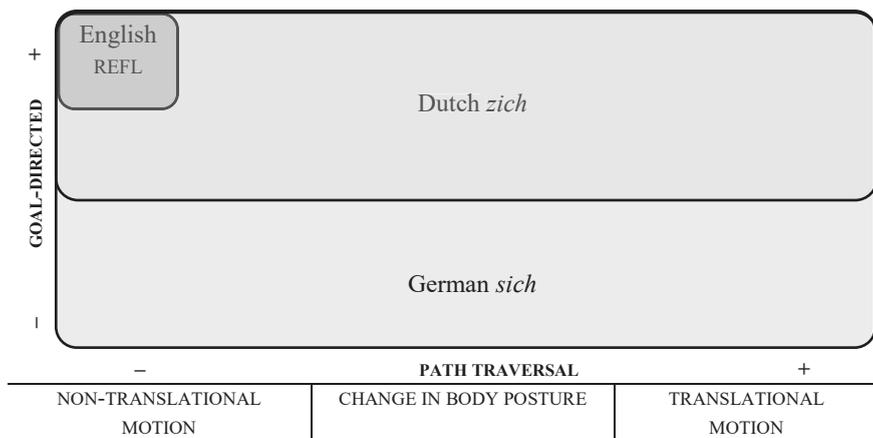
- (37) a. *Joggers often run themselves sick.*  
 b. *Don't expect to swim yourself sober.*  
 c. *She danced herself into a frenzy.*

Usage of the English strong reflexive in this domain is extremely restricted, however. It cannot be used, for example, in contexts involving motion in which the result phrase expresses the final **location** of the subject (Oya 2002: 976). In contrast to German and Dutch, the reflexive is excluded in such cases, see (38), taken from Oya (2002).

- (38) a. *She danced/swam (\*herself) free of her captors.*  
*Ze danste/zwom \*(zich) vrij van haar ontvoerders.*  
*Sie tanzte/schwamm \*(sich) frei von ihren Entführern.*
- b. *A bantam chick kicks (\*itself) free from its shell.*  
*Een kuiken slaat \*(zich) vrij uit zijn schaal.*  
*Ein Küken kickt \*(sich) frei von seiner Schale.*

If a reflexive is available, as illustrated in (37a–c), some metaphorical change of state of the subject is expressed which is possibly achieved through motion. This does not seem to involve any actual change of location, however. Indeed we observed in section 2 above that the reflexive construction in English denotes resultative, internal changes of state of the grammatical subject, whereas the *way*-construction is typically associated with motion along a path.

For English, we thus conclude that the (strong) reflexive is hardly used in the domain of autocausive motion at all. In those very rare cases in which the reflexive is used, the situation described does not involve any motion along a path or towards a goal, but rather a change in the internal, emotional or mental state of the subject.



**Fig. 1:** English, Dutch and German reflexives in the autocausive domain

Summing up, we may now locate the reflexive markers of German, Dutch and English on the continuum of autocausive motion represented in Table 5 above. Figure 1 is a modified version of the same cline, involving two basic semantic dimensions. We have substituted the original participant dimension (one vs. two

participants) with the semantic component of movement or traversal of a path, where the domain of non-translational motion does not involve the traversal of a spatial path, whereas translational motion clearly involves the traversal of a path towards a goal or an end point. In order to integrate the distinctive function of the Dutch reflexive, we also added the semantic component of goal-directedness to the table.

In German, the weak reflexive is used in all sub-domains of autocausive motion; the whole conceptual space in Figure 1 is covered by German *sich*. In Dutch, the use of the weak reflexive is more or less restricted to contexts of goal-directed motion. The English strong reflexive *-self*, insofar as it occurs at all, is only used in contexts denoting resultative, internal changes of state of the grammatical subject without bodily motion in space towards some speaker-external goal.

### 3.4 The *way*-construction and its analogues in the autocausive domain

In this section, we will have a closer look at the Dutch and German analogues of the English *way*-construction. We will first relate the constructions to each other crosslinguistically and then compare the individual reflexive markers language-internally.

As introduced in section 2, the English *way*-construction is basically associated with motion along a path, either spatially or metaphorically. This motion often requires some effort on the part of the subject referent, who overcomes obstacles by creating and traversing the path. Importantly, the English *way*-construction is not specified with respect to telicity, i.e. it is compatible with the goal being achieved or not. In German, there is only one analogue to the English *way*-construction, i.e. the reflexive construction (see section 2.2). Dutch (see section 2.1) has two different analogues to the English *way*-construction, and there is a division of labour between them. The *weg*-construction is not specified with respect to telicity and goal-directedness, i.e. it is not necessarily resultative. The TLC, on the other hand, is telic and resultative, i.e. it usually implies that the goal has been reached.

The semantics of the English *way*-construction and their analogues in Dutch and German may be described in the same conceptual terms as the autocausive domain of middle situations. There is usually a human subject who intentionally creates a path along which he or she moves towards a goal. Figure 2 7 below therefore uses the same conceptual space as Table 5 and Figure 1 to compare the constructions.

The English *way*-construction and the German reflexive construction [V *sich* OBL] cover the whole conceptual space of autocausive motion, as they convey meanings compatible with both [+/- goal directedness] and [+/- path traversal] situations. The English reflexive resultative construction is shown in the top left corner of Figure 2 (see section 2 and Figure 1). It usually refers to subject-internal change and has gradually been replaced by the *way*-construction, which now occupies the whole conceptual space of autocausive motion. The only remaining area in which the resultative reflexive construction survives is the region characterized by the features [- path traversal] and [+ goal-directed].

The German reflexive construction is similar to the English *way*-construction with respect to semantics. Its productivity is more restricted, however (see section 2.2), mainly due to the fact that many lexical verbs which otherwise could have been perfect candidates for the verbal slot of this construction are in fact lexicalized reflexive verbs. Hence, the highly productive **lexical** reflexive pattern of German blocks the schematic construction [V *sich* OBL]. Both constructions are therefore in competition for the same conceptual space of autocausive motion (compare Figures 1 and 2).

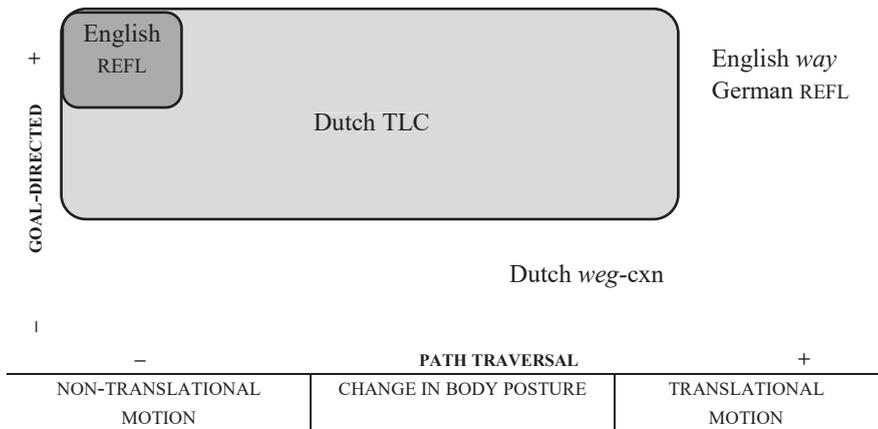


Fig. 2: Analogues of the *way*-construction in the autocausive domain

As shown in section 2.1, the Dutch TLC and the *weg*-construction differ with respect to telicity and resultativity. The *weg*-construction describes the incremental traversal of a path by means of, or during, the action described in the verb, i.e. it is not specified for telicity. The TLC, on the other hand, denotes the transition to a location and implies that the endpoint is reached. These two constructions share the conceptual space of autocausive motion; they show a basic division of

labor, but also an area of overlap. The TLC is preferred in situations that are more goal-directed and not necessarily involve a path traversal, hence it is located in the top left area of the continuum in Figure 2. The *weg*-construction, on the other hand, is located towards the less goal-directed, more path-oriented end of the continuum.

A corpus study by Smirnova/Mortelmans (subm.), however, detects some recent diachronic changes in the German reflexive construction which may be interpreted as early evidence of a (sort of) division of labour between the older lexical reflexive pattern and the more recent syntactic reflexive construction. During the 20<sup>th</sup> century, the reflexive construction seems to have developed a dominant sense of [+ path traversal] without an obligatory reference to a reached endpoint. This development manifests itself for example in the increased relative frequency of atelic verbs filling the verbal slot of the construction, and also in the increased relative frequency of the preposition *durch*, which is becoming the dominant preposition in the construction, see (39).

- (39) a. [...] *soll man sich jetzt wirklich durch 70.000 Seiten Material arbeiten*  
(DECOW14)  
‘should one really work one’s way through 70,000 pages of material’
- b. *Autofahrer [...] quälen sich bislang durch den Ort.* (DECOW14)  
‘drivers torture their way through the city’
- c. *Rüttgers nuschelte sich mal wieder durch hohle Phrasen* (DECOW14)  
‘and again Rüttgers mumbled his way through empty phrases’
- d. *Ich habe mich natürlich durch alle Sorten durchprobiert* (DECOW14)  
‘Needless to say I tested my way through all kinds’

This diachronic tendency is consonant with the directionality of change in English, where the older reflexive pattern was first replaced gradually by the new *way*-construction in the domain of [+ path traversal]. This tendency clearly holds across all three languages under consideration, as suggested by the continuum in Figures 1 and 2. Whereas the original (more lexical) reflexive patterns are associated with the goal-directedness of a situation (i.e. with the top left part of the continuum), the more recent constructions favor the interpretation of path traversal (i.e. the bottom right part of the continuum). This is most in evidence in English and Dutch, where the noun *way/weg* in the more recent constructions explicitly refers to a path, thus explaining the conceptual association of these constructions with the semantic notion of path traversal. It is less obviously, but still arguably, the case in German, where the newly developed reflexive construction is formally identical to the lexical reflexive patterns. Nevertheless, we observe the same tendency towards a division of labour, as the more recent construction tends to move towards the [+ path traversal] end of the continuum.

## 4 Conclusions and outlook

In this paper, we have shown that the English *way*-construction and its various reflexive analogues in German and Dutch cover different portions of the domain of autocausive motion, and that this variation can be described by means of two semantic dimensions, i.e. goal-directedness (telicity) on the one hand, and path-traversal, on the other.

From a more theoretical perspective, two conclusions can be drawn. First, the existence of close formal analogues in two languages (e.g. the *weg*-construction in Dutch and the *way*-construction in English) should not be taken to imply that these analogues are similar in functional terms as well. The English *way*-construction is functionally much more versatile than its Dutch counterpart, not only because of the greater variation in the verb slot, but also because the English *way*-construction has outcompeted the resultative reflexive construction and now occupies territory that in Dutch is taken up by the TLC. Whereas English speakers prefer the *way*-construction to describe the metaphorical motion event of reaching the finals, as in example (40),

(40) *He swam his way into the finals.*

Dutch speakers are more inclined to use the ‘resultative’ TLC in this context, in part because both subevents are consecutive (the swimming occurs first, reaching the finals is a later event).

(41) *Hij zwom zich naar de finale.*  
‘He swam his way into the finals’

Second, we are proposing a distinction between schematic constructions (e.g. [V *sich* OBL]) in German) on the one hand, and more substantial lexical constructions (e.g. inherently reflexive verbs) on the other. Although the two may look superficially alike, instances of the latter do not necessarily instantiate the former (e.g. *Der Zug bewegte sich zum Brunnen* ‘The procession moved REFL towards the fountain’, where *sich bewegen* is inherently reflexive). Future research should focus on the interaction of the schematic reflexive construction with existing lexically reflexive verbs in German (i.e. the more substantial constructions). The latter may well have facilitated the creation of the former, as the more abstract construction schematizes over a relatively frequent formal pattern. On the other hand, it may just as well be hindering its full development, as the schematic reflexive construction constantly interacts with formally similar instances that do not actually instantiate it, but compete with it in the same conceptual domain (autocausive motion). Diachronic data in particular could shed more light on this issue.

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# Lice in the fur of our language? German irrelevance particles between Dutch and English

**Abstract:** The present paper compares the distribution of English *-ever*, German *immer* and/or *auch*, and Dutch (*dan*) *ook* in universal concessive-conditional and nonspecific free relative subordinate clauses (e.g. G. *Was auch immer du willst* ‘Whatever you want’) and in their elliptically reduced versions (e.g. D. ... *of wat dan ook* ‘... or whatever’). By combining large language-specific corpora such as the *DEREKO*, *SoNaR*, and *BYU* corpora with the smaller multilingual *ConverGENTiecorpus*, 38,748 instances were obtained while maintaining comparability. Whereas present-day English has only one option in both clausal and elliptical constructions, viz. *WH-ever*, Dutch and German show more variation: in Dutch, discontinuous *W ... ook* is by far the most frequent option in subordinate clauses, while the complex particle *dan ook* is largely confined to elliptical constructions. In German subordinate clauses, *immer* in adjacency to the *W*-word is the most frequent option, thus corresponding to English *WH-ever*, but in elliptical constructions *auch immer* is predominant, thus corresponding to Dutch *dan ook*.

**Zusammenfassung:** Der vorliegende Beitrag vergleicht die Distribution von engl. *-ever*, dt. *immer* und/oder *auch* und ndl. (*dan*) *ook* in universalen Irrelevanzkonditionalen und verallgemeinernden Relativsätzen (z.B. engl. *Whatever you want* ‘Was auch immer du willst’) sowie in ihren elliptisch reduzierten Varianten (z.B. ndl. ... *of wat dan ook* ‘... oder was auch immer’). Dank der Kombination großer sprachspezifischer Korpora wie des *DEREKO*, des *SoNaR*-Corpus und der *BYU*-Corpora mit dem kleineren mehrsprachigen *ConverGENTiecorpus* konnten 38.748 Belege erhoben werden, wobei Vergleichbarkeit gewahrt blieb. Während im heutigen Englisch *WH-ever* sowohl in Nebensätzen als auch in elliptischen Konstruktionen die einzige Möglichkeit ist, zeigen das Niederländische und Deutsche mehr Variation: In ndl. Nebensätzen kommt das diskontinuierliche *W ... ook* am häufigsten vor, während sich die komplexe Partikel *dan ook* größtenteils auf elliptische Konstruktionen beschränkt. In dt. Nebensätzen ist *W*-adjazentes, dem engl. *WH-ever* entsprechendes *immer* die häufigste Möglichkeit, in elliptischen Konstruktionen dominiert aber das dem ndl. *dan ook* entsprechende *auch immer*.

# 1 Introduction

Reiners (1949: 283) referred to German modal particles as “die Läuse im Pelz unserer Sprache” (lit. ‘the lice in the fur of our language’), dismissing these small words, such as e.g. *mal* and *doch*, as superfluous and not worthy of the attention of linguists (cf. Hentschel 2012: 124f.). In the meantime, the tide has turned and the amount of work published on modal particles has been overwhelming ever since (König 2010: 79; Müller 2017: 384). Other kinds of apparent “lice in the fur”, on the other hand, seem to have been mostly ignored. Among them are so-called “irrelevance particles”, i.e. quantificational particles which occur in universal concessive conditionals (henceforth: UCCs) in certain languages (Haspelmath/König 1998):

- (1)
  - a. English:        Whatever he says, nobody listens to him.
  - b. German:        Was *immer* er *auch* sagt, jeder hört ihm zu.  
                         ‘Whatever he says, everybody listens to him.’
  - c. Dutch:         Wat Jan *ook* zegt, Marie luistert naar hem.  
                         ‘Whatever John says, Mary listens to him.’

Like all concessive conditionals, UCCs express a basic conditional meaning (König 1986; Leuschner 2006; Breindl 2014). While prototypical conditionals express one antecedent value  $p$  in their protasis, which is followed by a consequent  $q$  in the apodosis ...

- (2)    If the weather is nice today ( $= p$ ), we’ll go hiking ( $= q$ ).

... concessive conditionals express a multiplicity of antecedent values (if  $p_x$  then  $q$ ), whose individual truth values are irrelevant to the truth value of the consequent:

- (3)    Whatever tomorrow’s weather is like ( $= p_x$ ), we’ll go hiking ( $= q$ ).
  - a.    If tomorrow’s weather is A ( $= p_1$ ), we’ll go hiking ( $= q$ ).
  - b.    If tomorrow’s weather is B ( $= p_2$ ), we’ll go hiking ( $= q$ ).
  - c.    ...
  - d.    If tomorrow’s weather is X ( $= p_x$ ), we’ll go hiking ( $= q$ ).

Since these values are ordered along a given parameter – e.g. the characteristics of tomorrow’s weather in (3) –, the protasis typically contains at least one contextually extreme condition  $p_n$  which carries a presupposition to the effect that  $\neg q$  rather than  $q$  would normally be expected to be true (König 1986: 234). E.g. under the condition that *If there’s a blizzard tomorrow* ( $= p_n$ ), one would normally expect

*we won't go hiking* (=  $\neg q$ ) to be true.<sup>1</sup> This is why UCCs such as (3) often evoke a concessive interpretation, whence the epithet “concessive”.

Despite the label “*universal concessive conditionals*”, the type of quantifier used in UCCs is different from standard universal quantification. Instead, it is more reminiscent of a “free-choice quantifier” (König/Eisenberg 1984: 315), whose effect is to allow the recipient to select a random value for the variable expressed by the *WH*-word in the protasis (König 1986: 231). In English at least, *whatever* and the other *-ever*-compounds are thus quantificationally more similar to free-choice *any* than to standard universal *every* or *all*, and it is precisely the “domain-widening” effect of *any* (Kadmon/Landmann 1993) that *-ever* contributes to the meaning of UCCs. With regard to German, the free-choice analysis seems to be contradicted by the fact that *immer*, usually seen as the equivalent of *always* rather than *ever* (e.g. *Er kommt immer zu spät* ‘He is always late’), is used as the counterpart of *-ever* in German UCCs (cf. 1a and 1b above). There is an elegant diachronic solution to this apparent riddle, however: *immer*, which is a partial cognate of *ever*, used to have both universal and free-choice temporal readings in earlier stages of German (i.e. both ‘at all times’ and ‘at any time’; Leuschner 1996). Its present-day use in UCCs is a residue of this earlier free-choice reading, but *immer* lost its temporal force when it was recruited as a quantificational particle in UCCs, retaining only the free-choice part of its semantics in this function (cf. *ibid.*: 481).

Despite the etymological link between *-ever* and *immer*, the surface realization of UCC quantification in both languages is quite different overall. As can be seen in (1b) above, *immer* is not the only irrelevance particle in German. The other option, *auch* (lit. ‘also’), is etymologically identical to the Dutch irrelevance particle *ook*. Moreover, *-ever* and *immer* seem to share their preference to occupy the position immediately adjacent to the *WH*- resp. *W*-word, whereas *auch* and *ook* seem to preferably occur further to the right in the subordinate clause. We are thus faced with a rather atypical “Germanic Sandwich”-pattern (cf. van Haeringen 1956) in which German is situated between English and Dutch rather than Dutch between English and German.

Since these differences and similarities have so far mostly gone unnoticed in the literature, it is the goal of the present paper to present the first contrastive corpus study on the distribution of the irrelevance particles *-ever*, *immer* and/or

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<sup>1</sup> This extreme condition  $p_n$  is the end point of a contextually salient scale which may be either canonical or inverted. A canonical scale is invoked by (1a) above, which can be read as ‘no matter how high the quality/amount of what he says, nobody listens to him’. By contrast, (1b) invokes an inverted scale: ‘no matter how low the quality/amount of what he says, everybody (still) listens to him’. I am grateful to two anonymous reviewers for pointing out this and other issues.

*auch*, and (*dan*) *ook* in UCCs and related constructions (cf. below). This study is thus a trilingual extension of a previous study by Bossuyt/De Cuypere/Leuschner (2018) on the patterns and frequencies of German *immer/auch*, which is based on a sample of 23,299 instances with *was* ‘what’ and *wer* ‘who’ (incl. inflectional forms), gleaned from the *Deutsches Referenzkorpus* (henceforth: *DEREKO*). The latter study is in itself a semi-replication of Leuschner’s study (2000) on *immer/auch*, based on 104 instances from the *Mannheimer Korpus*, which contained ca. 2.2 million tokens.

In order to obtain a large amount of sufficiently comparable data, large language-specific corpora were triangulated for the present study with the respective components of a small but comparable multilingual corpus (cf. section 2). All occurrences were analyzed for combinatorial variation on the one hand (answering the question which particle(s) is/are used) and positional variation on the other hand (which position(s) the particle(s) tend to occupy). Focusing on German and Dutch, section 3 presents the distributional patterns of irrelevance particles in subordinate clauses (3.1) and elliptically reduced constructions (3.2). A discussion on the similarities and differences between, first, Dutch (*dan*) *ook* and German *auch* (*immer*), and then between English *-ever* and German *immer* follows in section 4.

This paper will argue that the synchronic distributions of the particles represent a snapshot of the long-term emergence of irrelevance marking as a subsystem in each of the three languages, with varying degrees of grammaticalization. Whereas the grammaticalization of English *WH-ever* is more or less complete, the grammaticalization process of German *W immer/auch* subordinators seems to have lost its former directionality, resulting in a situation resembling a long-term “grammaticalization building-site” (*Grammatikalisierungsbaustelle*, Leuschner 2006; cf. Nübling 2005). Finally, discontinuous Dutch *W ... ook* shows only weak signs of grammaticalization.

## 2 Methodology: corpus triangulation

### 2.1 Corpora and search queries

As mentioned above, this study combines data from very large, language-specific corpora (which are, however, barely comparable) with data from a small, but very comparable multilingual corpus. The goal of this methodology is to obtain a large amount of data while maintaining comparability. The following language-specific corpora were used:

- The “Archiv W” of the *DEREKO* is the main reference corpus of contemporary written German, containing approximately 9.2 billion tokens in total as of August 2018.<sup>2</sup> The corpus consists of a variety of text types, often from printed news media in Germany, Austria, and the German-speaking part of Switzerland, recently supplemented with a considerable amount of Wikipedia articles and discussions as well as parliamentary minutes (Kupietz/Lüngen 2014).
- The *SoNaR* corpus is a 500-million-word reference corpus of contemporary written Dutch.<sup>3</sup> It consists of both conventional media (e.g. newspapers) and new media (e.g. tweets, blogs, or chat conversations), and is fairly well-balanced between Dutch and Flemish texts (Oostdijk et al. 2013).
- The BYU corpora are probably the most widely used online corpora for English.<sup>4</sup> This study combines data from the *BYU-BNC* (100 million tokens of British English, 1980s-1993), *COCA* (560 million tokens of American English, 1990–2017), *Strathy Corpus* (50 million tokens of Canadian English, 1970s–2000s), *Wikipedia Corpus* (1.9 billion tokens, 2012–13), and *Hansard Corpus* (1.6 billion tokens of British parliamentary minutes, 1803–2005), containing over 4.2 billion tokens in total. Combining these corpora somewhat mimics the composition of the *DEREKO*.

The small but comparable multilingual corpus used for the present study is the *ConverGENTiEcorpus*, which is institutionally available at Ghent University.<sup>5</sup> It consists of seven subcorpora in English, Dutch, German, French, Spanish, Italian, and Portuguese, containing about 1.5 million tokens each. Comparability is guaranteed, as all subcomponents contain approximately the same amount of tokens distributed over a wide variety of corresponding text genres.

Search queries for the present study in the *ConverGENTiEcorpus* included virtually all *WH*-words, as was the case in Leuschner’s original study, which, however, referred exclusively to the German *Mannheimer Korpus* (Leuschner 2000). By contrast, the search queries in the large corpora were limited to *WH*-words for ‘what’ and ‘who’ (incl. inflectional forms, if applicable, e.g. *whom*) for practical reasons, as was also the case in Bossuyt/De Cuyper/Leuschner (2018).

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<sup>2</sup> <https://www.ids-mannheim.de/cosmas2/projekt/referenz/archive.html> (last accessed: 19-3-2019).

<sup>3</sup> <https://portal.clarin.nl/node/4195> (last accessed: 19-3-2019).

<sup>4</sup> <https://corpus.byu.edu/> (last accessed: 19-3-2019).

<sup>5</sup> <http://research.flw.ugent.be/en/projects/convergentiecorpus> (last accessed: 19-3-2019).

For the English data, search queries for *whatever*, *whoever*, *whomever*, and *whosever*<sup>6</sup> were conducted separately in each of the abovementioned corpora. A total of 4,642 instances were found. Search queries for these and other *-ever*-compounds conducted in the *ConverGENTiecorpus* resulted in a total of 1,240 exported instances.

For the German data, Leuschner's (2000) conclusions on the positional tendencies of *immer* and *auch* were taken into account when designing the corpus search queries, in order to maximize recall ratios. For *immer*, only instances where the *W*-word (i.e. *was*, *wer*, *wem*, or *wen*) immediately precedes *immer* were initially included. In a later stage, search strings with *immer* immediately preceded by a 3<sup>rd</sup> person singular pronoun which was in turn immediately preceded by the *W*-word (e.g. *wer es immer*) were included to find rare occurrences in which *immer* follows the subject rather than preceding it. For *wessen*, which can modify nouns (e.g. *wessen Haus* 'whose house'), the distance operator was set to 3. For *auch*, a distance operator of 4 was found to be the best balance between precision and recall (cf. Bossuyt/De Cuypere/Leuschner 2018: 101 fn. 5). A total of 53,732 instances were exported and analyzed manually (cf. 2.2 below). In the *ConverGENTiecorpus*, distance operators allowing up to 5 words between the *W*-word and the irrelevance particle were included, guaranteeing that virtually every instance in the corpus was included in the sample.

For the Dutch data, the queries were designed to resemble those used to search instances of *auch* in the *DEREKO*. This means that search queries allowed up to three words between the *W*-word (i.e. *wat*, *wie* or *wiens*) and the irrelevance particle *ook*. A total of 30,895 instances were exported and analyzed manually (cf. 2.2 below). As with the German data, distance operators allowing up to 5 words were included in the search queries in the *ConverGENTiecorpus*, assuring that nearly every instance was included in the sample.

## 2.2 Manual analysis of the German and Dutch data

Whereas the results for English *WH-ever* are mostly unambiguous, the German and Dutch data needed manual analysis to check whether *immer*, *auch* resp. *ook* did indeed function as irrelevance particles. This is because *immer* can also be

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<sup>6</sup> Unfortunately, the possessive form *whoever's* could not be included in this study, since this search query resulted in too many invalid instances consisting of *whoever* followed by the contracted form of *is*. Adding the noun tag did not solve this problem, nor did tagging *whoever's* as a possessive determiner.

a temporal adverb (cf. above), as shown in (4), and *auch/ook* can also be focus particles, as shown in (5) and (6):

- (4) #Was *immer* bleiben wird, ist mein Code civil. (Die Zeit (Online-Ausgabe), 25-2-2010)  
‘What will always remain, is my Code civil.’
- (5) #Was es heute jedoch *auch* häufiger gibt, sind Mütter, die arbeiten. (Braunschweiger Zeitung, 12-9-2008)  
‘However, what is nowadays more common as well are working mothers.’
- (6) #Wat *ook* speciaal zal zijn, is het Japanse theehuisje van S. D. (WR-P-P-G-0000666221)  
‘What will be special, too, is S. D.’s Japanese tea cottage.’

Moreover, numerous doubles had to be removed from the *DEREKO* and *SoNaR* data. This brought the final *DEREKO* sample to 23,299 instances (also used in Bossuyt/De Cuyper/Leuschner 2018) and the final *SoNaR* sample to 9,305 instances. The *ConverGENTiecorpus* contains 91 instances for German and 171 for Dutch.

Not all of these instances represent prototypical UCCs as mentioned in (1) and (3). The German sample in particular contains a considerable amount of non-specific free relatives (henceforth: NFRs), as in (7):

- (7) Wer *immer* bisher als “künftiger Papst” ins Konklave ging, kam als Kardinal wieder heraus. (Nürnberger Nachrichten, 14-10-2003)  
‘Whoever entered the conclave as a “future pope” so far, came out again as a (mere) cardinal.’

The free-choice semantics and quantificational strategies in these subordinate clauses are the roughly same as in UCCs, but the syntactic function of the subordinate clause in the complex sentence is different: whereas UCCs typically function as a loose adjunct to their apodosis, a NFR typically functions as an embedded argument in its respective main clause (Leuschner 2005), e.g. as its subject in (7), with a broad transitional zone of surface variation linking the two sentence types (Leuschner 2005: 59–62; Breindl 2014: 981f.). For the present study, however, the relevant syntactic distinctions are less important than the semantic-functional overlap between UCCs and NFRs, as shown by the fact that both clause types can be paraphrased by an open conditional (cf. Lehmann 1984: 339):

- (7)’ If x went into the conclave as a “future pope”, x came out again as a cardinal.

It is the presence of a variable in the underlying conditional relationship that motivates the quantificational strategies that are shared by UCCs and NFRs. Details in the surface realization of irrelevance marking may well vary with the syntactic status of the subordinate clause and such potential patterns should be addressed in future research into irrelevance marking. Only the overall patterns of irrelevance marking are in the focus of the present study, however, and hence no systematic distinction will henceforth be drawn between UCCs and NFRs. This decision is reflected in the label *primary irrelevance constructions* for both clause types together (as opposed to secondary irrelevance constructions, which occur at the sub-clausal level, cf. below).

Whereas there is only one strategy to mark free-choice quantification with an irrelevance particle in English primary constructions, namely by attaching *-ever* to the *WH*-word,<sup>7</sup> the same quantificational effect is conveyed by different particles resp. particle combinations in different positions in German and Dutch. In order to account for this variation, Dutch and German primary constructions are analyzed using Leuschner's (2000) adaptation of the Topological Field Model (cf. Wöllstein 2014) as demonstrated in Table 1.

**Table 1:** Leuschner's (2000: 345) adaptation of the Topological Field Model for primary irrelevance constructions in which the *W*-word is not the subject of the subordinate clause, exemplified by (1b)

–	pre-field	left bracket		middle-field		right bracket	post-field
–	W	–	II	S	IV	V	–
(1b)	was	–	<i>immer</i>	er	<i>auch</i>	sagt	–

While the *W*-word occupies the pre-field, leaving the left bracket unoccupied in Standard German (Wöllstein 2014: 32–37), the middle-field is divided into a field S for the subject of the subordinate clause and two fields which may be occupied by irrelevance particles: field II to the left of S and field IV to the right of S (Leuschner

7 The *WH-so-ever*-pattern (e.g. *whosoever*, *whatsoever*) is unproductive and archaic in present-day English. The only exception is *whatsoever* as a post-nominal NPI, e.g. *no idea whatsoever* 'no idea at all'. Its intensifying meaning is, however, considerably different from the free-choice quantificational readings the present study is concerned with, and will therefore not be considered any further.

2000: 345). As usual in German subordinate clauses, the verb occupies the right bracket (V) and the post-field is standardly left unoccupied.

The topological model of Table 1 only makes sense if the *W*-word is not the subject of the subordinate clause. If the *W*-word is the subject, on the other hand, there is no need to split up the middle-field, which is then simply called II/IV (Leuschner 2000: 345f.).

**Table 2:** Leuschner's (2000: 346) adaptation of the Topological Field Model for primary constructions in which the *W*-word is also the subject of the subordinate clause, exemplified by (8), taken from the *SoNaR* corpus

	pre-field	left bracket	middle-field	right bracket	post-field
–	W	–	II/IV	V	–
(8)	wie	–	morgen <i>ook</i>	wint	–

While these two models fit the majority of the data, a considerable amount of instances containing irrelevance marking does not fit either model (93/171 = 54.39% in the Dutch component of the *ConverGENTiecorpus*, 3,921/9,305 = 42.14% of *SoNaR* data; 35/91 = 38.46% in the German component of the *ConverGENTiecorpus*, 4,926/23,299 = 21.14% of *DEREKO* data). These instances are derived historically from primary constructions, but have been reduced by ellipsis (Breindl 2014: 980f.; Leuschner 2013: 57; Waßner 2006: 386f.). They are labeled *secondary irrelevance constructions* in the present study and may function as:

- (9) general extenders (Overstreet 1999: 122–124, 147; Brinton 2017: 273–278)
- a. Zij worden nooit voor dief of *wat dan ook* uitgescholden.  
(WR-P-P-G-0000427484)  
'They are never called thieves or whatever.'
  - b. Ich war immer betrunken, stoned oder *was auch immer*.  
(Braunschweiger Zeitung, 17-2010)  
'I was always drunk, stoned, or whatever.'
  - c. [...] there may be a gunboat, or *whatever* – I do not know. (Hansard90)
- (10) discourse markers (Brinton 2017: 268–282 on English *whatever*)
- a. [...] maar *wat dan ook*, jij bent de mooiste. (WR-U-E-A-0000104003)  
'but whatever, you are the most beautiful.'
  - b. Doch *was auch immer*: Ein Crash ist trotzdem jederzeit möglich.  
(Die Südostschweiz, 22-10-2006)  
'But whatever: a crash is nevertheless a possibility at all times.'

- c. [...] we'd just talk about, I don't know [pause] *whatever*, she'd probably agree with everything I said as well because that's what Catherine's like (BNC KP4 S\_conv)
- (11) indefinite pronouns (cf. Haspelmath 1997: 139, 160f.)
- a. De beklimming van de Everest is voor *wie dan ook* superzwaar. (WS-U-E-A-0000000442)  
'Climbing the Everest is super tough for anyone (lit. whoever).'
- b. Ein Appell an *wen auch immer*, der sich verantwortlich fühlt. (Süddeutsche Zeitung, 17-7-2008)  
'A call to anyone (lit. whoever) who feels responsible.'
- c. Romney can run a great campaign, spend untold millions in the final days, do *whatever*, but it's still the president who has more agency here. (EN\_Jou\_Com\_0077)

Indefinite pronouns of the type *WH* + particle(s) in (11) are more common in Dutch (cf. Hoeksema 2012 on *W dan ook*-pronouns); some native speakers of German and English might even not accept (11b) resp. (11c) as grammatical. In English, indefinite pronouns from the *any*-series are usually used in these contexts (cf. Haspelmath 1997).

Since irrelevance particles show strikingly different distributional patterns in primary and secondary irrelevance constructions in German and Dutch, a clear distinction between primary and secondary irrelevance constructions will be made in the following sections.

### 3 Distributional patterns

#### 3.1 Primary irrelevance constructions

##### 3.1.1 Dutch

Table 3 represents the distribution of the Dutch irrelevance particle *ook* in primary irrelevance constructions in the *ConverGENTiecorpus*.<sup>8</sup> An example of each type from the corpus is given in (12).<sup>9</sup>

<sup>8</sup> Note that the left bracket and the post-field are left out of this and subsequent tables, as they are irrelevant to the particles' distribution.

<sup>9</sup> Cases with a copula as in (12a) and (12b) were analyzed as *W I I S I V V*-patterns, since the finite verb agrees in number with the NP, not the *W*-word: *Wie hij.SG ook mocht.SG zijn* 'Whoever he might have been', but *Wie zij.PL ook mochten.PL zijn* 'Whoever they might have been'.

**Table 3:** Distribution of irrelevance particles in Dutch primary constructions with  $W \neq S$  in the *ConverGENTiecorpus*. # stands for raw frequencies, % for relative frequencies

–	W	II	S	IV	V	#	%
a.	W	<i>ook</i>	S	–	V	3	3.90%
b.	W	–	S	<i>ook</i>	V	74	96.10%
						77	100.00%

- (12) a. Wat *ook* het statuut van het kind in kwestie is, [...]: elk kind heeft recht op huisvesting, onderwijs, gezondheidszorg, ... (NE\_Jou\_Com\_1047)  
 ‘Whatever the status of the child in question is: every child has a right to housing, education and health care.’
- b. Maar wie hij *ook* mocht zijn of geweest was, hij was dood.  
 (NE\_Jou\_Com\_1137)  
 ‘But whoever he may have been or had been, he is dead.’

*Ook* clearly occurs much more often in field IV (96.10%) than in field II (3.90%). This rightward tendency is confirmed by the data from the much larger *SoNaR* corpus (4,808/4,977 = 96.60% in field IV vs. 169/4,977 = 3.40% in field II), as shown in Table 4. Apart from *ook*, the much rarer particle combination *dan ook* occurs in primary irrelevance constructions and shares *ook*’s preference for field IV (132/136 = 97.06% in field IV vs. 4/136 = 2.94% in field II). (13) provides an example of each type from the corpus.

**Table 4:** Distribution of irrelevance particles in Dutch primary constructions with  $W \neq S$  in the *SoNaR* corpus

–	W	II	S	IV	V	#	%
a.	W	<i>ook</i>	S	–	V	169	3.31%
b.	W	–	S	<i>ook</i>	V	4,808	94.03%
c.	W	<i>dan ook</i>	S	–	V	4	0.08%
d.	W	–	S	<i>dan ook</i>	V	132	2.58%
						5,113	100.00%

- (13) a. Wat *ook* de directe oorzaak mag zijn waardoor het vredesproces is vastgelopen, het lijkt geen twijfel dat hervatting van een dialoog de spanning tot normale proporties kan terugbrengen.  
 (WR-P-P-I-0000000313)

- ‘Whatever may be the direct cause which got the peace negotiations bogged down, there is no doubt that resuming the dialogue will bring the tensions back to normal proportions.’
- b. De beste ploeg zal winnen. Wie dat *ook* is, ik zal altijd een fles champagne opentrekken. (WR-P-P-G-0000642881)  
‘The best team will win. Whoever that is, I will pop a bottle of champagne in any case.’
- c. Wat *dan ook* de oorzaak is, leg de zieke met de voeten omhoog en zorg dat hij voldoende lucht krijgt. (WR-P-P-H-0000061428)  
‘Whatever the cause is, lay down the sick person with their feet up and make sure they get enough air.’
- d. [...] om de aandacht te trekken van de geïnteresseerden, wie dat *dan ook* mogen zijn. (WR-P-P-G-0000265835)  
‘to draw the attention of those who are interested, whoever that may be.’

Table 5 represents the distribution of Dutch irrelevance particle(s) (*dan ook*), based on the *SoNaR* corpus, in primary constructions in which the *W*-word is also the subject of the subordinate clause. (14) gives an example of each type from the corpus.<sup>10</sup>

**Table 5:** Distribution of irrelevance particles in Dutch primary constructions with *W = S* in the *SoNaR* corpus

–	<b>W</b>	<b>II/IV</b>	<b>V</b>	<b>#</b>	<b>%</b>
a.	<i>W</i>	<i>ook</i>	<i>V</i>	257	94.83%
b.	<i>W</i>	<i>dan ook</i>	<i>V</i>	14	5.17%
				271	100.00%

- (14) a. Wat hier *ook* wordt besloten, ik ben ervan overtuigd dat we een onomkeerbaar proces in gang zetten waardoor heel Europa een geheel ander aanzien zal krijgen. (WR-P-P-I-0000000272)

<sup>10</sup> There are no instances of primary constructions in which the *W*-word is the subject of the subordinate clause in the *ConverGENTie* corpus sample, although this is partially due to the fact that instances with Dutch *er*, e.g. *wat er ook gebeurt* ‘whatever happens’, were classified as instances of the *WII SIV V*-pattern (cf. Table 3).

‘Whatever is decided here, I am convinced that we set in motion an irreversible process which will totally alter the face of Europe.’

- b. Wie *dan ook* mij deze ketting gaf, moet van mij gehouden hebben.  
(WR-P-E-G-0000010823)

‘Whoever gave me this necklace, must have loved me.’

Despite *ook* clearly being more frequent in both types of primary irrelevance constructions, a chi-square test suggests that *dan ook* is significantly overrepresented in *W II/IV V*-constructions as shown in Table 6 (Yates  $\chi^2 = 5.08$ ;  $df = 1$ ;  $p = 0.02$ ; Cramér’s  $V = 0.33$ ):

**Table 6:** Chi-square test comparing occurrences of Dutch irrelevance particles *ook* and *dan ook* in both types of primary irrelevance constructions in the *SoNaR* corpus. Standardized residuals are given in brackets, values higher than  $|2|$  indicate a significant deviation from the expected cell value and are in bold. No cells have an expected value below 5

–	<i>ook</i>	<i>dan ook</i>	total
W II S IV V	4,977 (+0.08)	136 (–0.5)	5,113
W II/IV V	257 (–0.37)	14 ( <b>+2.17</b> )	271
total	5,234	150	5,384

### 3.1.2 German

Table 7 shows the distribution of the German irrelevance particles *immer* and *auch* and their combinations, based on the *ConverGENTi* corpus, in primary constructions in which the *W*-word is not the subject. An example of each type is provided in (15).

**Table 7:** Distribution of irrelevance particles in German primary constructions with  $W \neq S$  in the *ConverGENTi* corpus

–	<b>W</b>	<b>II</b>	<b>S</b>	<b>IV</b>	<b>V</b>	<b>#</b>	<b>%</b>
a.	W	<i>auch immer</i>	S	–	V	13	26.53%
b.	W	<i>immer</i>	S	–	V	22	44.90%
c.	W	<i>immer</i>	S	<i>auch</i>	V	8	16.33%
d.	W	–	S	<i>auch</i>	V	6	12.24%
						49	100.00%

- (15) a. Wie *auch immer* man Neanderthaler sehen mag. Das extrem wechselhafte Bild spiegelte immer auch den Zeitgeist der jeweiligen Epoche wieder. (GE\_Sci\_Pop\_0464)  
 ‘However one may view Neanderthals, their extremely variable image always reflected the *Zeitgeist* of the respective period.’
- b. Wann *immer* ein Land in die Krise gerät, werden seine Bürger panisch die Konten räumen. (GE\_Jou\_Com\_0767)  
 ‘Whenever a country plunges into a crisis, its citizens will empty their bank accounts in panic.’
- c. Was *immer* er *auch* jetzt sagen könnte, er müsste sich festlegen. (GE\_Lit\_Fic\_0005)  
 ‘Whatever he could say now, he would have to make a decision.’
- d. Wo Forscher *auch* hinsehen, überall entdecken sie bisher unbekannte Arten. (GE\_Sci\_Pop\_0630)  
 ‘Wherever scientists look, they discover previously unknown species everywhere.’

As can be seen from Table 7, the preferred position of irrelevance particles in German is clearly field II (71.43%) rather than field IV (12.24%). In fact, there are more instances where both fields are occupied (= type c; 16.33%) than instances where field IV is the only occupied field. The only particle that prefers field IV is *auch*, similarly to Dutch *ook* (cf. above).

These general distributional tendencies are confirmed in the much larger sample from the *DEREKO*, as represented in Table 8. (16) provides an example of each type from the corpus.

- (16) a. Was *auch* die Gründe sein mögen, nur jammern [...] hilft auch nicht weiter. (St. Galler Tagblatt, 2-10-2001)  
 ‘Whatever the reasons may be, just complaining won’t help either.’
- b. Wen *auch immer* man fragt: Esel finden alle irgendwie klasse. (Süddeutsche Zeitung, 3-6-2006)  
 ‘Whoever you ask: everyone thinks donkeys are great somehow.’
- c. Wer *immer auch* die Täter sind, [...], sie müssen sich vorsehen. (Die Südostschweiz, 21-4-2010)  
 ‘Whoever the perpetrators are, they have to watch out.’
- d. Was *immer* sie tun, Maitressen haben einen schlechten Ruf. (Süddeutsche Zeitung, 15-4-2014)  
 ‘Whatever they do, mistresses have a bad reputation.’

- e. Doch was *immer* er *auch* tut, es reicht nicht. (die tageszeitung, 19-11-2013)  
‘But whatever he does, it is not enough.’
- f. Mit wem ich *auch* rede, überall höre ich dasselbe. (plenary minutes, Berlin, 28-6-2001)  
‘Whoever I talk to, I hear the same everywhere.’
- g. Wessen Socke das *auch immer* ist, es wird langsam langweilig. (Wikipedia Discussion Forums, 2011)  
‘Whoever’s sock that is, things are beginning to get boring.’
- h. Zeitgemäße Dienstvereinbarungen, was das *immer auch* heißen möge. (plenary minutes, Sankt Pölten, 4-10-2001)  
‘Contemporary service contracts, whatever that may be.’
- i. zu AC. @Hajog oder O. oder wer das *immer* ist. (Wikipedia Discussion Forums, 2011)  
‘to AC. @Hajog or O. or whoever that is.’

**Table 8:** Distribution of irrelevance particles in German primary constructions with *W* ≠ *S* in the *DEREKO*

–	W	II	S	IV	V	#	%
a.	W	auch	S	–	V	22	0.24%
b.	W	auch immer	S	–	V	954	10.53%
c.	W	immer auch	S	–	V	149	1.64%
d.	W	immer	S	–	V	6,075	67.05%
e.	W	immer	S	auch	V	1,005	11.09%
f.	W	-	S	auch	V	647	7.14%
g.	W	-	S	auch immer	V	154	1.70%
h.	W	-	S	immer auch	V	15	0.17%
i.	W	-	S	immer	V	39	0.43%
						9,060	100.00%

The types represented in the *ConverGENTiEcorpus* (cf. (15a-d) above) are precisely the four most frequent ones in the *DEREKO*, viz. *immer* occupying field II (67.05% in the *DEREKO*), *immer ... auch* straddling the subject field (11.09%), *auch immer* occupying field II (10.53%), and *auch* occupying field IV (7.14%). All other types, which account for less than 2% each and for only about 4.18% combined, are instances of the particles (or particle combinations) occupying their respective dispreferred field(s). Moreover, the basic tendency is confirmed that irrelevance marking in field II only (79.47%) is preferred over marking in both fields simultaneously (11.09%) or in field IV only (9.44%).

The most striking difference, however, is the proportion of *immer* in field II in the *DEREKO* (67.05%) if compared to both the *ConverGENTiEcorpus* (44.90%) and Leuschner's study based on the *Mannheimer Korpus* (34/92 instances = 36.96%, Leuschner 2000: 348). A one-tailed two-proportions Z-test suggests that the proportion in the *DEREKO* deviates significantly from the corresponding proportions in the *ConverGENTiEcorpus* and the *Mannheimer Korpus* ( $p < 0.0001$  in both), while the *ConverGENTiEcorpus* and *Mannheimer Korpus* do not deviate significantly from each other ( $p = 0.18$ ).<sup>11</sup> There are several potential explanations for this difference:

1. Whereas Leuschner's (2000) sample and the *ConverGENTiEcorpus* contain search results for virtually all *W*-words, the *DEREKO* sample is limited to *was* and *wer* (incl. inflectional forms; cf. above). This means that almost all *W*-words that can form complex *W*-phrases, such as *welch-* (*welches Haus* 'which house') or *wie* (*wie schön* 'how beautiful'), are excluded from the *DEREKO* sample. In fact, the only *W*-word in the *DEREKO* sample that can build complex phrases is *wessen*, which is by far the least frequent *W*-word in the sample ( $n = 252$  or 1.08% of the total *DEREKO* sample). On the other hand, *welch-* and *wie* are the two most frequent *W*-words in the *ConverGENTiEcorpus* sample, making up 49% of its instances.

Since *immer* is only very rarely attested with complex *W*-phrases (cf. further below), but occurs very frequently with simple *W*-words such as *was* and *wer*, the difference in *W*-word coverage between the *DEREKO* on the one hand and the *ConverGENTiEcorpus* and *Mannheimer Korpus* on the other hand may largely explain the proportional differences between these corpora. At a later stage of the investigation, *welch-* will be added to the *DEREKO* sample, presumably resulting in an overall lower proportion of *immer*.

2. The distance operator of 1 in *DEREKO* search queries for *W immer* may have caused *immer* to be somewhat overrepresented in this sample. Since larger distance operators make the recall ratios less precise, it is easier to find instances of *W immer* compared to e.g. *W ... auch* with a distance operator of 4.
3. Tendencies relating to text genre may play a role here. The relative portion of written press texts in the *DEREKO* is much larger than in the more balanced *ConverGENTiEcorpus* and in the *Mannheimer Korpus*, which contained a larger

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<sup>11</sup> The proportional difference between the *DEREKO* on the one hand and the *ConverGENTiEcorpus* and *Mannheimer Korpus* on the other hand remains significant after a Bonferroni correction was carried out, which is used to counteract the increased risk of false positives when comparing more than two samples with a two-proportions Z-test. I thank Dr. Ludovic De Cuyper (Ghent) for introducing me to this method. Although Z-tests require independent data and the *Mannheimer Korpus* is included in the *DEREKO*, the enormous size difference between these two corpora (cf. above) nullifies this issue.

proportion of literary texts. To test this hypothesis, the proportions of *immer* in press texts, parliamentary minutes, and Wikipedia-texts were compared in two randomly drawn subsets containing 10% of the instances in Table 8 ( $n = 906$ ) for constructions with  $W \neq S$  and in Table 9 ( $n = 931$ , cf. below) for constructions with  $W = S$ .<sup>12</sup> While text genre is often a large source of unwanted noise in corpus linguistics, its role seems to be fairly minor in this case: only the difference between press texts and Wikipedia-texts in *W II/IV V*-constructions proved to be significant (two-tailed two-proportions Z-test  $p < 0.0001$ ). While these findings suggest that the proportion of *immer* is not strikingly different across different text genres, it may still be worthwhile for further research to look into the effects of text genre on particle distribution, based on multiple genres and larger samples.

4. It is conceivable that the proportional differences between Leuschner's (2000) sample based on the *Mannheimer Korpus*, which was compiled in the 1960s, and the *DEREKO* sample, which consists mostly of texts from the 1990s–2010s, reflect a microdiachronic change. This is, however, rather unlikely, since the *ConverGENTiecorpus* consists of texts published from the 1990s until 2015, and yet shows a distribution similar to the *Mannheimer Korpus*. Another reason why the microdiachronic hypothesis is implausible, is that irrelevance particles in German are part of a larger “grammaticalization building-site” (Leuschner 2006; cf. Nübling 2005), and therefore unlikely to undergo dramatic changes within a few decades (cf. further below).

Table 9 represents particle distributions, based on the *DEREKO* data, in those primary irrelevance constructions in which the *W*-word is also the subject of the subordinate clause. An example of each type with the verb *passieren* ‘to happen’ is given in (17).<sup>13</sup>

- (17) a. Denn was *auch* passiert: Freilichtspiele sind immer ein Erlebnis.  
(Mannheimer Morgen, 16-6-2001)  
‘For whatever happens: open-air shows are always a great experience.’
- b. Was *auch immer* passiert, es muss schnell geschehen. (Luxemburger Tageblatt, 28-6-2011)  
‘Whatever happens, it has to happen fast.’

<sup>12</sup> I am grateful to an anonymous reviewer for suggesting this method to me.

<sup>13</sup> The *ConverGENTiecorpus* contains only 3 instances of *immer* in *W II/IV V*-constructions (42.86%), 2 with *auch immer* (28.57%), and 2 with *auch* (28.57%). Since the total number of occurrences is so low ( $n = 7$ ), little can be said about these instances and they will not be discussed any further.

- c. Was *immer auch* passiert, Gott will, daß wir glücklich sind. (Neue Kronen-Zeitung, 24-1-1995)  
‘Whatever happens, God wants us to be happy.’
- d. Was *immer* passiert, wir sind bereit zu kämpfen. (St. Galler Tagblatt, 15-2-1999)  
‘Whatever happens, we are prepared to fight.’

**Table 9:** Distribution of irrelevance particles in German primary constructions with  $W = S$  in the *DEREKO*

–	W	IV	V	#	%
a.	W	<i>auch</i>	V	79	0.85%
b.	W	<i>auch immer</i>	V	1,295	13.91%
c.	W	<i>immer auch</i>	V	640	6.87%
d.	W	<i>immer</i>	V	7,299	78.37%
				9,313	100.00%

As with  $W II S IV V$ -constructions in Table 8, *immer* is the most frequent irrelevance particle in Table 9 (78.37%), but *auch immer* (13.91%) is more common than *immer (...)* *auch* (6.87%) in  $W II/IV V$ -constructions. *Auch* occurs only marginally in the latter subordinate clause type (0.85%). In accordance to these observations, a chi-square test with standardized residuals, as shown in Table 10, suggests that *immer* and *auch immer* occur significantly more often in  $W II/IV V$ -constructions, whereas *auch* and *immer (...)* *auch* show a strong preference for the  $W II S IV V$ -constructions ( $\chi^2 = 735.97$ ;  $df = 3$ ;  $p < 0.0001$ ; Cramér’s  $V = 0.20$ ).

**Table 10:** Chi-square test comparing occurrences of *immer*, *auch*, *auch immer*, and *immer (...)* *auch* in both types of German primary irrelevance constructions in the *DEREKO*. Standardized residuals are given in brackets, no cells have an expected value below 5

–	<i>immer</i>	<i>auch</i>	<i>auch immer</i>	<i>immer (...)</i> <i>auch</i>	total
$W II S IV V$	6,114 (–6.15)	669 (+15.63)	1,108 (–2.24)	1,169 (+9.27)	9,060
$W II/IV V$	7,299 (+6.07)	79 (–15.41)	1,295 (+2.2)	640 (–9.15)	9,313
total	13,413	748	2,403	1,809	18,373

## 3.2 Secondary irrelevance constructions

### 3.2.1 Dutch

Table 11 represents the distribution of the Dutch irrelevance particle(s) (*dan ook*) in secondary constructions in the *ConverGENTiecorpus*. Particle distributions in the *SoNaR* corpus are given in Table 12. Examples from the corpora are provided in (18) resp. (19).

**Table 11:** Distribution of irrelevance particles in Dutch secondary constructions in the *ConverGENTiecorpus*

–	<i>ook</i>	<i>dan ook</i>	total
#	38	55	93
%	40.86%	59.14%	100.00%

- (18) a. Als een rode draad door zijn politiek loopt tenslotte zijn constante weigering om welk akkoord *ook* te sluiten (NE\_Jou\_New\_0715)  
‘A central theme in his politics is after all his permanent refusal of signing any agreement (lit. whichever agreement)’
- b. Alleen het lezen van deze letters in het Frans of welke andere taal *dan ook* leidt tot verbazingwekkende resultaten. (NE\_Cor\_Pro\_0016)  
‘Simply reading these letters in French or in whichever other language leads to amazing results.’

**Table 12:** Distribution of irrelevance particles in Dutch secondary constructions in the *SoNaR* corpus

–	<i>ook</i>	<i>dan ook</i>	total
#	975	2,946	3,921
%	24.87%	75.13%	100.00%

- (19) a. Jij hoeft u daarover niet te schamen of wat *ook*.  
(WR-P-E-G-0000005399)  
‘You don’t have to be ashamed of that or whatever.’
- b. Een fusie met wie *dan ook* is geen optie. (WR-P-P-G-0000599808)  
‘A fusion with anyone (lit. whoever) is not an option.’

Although *dan ook* is clearly the more frequent option in both corpora, instances with *ook* still account for a considerable proportion of the total. They mainly occur in a specific context, however, namely with indefinite pronouns in comparative constructions. 673 out of 975 occurrences of *ook* in secondary constructions are comparatives (69.03%).

In all 856 comparatives in *SoNaR*, we find a tendency to use the single particle *ook* ( $n = 673$  or 78.62%) rather than the particle combination *dan ook* ( $n = 183$  or 21.38%):

- (20) ik weet meer dan *wie ook* over armoede (WR-P-E-A-0000410476)  
 ‘I know more than anyone (lit. whoever) about poverty’

According to Hoeksema (2012: 96), the reason for this tendency is that speakers want to avoid a “double *dan*” (i.e. *horror aequi*). Since the comparative particle in Dutch happens to be *dan* (Reinarz/de Vos/de Hoop 2016), speakers tend to prefer *dan wie ook* over *dan wie dan ook*. Moreover, comparative constructions tend to be used with animate pronouns (e.g. *wie* ‘who’ rather than *wat* ‘what’; Hoeksema 2012: 98), and this could explain why the proportion of *ook* is significantly higher in secondary irrelevance constructions with *wie*, while *dan ook* shows a significant preference for inanimate *wat* (Yates  $\chi^2 = 601.88$ ;  $df = 1$ ;  $p < 0.0001$ ; Cramér’s  $V = 0.39$ ).

**Table 13:** Chi-square test comparing occurrences of Dutch irrelevance particle(s) (*dan*) *ook* secondary constructions in the *SoNaR* corpus. Standardized residuals are given in brackets, no cells have an expected value below 5

–	<i>ook</i>	<i>dan ook</i>	total
wie	704 (+16.61)	822 (–9.56)	1,526
wat	271 (–13.27)	2,121 (+7.64)	2,392
total	975	2,943	3,918

### 3.2.2 German

The distribution of German irrelevance particles in secondary constructions in the *ConverGENTiecorpus* is shown in Table 14; Table 15 represents their distribution in the *DEREKO*. Examples from the corpora are given in (21) resp. (22).

**Table 14:** Distribution of irrelevance particles in German secondary constructions in the *ConverGENTiecorpus*

–	<i>immer</i>	<i>auch immer</i>	<i>auch</i>	total
#	6	26	3	35
%	17.14%	74.29%	8.57%	100.00%

- (21) a. Weitergabe des Mietgegenstandes an natürliche oder juristische Personen in *welcher* Form *immer* ist dem Mieter untersagt. (GE\_Ins\_Con\_0104)  
‘A transfer of the rental property to natural or legal persons in whichever form is prohibited to the tenant.’
- b. Feigheit, Faulheit, *was auch immer*. (GE\_Jou\_Com\_1040)  
‘Cowardice, laziness, whatever.’
- c. Sollte der Mieter, aus *welchen* Gründen *auch*, seinen Mietvertrag annullieren, erklärt er sich bereit, dem Vermieter Schadenersatz zu erstatten. (GE\_Ins\_Con\_0027)  
‘Should the tenant, for whichever reasons, cancel their rental contract, they agree to pay the landlord a compensation.’

**Table 15:** Distribution of irrelevance particles in German secondary constructions in the *DEREKO*

-	<i>immer</i>	<i>immer auch</i>	<i>auch immer</i>	<i>auch</i>	total
#	399	18	4,485	24	4,926
%	8.10%	0.37%	91.05%	0.49%	100.00%

- (22) a. Zum Einstieg, zum Verführen, als kleine Zwischenmahlzeit, als *was immer*: Tapas müssen auf den Tisch. (Nürnberger Nachrichten, 8-3-1999)  
‘As a starter, as a temptation, as a small snack in between, as whatever: there have to be tapas on the table.’
- b. Aber wer könnte ein Interesse daran haben, Ihnen *was immer auch* zuzufügen? (Emme, Pierre: Florentinerpakt, 25-3-2011)  
‘But who could benefit from inflicting anything (lit. whatever) upon you?’
- c. Ich bin wichtig. Ich bin... *was auch immer*. (Braunschweiger Zeitung, 23-10-2010)  
‘I am important. I am ... whatever.’

- d. Ob Baldi, Plüss oder *wer auch* sonst: Bern braucht vor allem eines: Den Mut, mit der Vergangenheit zu brechen. (Zürcher Tagesanzeiger, 30-11-1998)  
 ‘Whether Baldi, Plüss or whoever else: Bern needs one thing above all: the courage to leave the past behind.’

Whereas *immer* is the most frequent particle in primary irrelevance constructions, it plays only a minor role in secondary constructions. Instead, the latter are clearly dominated by *auch immer*, the only particle (or particle combination) in the *DEREKO* sample that prefers secondary over primary constructions (4,485 secondary constructions out of 6,889 total instances = 65.10%). By contrast, all the other particles and particle combinations clearly prefer primary constructions (*immer*: 399 instances are secondary constructions out of 13,812 total instances = 2.89%; *immer auch*: 18/1,827 = 0.99%; *auch*: 24/772 = 3.11%). This holds especially for the other particle combination, *immer auch*, which does not occur in secondary constructions in the *ConverGENTiecorpus* at all.

## 4 Differences and similarities

Now that the distributional patterns of irrelevance particles in different construction types have been described in section 3, the most striking differences and similarities between certain particles or particle combinations will be discussed below.

### 4.1 German *auch* and Dutch *ook*

As mentioned above, the etymologically identical irrelevance particles *auch* and *ook* share their overwhelming rightward tendency. In fact, the distributional tendencies of *auch* and *ook* are strikingly similar (*auch* occupies field IV in 647 out of 669 *W II S IV V*-instances in the *DEREKO* = 96.71%; 4,808/4,977 in the *SoNaR* corpus = 96.60%). Their distributional patterns are statistically identical both in the language-specific corpora and in the subcomponents of the *ConverGENTiecorpus* ( $\chi^2 < 0.001$ ,  $n = 5,646$ ,  $df = 1$ ,  $p > 0.99$  for the *DEREKO* and *SoNaR* corpus; Fisher’s Exact Test:  $p > 0.99$  for the *ConverGENTiecorpus*). This rightward tendency has been explained in terms of disambiguation: according to Leuschner (2000: 354), *auch* is more likely to be misinterpreted as a narrow-scope focus particle in field II and more likely to be read as a wide-scope irrelevance particle in field IV (cf. also

Bossuyt/De Cuypere/Leuschner 2018: 110). The same explanation applies to the Dutch particle *ook*.

As has been observed before (Leuschner 2000: 350), occupation of field II by *auch* (and *ook*) is not only much rarer, but also more restricted, as *auch* and *ook* can only occur, at least as irrelevance particles, before lexical subjects, not before pronouns:

- (23) a. Was *auch* die Abgeordneten des Bundestags entscheiden – das letzte Wort hat immer wieder das Bundesverfassungsgericht.  
(Nürnberger Zeitung, 21-12-2012)  
'Whatever the delegates of the Bundestag decide – the Federal Constitutional Court always has the last word.'
- b. Wie *ook* zijn medewerkers waren in de regering, bij de Europese Commissie of het Europees Parlement, allen bewaren ze goede herinneringen aan hun vroegere 'baas'. (NE\_Lit\_Non\_1208)  
'Whoever his fellow workers were in the government, at the European Commission or the European Parliament, all had good memories to their former 'boss'.'
- (24) a. \*Was *auch* die entscheiden [...]  
'Whatever they decide ...'
- b. \*Wie *ook* zij waren [...]  
'Whoever they were ...'

This positional restriction can be explained by the general tendency of German and Dutch lexical subjects to occupy their base position in [Spec, VP] (Lenerz 1993: 118), i.e. the right periphery of the middle-field, occasionally forcing *auch/ook* to occupy field II despite the above-mentioned risk of ambiguity. According to Behaghel's (1909) "Law of Increasing Constituents" and the principle of end-weight, the preference to occur further to the right is especially strong with lengthier lexical subjects. Conversely, German and Dutch pronouns generally prefer to occupy the left periphery of the middle-field, also known as the "Wackernagel position" (Weiß 2018). Since pronouns are typically thematic, expressing discourse-old, given information, they tend to occur before rhematic, i.e. discourse-new information, which is typically expressed through lexical word classes such as NPs (cf. Noel Aziz Hanna 2015: 46). *Auch* thus never precedes pronouns because its positional preferences are perfectly complementary to those of pronouns.

## 4.2 German *auch immer* and Dutch *dan ook*

The particle combinations *auch immer* and *dan ook* share four notable similarities. The first is that they are the most frequent option in secondary irrelevance constructions in their respective language, as seen in section 3.2. Although *auch immer* may seem to be more dominant in German secondary constructions (26 out of 35 instances in the *ConverGENTiecorpus* = 74.29%; 4,485/4,926 in the *DEREKO* = 91.05%) compared to Dutch *dan ook* (55/93 in the *ConverGENTiecorpus* = 59.14%; 2,946/3,921 in the *SoNaR* corpus = 75.13%), this difference is only significant in the language-specific corpora (two-tailed two-proportions Z-test  $p < 0.0001$ ), not in the *ConverGENTiecorpus* ( $p = 0.11$ ). It can be explained by the fact that *W auch/immer*-pronouns in comparative constructions do not occur in the German sample at all, while being very frequent in the Dutch sample. As mentioned above (cf. section 3.2.1), it is in this exact context that Dutch secondary irrelevance constructions show a tendency to take the single particle *ook* rather than the particle combination *dan ook*.

Consistent with this similarity, both *auch immer* and *dan ook* are specialized for secondary irrelevance constructions: if all instances of *auch immer* and *dan ook* are considered, a clear majority of them turn out to be secondary constructions. *Dan ook* seems to specialize even more for secondary constructions than *auch immer*: all 55 instances of *dan ook* in the *ConverGENTiecorpus* are secondary constructions, compared to only 26 out of 41 instances with *auch immer* (63.41%). A similar pattern is found in the language-specific corpora (2,946/3,096 in the *SoNaR* corpus = 95.16% vs. 4,485/6,889 = 65.10% in the *DEREKO*; two-tailed two-proportions Z-test:  $p < 0.0001$ ).<sup>14</sup> Thus, whereas German *auch immer* occurs both in secondary irrelevance constructions (where it clearly predominates) and primary constructions, Dutch *dan ook* is almost exclusively found in secondary constructions.

The third similarity of *auch immer* and *dan ook* is that these particle combinations are never broken up by any other constituent, i.e. that the components *auch* and *immer* resp. *dan* and *ook* always occur next to each other. Using terminology suggested by Thurmair (1989: 290) for modal particles, *auch immer* and *dan ook* thus qualify as “closed” particle combinations. This suggests that these erstwhile particle combinations have been reanalyzed as single complex particles, enabling them to function as “indefiniteness markers” to the *W*-stem (in the terminology of Haspelmath 1997) in secondary irrelevance constructions.

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<sup>14</sup> The two-proportions Z-test cannot be performed on the data from the *ConverGENTiecorpus* because the difference between the numerator and denominator is  $< 5$  for the Dutch data (55/55 = 100.00%).

The fourth similarity is the statistically significant preference of *auch immer* and *dan ook* for primary constructions of the *W II/IV V*-type over the *W II S IV V*-type (cf. above, sections 3.1.1 and 3.1.2). Given that *W II/IV V*-constructions have no subject field and therefore tend to be shorter than *W II S IV V*-constructions, the preference of *auch immer* and *dan ook* for shorter or elliptically reduced subordinate clauses (as observed by Leuschner 2000: 353 for *auch immer*) is not surprising.

The most notable difference between *auch immer* and *dan ook* is the complementary nature of their positional tendencies in primary irrelevance constructions. In *W II S IV V*-constructions, *auch immer* shows a strong leftward tendency, occupying field II 954 out of 1,108 total instances in the *DEREKO* (86.10%). *Dan ook*, on the other hand, shows a strong rightward tendency in this construction type (132/136 in field IV in the *SoNaR* corpus = 97.06%). This might seem like a problem, as it has been argued that *auch immer*'s leftward tendency is one of the major factors that caused this particle combination to specialize for secondary constructions (Bossuyt 2016: 64): a *W*-word and one or more subsequent irrelevance particles are more likely to be reanalyzed as a new unit if the particles typically occur in immediate adjacency to the *W*-word. This factor may well apply to German *auch immer*, but it is obviously irrelevant for *dan ook*, given that Dutch does not have any irrelevance particles with a leftward tendency to begin with. The reason that *dan ook* specializes for secondary constructions rather than *ook* alone is due to the fact that a complex particle is less prone to ambiguity as an indefiniteness marker than a single particle. This is especially true in clause-medial contexts, in which secondary constructions often occur. For the very same reason, the complex particle *auch immer* is more frequent in German secondary constructions than *immer*, which also has a preference for field II, but is a single particle instead of a closed particle combination (ibid.).

### 4.3 German *immer* and English *-ever*

Not only is German *immer* related to English *-ever* etymologically to the extent that the initial *i-* in *immer* is cognate with the *e-* in English *ever* (Leuschner 1996), its leftward tendency is reminiscent of the positional shift undergone by *ever* in the history of English. In present-day English, attaching itself to the *WH*-word is the only option for *-ever* (cf. above). For *immer*, it is almost the only option: *immer* occupies field II in 6,075 out of 6,114 *W II S IV V*-instances in the *DEREKO* sample (99.36%). Although *immer* competes for this position with pronominal subjects (cf. section 4.1 above), the pronoun has successfully forced *immer* to occupy field IV in only 39 instances in the entire *DEREKO* sample. Since only pronouns com-

pete for Wackernagel's position, *immer* never occurs behind lexical subjects, as shown by (26) in comparison with the original in (25):

- (25) Und was es *immer* gewesen sein mag: Der Verdächtige ist nicht vorbestraft und erst recht nicht verurteilt. (Nürnberger Nachrichten, 16-5-1998)  
 'And whatever it may have been: the suspect has not been previously convicted and surely never been sentenced.'
- (26) \* Was das Verbrechen *immer* gewesen sein mag [...]   
 'Whatever the crime may have been ...'

As shown by Leuschner (2001; 2006: 134–140), *immer* and *ever* first occurred in irrelevance constructions as free-choice adverbs supporting the quantificational effect of the semantically opaque irrelevance markers *so ... so* (e.g. Old English *swa hwylc swa* 'whoever, whichever'; Old High German *so wér so* 'whoever'). *Immer* and *ever* then began replacing *so ... so* as the main irrelevance marking strategy, a grammaticalization process which was accompanied by the omission of the left-hand *swa* (> *so*) in English, eventually resulting in *WH-(so)-ever*-compounds, and the right-hand *so* (> *s-*) in German, resulting in combinations like *swâ iemer* 'wherever'. English *-so-* was eventually left out completely in irrelevance constructions (for *whatsoever*, which still occurs as a post-nominal intensifier, cf. above and Leuschner 2001), and German irrelevance marking *s-W*-words collapsed with bare *W*-words in the 14<sup>th</sup> century (Leuschner 2006: 135), leaving *iemer* (> *immer*) and *auch* as clause-internal irrelevance marking. Both *ever* and *immer* occurred initially in field IV, i.e. in the typical position of adverb, but following their reanalysis as quantificational particles began shifting towards field II as *so ... so* became increasingly obsolete and the new strategies of irrelevance marking became more and more obligatory (cf. Leuschner 2006 and Bossuyt/De Cuypere/Leuschner 2018 for more details).

While *immer* and *-ever* both underwent grammaticalization, this process happened much faster in English than in German. The last instances with *æure* (> *ever*) in field IV seem to be attested around the 12<sup>th</sup> century:

- (27) Luue ðine nexte al swa ðe seluen, hwat manne swa he *æure* bie! (cited in Leuschner 2006: 135)  
 'Love thy neighbour like thyself, whatever man he be!'

In German, however, the positional tendencies of *immer* and *auch* did not emerge clearly until well into the 19<sup>th</sup> century (Leuschner 2006: 136), as suggested by verses like (28) from Johann Wolfgang von Goethe (1749–1832):

- (28) Und man kommt in's Gered', wie man sich *immer* stellt. (cited in Goethe's *Faust I*, line 3201)  
 'And one becomes the subject of gossip, however one (lit.: how one ever) positions oneself.'

Unlike with *-ever*, the grammaticalization of *immer* is still incomplete. While phrases like *whichever house* and *however beautiful* are perfectly grammatical in English, their German equivalents with *immer* are ungrammatical or at least highly unusual: *welches \*(immer) Haus ?(immer)*, *wie \*(immer) schön ?(immer)*. When *wessen* 'whose' modifies an intervening NP, as in (29a), *immer* is ruled out, but *auch immer* is allowed.<sup>15</sup> When *wessen* functions as a genitive object, by contrast, and no constituents intervene between the *W*-word and the particle as in (29b), *immer* is unproblematic:

- (29) a. mit *wessen* Geld *auch immer* [*\*immer*] sie bezahlt wurden  
 (St. Galler Tagblatt, 18-3-2010)  
 'with whoever's money they got payed'  
 b. *wessen immer* man mich anklagt (Süddeutsche Zeitung, 31-3-1998)  
 'Whatever (some)one accuses me of'

*Immer* also seems to be problematic with complex *W*-words such as *womit* 'with what/which' (lit. 'where-with'), as suggested by Leuschner (2000: 350). These restrictions have so far prevented *immer* from becoming the sole irrelevance particle in German and attaining univerbation with the *W*-word, as has happened in English. Its obligatorification seems to be counteracted by the presence of other particles, as the above-mentioned restrictions are more likely to encourage the use of *auch* or particle combinations rather than *immer* alone in these specific contexts.

## 5 Conclusion and prospects

The present study has documented and analyzed the distributional patterns of the irrelevance particles *-ever*, *immer* and/or *auch* and (*dan*) *ook* in both primary and secondary irrelevance constructions. A contrastive corpus triangulating approach

<sup>15</sup> (29a) would be grammatical with *auch immer* in either field II or field IV, or, alternatively, with *auch* in field IV. In any case, *immer* in field II is ruled out.

was adopted, thereby expanding the scope of a previous study by Bossuyt/De Cuypere/Leuschner (2018) and providing a semi-replication of Leuschner (2000).

From a diachronic perspective, the synchronic analysis can be read as a snapshot of a long-term process of emergence-by-grammaticalization. As far as primary constructions are concerned, this is nearly completed in English, where *-ever* is the sole irrelevance particle and only occurs in univertation with the *WH*-word. There are only a few small defects in the *WH-ever*-paradigm, like the \**whyever* gap (Leuschner 2006: 41) and residual *-so-* in intensifying *whatsoever*. In German, the grammaticalization process is not only incomplete, but seems to have lost its former directionality: although *immer* shows a very similar leftward tendency to *-ever*, it has not yet reached univertation with the *W*-word and seems unlikely to do so in the foreseeable future because its obligatorification is hindered by the systemic presence of both *auch* and the particle combination *auch immer*. Thus, the *W immer/auch*-paradigm seems to be stuck in an uneasy balance. Dutch *W ... ook* shows only weak signs of grammaticalization: although *ook* did undergo function-specific semantic changes when it was recruited from the focus particle, and shows a clear preference for field IV (cf. Bossuyt 2016: 59 and Leuschner 2013: 53 on German *auch*), its position in this field is not absolute and the result of its preferential position is precisely to make it discontinuous with the *W*-word. *Ook* thus fails to show even the most rudimentary signs of coalescence (Lehmann 2015: 157–167), a clear indication that any further increase in grammaticalization is blocked.

In secondary constructions, however, we see a different pattern. Dutch *W dan ook* is highly specialized for secondary constructions and the most functionally versatile of all three languages, occurring as a discourse marker, general extender, and indefinite pronoun. German *W auch immer* occurs frequently in the first two functions, but is still rare as an indefinite pronoun. The same is true for English *WH-ever* in secondary constructions, mainly due to the systemic presence of the *any*-series.

The subsystem of irrelevance marking through particles thus participates in the larger “grammaticalization building-site” of concessive conditionality in English, German, and Dutch (Leuschner 2006). Follow-up research should look at the interaction, both in terms of quantification (i.e. semantics) and of surface distribution, between irrelevance particles on the one hand and expressions of epistemic modality, particularly *may/mögen/mogen*, and the present subjunctive as strategies of free-choice quantification on the other hand:

- (30) a. It might have something to do with people trying to express their frustration -- *whatever* that *may* be.  
(COCA, NEWS: Atlanta)

- b. Steht am Schluss eines Artikels “pd”, hat nicht die Zeitungsredaktion geschrieben, sondern der “Pressedienst”, wer *immer* das sein *möge*. (St. Galler Tagblatt, 11-5-2012)  
 ‘If it says “pd” at the end of an article, then the newspaper editorial didn’t write [it], but the “press-service”, whoever that may be.’
- c. Wat Henin *ook moge* beweren, zij start als favoriete. (WR-P-P-G-0000237815)  
 ‘Whatever Henin may claim, she starts as the favorite.’

Another avenue is to investigate the alteration between clause-internal strategies of irrelevance marking, i.e. through irrelevance particles, and clause-external strategies such as elliptical expressions of irrelevance, which come to the building-site with a grammaticalization history of their own (Leuschner 2006). As Bossuyt/De Cuypere/Leuschner (2018: 117) demonstrate, rare instances of overlap between clause-external and clause-internal strategies exist in German, and equivalent examples occur in Dutch:

- (31) a. *Egal*, was sie *auch* tun (die tageszeitung, 2-12-2006)  
 ‘No matter what (lit. whatever) they do’
- b. Het is het nie[t] waard jong, *gelijk* met wie je *ook* zo een one-night-stand zou willen doen. (WR-P-E-A-0000047811)  
 ‘It’s not worth it, man, no matter with whom (lit. whomever) you would like to have a one night stand.’

The language-specific and cross-linguistic patterning of such an overlap remains to be seen. Equivalent structures in English would feature a *WH-ever*-word in combination with *no matter* (or some other clause-external marker). The fact that there are no such examples in the BYU-sample at all matches the observation that the overlap occurs in German mainly with the rightward-tending *auch*, but only rarely with the leftward-tending *immer*. Any future investigation taking into account irrelevance markers other than clause-internal particles is thus likely to confirm the position of German irrelevance marking strategies in between those of Dutch and English.

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# IPP in Afrikaans: a corpus-based investigation and a comparison with Dutch and German

**Abstract:** In the West-Germanic languages we expect an auxiliary of the perfect to select a past participle. In a subset of these languages, however, some verbs select an infinitive instead, i.e. in constructions known as infinitivus pro participio (IPP). The phenomenon is well-studied with regard to Dutch and German, but for Afrikaans an extensive study based on empirical data is still lacking. In order to fill this void, the present paper uses a corpus study to identify the verbs which – obligatorily or optionally – take the IPP form in Afrikaans. Verb classes showing the IPP effect in Afrikaans, Dutch and German are compared, and crosslinguistic similarities and differences are identified. The result is a corpus-based typology of IPP verbs in the three languages in question.

**Zusammenfassung:** In den westgermanischen Sprachen wäre eigentlich zu erwarten, dass Perfekt-Hilfsverben immer ein Partizip Perfekt selektieren. In einer Untergruppe dieser Sprachen selektieren einige Verben jedoch einen Infinitiv, den so genannten infinitivus pro participio (IPP). Während dieses Phänomen hinsichtlich des Niederländischen und Deutschen bereits eingehend erforscht worden ist, fehlt zum Afrikaans bisher eine umfangreichere, empirisch fundierte Studie. Um diesem Mangel abzuhelpen, werden in dem vorliegenden Beitrag mittels einer Korpusuntersuchung diejenigen Verben identifiziert, die im Afrikaans – obligatorisch oder optional – in der IPP-Form auftreten. Wir vergleichen die Verbklassen, die auf Afrikaans, Niederländisch und Deutsch den IPP-Effekt zeigen, und stellen Ähnlichkeiten und Unterschiede zwischen den Sprachen fest. Das Ergebnis ist eine korpusbasierte Typologie von IPP-Verben in den drei betroffenen Sprachen.

# 1 Introduction

In the West-Germanic languages the auxiliary of the perfect combines with a past participle (PSP), as illustrated in (1–6) for German (DE), Dutch (NL), Afrikaans (AF), English (EN), West Frisian (FY), and Yiddish (YI).<sup>1</sup>

- (1) DE Wir haben nichts *gesehen*.
- (2) NL Wij hebben niets *gezien*.
- (3) AF Ons het niks *gesien* nie.
- (4) EN We have not *seen* anything.
- (5) FY Wy hawwe neat *sjoen*.
- (6) YI Mir hobn gornisht *gezen*.

If the participle combines with an infinitival complement, though, it may and sometimes must take the form of an infinitive, as illustrated in (7–9).

- (7) DE Ich habe Johann einen Roman schreiben *sehen/gesehen*.
- (8) NL Ik heb Johan een roman *zien/\*gezien* schrijven.
- (9) AF Ek het Johan 'n roman *sien/gesien* skryf.  
'I saw John write a novel.'

The phenomenon is known as *infinitivus pro participio* (IPP).<sup>2</sup> It occurs in German, Dutch and Afrikaans, but not in English, Frisian or Yiddish (Wurmbrand 2004; Schmid 2005: 138). It is an interesting topic for comparative research, because it shows a large degree of variation. Notice, for instance, that the Dutch *zien* in (8) must take the IPP form, while its counterparts in German and Afrikaans may take either the usual participial form or the IPP form.

While German and Dutch IPP have been studied extensively, Afrikaans IPP has received far less attention. The first objective of this study therefore is to identify the verbs which – obligatorily or optionally – take the IPP form in Afrikaans. For this purpose we make use of two corpora. The second objective is to compare the results with those for Dutch and German. In answering this question, we use the typology of IPP verbs that has been proposed in Augustinus/Van Eynde (2017).

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<sup>1</sup> We thank the audience of the Germanic Sandwich conference (March 2017, Münster), the anonymous reviewers and Alexander Hurst for their comments.

<sup>2</sup> Other terms are *Ersatzinfinitiv* and *substitute infinitive*, see Den Besten/Edmondson (1983).

The paper starts with a survey of the literature on IPP in Afrikaans in section 2. In section 3 we present the corpus study. Section 4 describes the typology of Augustinus/Van Eynde (2017) and compares it to other lists and classifications for German and Dutch IPP verbs. In addition, an extension to the typology is proposed, making use of the data from the corpus study. Section 5 summarizes our findings.

## 2 IPP in Afrikaans

This section provides a brief survey of the literature on IPP in Afrikaans. To pave the way we first present some facts about the verbal paradigm (2.1). Then we discuss the constructions in which the IPP effect occurs (2.2). A separate section is devoted to the modal verbs (2.3).

### 2.1 The verbal paradigm

Afrikaans verbs do not show much inflectional variation. The finite forms do not show any variation for person or number and the present/past distinction is – for most verbs – not morphologically marked (De Vos 2005). Instead the past is marked by the perfect auxiliary *het* ‘have’ in combination with the past participle, as illustrated for the verb *bly* ‘to stay’.

ek bly ‘I stay’	ek het gebly ‘I stayed’
jy/u <sup>3</sup> bly ‘you (sing.) stay’	jy/u het gebly ‘you (sing.) stayed’
hy/sy/dit bly ‘he/she/it stays’	hy/sy/dit het gebly ‘he/she/it stayed’
ons bly ‘we stay’	ons het gebly ‘we stayed’
julle/u bly ‘you (plur.) stay’	julle/u het gebly ‘you (plur.) stayed’
hulle bly ‘they stay’	hulle het gebly ‘they stayed’

The past participle canonically has the prefix *ge-*, but this prefix is omitted if the verb already has an unstressed prefix, such as *be-*, *ge-*, or *ver-*, as shown in *jy het begin* ‘you started’.<sup>4</sup> The only verbs with a morphologically marked past tense, henceforth called preterite, are the copula and most of the modals.

<sup>3</sup> *Jy* is the informal form. The polite form *u* is hardly ever used in present-day Afrikaans.

<sup>4</sup> A form like *gebegyn* is sometimes observed in colloquial language.

<i>ek is</i> ‘I am’	<i>ek was</i> ‘I was’
<i>ek kan</i> ‘I can’	<i>ek kon</i> ‘I could’
<i>ek wil</i> ‘I want’	<i>ek wou</i> ‘I wanted’
<i>ek sal</i> ‘I will’	<i>ek sou</i> ‘I would’
<i>ek moet</i> ‘I must (pres.)’	<i>ek moes</i> ‘I must (past)’
<i>ek mag</i> ‘I may’	<i>ek mog</i> ‘I might’ <sup>5</sup>

The infinitive has the same form as the simple present tense, except in the case of the copula *wees* ‘be’ and the main verb *hê* ‘have’.<sup>6</sup> They contrast respectively with *is* and *het* (Donaldson 1993).

The passive is formed by the combination of a passive auxiliary and a past participle. The auxiliary is *word* ‘become’ for the present and *is* ‘be’ for the past. Compare the active *sy slaan hom* ‘she hits him’ and *sy het hom geslaan* ‘she hit him’ with the passive counterparts *hy word deur haar geslaan* ‘he is hit by her’ and *hy is deur haar geslaan* ‘he was hit by her’. In colloquial speech one also hears *was* (instead of *is*), but this is considered an Anglicism, being a double past.

## 2.2 IPP

In Afrikaans, IPP mainly occurs in the double infinitive construction (2.2.1) and in pseudo-coordination (2.2.2). A special case is IPP in passive constructions (2.2.3).

### 2.2.1 Double infinitive construction

As pointed out in the introduction, the perfect auxiliary canonically combines with a past participle, as in (3) and (10), but if the participle selects an infinitival complement, it may take the IPP form instead, as in (9) and (11).

- (10) Hy   het stil     gebly/\*bly.  
       he   has quiet   remain.PSP/remain.INF  
       ‘He remained quiet.’

<sup>5</sup> *Mog* ‘might’ is archaic and does not appear anymore in contemporary Afrikaans. The verb *hê* ‘have’ used to have a preterite form (*had*), but this is now replaced by *het gehad*. The modals *hoef* ‘need to’ and *behoort* ‘ought to’ do not have a preterite form. Their past counterparts are formed with the auxiliary *het*.

<sup>6</sup> For the homophonous auxiliary the infinitive is identical to the simple present, i.e. *het*.

- (11) Hy het gebly/bly praat.  
 he has remain.PSP/remain.INF talk.INF  
 'He kept talking.'

Ponelis (1979), De Vos (2001) and Zwart (2007) claim that the choice for the IPP form is optional, but Donaldson observes that it is often preferred in the contexts where it is allowed and that the use of the past participle in (10) is typical of colloquial Afrikaans (Donaldson 1993: 225f.). If the IPP form is chosen, one gets a sequence of two infinitives, hence the term *double infinitive construction*.

A list of verbs that may take the IPP form is provided in Ponelis (1979). It includes the aspectual verbs *begin* 'begin', *bly* 'stay', *aanhou* 'continue', *ophou* 'stop', *gaan* 'go', *kom* 'come' and *loop* 'walk', the causative *laat* 'let', and the control verbs *help* 'help', *leer* 'learn, teach' and *probeer* 'try'. They all combine with a bare infinitive, except for *begin*, which can also have an infinitive introduced by *te* 'to'.

Van Schoor (1983) contains a longer list, which also includes *kry* 'get', *durf* 'dare', the causative *maak* 'make', the evidential modals *skyn* 'seem' and *blyk* 'turn out', and the perception verbs *hoor* 'hear', *sien* 'see', *voel* 'feel' and *ruik* 'smell'. According to Van Schoor, IPP is obligatory for all of these verbs, except for *aanhou* and *ophou*.

**Table 1:** IPP versus PSP (Robbers 1997)

	IPP		PSP	
<i>aanhou</i> 'continue'	0	(0%)	0	(0%)
<i>begin</i> 'begin'	0	(0%)	0	(0%)
<i>bly</i> 'remainc'	17	(94.44%)	1	(5.56%)
<i>gaan</i> 'go'	71	(100%)	0	(0%)
<i>help</i> 'help'	1	(33.33%)	2	(66.67%)
<i>hoor</i> 'hear'	2	(66.67%)	1	(33.33%)
<i>laat</i> 'let'	49	(98%)	1	(2%)
<i>leer</i> 'learn/teach'	5	(100%)	0	(0%)
<i>sien</i> 'see'	16	(94.12%)	1	(5.88%)
<i>voel</i> 'feel'	1	(100%)	0	(0%)
<b>Total</b>	<b>162</b>	<b>(96.43%)</b>	<b>6</b>	<b>(3.57%)</b>

Robbers (1997) is the first to provide quantitative data. For a subset of the IPP verbs she counted the frequency of IPP and non-IPP (i.e. PSP) occurrences in a 128K-word corpus, consisting of (parts of) three novels.<sup>7</sup> The results are presented in Table 1.

This survey clearly shows that IPP is preferred when it is possible, confirming the claim in Donaldson (1993). The only exception is *help*, but notice that there are only three occurrences of this verb in the data set.

Note that Conradie (2006) claims there is no such thing as IPP in Afrikaans.

- (12) Hy het 'n liedjie *laat* /*gelaat* sing.  
 he has a song let.INF /let.PSP sing.INF  
 'He made them sing a song.'

In a construction like (12), he analyses *laat sing* as a single verb, and considers (*ge*)*laat sing* as a single past participle with optional *ge-* prefixation. He does not give any arguments for this analysis, though. According to Ponelis (1993), also cited in Robbers (1997), a small number of these combinations of a linking verb and a main verb have become lexicalized, e.g. *gaan haal* 'fetch', *laat blyk* 'indicate', *laat geld* 'exercise authority', *laat kom* 'summon', *laat spaander* 'get going' and *laat staan* 'leave'. Most combinations, however, are not lexicalized as the verb clustering is a productive process and there is no specialization of meaning. The present tense version is "Hy *laat* 'n liedjie *sing*", making it hard to claim *laat sing* is a single verb.

### 2.2.2 Pseudo-coordination

Another construction in which IPP forms occur concerns a serialization pattern with the conjunction *en* 'and'. It is used to express the continuous or progressive aspect, as in (13).

- (13) Ons staan en luister.  
 we stand.PRES and listen.INF  
 'We are listening.'

Since the conjunction does not have its usual coordinating function here, the construction is known as *pseudo-coordination*. It also exists in English (e.g. *he sits*

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<sup>7</sup> Robbers' corpus study is based on novels of Van Heerden (1987, first 100 pages), Van Niekerk (1994, first 100 pages) and Brink (1995, first 160 pages), but she does not mention the titles herself.

*and reads*), but not in Dutch or German. If *staan* is combined with the perfect auxiliary, it optionally takes the IPP form. The verb after *en*, by contrast, must take the infinitival form, as shown in (14).

- (14) Ons het gestaan/staan en luister/\*geluister.  
 we have stand.PSP/stand.INF and listen.INF/listen.PSP  
 ‘We were listening.’

Both options are considered standard Afrikaans by Poneis (1979: 241–245), Donaldson (1993), Zwart (2007), and Verdoolaege/Van Keymeulen (2010). Robbers (1997) points out that *en* may be omitted, as in (15–16).

- (15) Sy staan ril effe.  
 she stands tremble.INF momentarily  
 ‘She is trembling for a minute.’
- (16) Sy het gestaan/staan ril effe.  
 she has stand.PSP/stand.INF tremble momentarily  
 ‘She was trembling for a minute.’

Notice that the variant with the IPP form in (16) has the same form as the double infinitive construction.

Beside *staan* ‘stand’, the verbs which occur in this construction are *lê* ‘lie’, *loop* ‘walk’, and *sit* ‘sit’.<sup>8</sup> Notice that this use of *loop* is different from the one that it has in the double infinitive construction. Robbers (1997) provides some quantitative data, see Table 2.

**Table 2:** IPP versus PSP in pseudo-coordination (Robbers 1997)

	IPP		PSP	
<i>lê</i> ‘lie’	2	(50%)	2	(50%)
<i>loop</i> ‘walk’	0	(0%)	2	(100%)
<i>sit</i> ‘sit’	2	(16.67%)	10	(83.33%)
<i>staan</i> ‘stand’	3	(15%)	17	(85%)
<b>Total</b>	<b>7</b>	<b>(22.58%)</b>	<b>31</b>	<b>(77.42%)</b>

<sup>8</sup> Poneis (1979) points out that the infinitival marker *te* ‘to’ appears instead of *en* in a very limited number of cases. Such constructions are archaic.

In contrast to what we observed for the DIC, we see a preference for the non-IPP combination.

### 2.2.3 Passive IPP constructions

De Vos (2001) reports that some of the IPP verbs, esp. *laat* ‘let’, tend to passivize fairly productively. Examples are (17–18).

(17) Hierdie huis is deur my oom laat /gelaat bou.  
 this house is by my uncle let.PSP /let.INF build  
 ‘My uncle had this house built.’

(18) ’n stuk hout wat daarheen laat sak word  
 a piece wood that to-there let.INF lower.INF is  
 ‘a piece of wood that is lowered to that place’

Robbers (1997: 61–64) also provides examples with *kom* ‘come’, *ophou* ‘stop’ and *begin* ‘begin’. If the embedded infinitive is a transitive verb, such as *bou* ‘build’, its object is identified with the subject of the passive auxiliary, as in (17). If the embedded infinitive is intransitive, it is its subject which is identified with the subject of the passive auxiliary, as in (18).<sup>9</sup>

According to Ponelis (1979), complex passives are not acceptable in pseudo-coordination. De Vos (2001) also points out that, although speaker judgements vary, it is difficult to passivize constructions with pseudo-coordination. Robbers (1997), however, had two informants who accept the construction, and Breed (2012) cites a few examples from the internet, such as (19).

(19) ? Die appel word deur hom gesit en eet.  
 The apple is by him sit.PSP and eat.INF  
 ‘He sits and eats the apple’

Notice that *sit* has the PSP form. Breed’s examples all contain transitive verbs, such as *eet* ‘eat’.

<sup>9</sup> Constructions like (17) are impossible in Dutch and German. However, some speakers of German allow the *remote passive construction*, e.g. *Weil der Wagen oft zu reparieren versucht wurde*. ‘Because many attempts were made to repair the car.’ (Müller 2002: 136). In those constructions, the object of the embedded verb is realized as the subject of the selecting verb (in this case *versuchen* ‘try’). In German, these constructions do not show the IPP effect.

### 2.2.4 Summing up

The literature on Afrikaans discusses a limited set of verbs that figure in IPP constructions. They concern the double infinitive construction, pseudo-coordination and their passive counterparts. The literature is inconclusive about the issue of which verbs belong to the set (each author has his/her own set) and whether IPP is optional or obligatory. With a more extensive corpus study we aim to shed some more light on this issue, see section 3.

## 2.3 Modal verbs

The modal verbs are special in two respects. First, they are – together with the copula – the only verbs with a morphologically marked past tense, see 2.1. Second, they lack a past participle form. From this it follows that the past tense counterpart of a sentence with a modal verb is formed in another way than in the case of the other verbs. As an example, let us take the sentence *Jan kan hard werk* ‘John can work hard’. According to Robbers (1997) it has no less than five possible past tense counterparts. The most common one is (20), in which the modal has the preterite form.<sup>10</sup>

(20) Jan kon hard werk. [pret<sub>1</sub> – inf<sub>2</sub>]

The alternatives all contain the auxiliary of the perfect *het*.<sup>11</sup>

- (21) Jan het hard kon werk [aux<sub>1</sub> – pret<sub>2</sub> – inf<sub>3</sub>]  
 (22) Jan het hard kan werk [aux<sub>1</sub> – pres<sub>2</sub> – inf<sub>3</sub>]  
 (23) Jan kon hard gewerk het [pret<sub>1</sub> – psp<sub>3</sub> – aux<sub>2</sub>]  
 (24) Jan kan hard gewerk het [pres<sub>1</sub> – psp<sub>3</sub> – aux<sub>2</sub>]

In (21) the auxiliary is combined with the preterite form *kon*, which in turn selects the infinitive *werk*. Robbers calls it archaic. In (22) the auxiliary selects the present

<sup>10</sup> In the added annotation *aux* stands for the auxiliary *het* ‘have’, *pres* for the present tense of the modal, *pret* for the preterite form of the modal, *inf* for the infinitival form of the main verb, and *psp* for the participial form of the main verb. The subscripts indicate the order of selection, with the hierarchically highest verb being 1.

<sup>11</sup> Ponelis (1979) calls the construction in (21) *preteritive assimilation* and the one in (23) *preteritive replacement*.

form *kan* which selects *werk*. Robbers doubts whether it is well-formed. In (23) and (24) the main verb takes the form of the past participle which is selected by the auxiliary *het*; the modal appears in its preterite form in (23) and in its simple present form in (24). Ponelis (1993: 412) suggests that the preterite form of the modal in (21) crossed over from finite to infinitival territory.

We find the same possibilities in subordinate clauses, but with another word order.

- |      |                                 |  |
|------|---------------------------------|--|
| (25) | ... dat Jan hard kon werk       | [pret <sub>1</sub> – inf <sub>2</sub> ]                    |
| (26) | ... dat Jan hard kon werk het   | [pret <sub>2</sub> – inf <sub>3</sub> – aux <sub>1</sub> ] |
| (27) | ... dat Jan hard kan werk het   | [pres <sub>2</sub> – inf <sub>3</sub> – aux <sub>1</sub> ] |
| (28) | ... dat Jan hard kon gewerk het | [pret <sub>1</sub> – psp <sub>3</sub> – aux <sub>2</sub> ] |
| (29) | ... dat Jan hard kan gewerk het | [pres <sub>1</sub> – psp <sub>3</sub> – aux <sub>2</sub> ] |

For verbs that have identical forms for the infinitive and the past participle, such as *gebeur* ‘happen’ and *verkies* ‘prefer’, the [pret<sub>2</sub>–inf<sub>3</sub>–aux<sub>1</sub>] sequence in (26) is not distinct from the [pret<sub>1</sub>–psp<sub>3</sub>–aux<sub>2</sub>] sequence in (28), and the [pres<sub>2</sub>–inf<sub>3</sub>–aux<sub>1</sub>] sequence in (27) is not distinct from the [pres<sub>1</sub>–psp<sub>3</sub>–aux<sub>2</sub>] sequence in (29).

An obvious question is whether there are any semantic differences between the five alternatives. Stell (2011: 162–165) points out that the patterns in (21) and (22) are only used with declarative (indicative) senses, whereas the canonical pattern in (20) and the patterns with the past participle in (23) and (24) are also used with conditional and hypothetical senses, including the irrealis.

### 3 Corpus study

For the corpus study we have used two corpora: the *Taalkommissie* corpus and the Afrikaans section of Wikipedia.

The *Taalkommissie* corpus is a 54 million-word corpus of written Afrikaans, developed by the Centre for Text Technology (CTeX 2011) of North-West University’s Potchefstroom campus under the auspices of the language committee of the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns* (South African Academy of Science and Arts). It covers a wide selection of genres including newspapers and magazine articles, textbooks, law and government texts, Bible texts, and literature excerpts. Unfortunately, the version of the corpus at our disposal does not contain any metadata, so it is not possible to track the origin of the sentences or to compare the different registers. The corpus was automatically tokenized, annotated with part-of-speech (PoS) tags and integrated in a search tool as described

in Augustinus/Dirix (2013). The tag set consists of 139 different tags, mainly based on morphosyntactic features (Pilon 2005). The author of the tagger claims an accuracy of 85.87% on a small data set, which is rather low compared to state-of-the-art PoS taggers for well-resourced languages. Schlünz (2010) reports an accuracy of 94.64%, but with a tag set reduced to only 17 different tags, mainly just part-of-speech. We decided to use the extended tag set, as the tags for the different verb forms are important to us.

Wikipedia<sup>12</sup> is the world's best known online encyclopaedia, available in about 280 languages. Its Afrikaans section contained 40,820 articles with 13.2 million words at the moment of download (July 2016). After extracting the articles with WikiExtractor.py,<sup>13</sup> we applied the same tokenization and tagging procedure as we did for the *Taalkommissie* corpus.

The following sections describe the results of the corpus investigation of both corpora. Section 3.1 presents the double infinitive constructions, section 3.2 pseudo-coordination, section 3.3 passive constructions, and section 3.4 constructions with modal verbs. Section 3.5 compares the results for the two corpora. Section 3.6 concludes.

### 3.1 Double infinitive constructions

In order to collect double infinitive constructions and the corresponding constructions with a past participle, we searched for the following constructions in the *Taalkommissie* and Wikipedia corpora:<sup>14</sup>

- Constructions in which the auxiliary *het* 'have' is immediately followed by two verbs (main clauses),
- Constructions in which the auxiliary *het* 'have' is immediately preceded by two verbs (subordinate clauses),
- Constructions in which there is another word between *het* 'have' and the two other verbs (main clauses).

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<sup>12</sup> [www.wikipedia.org](http://www.wikipedia.org) (last accessed: 12-6-2016).

<sup>13</sup> Downloadable from <https://github.com/attardi/wikiextractor> (last accessed: 12-6-2016).

<sup>14</sup> In Augustinus/Dirix (2013) a more limited corpus study of IPP in the *Taalkommissie* corpus was done. Constructions with modal verbs and verbs selecting a *te* infinitive were not considered in that study. The methodology for extracting double infinitive constructions and constructions with pseudo-coordination is similar to the methodology used for this study.

It is obviously possible that more than one word occurs between *het* and the two other verbs, see example (9) in the introduction, but we limited our research to constructions with no more than one word between *het* and the verbal group. Searching for constructions with more words in between resulted in data that were too noisy to manually classify.<sup>15</sup>

The corpus searches resulted in more than 13,000 matches, which were manually checked and categorized. After filtering out the false positives, we retained 7,713 hits, of which 7,632 contain an IPP verb.

The results of the corpus investigation are presented in Table 3. The first column describes the verb types. The categorization is taken from Augustinus/Van Eynde (2017).<sup>16</sup> The classification is based on the distinction between subject- and object-oriented VP selectors. In IPP constructions with a subject-oriented verb, the unexpressed subject of the infinitival complement is identified with the subject of the IPP, whereas in IPP constructions with an object-oriented verb the unexpressed subject is identified with the (in)direct object of the IPP. An example of a subject-oriented verb is *try* in *He tried to cheat on us*, whereas *made* in *She made him smile* is an instance of an object-oriented verb. The subject-oriented verbs are further divided into aspectual, evidential and subject-control verbs, while the object-oriented verbs are partitioned into causative, perception and benefactive verbs.

The second column of Table 3 mentions the lemma of the verbs. The third and fourth column contain the corpus results from the *Taalkommissie* corpus and Wikipedia respectively. The fifth column contains the row totals, and the sixth column mentions the percentage of hits that contain an IPP construction for the verb under investigation. Within the corpus results (third and fourth column), the first column represents the verb's occurrence as an IPP verb selecting a bare infinitive (IPP), the second column indicates how often it occurs as an IPP verb selecting a *te* infinitive (IPP + *te*), the third column indicates how often the verb occurs in a construction with a past participle (PSP).

---

<sup>15</sup> Using a treebank would solve this problem, but unfortunately the only treebank at our disposal, AfriBooms (Augustinus et al. 2016; Dirix et al. 2017), turned out to be too small to investigate the IPP phenomenon. Therefore, we decided to use flat corpora, but with a restriction on the length of the constructions under investigation.

<sup>16</sup> In section 4 we will compare the results of this study to the typology of IPP verbs proposed in Augustinus/Van Eynde (2017).

**Table 3:** Double infinitive constructions and corresponding constructions with a past participle in the Taalkommissie corpus and Wikipedia

Type	Verb	Taalkommissie corpus			Wikipedia			Total	% IPP	
		IPP	IPP + te	PSP	IPP	IPP + te	PSP			
subject-oriented	aspectual	<i>begin</i> 'begin'	1,461	1	1	713	1	1	2,178	99.91
		<i>gaan</i> 'go'	853	0	0	200	0	0	1,053	100.00
	<i>kom</i> 'komen'	645	0	17	147	0	0	809	97.90	
	<i>bly</i> 'continue'	270	0	1	87	0	0	358	99.72	
	<i>aanhou</i> 'continue'	45	0	6	24	0	3	78	88.46	
	<i>ophou</i> 'stop'	16	0	6	10	0	0	32	81.25	
	subject control	<i>probeer</i> 'try'	575	0	1	172	0	0	748	99.87
		<i>durf</i> 'dare'	35	0	1	4	0	0	40	97.50
		<i>leer</i> 'learn'	24	0	6	3	0	5	38	71.05
		<i>weet</i> 'manage'	0	3	0	0	0	0	3	100.00
evidential	<i>blyk</i> 'turn out'	0	3	4	0	3	2	12	50.00	
object-oriented	causative	<i>laat</i> 'let'	1,502	0	2	507	0	0	2,011	99.90
		<i>maak</i> 'make'	1	0	5	1	0	0	7	28.57
	perception verbs	<i>sien</i> 'see'	130	0	7	9	0	1	147	94.56
		<i>hoor</i> 'hear'	4	0	0	0	0	0	4	100.00
	benefactive verbs	<i>help</i> 'help'	111	0	8	70	0	3	192	94.27
		<i>leer</i> 'teach'	2	0	1	0	0	0	3	66.67
<b>Total</b>		<b>5,674</b>	<b>7</b>	<b>66</b>	<b>1,947</b>	<b>4</b>	<b>15</b>	<b>7,713</b>	<b>98.95</b>	

The results in Table 3 show that there are very few examples without IPP: 7,632 constructions or 98.95% of the matches contain an IPP construction. For 11 of the 17 verbs the percentage of IPP forms is higher than 90% and for three of those it is even 100%. Examples and more detailed discussion are given in 3.1.1 for the subject-oriented and in 3.1.2. for the object-oriented VP selectors.

We also observed there are 84 examples of clusters with three verbs in the cluster and 4 examples with four verbs. All of these have IPP,<sup>17</sup> as in example (30):

<sup>17</sup> This is also true in Dutch for clusters with three verbs or more.

- (30) Sy sou graag meermale wou kom speel het,  
 she would happily more-times want.PRET come.INF play.INF have.INF  
 maar die opsigter gee haar die krees.  
 but the supervisor gives her the creeps  
 ‘She would have come over to play more often, but the supervisor gives her  
 the creeps.’

### 3.1.1 Subject-oriented VP selectors

The set of **aspectual verbs** is the largest category, both with respect to verb types (6) and tokens (4,508). They add up to 58.45% of the 7,713 constructions under investigation. Some examples are given in (31–32).<sup>18</sup>

- (31) Hy het *gaan* draf.  
 he has go.IPP run  
 ‘He went running.’
- (32) Sy het *begin* huil en het my uitgesit omdat ek dronk was.  
 she has begin.IPP cry and has me out-thrown because I drunk was  
 ‘She started crying and threw me out because I was drunk’

The verbs *begin* ‘begin’, *gaan* ‘go’, *kom* ‘come’, and *bly* ‘continue’ appear as IPP in more than 97% of the cases. The verbs *aanhou* ‘continue’ and *ophou* ‘stop’ have a slightly higher percentage of constructions with a past participle, cf. (33–34).

- (33) Ek het vir hom gesê die kluis staan oop en dis leeg, maar hy  
 I have for him said the safe stands open and this-is empty, but he  
 het *aangehou* vra.  
 has keep.PSP ask.INF  
 ‘I said to him the safe was open and empty, but he kept asking.’
- (34) Hy het *opgehou* oefen na sy motorongeluk 20 jaar gelede.  
 he has stop.PSP practise after his car-accident 20 years ago  
 ‘He stopped practicing 20 years ago after his car accident.’

<sup>18</sup> All examples in this section are taken from the *Taalkommissie* corpus. We consider the use of *begin* in (32) to be an IPP, rather than a PSP.

Note that those verbs are the only verbs with a separable particle encountered in the data set.

The figures in the PSP column of the *Taalkommissie* corpus include several combinations with two participles. For *kom* ‘come’ this is the case for 12 out of the 17 PSP constructions, cf. example (35).

- (35) ’n Vragmotor wat in die teenoorgestelde rigting aangery  
 a truck which in the opposite direction drive.PSP  
*gekom* het ...  
 come.PSP has  
 ‘A truck which came from the opposite direction ...’

The literature does not mention this construction.<sup>19</sup> Our consultants consider them ill-formed or very colloquial.<sup>20</sup> This might explain why we did not encounter this construction in the Wikipedia corpus.

The **subject control verbs** account for 10.75% of the constructions under investigation. An example is given in (36).

- (36) Hy het *probeer* terugbaklei, maar is in ’n stoeiery in die bors  
 he has try.INF fight-back.INF but is in a struggle in the chest  
 geskiet ...  
 shot  
 ‘He tried to fight back, but was shot in the chest during a struggle ...’

In contrast to Dutch *proberen* ‘try’, which is an optional IPP verb, the Afrikaans *probeer* has a high preference for IPP; we have encountered only one construction with a past participle and it clearly contains colloquial language (37).

- (37) oom Gert Wiese het *geprobeer* paai en gesê: “Broer, laat ons  
 uncle Gert Wiese has try.PSP appease.INF and say.PSP brother let us  
 tog maar’ie vrede bewaar en da moet ons ôk  
 PRT but-the.COLL peace keep and then.COLL must we also.COLL  
 onthou ons is nog altyd innie voorhowe vannie  
 remember we are still always in-the.COLL forecourts of-the.COLL

<sup>19</sup> We also encountered one instance of a double participle construction for the verb *bly* ‘continue’ and two for the verb *sien* ‘see’ in the *Taalkommissie* corpus.

<sup>20</sup> We have asked five native speakers whether they could use such constructions.

tempel.”

temple

‘Uncle Gert Wiese tried to appease him and said: “Brother, let us keep the peace and we must also keep in mind that we are still in the forecourts of the temple.”’

Similar to the aspectual verbs IPP is the preferred construction for Afrikaans subject control verbs. Only in the case of *leer* ‘learn’ have we encountered a substantial percentage (nearly 30%) of constructions with a past participle, as in (38).

- (38) Sy het *geleer* fantaseer, en aanhou fantaseer, deur haar  
 she has learn.PSP fantasize.INF, and keep.INF fantasize.INF through her  
 skooljare, deur haar studentedae ...  
 school-years through her student-days  
 ‘She learned to fantasize and kept fantasizing, during her years at school,  
 during her days at college ...’

The examples with *geleer* are definitely not colloquial, so *leer* can be considered a truly optional IPP verb in Afrikaans. In Wikipedia, the use of the past participle is the preferred option, but note that the overall frequency of the verb is too small to draw hard conclusions on this matter.

The verb *weet* ‘know’ is one of the few verbs that select a *te* infinitive in IPP constructions, cf. example (39).

- (39) Dis sy ma, het die man *weet* te vertel, wat hom so  
 this-is his mother, has the man know.INF to tell.INF, which him so  
 genadeloos gedruk het toe hy nog jonk was.  
 relentlessly pressured has when he still young was  
 ‘The man managed to say that it is his mother who pressured him relentlessly when he was still young.’

Another verb that exclusively selects a *te* infinitive is the **evidential verb** *blyk* ‘turn out’, as used in (40).

- (40) Dit het heel doeltreffend *blyk* te wees en die masjien het die  
 this has very efficient seem.INF to be.INF and the machine has the  
 eerste in Groot-Brittanje (deur Reynolds) vrygestel en het groot treë  
 first in Great-Britain (by Reynolds) released and has great steps  
 vorentoe in die fietstegnologie getoon.  
 forward in the bicycle-technology showed

'It seemed very efficient and the machine released the first one in Great Britain (by Reynolds) and showed a big step forward in bicycle technology.'

*Blyk* is the only verb in this category. It occurs both as IPP and past participle, so IPP is clearly optional for this verb, but note that the overall frequencies of *blyk* are low in both corpora (0.16% of the constructions under investigation). As an IPP verb it only appears in the construction *blyk te wees* 'appear to be'. Other verbs that would fit into this category are *lyk* 'seem' and *skyn* 'appear'. Those verbs appear in the corpus, but not in combination with *het*.<sup>21</sup>

### 3.1.2 Object-oriented VP selectors

Within the set of object-oriented VP selectors the **causatives** form the largest category (2018 hits, 26.16%). Most of the constructions are instances of *laat* 'let' (41), but we also found a few examples with *maak* 'make' in the sense of 'make someone do something', as in (42).

- (41) Na 'n dol dag op die filmstel, met 'n regisseur wat die een toneel na  
after a crazy day on the film-set, with a director which the one scene after  
die ander tot vervelens toe laat herhaal het ...  
the other until boring to let.INF repeat.INF has  
'After a crazy day on the film set, with a director who made us repeat one  
scene after another ad nauseam ...'
- (42) Haal die Haaie die eindstryd, sou dit wees omdat hulle tereg  
reach the Sharks the finals, would this be because they rightly  
hul veldtog op die basiese hoekstene van die spel. maak  
their campaign on the basic cornerstones of the game make.INF  
staan het.  
stand.INF have  
'If the Sharks reach the finals, it would be because they rightly based their  
campaign on the fundamentals of the game'

---

<sup>21</sup> The Dutch cognates *blijken* 'turn out', *schijnen* 'appear', and *lijken* 'seem' show similar properties: constructions with IPP are hard to find as those verbs are rarely combined with the auxiliary of the perfect (Broekhuis/Corver 2015: 621).

*Maak* ‘make’ is the only verb in Table 3 for which the IPP hits are outnumbered by the PSP hits (28.57%). Notice that its Dutch cognate *maken* is not used as an IPP at all.

The **perception verbs** *hoor* ‘hear’ and *sien* ‘see’ account for a meagre 1.96% of the constructions. Examples are given in (43) and (44).

- (43) ... sodat sy hulle nooit *hoor* terugkom het nie.  
 ... so-that she them never hear.INF return.INF has not  
 ‘... so she never heard them return’
- (44) omdat sy hom nog nooit so *sien* glimlag het nie.  
 because she him yet never so see.INF smile.INF has not  
 ‘because she had never seen him smile that way’

Both verbs clearly prefer IPP. For *hoor* we did not find any instances of PSP, and for *sien* just a few, including (45).

- (45) ’n ADT-veiligheidswag wat die voorval *gesien* gebeur het, het sy  
 a ADT-security-guard which the event see.PSP happen.INF has,has his  
 noodknoppie gedruk om bystand te ontbied.  
 emergency-button pressed for assistance to send-for  
 ‘An ADT security guard who witnessed the incident, pushed the emer-  
 gency button to call assistance.’

The set of **benefactives** concludes the typology. The 195 hits account for 2.53% of the constructions. Its members *leer* ‘teach’ and *help* ‘help’ both occur as IPP constructions and with a participle:

- (46) Emily Petlo, ’n buurvrou wat Klyn *help* skoonmaak het, sê die  
 Emily Petlo, a neighbour which Klyn help.INF clean.INF has, says the  
 water in haar toiletbak staan ook hoog.  
 water in her toilet stands also high  
 ‘Emily Petlo, a neighbour who helped Klyn to clean, said the water in her  
 toilet was also high.’
- (47) Net soos my pa my *geleer* werk het, so leer ek my kinders.  
 just like my father me teach.PSP work.INF has, so teach I my children  
 ‘Just as my father taught me how to work, I am teaching my children.’

### 3.1.3 Summing up

The results in Table 3 show that the aspectual verbs are the prototypical IPP verbs in Afrikaans, followed by causative *laat* ‘let’ and the set of subject control verbs. Evidential *blyk* ‘turn out’, causative *maak* ‘make’ and benefactive *leer* ‘teach’ occur in less than 70% of the hits in the IPP form, but note that the absolute frequencies for those verbs are very low. In general, the double infinitive construction with IPP is by far the preferred construction compared to constructions in which a past participle is selected.

If we compare the verbs in Table 3 to the verbs mentioned in section 2, we see that the results from the corpus study include all verbs mentioned in Ponelis (1979), except for *loop* ‘run’. Van Schoor (1983) also mentions the verbs *kry* ‘get’, *voel* ‘feel’, and *ruik* ‘smell’ as IPP verbs, but they were not retrieved in the dataset. Robbers (1997) encountered one instance of *voel* ‘feel’ in her corpus study. The non-occurrence of *voel* and *ruik* in the *Taalkommissie* and *Wikipedia* corpora may be due to data sparseness, but for *kry* this is unlikely. *Kry* consistently occurs as a past participle in combination with a verbal complement. *Weet* ‘manage’ is the only verb encountered in the dataset that is not mentioned in the literature.

## 3.2 Pseudo-coordination

A second corpus investigation concerns IPP constructions with pseudo-coordination. We looked for similar constructions as in section 3.1, but with the conjunction *en* ‘and’ between the two verbs that precede or follow the auxiliary *het* ‘have’. This resulted in more than 1,900 hits, but after filtering out the false positives, only 248 examples were retained. Table 4 presents the results. Although the literature claims *en* is optional, we did not find any occurrences without *en*, neither with nor without IPP.<sup>22</sup>

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<sup>22</sup> According to Robbers (1997) such constructions are grammatical, see example (16). In the *Taalkommissie* corpus we found a number of examples in present tense constructions, e.g. *Die ouer span staan praat in groupies* ‘The older team was talking in small groups’, but none in combination with *het*.

**Table 4:** IPP in constructions with pseudo-coordination in the Taalkommissie corpus and Wikipedia

Verb	Taalkommissie		Wikipedia		Total	% IPP
	IPP	PSP	IPP	PSP		
<i>sit</i> 'sit'	48	59	2	1	110	45.45
<i>staan</i> 'stand'	45	47	3	2	97	49.48
<i>lê</i> 'lie'	30	5	0	0	35	85.71
<i>loop</i> 'run'	1	5	0	0	6	16.67
<b>Total</b>	<b>124</b>	<b>116</b>	<b>5</b>	<b>3</b>	<b>248</b>	<b>52.02</b>

The counts in Table 4 show that IPP is optional in constructions with pseudo-coordination. This is in accordance with the literature on these constructions. The verbs occurring in constructions with pseudo-coordination are all aspectual verbs which refer to posture (*sit*, *staan* and *lê*) or movement (*loop*).<sup>23</sup> The verb *lê* 'lie' clearly prefers IPP (about 85% of the constructions), but for *sit* 'sit', *staan* 'stand' and *loop* 'walk' the PSP form is a valid alternative, as less than 50% of the constructions appear with IPP. Some examples are given in (48)–(49).

- (48) Sy klap die boek toe waarin sy lê en lees het, en  
 she\* smacked the book closed in-which she lie.INF and read.INF has, and  
 draai na Mara toe.  
 turned to Mara to  
 'She closed the book which she was reading and turned to Mara.'
- (49) En ons almal het *gesit* en wag op die droogte wat voorspel  
 and we all have sit.PSP and wait.INF on the drought which predicted  
 is...  
 is  
 'And we were all waiting for the drought that was predicted ...'

<sup>23</sup> Broekhuis/Corver (2015) call this set of verbs *semi-aspectuals*, in order to differentiate them from the *core* aspectual verbs, which have different characteristics in Dutch. Considering the fact that the aspectual verbs mentioned in this section may appear in constructions with pseudo-coordination, as opposed to the aspectual verbs mentioned in section 3.1, the distinction makes sense for Afrikaans as well (cf. section 4).

### 3.3 Passive constructions

As mentioned in section 2, Afrikaans allows for the passivization of IPP constructions. We have encountered some examples in the data for 5 out of the 17 verbs mentioned in Table 3. Table 5 presents an overview.

**Table 5:** Passive IPP constructions in the Taalkommissie corpus and Wikipedia

Verb	Taalkommissie corpus			Wikipedia			Total	% IPP
	word + IPP	wees + IPP	PSP	word + IPP	wees + IPP	PSP		
<i>laat</i> 'let'	44	97	0	7	78	0	226	100.00
<i>begin</i> 'begin'	82	0	0	14	15	0	111	100.00
<i>probeer</i> 'try'	9	3	0	1	1	0	14	100.00
<i>kom</i> 'come'	0	1	0	0	0	0	1	100.00
<i>help</i> 'help'	0	1	0	0	0	1	2	50.00
<b>Total</b>	<b>135</b>	<b>102</b>	<b>0</b>	<b>22</b>	<b>94</b>	<b>1</b>	<b>354</b>	<b>99.72</b>

The figures in Table 5 show that passive IPP constructions are far less frequent compared to their active variants, but we find instances both in the present (with auxiliary *word*), cf. (50) and in the past (with auxiliary *wees*), cf. (51).

- (50) Indien die voorwerp *laat* val word, val dit onder die  
 if the object let.INF drop.INF is, drop this under the  
 invloed van gravitasie vloer toe.  
 influence of gravitation floor to  
 'If the object is dropped, it falls to the floor due to gravitation.'
- (51) ... 'n meganistiese hoof-tendens waarin alle fisiese verskynsels  
 ... a mechanistic main-tendency in-which all physical phenomena  
 konsekwent *probeer* herlei is tot 'n kinematiese perspektief.  
 consistently try.INF reduce.INF is to a kinematic perspective  
 '... a principal mechanistic tendency in which (physicists) consistently tried  
 to reduce all physical phenomena to a kinematic perspective.'

In passive constructions, IPP is obligatory for the majority of the verbs. The only instance in which *help* 'help' does not have IPP is given in (52).

- (52) die Nowikof-telegram wat deur die Sowjet-ambassadeur aan die VSA  
 the Novikov-telegram which by the Soviet-ambassador to the USA  
 gestuur is, maar deur Wjatsjeslaf Molotof gelas en *gehelp*  
 sent is but by Vyacheslav Molotov order.PSP and help.PSP  
 skryf is...  
 write.INF is  
 ‘the Novikov telegram, which was sent by the Soviet ambassador to the  
 USA, but was ordered and helped to be written by Vyacheslav Molotov...’

Robbers (1997) claims that it is also possible to passivize constructions with *ophou* ‘stop’, but we did not find any corpus evidence for that verb. Furthermore, we did not encounter any passive constructions with pseudo-coordination in the corpus.

### 3.4 Constructions with modal verbs

As explained in section 2.3, Afrikaans modal verbs have a morphologically marked past tense. We have searched the *Taalkommissie* and Wikipedia corpora for past constructions with modal verbs, taking into account the alternatives with auxiliary *het* ‘have’ in main and subordinate clauses. We have limited the queries to constructions with adjacent verbs. Table 6 presents the filtered results for the *Taalkommissie* corpus and Wikipedia, in which the canonical *pret*<sub>1</sub>–*inf*<sub>2</sub> constructions (type *kon werk*) are separated from the alternatives with auxiliary *het* (e.g. *het kon werk*, *kan gewerk het*). Note that ‘–’ is used for principled non-occurrence and ‘0’ for accidental non-occurrence.

**Table 6:** Constructions with modal verbs in the *Taalkommissie* corpus and Wikipedia

Verb	<i>Taalkommissie</i>		Wikipedia		Total	% canonical
	Canonical	with <i>het</i>	Canonical	with <i>het</i>		
<i>kan</i> ‘can’	19,912	817	5,325	264	26,318	95.89
<i>sal</i> ‘will’	16,310	1,095	6,542	220	24,167	94.56
<i>moet</i> ‘must’	9,900	647	2,978	101	13,626	94.51
<i>wil</i> ‘want’	7,164	254	972	21	8,411	96.73
<i>mag</i> ‘may’	6	48	6	17	77	15.58

Verb	Taalkommissie		Wikipedia		Total	% canonical
	Canonical	with <i>het</i>	Canonical	with <i>het</i>		
<i>hoef</i> 'need to'	–	14	–	2	16	0.00
<i>behoort</i> 'ought to'	–	1	–	0	1	0.00
<b>Total</b>	<b>53,292</b>	<b>2,876</b>	<b>15,823</b>	<b>625</b>	<b>72,616</b>	<b>95.18</b>

The figures in Table 6 show that more than 95% of the constructions are instances of the canonical construction, which is in both the *Taalkommissie* corpus and *Wikipedia* clearly preferred over the alternatives with auxiliary *het*. An example with *wou* 'wanted' is given in (53).

- (53) wat ek *wou* vra, volgens watter resep kook jy jou  
 what I want.PRET ask.INF according-to which recipe cook you your  
 boontjiesop?  
 bean-soup  
 'What I wanted to ask, what recipe do you use for your bean soup?'

*Mag* 'may' only occurs in 15% of the cases in the canonical preterite construction. Alternatives with *het* are more common (54), but note that the verb is very uncommon in comparison to the other modals.

- (54) Baie leerders besef eers in die eksamenkamer dat, alhoewel hulle baie  
 many learners realize first in the exam-room that, although they very  
 hard *mag* studeer *het*, hulle nie die uitkomst bereik het  
 hard may.PRES study.INF have.INF, they not the results reached have  
 wat vir die module gestel is nie.  
 which for the module put is not  
 'Despite the fact they might have studied very hard, a lot of learners only  
 realize in the exam room they haven't reached the outcome that was  
 expected for the module.'

The verbs *hoef* 'need to' and *behoort* 'ought to' do not have a preterite form and, as a consequence, cannot occur in the canonical construction. Their number in the corpus results is very small, as those verbs are only used in formal contexts.

In order to take a closer look at the alternative constructions, the results with *het* are split up with respect to the form and the order of the verbs in Table 7. The

ambiguous constructions ('pres-inf/pp-aux' and 'pret-inf/pp-aux') are put in separate columns.

**Table 7:** Constructions with modal verbs and auxiliary *het* in the Taalkommissie corpus and Wikipedia

<i>Taalkommissie</i> corpus	pret1-pp3-aux2 <i>kon gewerk het</i>	ambiguous pret-inf/pp-aux <i>kon gebeur het</i>	aux1-pret2-inf3 pret2-inf3-aux1 <i>het kon werk</i>	pres1-pp3-aux2 <i>kan gewerk het</i>	ambiguous pres-inf/pp-aux <i>kan gebeur het</i>	aux1-pres2-inf3 pres2-inf3-aux1 <i>het kan werk</i>	Total
<i>kan</i> 'can'	552	249	5	10	1	0	817
<i>sal</i> 'will'	794	275	15	8	3	0	1,095
<i>moet</i> 'must'	456	119	5	61	6	0	647
<i>wil</i> 'want'	228	14	3	4	1	4	254
<i>mag</i> 'may'	0	0	0	38	8	2	48
<i>hoef</i> 'need to'	0	0	0	14	0	0	14
<i>behoort</i> 'ought to'	0	0	0	1	0	0	1
<b>Total</b>	<b>2,030</b>	<b>657</b>	<b>28</b>	<b>136</b>	<b>19</b>	<b>6</b>	<b>2,876</b>
<b>%</b>	<b>70.58</b>	<b>22.84</b>	<b>0.97</b>	<b>4.73</b>	<b>0.66</b>	<b>0.21</b>	<b>100.00</b>

Wikipedia	pret1-pp3-aux2 <i>kon gewerk het</i>	ambiguous pret-inf/pp-aux <i>kon gebeur het</i>	aux1-pret2-inf3 pret2-inf3-aux1 <i>het kon werk</i>	pres1-pp3-aux2 <i>kan gewerk het</i>	ambiguous pres-inf/pp-aux <i>kan gebeur het</i>	aux1-pres2-inf3 pres2-inf3-aux1 <i>het kan werk</i>	Total
<i>kan</i> 'can'	184	71	8	0	0	1	264
<i>sal</i> 'will'	147	65	4	3	1	0	220
<i>moet</i> 'must'	80	15	1	4	1	0	101
<i>wil</i> 'want'	19	2	0	0	0	0	21
<i>mag</i> 'may'	0	0	0	9	7	1	17
<i>hoef</i> 'need to'	0	0	0	2	0	0	2
<i>behoort</i> 'ought to'	0	0	0	0	0	0	0
<b>Total</b>	<b>430</b>	<b>153</b>	<b>13</b>	<b>18</b>	<b>9</b>	<b>2</b>	<b>625</b>
<b>%</b>	<b>68.80</b>	<b>24.48</b>	<b>2.08</b>	<b>2.88</b>	<b>1.44</b>	<b>0.32</b>	<b>100.00</b>

Table 7 shows that all constructions mentioned in the literature were encountered, but their frequency differs markedly. The constructions can be divided into two main sets: the constructions in which the modal verb appears in its preterite (pret) form (lefthand side of the table), and the ones in which it appears in its simple present (pres) tense form (righthand side of the table). The results show that constructions belonging to the former set are more common in both corpora.

Around 70% of the alternatives are instances of pret<sub>1</sub>-psp<sub>3</sub>-aux<sub>2</sub> constructions (type *kon gewerk het*), which makes it the most common alternative for the canonical construction. An example is given in (55).

- (55) Veel langer sou sy in ieder geval nie hier *kon* *gebly*  
 much longer would she in each case not here can.PRET stay.PSP  
*het* *nie*.  
 have.INF not  
 ‘She would not have been able to stay here much longer anyway.’

By contrast, the constructions in which the auxiliary *het* selects a preterite modal verb (type *het kon werk*), only account for 0.97% of the constructions in the *Taalkommissie* corpus and 2.08% in Wikipedia. The majority of the constructions that are ambiguous between those constructions (i.e. the pret-inf/psp-aux cases) are, hence, instances of the former.<sup>24</sup>

In comparison to the constructions with a preterite modal, the alternatives with a present form of the modal verb are uncommon. The pres<sub>1</sub>-psp<sub>3</sub>-aux<sub>2</sub> instances (type *kan gewerk het*) account for 4.73% of the constructions in the *Taalkommissie* corpus, but they only make up 2.88% of the constructions in Wikipedia. The least common construction is the one that is most common in past constructions without modal verbs, i.e. the IPP constructions (aux<sub>1</sub>-pres<sub>2</sub>-inf<sub>3</sub>). They account for less than 0.3% of the constructions in both corpora. An example with *mag* ‘may’ was given in (50).

As the modals *hoef* ‘need to’ and *behoort* ‘ought to’ do not have a preterite form, we would expect them to occur as IPP verbs, but instead they consistently occur in pres<sub>1</sub>-pp<sub>3</sub>-aux<sub>2</sub> constructions. An example with *hoef* is given in (56).

<sup>24</sup> Some of the ambiguous verbs such as *probeer* ‘try’, *hanteer* ‘handle’ and *fouteer* ‘error’ are used as past participles without *ge-* in present-day Afrikaans and mentioned as such in the main prescriptive spelling dictionary (Van Huyssteen et al. 2017) and also for the first time in the latest edition of the most commonly used monolingual dictionary (Luther (ed.) 2015), although not everyone accepts it as grammatical.

- (56) Ek is trots daarop dat ek nog nooit in my lewe op iemand anders  
 I am proud there-off that I yet never in my life on someone else  
*hoef te gereken het* nie.  
 need.INF to count.PSP have not  
 ‘I am proud of the fact that never in my life have I had to count on anyone  
 else.’

Also in the constructions with a present modal there are a number of ambiguous cases (pres-inf/psp-aux). They most likely belong to the pres<sub>1</sub>-psp<sub>3</sub>-aux<sub>2</sub> category.

Summing up, the corpus results show that the canonical pret<sub>1</sub>-inf<sub>2</sub> construction is by far the most popular to express the past, followed by the pret<sub>1</sub>-pp<sub>3</sub>-aux<sub>2</sub> construction. Considering the alternative constructions with auxiliary *het*, it is clear that constructions in which the modal verb appears as the finite verb are preferred over constructions with an infinitival form of the modal (selected by auxiliary *het*). In combination with the fact that the use of the preterite form of the modal is preferred over the present form, IPP ends up as the least preferred option to express the past in these cases.

It would be interesting to investigate the factors that trigger the use of the different alternative past constructions, but this is left for future work.

Our findings confirm Robbers’ (1997) claim that the most common construction is the canonical one, and that the instances in which the auxiliary *het* ‘have’ is the finite verb hardly occur.

### 3.5 Differences between the two corpora

If we compare the proportions of the constructions described in section 3.1 to 3.3, we see that for most verbs the proportion of IPP to no IPP is similar in both corpora. However, if we take another look at Table 3, we see that the ratio of IPP constructions is 105.2 occurrences per million words in the *Taalkommissie* corpus and 147.8 occurrences per million words in Wikipedia. A chi-square goodness of fit test reveals that there is a statistically significant difference with respect to IPP in the two corpora.<sup>25</sup>

Also on the level of the individual verbs there are some noteworthy differences between the two corpora. Only the *Taalkommissie* corpus contains examples with

<sup>25</sup> The  $\chi^2$  value is 169.606. The P-value is < 0.001. The result is significant at  $p \leq 0.01$ .

a participle in the case of *kom* ‘come’, *bly* ‘stay’, *ophou* ‘stop’, *probeer* ‘try’, *durf* ‘dare’, *laat* ‘let’, *maak* ‘make’, and *leer* ‘teach’.<sup>26</sup>

With respect to pseudo-coordination we observe that Wikipedia has significantly fewer constructions with pseudo-coordination than the *Taalkommissie* corpus.<sup>27</sup>

The differences between the corpora are most likely due to the inclusion of nonstandard Afrikaans in the *Taalkommissie* corpus, but as we do not have any metadata directly linked to the sentences in the corpus, it is hard to investigate this in a systematic way.

### 3.6 Conclusion

The corpus study has revealed some interesting insights with respect to the occurrence of IPP in Afrikaans. With respect to the double infinitive constructions, we can conclude that verbs that may appear in such constructions are obligatory IPP verbs for most speakers. Within this set, the aspectual verbs turn out to be the most common IPP verbs. A subset of the verbs that appear in double infinitive construction may also occur as IPPs in passive constructions.

With respect to constructions with pseudo-coordination, the corpus results confirm the statement in the literature that IPP is optional.

Modal verbs have a special status. For those verbs IPP seems the least preferred option in comparison to alternative ways to express the past. Instead, a construction in which they appear as a preterite finite verb selecting a bare infinitive is canonical.

## 4 Integrating Afrikaans in the typology of IPP verbs

As already observed in the introduction, Afrikaans shares the IPP phenomenon with German and Dutch. For a study of the similarities and differences with these

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<sup>26</sup> For each verb in Table 3, a Fisher’s exact test (Fisher 1922) was performed, as it is able to deal with small sample sizes, but only for *leer* ‘learn’ was the difference statistically significant (the Fisher exact test statistic value is 0.0311; the result is significant at  $p < 0.05$ ).

<sup>27</sup> Again, a goodness of fit test was performed. The  $\chi^2$  value is 19.846. The P-value is  $< 0.001$ . The result is significant at  $p \leq 0.01$ .

languages we employ the typology of IPP verbs in Augustinus/Van Eynde (2017). This typology is based on a usage-based analysis of Dutch and German treebanks, i.e. Lassy Small and CGN core for Dutch and Tüba-D/S and Tüba-D/Z for German. For Afrikaans the corpus search yielded 8,122 examples with IPP, see Table 8 for an overview. Comparing this to the data from Dutch and German IPP, it is immediately clear that the phenomenon is less frequent in Afrikaans, see Table 9.

**Table 8:** IPPs in the Taalkommissie corpus and Wikipedia

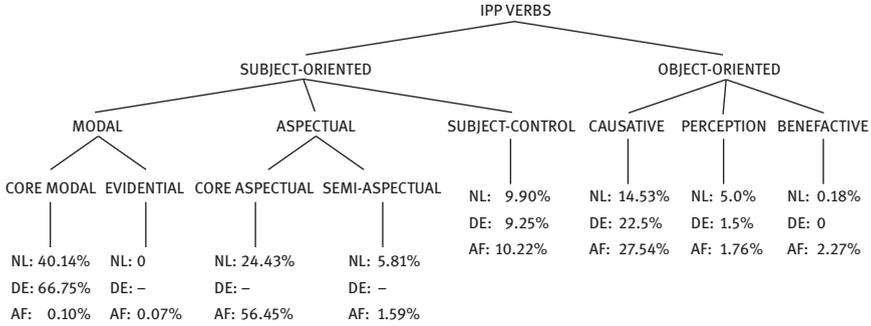
Construction	<i>Taalkommissie</i> corpus	Wikipedia	Total
Double infinitive	5,681	1,951	7,632
Pseudo-coordination	124	5	129
Passive	237	116	353
Modal	6	2	8
<b>Total</b>	<b>6,048</b>	<b>2,074</b>	<b>8,122</b>

**Table 9:** IPP per 10,000 words

	IPPs/words in corpus	IPPs per 10K words
Dutch	1,101 / 1,983,788	5.55
German	400 / 1,468,415	2.72
Afrikaans	8,122 / 67,088,350	1.21

To some extent this is due to the fact that the numbers for Afrikaans are a slight underestimation given that we only consider adjacent verbs and verbs which are separated by at most one other word. The main factor, though, is the very low frequency of IPP forms for the modals. While they are the most frequently used IPP verbs in the Dutch and German treebanks, the Afrikaans corpora contain just a few examples, see (54). If the modals are left out of the comparison, Afrikaans takes an intermediate position, having fewer IPP forms than Dutch, but more than German.

A finer-grained comparison can be made on the basis of the typology in Figure 1.



**Fig. 1:** A typology of IPP in Dutch, German and Afrikaans

The percentages for Dutch and German are quoted from Augustinus/Van Eynde (2017). They concern the relative frequency in the respective treebanks. The percentages for Afrikaans are based on the corpus study in section 3.

Within the class of the modal verbs we make a distinction between core modals and evidential modals. The former are, as discussed previously, the most frequently used IPPs in Dutch and German, but they are nearly absent in Afrikaans. The few exceptions include some hits for *mag* ‘may’, *wil* ‘want’ and *kan* ‘can’. The evidential modals are rarely combined with a perfect auxiliary in any of the three languages. If they do, they occasionally take the IPP form in Afrikaans, as in (40). This is also possible in Dutch, but in order to attest it Augustinus/Van Eynde (2017) had to resort to internet search, since the treebanks did not contain any hits.

Within the class of the aspectual verbs we make a distinction between the core aspectuals and the semi-aspectuals.<sup>28</sup> The distinction is relevant for Afrikaans, since the former turn up in the double infinitive construction while the latter turn up in pseudo-coordination. It is also relevant for Dutch, since the core aspectuals take *zijn* ‘be’ as the auxiliary of the perfect, while the semi-aspectuals take *hebben* ‘have’, cf. *Ik ben gaan lopen* ‘I went and ran’ versus *Ik heb staan praten* ‘I was talking’. The odd one out in this category is German. While the aspectuals account for more than half of the IPP verbs in Afrikaans and for nearly 30% of the IPP verbs in Dutch, the German aspectual verbs do not take the IPP form.

The subject control IPP verbs are a heterogeneous group. There is one that occurs in all three of the languages, i.e. *leer/leren/lernen* ‘learn’, and there are three that occur in Afrikaans and Dutch, but not in German, i.e. *probeer/proberen* ‘try’, *durf/durven* ‘dare’ and *weet/weten* in the sense of ‘manage to’.

<sup>28</sup> The term ‘semi-aspectual’ is adopted from Broekhuis/Corver (2015: 151).

The causative IPP verbs are few in number but relatively high in frequency: *laat* and *maak* jointly account for 27.54% of the Afrikaans IPP verbs, *lassen* for 22.5% of the German IPP verbs, and *laten* and *doen* for 14.53% of the Dutch IPP verbs.

The perception IPP verbs are the same in the three languages, i.e. *sien/zien/sehen* ‘see’ and *hoor/horen/hören* ‘hear’. Examples with *voel/voelen* ‘feel’ can be constructed and/or googled, but are not attested in the corpora that we consulted.

The benefactive IPP verbs are *help/helpen/hilfen* ‘help’ and *leer/leren* in the sense of ‘teach’. They account for a very small percentage of the IPP verbs. For German we did not find a single hit in the treebanks.

In contrast to Dutch and German, Afrikaans also allows the use of IPPs in combination with the auxiliaries of the passive, i.e. *word* and *wees*. The instances that we found in the corpora mainly concern the causative *laat* (226 hits), the aspectual *begin* (111 hits) and the control verb *probeer* (14 hits).

The resulting classification can be compared to the one in Schmid (2005), which also covers Dutch, German and Afrikaans, as well as some regional variants of Dutch and German, i.e. Bernese German, Sankt Gallen German, Zürich German and West Flemish. Schmid distinguishes eight classes of IPP verbs, just as we do, but the details of the classification are different for the subject-oriented ones. Within the class of aspectuals, she differentiates between durative and inchoative, which in our classification are both core aspectuals, and she does not include the semi-aspectuals, which is justified for German, but not for Dutch or Afrikaans. The evidential modals are called raising verbs in Schmid (2005), which is a misnomer, since the modals and most of the aspectuals are raising verbs as well.

As shown in Augustinus/Van Eynde (2017), Schmid’s claims about the status of IPP for the eight classes (obligatory, optional or impossible) is in line with the judgments in the literature and with corpus data for German, except in the case of the causative *lassen* ‘let’, which she classifies as an obligatory IPP verb, while it is in fact an optional IPP verb, as claimed in Duden (2006) and confirmed by the corpus data discussed in Augustinus/Van Eynde (2017). For Afrikaans, Schmid claims that IPP is optional for all classes, except for the raising verbs, which according to her do not allow it. This is contradicted by the fact that *blyk* ‘seem’ does occur as IPP in the corpora we consulted. The characterization of the other classes as optional IPP verbs is not by itself erroneous, but it is misleading since it does not differentiate between classes where the IPP form is by far the most frequent (the double infinitive construction), classes where it is more or less in 50–50 relation with the non-IPP form (pseudo-coordination) and classes where it is marginal (the modals).

## 5 Conclusion

We conducted a corpus study of two Afrikaans corpora in order to identify the verbs showing the IPP effect. The corpus results reveal that the majority of the IPP constructions concern instances of the double infinitive construction. In addition, Afrikaans IPPs also occur in constructions with pseudo-coordination and in passive constructions.

Next, we compared the results to a previous corpus study on IPP in German and Dutch. IPP is more widespread in Afrikaans than in Dutch and German, as in those languages IPP is only possible in the double infinitive. In order to compare the verb types that figure in IPP constructions, we extended the classification in Augustinus/Van Eynde (2017) on Dutch and German IPP to Afrikaans. With respect to the verb types that may appear as IPP, Afrikaans resembles Dutch, as the IPP shows up in the same verbal categories (i.e. modal, aspectual, subject control, causative, perception and benefactive). The relative frequencies of the corpus study indicate, however, that the two languages highly differ with respect to the category of core modal verbs. While this is the prototypical IPP category in Dutch, Afrikaans modals hardly show the IPP effect. Instead they canonically use an alternative construction to express the past. The prototypical IPP category in Afrikaans is the set of aspectual verbs. If we compare Afrikaans to German, we see that German aspectual verbs never occur as IPPs.

In future work we aim to create a large treebank for Afrikaans. Due to the limitations of the corpora, we had to limit our queries to constructions in which the verbs were (almost) adjacent. Using a (large scale) treebank would allow the investigation of constructions with non-adjacent words in a more systematic way.

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# The grammaticalisation of definite articles in German, Dutch, and English: a micro-typological approach

**Abstract:** Sharing definite articles as a common feature, Germanic languages, however, diverge considerably with respect to these articles' functional domains. Restrictions concern generic uses on the one hand and combinations with proper names on the other, displaying both later stages in grammaticalisation. Taking three West Germanic languages into account, German, Dutch, and English, it is shown that the semantic-pragmatic extension proceeds along the hierarchy definite > generic > onymic with the spread singular > plural generics and non-prototypical > prototypical proper names (i.e. with/without appellative heads) as intermediate steps. It will be argued that this development is most advanced in German, where both the generic and the onymic article are extensively used, which is not the case in English. Allowing for both the generic and the onymic article but with restrictions, definite articles in Dutch represent an intermediate stage of functional expansion.

**Zusammenfassung:** Aus einem Demonstrativ entstandene Definitartikel sind ein gemeinsames Charakteristikum der germanischen Sprachen. Trotz des gleichen Entstehungsweges bestehen klare funktionale Unterschiede; insbesondere divergiert der Gebrauch in generischen Kontexten und die Kombinierbarkeit mit inhärent definiten Eigennamen. Der Beitrag fokussiert, aus mikro-typologischer Perspektive, die funktionale Extension des Definitartikels in drei west-germanischen Sprachen (Deutsch, Niederländisch und Englisch). Es wird gezeigt, dass die Grammatikalisierung der Hierarchie Demonstrativ > Definitartikel > generischer Artikel > onymischer Artikel folgt, mit der Expansion Singular > Plural (Generika) sowie nicht prototypische > prototypische Eigennamen (d.h. mit/ohne appellativischem/n Kopf) als Zwischenetappen. Diese Entwicklung ist im Deutschen am weitesten fortgeschritten, gefolgt vom Niederländischen. Die meisten Restriktionen gelten für den Definitartikel im Englischen.

# 1 Introduction

Definite articles are a common Central European feature. However, the fact that their functional domains diverge considerably even within Germanic languages became evident during a presidential debate in 2016, when Donald Trump provoked a discussion on racism only because of his usage of the definite article in English which would probably have gone unnoticed in German:<sup>1</sup>

The news website QARTZ (<https://qz.com/>) comments as follows in a gloss from October 11, 2016:<sup>2</sup>

**Linguistics explains why Trump sounds racist when he says “the” African Americans**

One of the littlest words in the English language gives the biggest clue about where Donald Trump’s head is at: his use of the word “the.”

In the second US presidential debate on Oct. 9, Trump promised, “I’m going to help the African-Americans. I’m going to help the Latinos, Hispanics. I’m going to help the inner cities. [Clinton has] done a terrible job for the African-Americans.” [...]

If Trump had said, “I’m going to help African-Americans,” we’d assume he meant African-Americans in general – whichever ones need help. Under normal circumstances, saying “the African-Americans” would raise the question: Which African-Americans? [...] he intends to refer to all African-Americans, and so “the” seems unnecessary. But it is doing something. It takes that plural, “African-Americans,” and makes the group into more of an undifferentiated whole. [...] “The” makes the group seem like it’s a large, uniform mass, rather than a diverse group of individuals. This is the key to “othering:” treating people from another group as less human than one’s own group.

Trump’s “the” works as a dog-whistle to disaffected rural white voters attracted to his message. [...]

A woman with African-American roots reacted as follows:

I REALLY need him to stop calling me “THE African-Americans”  
because ARE YOU KIDDING ME?

Definite articles represent a characteristic feature of (western) European, mainly Germanic, Romance, and Balkan languages. They may also be described as a

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<sup>1</sup> I wish to thank two anonymous reviewers for their insights and criticisms, which helped substantially improve the quality of this article.

<sup>2</sup> Link to the article: <https://qz.com/806174/second-presidential-debate-linguistics-explains-why-donald-trump-sounds-racist-when-he-says-the-african-americans/> (29-3-2018). Many thanks to Damaris Nübling for drawing my attention to this article.

Euroversal<sup>3</sup> (e.g. Haspelmath 1998, 2001; Heine/Kuteva 2006). According to Dryer (1989), only a third of the languages of the world employ definite articles (125 out of about 400 languages) and less than 8% (31 languages) use both definite and indefinite articles. With respect to the worldwide sample, the European language area stands out typologically in that up to 39% of European languages have definite and indefinite articles at their disposal, and an additional 15% have developed definite articles only (cf. Heine/Kuteva 2006).<sup>4</sup>

The development of definite articles from demonstrative determiners has frequently been the focus of typological research (cf. Greenberg 1978; Lehmann 1995; Lyons 1999: 331–334; Heine/Kuteva 2006: 97ff.). In the framework of grammaticalisation theory special attention has been paid to the semantic-pragmatic expansion into new functional domains, which has been described as a gradual spread in a predictable manner. In his essential work, Greenberg (1978) distinguishes three main diachronic stages of development (cf. also Hawkins 2004; Heine/Kuteva 2006; de Mulder/Carlier 2011), as depicted in Figure 1.

(DEMONSTRATIVE) > DEFINITE ARTICLE > SPECIFIC ARTICLE > NOUN MARKER

Fig. 1: Stages of grammaticalisation according to Greenberg (1978)

At Stage I the former demonstrative “becomes compulsory and has spread to the point at which it means ‘identified’ in general” (Greenberg 1978: 61). Unlike (discourse-)deictic demonstratives that are restricted to situational or anaphoric use (e.g. *this/the book over there, I bought a book – this/the book*), definite articles typically denote entities that are not immediately given (i.e. non-situational). Instead, uniqueness in the discourse is based on a larger context such as a prior conversation (e.g. *Did you watch the film, finally?*), general knowledge (*the president* referring to the current president) or “stereotypic ‘frames’ (*a house : the door*)” (Hawkins 2004: 85, cf. also Himmelmann 1997: 93–101 on *anamnestic* determiners). In the terms of Hawkins, definite articles must be unique within the “pragmatic set” (or “P-set”) shared between speaker and hearer (cf. Hawkins 1978, 1991; cf. also Lyons 1980). Representing Stage II in Greenberg’s hierarchy,

<sup>3</sup> The term *Euroversal* was introduced by Kortmann (1997: 271–288), who focuses on morpho-syntactic properties of adverbial subordinators.

<sup>4</sup> More marginal article systems attested in European languages that deviate from the common western European type are described in Schroeder (2006), e.g. systems with two definite articles (northern European) and definite articles going back to possessive suffixes (eastern European); on northern European cf. also Dahl (2004).

specific or “non-generic” articles include “non-definite specific uses” (Greenberg 1978: 62). Stage II articles denote individual referents that are not yet part of the shared pragmatic set of speaker and hearer. They are typically used when participants are newly introduced in the discourse with “instances of non-referential use” also being included (e.g. *I eat \*the/an apple a day*) (Greenberg 1978: 62; cf. also Himmelmann 1997: 101–109 and König 2018 for a critical discussion of specific articles as a further development of definite articles). Specific articles are characteristic of Niger-Congo and Austronesian languages (cf. Greenberg 1978: 62–68; Himmelmann 2001) but – with the exception of a Northern Swedish dialect<sup>5</sup> (cf. Dahl 2004) – they are not attested in European languages, where the indefinite article takes over (e.g. EN *I’ve got \*the cat/a cat, I need \*the/a new car*; cf. Heine/Kuteva 2006). Articles that developed into mere noun or gender markers represent the last step (Stage III) in Greenberg’s cline, which implies that “the mass of common nouns now only have a single form” and that the article “no longer has any synchronic connection with definiteness or specificity” (Greenberg 1978: 69). Stage III-articles are not attested in European languages either. Nominalisation constitutes, of course, a central function of articles particularly in English (*to run – the run, green – the green*). Still, in the languages investigated, the definite article requires an individual referent that is identifiable by the hearer and it stands in opposition to the indefinite article (*a/the run, a/the bright green*). Figure 2 takes up Stages I–III according to Greenberg (1978) and provides English examples.

Considering different language families and types, mainly African but also Austronesian and Australian languages, the three stages distinguished within this “macro”-typological perspective appear less appropriate to describe grammaticalisation in the western European languages. Belonging to a small set of languages worldwide that have developed both definite and indefinite articles (less than 8% in Dryer 1989’s sample), European languages stand out in that the indefinite article takes over in the domain of specific reference (Stage II) (cf. also

<sup>5</sup> As shown in Dahl (2004: 172f.), in a Northern Swedish dialect, the suffixed definite article occurs with referents that are specific but not identifiable by the hearer. The following example is provided:

Skellefteå (Västerbotten)

*Hä gick skaplit att klaar sä,*  
it go:PST okay to survive

*meda ‘ä fanns rått-än å mus-än*  
as long as it exist:PST rat-DEF.PL and mouse-DEF.PL

‘[The cat thinks:] It was kind of OK [to live in the forest], as long as there were **rats and mice ...**’

Harris 1980: 81f.). Thus, for the European *sprachbund* and for the closely related West Germanic languages in particular, where uses typical of Greenberg's Stage II/III-articles hardly ever occur, a more fine-grained scale is needed.

referential		non-referential	
→			
Stage 0	Stage I	Stage II	Stage III
DEMONSTRATIVE	DEFINITE ARTICLE	SPECIFIC ARTICLE	NOUN MARKER
<i>The book over there is mine.</i>	<i>Did you buy <u>the book</u>, finally?</i>	<i>I've got *<u>the cat</u>. → I've got a cat.</i>	----

Fig. 2: Greenberg's cline applied to Germanic languages (English)

Lyons (1999) compares the functional domains of definite articles in four European languages (English, French, Italian, and Greek) from a synchronic perspective. The following picture emerges, see Figure 3:

- 1 (English): simple definite<sup>6</sup>
- 2 (French): simple definite, generic
- 3 (Italian): simple definite, generic, possessive
- 4 (Greek): simple definite, generic, possessive, proper noun

Fig. 3: Expansion in article use according to Lyons (1999: 337)

Of course, the purely synchronic data from only four languages have to be interpreted with caution. The figure is explicitly not intended as a universal implicational scale. Still, the data reflect the following diachronic evolution in the languages considered:

simple definite > generic > (possessive) > proper noun

Although building on a small set of data only, this scale appears to be a promising starting point for the present purpose, all the more so since proper names are also taken into account. However, possessives will be discarded in the following analysis. They have to be the subject of future research.

<sup>6</sup> "Simple definite" articles correspond to Stage I-articles in the terms of Greenberg.

The development demonstrative > definite article is most straightforward and well documented (cf. Himmelmann 1997, 2001; Lehmann 1995; Szczepaniak 2011: 71–78). Less attention, in particular from a cross-linguistic perspective, has been paid so far to later stages in the grammaticalisation of articles, namely the gradual expansion to generic uses and, most notably, to proper names – a function generally subsumed under the so-called onymic article. Focusing on three closely related West Germanic languages, namely German, Dutch, and English, it will be shown that substantial differences exist with respect to the functional expansion of definite articles proposing the following scale, see Figure 4.

English:	simple definite		
Dutch:	simple definite	generic	
German:	simple definite	generic	proper noun

Fig. 4: Functional expansion in English, Dutch, and German (hypothetical)

The next section provides a short overview of the diachronic evolution by summarising the relevant research for German and English; for Dutch, diachronic data are unfortunately scarce.

## 2 Stages of grammaticalisation: Diachronic overview

### 2.1 Diachronic overview: German

In German, definite articles are missing in the earliest texts, but the demonstrative determiner grammaticalises in the course of the Old High German (OHG) period (750–1050) towards an incipient Stage I-article. The development from demonstrative determiner to definite article in Old High German (Stage 0 > Stage I-article) has been the subject of several corpus-based studies (cf. Oubouzar 1992, 1997; Leiss 2000; Szczepaniak/Flick 2015; Flick 2017). In early Old High German, the determiner *ther* is restricted to discourse deictic functions and has to be interpreted as a demonstrative. For its transition to the definite article, anamnestic uses are considered as the starting point (cf. Himmelmann 1997: 93–101). At this point, definite reference is no longer based on the concrete situation or discourse context but on shared cultural or religious knowledge (e.g. OHG *diu magd* ‘the virgin’ for virgin Mary, *diu skrift* ‘the writing’ for the bible) (cf. Szczepaniak 2011: 71–73). From

the 9th century onwards, non-situational uses are increasingly attested and OHG *ther* gradually evolves into a marker of definiteness. Being initially restricted to human referents, it expands along the animacy hierarchy human > animate > concrete > abstract in the course of the OHG period (cf. Szczepaniak 2011: 74f.). The first instances of definite articles in generic contexts are attested as early as in the 9th century, in the OHG Tatian translation (*ther man* ‘the human’) but occur more regularly only from the 10th/11th century onwards. Selecting no individual entity but the class as a whole (e.g. the species *man*), generic articles referring to kinds pave the way for the expansion to indefinite or non-referential contexts (cf. chapter 3). As a last step, about 500 years later, from the late Early New High German period onwards (1350–1650), the definite article starts to spread to personal names in German vernaculars (16th century) (cf. chapter 4.1), where, similar to unique nouns (e.g. *the moon*), the article functions as a mere expletive marker (on the notion of an expletive article see Longobardi 1994; Gallmann 1997; Sturm 2005: 114–120; but Karnowski/Pafel 2005 for an opposing view). Figure 5 provides an overview of the diachronic development (cf. also Szczepaniak 2011: 78).

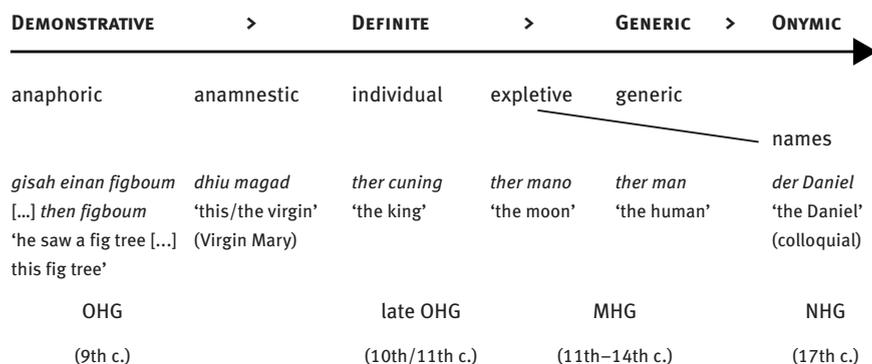


Fig. 5: Diachronic expansion of the definite article in German

## 2.2 Diachronic overview: English

The definite article in English has been the subject of numerous, mainly synchronic studies (e.g. Christophersen 1939; Hewson 1972; Carlson 1978; Hawkins 1978; Chesterman 1991; Lyons 1991, 1999). The major steps in the diachronic evolution presented below follow Hodler (1954), Hewson (1972), and the *Cambridge history of the English language* (Hogg (ed.) 1992; Blake 1992; Lass (ed.) 1999). For the early stages, the development from demonstrative to definite arti-

cle, the evolution parallels that observed in Old High German. In the Old English period (500–1100), the fully inflecting OE determiner *se* (masc.), *seo* (fem.), *þæt* (neut.) is still restricted to discourse-deictic uses and expands only gradually to definite contexts. “In Old English many types of noun, and certain types of usage, show resistance to an article that has traces of demonstrative force” and seem “more like a mixture of demonstrative and article” (Hewson 1972: 18). In Middle English (1100–1500), when strong vs. weak adjectival inflection as an alternative marker of (in)definiteness got lost and the indefinite article emerged, the usage of articles comes to be further systematised in that a clear-cut distinction is established between both deictic *that* (< OE *þæt*) and non-deictic, invariant *the* (< OE *se, seo*) on the one hand and the definite (*the*) and the indefinite (*a/an*) article on the other hand (Blake 1992: 217). In Early Modern English (1500–1800), however, the definite article still tends to be left out in combination with abstract nouns (cf. Lass (ed.) 1999: 191f.). Definite articles with a generic reading are found only occasionally during the Old English period (OE *Se lareow scal bion on his weorcum healic* ‘the/a teacher must excel in his works’; cf. Hogg (ed.) 1992: 176) but they occur more regularly by the end of the Middle English period with kind-referring singular nouns of the type *the cat loves comfort* (cf. Lass (ed.) 1999: 191). Also in Modern English, singular definite generics are missing with abstract nouns (EN *\*the life is beautiful* vs. GE *das Leben ist schön*) (cf. Wandruszka 1969: 190; Schaden 2012) and mass nouns (*\*the wine, \*the rice*) (cf. also chapter 3.1); definite plural generics are by and large restricted to nominalised adjectives (*the poor, the French*) (Lyons 1991, 1999: 189–193, but cf. also chapter 3 for corpus data). In combination with unique nouns (*þe heouene* ‘the heaven’, *þe sonne* ‘the sun’), definite articles can be found from the Middle English period onwards, but they did not survive in all instances in Modern English (*the sun, the moon* but *\*the heaven, \*the paradise, \*the hell*<sup>7</sup>). Further restrictions concern prepositional phrases and the onymic article. In English, other than in Modern German, the article is often missing in prepositional phrases, in particular when reference is non-specific (EN *she goes to church, he came after lunch* vs. GE *sie geht in die Kirche, er kam nach dem Mittagessen*) (cf. Löbner 1985: 307). With only a few exceptions, mainly names of rivers (*the Rhine*), the onymic article is not available. Its use appears to be very restricted even if the name is premodified by an adjective (*\*the little Mary*) (cf. chapter 4.2 for more details). For an overview see Figure 6.

7 Pointing to the divergent behaviour of *\*the heaven* vs. *the sky*, Wandruszka (1969: 193) goes even further and interprets the religious terms *heaven, paradise, and hell* as proper names.

To sum up, definite articles appear to be more restricted in use in English than in German. This holds true for their combinability with unique and abstract nouns and, most particularly, for generic contexts and in combination with proper names. The fact that the functional evolution is less advanced in English has already been pointed out by Curme (1922: 67):

A difference of development or conception in some cases leads to a different use of the article in the two languages: [...] it becomes apparent that English has preserved much better than German the old simple form of the noun without the definite article wherever it represents a person or thing single in kind, like a proper name.

Considering both the generic and the onymic article, in the following the functional expansion of the articles will be investigated in more detail.

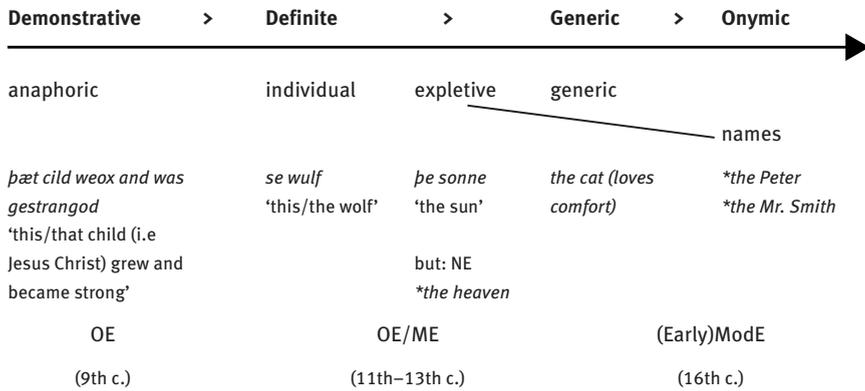


Fig. 6: Diachronic expansion of the definite article in English

### 3 Generic articles

#### 3.1 Prototype- vs. kind-referring generics

As has been pointed out in the vast body of literature on generics, basically both the indefinite and the definite article are available for generic reference but both of them are associated with different generic types, cf. (1):

- (1) A tiger is striped. / \*A tiger almost died out.  
 Tigers are striped. / Tigers almost died out.  
 The tiger almost died out. / ?The tiger is striped.

The indefinite singular article operates on the level of individuals and singles out a prototypical member of its kind (e.g. *a tiger is striped*).<sup>8</sup> For this type the term prototype-referring is introduced here. In the case of plural indefinites or bare plurals, all prototypical individuals are selected (*Tigers are [generally] striped*). Still, exceptions are allowed, which explains why plural indefinites are more widely applicable.<sup>9</sup> The definite article, by contrast, is typically kind-referring and hence more restricted in use. Operating on a higher taxonomic level, it selects the class as a unit, e.g. *the tiger, the lion* etc. as definite uniform entities of the hyperonym *mammals*, and hardly allows for exceptions. Definite generics are the first choice in sentences with kind-level predicates (*die out, be numerous*), whereas indefinite generics are typically combined with individual-level predicates (*be striped, be intelligent*) (cf. Carlson 1978; Kratzer 1995; Barton/Kolb/Kupisch 2015).<sup>10</sup> The fact that definite articles and indefinite articles or bare plurals operate on different taxonomic levels can be illustrated by the following German examples taken from Laca (1992: 268), cf. (2):

- (2) Die Deutschen trinken im Durchschnitt 500 Millionen Liter  
 The Germans drink an average of 500 million litres  
 Bier pro Jahr  
 beer per year  
 ‘Germans drink an average of 500 million litres beer per year’ (all together)
- ?? Deutsche trinken im Durchschnitt 500 Millionen Liter  
 Germans drink an average of 500 million litres  
 Bier pro Jahr  
 beer per year  
 ‘Germans drink an average of 500 million litres beer per year’ (each German)

**8** However, as Nickel (2012) pointed out, strong and weak generics have to be distinguished, involving majorities (e.g. *tigers are striped*) or indeed minorities (e.g. *Dutchmen are good sailors*). The first have also been referred to as *definitional generics* in the literature (cf. Krifka 2012).

**9** The exact status of bare plurals is, however, unclear and has been controversially discussed in the literature, cf. e.g. Krifka (2004) on “Bare NPs: Kind-referring, indefinites, both or neither?”

**10** In the literature, several terms have been introduced to refer to both types. Taking formal aspects (domains of definite vs. indefinite articles) into account, Gerstner/Krifka (1993) use the terms *D-genericity* vs. *I-genericity* (cf. also Platteau 1980 on “definite and indefinite generics”). Krifka et al. (1995: 2–3) distinguish between “kind-referring NPs” (*The potato was first cultivated in South-America*) and “generic sentences” (*A potato contains vitamin C, amino acids, protein and thiamine.*), cf. also Behrens (2000: 6–8) for a critical discussion. For the present purpose, however, the distinction prototype- vs. kind-referring seems most straightforward.

In the first case, the definite article evokes a collective reading ‘Germans *all together* drink about 500 million litres beer a year’, which is not that much.<sup>11</sup> The second example, however, implies a distributive reading and would require every single German to drink this quantity individually.

Basically, four options exist for generic NPs, but not all of them are likewise available in all three languages considered. Whereas productive definite singular generics represent a common feature, this is not the case for plural generics. In English, Gerstner/Krifka (1993: 967) ascribe definite generics “a rather marginal status”. Likewise, Hawkins (2004: 85) states that

German has gone further than English and regularly uses the definite article with generic plurals where English does not: *er zieht den Rosen die Nelken vor* (he prefers Def+Dat+Pl roses Def+Acc+Pl carnations) ‘he prefers carnations to roses’. He prefers *the carnations to the roses* in English suggests pragmatically identifiable sets of each.

Even though far from being “regularly” used in all contexts as assumed by Hawkins, definite plural generics are indeed much more common in German compared to English, which will be shown in the next section. To start, Table 1 compares the inventories for generic reference in English, Dutch, and German following the respective standard reference grammars (Quirk et al. 1999; Duden 2016; ANS).

**Table 1:** Availability of generic articles in English, Dutch, and German according to the standard grammars

	English	Dutch	German
prototype-referring	A tiger is striped.	Een tijger is gestreept.	Ein Tiger ist gestreift.
	Tigers are striped.	Tijgers zijn gestreept.	Tiger sind gestreift.
kind-referring	The tiger is threatened with extinction.	De tijger dreigt uit te sterven.	Der Tiger droht auszusterben.
	*The tigers are threatened with extinction.	*De tijgers dreigen uit te sterven.	?Die Tiger drohen auszusterben.

In the singular, definite NPs are common and constitute the first choice for kind-reference – at least when combined with count nouns (*the tiger, the potato*). As

<sup>11</sup> In fact, Germans consumed 84.6 million hectolitre in 2018, which, on average, corresponds to 102 litre each (cf. <https://de.statista.com>, last accessed: 7-10-2019).

for human referents (nationality terms), singular generic NPs are grammatical in German, but involve a contemptuous reading and are therefore rather disfavoured (cf. Duden 2016: 295, § 390). In combination with mass (*rice*) or abstract (*love*) nouns definite singular generics are effectively more restricted and indeed ungrammatical in English (*\*the rice*, *\*the love*). In Dutch, they are hardly acceptable for mass nouns (*??de rijst*), but regularly occurring with abstract nouns (*de liefde*). In German, both mass and abstract nouns take the definite article (*der Reis*, *die Liebe*). However, as a reflex of former anaphoric uses, generic articles are better accepted in the singular and in subject position – a restriction that is best described as a phenomenon of ‘persistence’ in the terms of Hopper (1990, 1991). The spread to (generic) object NPs constitutes a characteristic feature of languages representing an advanced stage of article grammaticalisation, such as in French for example, cf. (3):

- (3) EN Rice was introduced in Europe in the 10th century.  
I like rice.  
DU ??De rijst was was geïntroduceerd in Europa in de 10de eeuw.  
Ik hou van rijst.  
GE **Der Reis** wurde im 10. Jahrhundert in Europa eingeführt.  
Ich mag Reis.  
FR **Le riz** a été introduit en Europe au 10ième siècle.  
J’adore **le riz**.

Further restrictions concern definite plural generics that are not available in English so that bare plurals (indefinite plurals) are chosen instead. However, definite plurals are exceptionally allowed for nouns derived from adjectives (*the poor*, *the rich*), including nationality terms such as *the French*, *the Chinese* (cf. Lyons 1991). In those cases, the definite article first of all functions as a noun marker and is obligatorily used both in the singular and in the plural, which allows Lyons (1991: 105) to conclude: “So we have two types of plural generic: the indefinite restricted to nouns, and the definite restricted to adjectives.” (Cf. also Lyons 1999: 181ff.) In the Dutch standard reference grammar the definite plural is marked as doubtful (“*twijfelachtig*”) (cf. ANS, section 14.3.2). What is more, unlike in French, where the definite article is the first choice for generic reference (cf. Laca 1992; Lyons 1999: 51), in the other languages definite plural generics are restricted to human referents, mainly nationality terms (cf. chapter 3.2), cf. (4):

- (4) EN Books/Cats are my greatest passion.  
DU Boeken/Katten zijn mijn grootste passie.  
GE Bücher/Katzen sind meine größte Leidenschaft.  
FR **Les livres/Les chats** sont ma meilleure passion.

In order to obtain a more complete picture of the use of definite articles in generic sentences in the three languages considered, a small corpus study has been conducted. The results will be presented in the following section.

### 3.2 Generic articles: Corpus data

Generics have been the subject of several corpus-based studies, most notably generics in English. Recent data on German and English, among others, are provided in Behrens (2000); generics in Dutch have been extensively studied in Oosterhof (2008); plural generics in German by Barton/Kolb/Kupisch (2015) and, from a language learners' perspective, in Kupisch/Barton (2013) and Kupisch/Pierantozzi (2010). In her contrastive study on generics in German, English, French, Hungarian, and Greek based on the story "Le petit prince" and its translations, Behrens (2000: 23) concludes that in English

the use of the definite article is significantly more weakly attested than in the other languages. More precisely, the percentage of definite phrases in English both in the singular (11,24%) and in the plural (24,42%) is approximately twice as low as the percentage of definite phrases in the other languages.

In addition, what is emphasised is the exceptional prominence of the bare plural in English. Barton/Kolb/Kupisch (2015) investigated the semantics of plural generics in German on the basis of acceptability judgement tasks. Their results support the claim that in German, besides bare subjects with an acceptability of 99.5%, definite articles are also accepted in the plural (67.7%), in particular when referring to kinds (kind-level 84.9% vs. individual level: 61.9%). Also, taking sociolinguistic aspects into account, age has been identified as a decisive factor: Older participants accepted significantly more definite plural generics than younger ones and, moreover, the preference for definite plural generics in kind-referring sentences declined with age. Based on modern Dutch corpora, spoken and written (INL-corpora, CONDIV-corpora)<sup>12</sup>, Oosterhof's (2008) findings emphasise an equally strong correlation between kind-reference and the use of definite articles for Dutch. In combination with the kind predicate *uitsterven/uitgestorven* 'die out/died out', the percentage of definite articles amounts to 38% (singular definites) and 47%

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<sup>12</sup> INL-corpora = Corpora of the *Instituut voor Nederlandse Lexicologie* (<http://corpusedend.aagsnederlands.inl.nl/>) (29-3-2018); CONDIV-corpora = corpus of the project *Lexicale variatie in het Standaardnederlands. Convergentie/divergentie en standaardisering/substandaardisering in Nederland en Vlaanderen*.

(plural definites) respectively, whereas indefinite singular NPs (3%) and bare plurals (13%) are underrepresented (Oosterhof 2008: 79–82). Another study conducted on the basis of corpora and questionnaires focused on nationality (e.g. *Italiaan* ‘Italian’, *Brazilaan* ‘Brazilian’) and animal terms (e.g. *orang oetan* ‘orang-utan’, *zeehond* ‘seal’) in generic sentences (both, however, erroneously classified as *nationality names* and *animal names*<sup>13</sup>). Considering also areal factors (Netherlands vs. Belgium), the collected data reveals, first, a higher overall percentage of the generic article in the Flemish area (Belgium) and second, a significantly higher acceptance of singular definites in combination with animal terms (animal vs. nationality terms: NL 39% : 13%, BE 32% : 18%); conversely, plural definites occur more frequently with nationality terms (animal vs. nationality terms: NL: 4% : 21%, BE: 3% : 25%). Ranging between 48% and 64%, bare plurals are, however, preferred in all subsets of data (cf. Oosterhof 2008: 103).

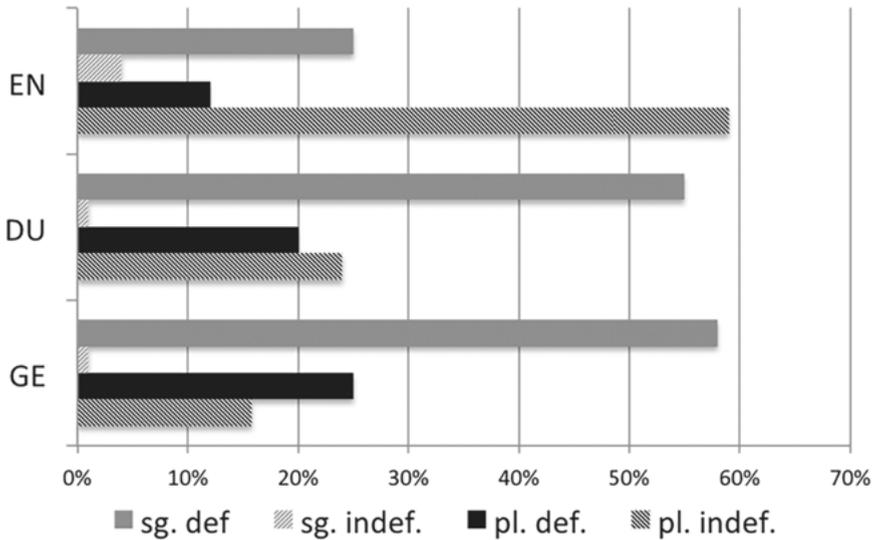
In order to directly compare the acceptance of the generic article in the three languages considered, data was collected from the COW-corpus,<sup>14</sup> a web-based corpus with sub-corpora for English (ENCOW), German (DECOW), and Dutch (NLCOW) (cf. Schäfer/Bildhauer 2012; Schäfer 2015). A first query conducted concerned the items ‘citizen’, ‘reader’, and ‘voter’ all of which refer to the nature of citizens/readers/voters rather than to individuals and can therefore be classified as kind-referring generics typically involving definite singular NPs. A second query conducted in all three corpora focused on nationality terms. Referring to prototypical individuals, they are typically associated with plural indefinites. To obtain a maximum of generic sentences and to limit at the same time the total number of hits, both queries were restricted to items followed by a finite form of ‘to be’ (e.g. ‘citizen is/citizens are’). In the present analysis, the first 200 hits of each query were taken into account and, in a second step, all sentences with a generic

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**13** Undoubtedly, animal and nationality terms share some properties with proper names (e.g. some kind of name-giving act for newly discovered species). Still, both of them behave like typical count nouns grammatically, do not refer to individuals and, what is most striking, they clearly have a denotative meaning. Accordingly, unlike proper names, they are not applicable to any entity in the world, but the object requires certain properties for being successfully referred to as *orang-utan* for example.

**14** The COW-corpus (= Corpora from the Web) is a web-based corpus with linguistic annotation comprising texts from a wide range of genres (e.g. press, comments, interviews). The subcorpora used for the present study are composed as follows: DECOW14: 20,495,087,352 words/17,147,104 (Austrian, German, and Swiss German) documents; NLCOW 6,887,226,290 words/5,468,755 (Dutch and Flemish) documents; ENCOW14: 16,821,840,292 words/9,216,176 documents representing ‘World Englishes’ (see also <http://corporafromtheweb.org/> (last accessed: 3-7-2019) for more details).

interpretation were extracted using the test criteria for genericity defined in Krifka et al. (1995). The results are presented in Figures 7–8:

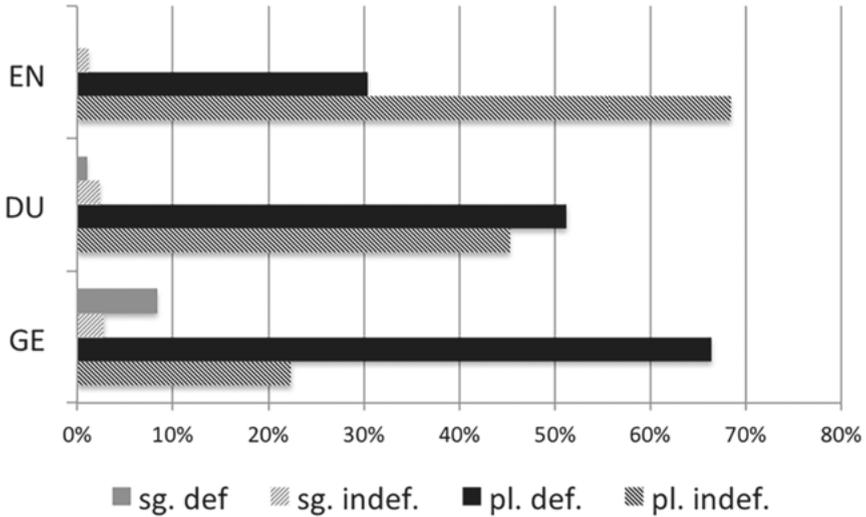


	English	Dutch	German
I.	The citizen is entitled to ...	<b>De burger</b> is bevoegd ...	<b>Der Bürger</b> ist berechtigt ...
II.	A citizen is entitled to ...	Een burger is bevoegd ...	Ein Bürger ist berechtigt ...
III.	The citizens are entitled to ...	De burgers zijn bevoegd ...	Die Bürger sind berechtigt ...
IV.	<b>Citizens</b> are entitled to ...	Burgers zijn bevoegd ...	Bürger sind berechtigt ...

Fig. 7: Generic article: Reference to kinds (n=401)

According to the data presented in Figures 7–8, definite generics are most appropriate in the singular when referring to homogenous groups (‘citizens’, ‘readers’, ‘voters’) but significant differences can be observed with respect to the languages considered. Amounting up to 58% and 55% respectively in German and Dutch, definite singular NPs constitute the first choice when referring to kinds, which is clearly not the case for the English counterparts with a total of only 25% and with bare (indefinite) plurals being preferred instead (59%). Reference to kinds is also possible with definite plurals and provides, by and large, the same general picture: Again, the highest ratio is attested for German (25%) followed by Dutch (20%) and finally English (10%). In combination with nationality terms denoting

a group of individuals a divergent picture emerges: Definite singulars are scarce (EN 0%, DU 1%=2x, GE 8%=12x) and, in the few cases attested, they imply a negative, stereotyped reading, cf. (5).



	English	Dutch	German
I.	*The Americ. is proud of ...	*De Amerikaan is trots op ...	Der Amerik. ist stolz auf ...
II.	An American is proud of ...	Een Amerik. is trots op ...	Ein Amerik. ist stolz auf ...
III.	The Americ. are proud of ...	<b>De Amerik. zijn</b> trots op ...	<b>Die Amerik. sind</b> stolz auf ...
IV.	<b>Americans</b> are proud of ...	<b>Amerikanen</b> zijn trots op ...	Amerikaner sind stolz auf ...

**Fig. 8:** Generic article: Reference to prototypical individuals (nationality terms) (n=476)

- (5) DU We weten het allemaal heel zeker, de Amerikaan is oppervlakkig  
 ‘We know it all for sure, Americans are superficial.’<sup>15</sup>
- GE der Amerikaner ist kulturell eben sehr tief stehend  
 ‘Americans simply are culturally underneath’<sup>16</sup>

<sup>15</sup> <https://www.amerika.nl/amerika/reisgids/cliches-amerika/amerikanen-zijn-oppervlakkig/> (last accessed: 3-7-2019).

<sup>16</sup> [http://nachtkritik.de/index.php?option=com\\_content%26task=view%26id=3417%26Itemid=40](http://nachtkritik.de/index.php?option=com_content%26task=view%26id=3417%26Itemid=40) (last accessed: 14-9-2019).

Definite plurals, by contrast, are frequently attested and turn out to be the first choice in German (pl. def. 66%, pl. indef. 22%) and, what is surprising, also predominate in Dutch (pl. def. 51%, pl. indef. 45%). In English, where again bare plurals represent by far the preferred option (68%), definite plurals achieve the lowest percentage, but still amount up to 32%.<sup>17</sup> Thus, definite plural NPs appear to be rather unmarked in German where they constitute the first choice (cf. also 67.7% acceptance in Barton et al. 2015). Their English counterparts, however, are bare plurals. In Dutch, definite and bare plurals are equally accepted, which may point to a transitional state, such that the definite plural is about to be established as the unmarked form. However, the Dutch data presented in this study diverge considerably from the data provided in Oosterhof (2008), where definite plurals of nationality terms are less frequently attested amounting only up to 21% (NL) or 25% (BE) respectively.

With respect to a possible semantic load, a closer look at the data reveals that the proportions of definite plurals vary significantly for each research item. In German and Dutch, the total amount of definite articles is much higher when referring to ‘Americans’ and ‘Frenchmen’, whereas for ‘Europeans’ indefinite plurals take over (def. pl.: ‘Frenchmen’ GE 84%, DU 62%, ‘Americans’ GE 74%, DU 56%, ‘Europeans’ GE 45%, DU 27%). In English, definite plural generics achieve the highest percentage for ‘Germans’ (52%), but are less frequent for ‘Europeans’ (29%) and scarce for ‘Americans’ (10%).<sup>18</sup> Thus, being rather avoided for self-reference, definite generics predominantly refer to foreign nationalities (GE *die Franzosen, die Amerikaner* vs. *(die) Europäer*; DU *de Fransen, de Amerikanen* vs. *Europeanen*; EN *the Germans* vs. *Europeans, Americans*). These findings point to the fact that, in all three languages considered, definite generics (partially) retained their emphatic character and may involve a contemptuous reading and the notion of “othering” – a connotation that predominates in English, but is also present in Dutch, cf. (6).

- (6) EN But it is not against the Germans that we hold our primary grudge.<sup>19</sup>  
 DU De Amerikanen zijn verantwoordelijk voor de meeste oorlogen ter wereld.  
 ‘Americans are responsible for most of the wars worldwide.’<sup>20</sup>

<sup>17</sup> Possible differences with respect to the different ‘Englishes’ have to be the subject of future research based on a larger set of data.

<sup>18</sup> For the English data, it has kept in mind, however, that several Englishes are included in ENCOW.

<sup>19</sup> <http://home.comcast.net/~eo9066/1944/44-01/TL26.html> (last accessed: 14-9-2019).

<sup>20</sup> <https://blog.thesilvermountain.nl/krachtenbundeling-edelmetaal-centrum-amsterdam/comment-page-5/> (last accessed: 3-7-2019).

To sum up, whereas indefinite singulars and, most notably, bare plurals constitute typical candidates for generic interpretation, the use of definite articles appears to be more restricted in earlier stages of grammaticalisation, namely to kind-reference in the singular (*the tiger, the teacher*). In the plural, definite generics evoke a contemptuous reading when combined with nationality terms. In conjunction with the bleaching of deictic force during the process of grammaticalisation, the taxonomic interpretation weakens and definite generics gradually expand to groups of individuals. As has been shown, this development is most advanced in German, whereas English represents the other extreme with deictic force and the notion of “othering” still being prevalent.

## 4 Onymic articles

### 4.1 Diachronic development

#### 4.1.1 German

As has been shown in chapter 2, the onymic article marks an advanced stage in grammaticalisation. Its rise in combination with personal names in German has been the subject of recent research. Onymic articles emerge in the late Early New High German period (16th/17th century) and spread from the southeast to the north triggered by case as one crucial factor among others (cf. Behaghel 1923: 52f.; Schmuck/Szczepaniak 2014; Schmuck *forthc.*). Disregarding name class, names combined with attributive adjectives exhibit the onymic article significantly earlier, obligatorily from the Middle High German period onwards and, what is remarkable, also unmodified names of rivers (Paul 1919: 180). For early attestations of the onymic article in combination with personal names and names of rivers cf. (7) and (8):

- (7) Song of Anno (end of 11th century):  
 Von demi gezûgi des stiphtis Worti **diu Semîramis** /  
 From the material of this building / fashioned the Semiramis /  
 ‘From the material of this building/Semiramis fashioned’  
 Die burchmura viereggehtich.  
 The town wall quadrangular.  
 ‘The town wall quadrangular.’

- (8) Tannhäuser, 13th century  
 Rome bi **der Tiver** lit, **der Arne** get für Pise  
 Rome near the Tiber is located, the Arno goes in front of Pisa  
 ‘Rome is located near the Tiber, the Arno flows through Pisa’  
 Paris bi **der Seine** lit, **diu Musel** get für Metz  
 Paris near the Seine is located, the Moselle goes in front of Metz  
 ‘Paris is located near the Seine, the Moselle flows through Metz’

In combination with personal names, the onymic article is nowadays extensively used in southern German dialects including Swiss German and Austrian-Bavarian, where names combined with the onymic article in fact represent the unmarked option. It is rather its omission that is effectively felt as inconvenient (e.g. Nübling/Fahlbusch/Heuser 2015: 123–124). In the north, by contrast, it is the definite article that, depending on the context, may elicit a derogatory connotation and has remained uncommon up to the present (Werth 2014). Yet, the unmarked use of the onymic article currently spreads in colloquial speech proceeding from the south to the north with central German as a transitional area (cf. Bellmann 1990; Longobardi 1994: 653f.; Eichhoff 2000; Duden 2016: 301, §398; Werth 2015).

#### 4.1.2 Dutch

Similar to their German counterparts, in Modern Dutch names combined with an attributive adjective obligatorily take the onymic article (*de kleine Jan* ‘the little Jan’) that, in southern (Flemish) dialects, appears regularly from the Middle Dutch period onwards (13th century) (cf. also van der Horst 2008, I: 843f.). Also in Middle Dutch, instances of bare, unmodified names combined with onymic articles are occasionally attested, cf. (9)–(11):

- (9) Rijmbijbel, West-Flanders 1285:  
 Maria, **des mijnders IJacobs** moeder  
 Mary, the younger Jacob’s mother  
 ‘Mary, the mother of Jacob the Younger’s’
- (10) Rijmbijbel, West-Flanders 1285:  
 Martha beclaghede **die Magdalene**  
 Martha deplored the Magdalena  
 ‘Martha deplored Magdalena’

- (11) Van onser vrouwen gheslachte, East-Flanders 1290:  
 Dat was ihesus **dier** **marien** kint  
 That was Jesus the-GEN Mary-GEN child  
 ‘That was Jesus, Mary’s child’

Standard Dutch lacks the onymic article with unmodified personal names. However, onymic articles are characteristic of Flemish dialects and a south-north decline of article use similar to the situation in the German-speaking area can be observed. The following examples are extracted from the *The Dynamic Syntactic Atlas of the Dutch dialects*<sup>21</sup>), cf. (12):

- (12) SAND sentence 286  
*Herinneren jullie je nog dat we Jan op de markt gezien hebben?*  
 ‘Do you still remember that we have seen Jan on the market?’  
 a. Brabant, b. Limburg
- |    |       |       |       |      |     |            |            |    |     |        |        |         |
|----|-------|-------|-------|------|-----|------------|------------|----|-----|--------|--------|---------|
| a. | Wette | gelle | nog   | da   | we  | <b>de</b>  | <b>Jan</b> | op | de  | met    | emme   | gezien? |
| b. | Wit   | ier   | nog   | dat  | y’a | <b>d’r</b> | <b>Jan</b> | óp | d’r | maar   |        | zoge?   |
|    | Know  | you   | still | that | we  | the        | Jan        | on | the | market | once   | saw /   |
|    |       |       |       |      |     |            |            |    |     |        | (have) | seen?   |

As a striking fact, onymic articles are far more common with names of men as pointed out by van Langendonck (2007: 158): “In Dutch (Flemish) dialects the article *de* ‘the’ is used before men’s names and sometimes before women’s names to express familiarity with respect to the name bearer, e.g., *de Jan* ‘the John’, *de Marie* ‘the Mary’.”

According to van de Ven/Govaart (1917), the onymic article combined with personal names appears in Brabant already in the 17th century (*de Jans*, *den Theum*<sup>22</sup>) and at that time equally induces a familiarity reading (“iets familiaars”).

Similar to German and English, names of rivers regularly require the onymic article in modern Dutch (*de Rijn*, *de Moezel*), with the first instances dating back to Middle Dutch (14th/15th century), cf. (13):

<sup>21</sup> The *Dynamic Syntactic Atlas of the Dutch dialects* (*DynaSAND*) is an on-line tool for dialect syntax research available at <http://www.meertens.knaw.nl/sand/> (last accessed: 3-7-2019).

<sup>22</sup> Similar to definite articles in combination with common nouns, the onymic article equally reflects the Flemish “accusativism” (cf. van Loon 1989), i.e. the phonologically conditioned alternation of *de* and *den* (i.e. former accusative article) with the latter being used when the noun/name starts with a vowel or with one of the consonants *h*, *b*, *d*, *t* or *r* (e.g. *de Jan* vs. *den Alex*). I am grateful to Ann Marynissen and to an anonymous reviewer for drawing my attention to this aspect.

- (13) Reinaerde van den vos 1401–1410:  
 Tusschen **dier Elve entjer** Zomme  
 Between the Elbe and=the Somme

#### 4.1.3 English

In modern English, personal names are typically undetermined. Sporadic occurrences of the onymic article with bare (unmodified) names concern honorific articles such as *the Talbot*, *the Douglas* (cf. Poutsma 1914: 570f.), with Donald Trump’s nickname *the Donald* representing a contemporary case in point. Crucially, the article is also absent with premodifiers (*little Eric*, *poor Mary*), even though certain adjectives exhibit the onymic article (*the inimitable/ill-fated/unfortunate John Smith*). According to the literature, personal names remain undetermined if the adjective has an “emotive colouring” (*old Mrs. Fletcher*, *poor Charles*), whereas “[i]n a more formal rather stereotyped style, the adjective is placed between *the* and a personal name” (e.g. *the inimitable Henry Higgins*) (Quirk et al. 1999: 290; cf. also Huddleston/Pullum 2002: 519f.). In other words, the article is absent when restrictive, name-like adjectives are concerned (*little*, *old*) but employed with attributive adjectives indicating a spontaneous judgment of the speaker about the person in question. Historically, however, sporadic instances of the syntactically conditioned onymic article can be found in contexts where the article is missing in the modern language, cf. (14):

- (14) Geoffrey Chaucer: Canterbury tales, late 14th century  
 Wel knew he **the olde Esculapius**,  
 And Deyscorides, and eek Rufus,  
 Old Ypocras [...]

Names of rivers require the onymic article (*the Thames*, *the Rhine*), which is already attested in Middle English but has not yet become obligatory before the Early Modern English period, thus differing from the situation in Middle Dutch and Middle High German (cf. Hewson 1972: 18–20), cf. (15)–(16):<sup>23</sup>

<sup>23</sup> Why names of rivers stand out for taking the onymic article so early (i.e. from the Middle Ages on) has remained unexplored. The fact that in English the noun phrase may also be interpreted as elliptical (*the Hudson [river]/the [river] Hudson*) does not provide a satisfactory answer as the article is missing in similar cases like *\*the [Mount] Kilimanjaro* (cf. also Anderson 2007: 106f.). Neither does this explanation hold for Modern German (*der \*[Fluss] Rhein* masc. ‘the Rhine’, *die*

- (15) Ranulf Higden: Polychronicon, engl. translation 14th/15th century:  
wiþ **þe Reyne** in þe norþ side, wiþ **þe Rone** in þe est
- (16) Bible, King James Version, 1611:  
And were baptized of him in Jordan

In sum, the onymic article appears to be most established in German where the syntactically conditioned article is obligatorily used from the Middle High German period onwards disregarding name type and, what is more, the onymic article is currently about to be established in front of personal names. In Dutch, grammaticalisation is less advanced. Similar to German, premodified names take the onymic article obligatorily, whereas personal names remain undetermined – with the exception of names for men in southern dialects. Most restrictions have been observed in English, which only allows for the onymic article in combination with names of rivers and, exceptionally, with personal names when combined with non-restrictive adjectives. Comparing the divergent development in all three languages, it is crucial that the functional expansion of onymic articles correlates with the retention or loss of inflectional categories: in modern German, on the one end of the continuum, three categories (case, gender, and number) are expressed. In modern Dutch, only two morphological categories are maintained (gender and number) and only two genders (common and neuter) are distinguished. In addition, article inflection displays more syncretism. In English, on the other end of the spectrum, article inflection got completely lost during the Middle English period.

The present chapter focused mainly on personal names. In the following, more name types (prototypical vs. non-prototypical names) will be taken into account in order to gain a more complete picture of the expansion of the onymic article in modern languages.

## 4.2 Prototypical vs. non-prototypical names

In order to define prototypical vs. non-prototypical names, the distinction between proper nouns (i.e. the lexical category of name) and proper names (i.e. definite NPs referring uniquely to one entity in the world) is crucial (cf. Schlücker/Acker-

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[?] *Mosel* fem. ‘the Moselle’) or for Modern Dutch (*de* \*[rivier] *Rijn/Moezel*). Rather, the onymic article as marker of onymic gender has to be conceived of as a classifier in the sense of Nübling (2015, forthc.) (e.g. EN: *Hudson* [family name] vs. *the Hudson* [river name], GE *Warnow* [city name] vs. *die Warnow* [river name]).

mann 2017). Prototypical names (name classes) consist of proper nouns (*Anna, London*), whereas non-prototypical names (name classes) comprise definite NPs with appellative heads (*the White House*) – often premodified by proper nouns (*Buckingham Palace*).

Following the classification provided in Nübling/Fahlbusch/Heuser (2015: 101–105), personal names and, to a lesser extent, also names of cities and countries or continents represent prototypical names in that they make recourse to a specific inventory (proper nouns) thus being maximally distinct from common nouns. More recent name types are rather descriptive in nature, headed by common nouns (descriptors) that indicate the class of objects, e.g. names of institutions (*York University*), buildings (*Westminster Abbey*), streets (*Baker Street*) or mountains (*Mount Everest*). These appellative heads enhance the use of onymic articles. Crucially, in English, names containing non-proprietary heads also remain more often undetermined compared to German and Dutch, cf. (17)–(19):

- (17) GE **Die** Westminster Abbey wurde zwischen 1045 und 1065 erbaut.  
 DU (De) Westminster Abbey is tussen 1045 en 1065 opgericht.  
 EN Westminster Abbey was built between 1045 and 1065.  
 But: **The** Empire State Building, **The** World Trade Center
- (18) GE **Die** Baker Street ist eine berühmte Straße in London.  
 DU **De** Bakkersstraat is een korte straat in Amsterdam Centrum.  
 EN Baker Street is a well-known street in the city of London.
- (19) GE **Der** Mount Everest ist der höchste Berg der Erde.  
 DU **De** Mount Everest is de hoogste berg ter wereld.  
 EN Mount Everest is Earth's highest mountain.

Making recourse to a specific inventory, names of countries and continents usually remain undetermined in all three languages, which exceptionally also holds true for premodified names in English (*modern Brazil, ancient Rome*).<sup>24</sup> Thus, with the onymic article being restricted to names of rivers and personal names combined with non-restrictive adjectives, English stands out by a very limited use of the

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<sup>24</sup> The few exceptions concern country names in the plural (*die Niederlande, die USA*) or with feminine gender (*die Ukraine, die Schweiz*) and names that originally belonged to other name classes (*der Libanon* < range of mountains, *der Kongo* < river) (cf. Thieroff 2000). Nevertheless, the onymic article is increasingly omitted in order to adapt these younger names morphosyntactically to the German system requiring a country name to be gender neuter and undetermined (Nübling 2015). Strikingly, the corresponding country names (may) also exhibit the onymic article in

onymic article (cf. also Quirk et al. 1999: 288–297<sup>25</sup>). The onymic article appears to be better established in German and Dutch, where it is obligatorily used with many non-prototypical name types, i.e. names of buildings and institutions or streets. What is more, disregarding name type, the onymic article is required obligatorily with adjectival premodifiers. German stands out by accepting onymic articles with personal names in informal speech in large parts of the German speaking area. See Figure 9 for an overview.

prototypical →				
buildings, institutions	streets, rivers, mountains	countries, continents	cities	persons
<b>German</b>				
<b>die</b> Paulskirche <b>die</b> Goetheschule	<b>die</b> Goethestraße <b>der</b> Rhein, <b>der</b> K2	Italien, Asien	Mainz, Paris	Anna, Jan, coll.: <b>die</b> Anna, <b>der</b> Jan
		<b>das</b> ferne Asien	<b>das</b> alte Rom	<b>der</b> große Jan
<b>Dutch</b>				
<b>de</b> St. Nicolaas- basiliek <b>de</b> Tower Bridge	<b>de</b> Hoofdstraat <b>de</b> Mount Everest <b>de</b> Rijn, <b>de</b> Moezel	Italië, Azië	Amsterdam, Parijs	Jan, Emma (Flemish: de Jan)
		<b>het</b> zonnige Frankrijk	<b>het</b> mooije Parijs	<b>de</b> kleine Jan
<b>English</b>				
Tower Bridge, Westminster Abbey	Madison Avenue, Mount Everest	Italy, France, Asia, Europe	London, Paris	Anna, James
	<b>the</b> Rhine, <b>the</b> (River) Thames	modern Brazil	ancient Rome	little James, but: the unfortunate James

**Fig. 9:** Usage of onymic articles in German, Dutch, and English considering different name classes

English (\**(the)* USA, *(the)* Sudan, *(the)* Ukraine) (cf. Quirk et al. 1999: 293). As prototypical English country names are all undetermined (*England, France, Italy*), the article is also likely to be omitted in the long run.

25 For a corpus-based investigation of article usage with complex or “multi-word” names in English see Tse (2005).

Further aspects that have not yet been considered in the present study but that appear to be relevant for the languages investigated concern, on the one hand, obligatoriness or, more precisely, interchangeability of the definite article and the possessive pronoun (when referring to body parts, for example) and, on the other hand, formal reduction, i.e. the occurrence of clitic forms. The following section provides first observations in these respects.

### 4.3 Obligatoriness: Possessive pronoun vs. definite article

The use of possessive pronouns vs. definite articles completes the general picture presented here according to which English represents an earlier stage in grammaticalisation. In combination with body parts, the possessive pronoun is preferred in modern English (*He closed his eyes/?the eyes*), which parallels the situation in Old High German where possessive pronouns likewise constitute the first choice. In Middle High German, both vary freely, whereas on the way to New High German the definite article has taken over. In modern Dutch, both options are still available, but the possessive pronoun is clearly preferred (*Hij sluit zijn ogen/?de ogen*). Thus, diachronic variation in German seems to be paralleled by synchronic variation in the three languages considered, cf. (20)–(21) (bold print is used for the preferred variant):

(20) Diachronic variation:

OHG: Tatian

leimon	teta	hér	mir	ubar	<b>minu</b>	<b>ougun</b>
balm	gave (“did”)	he	to me	on	my	eyes

MHG: Herbort von Fritzlar: Liet von Troye (a), Konrad v. Würzburg: Trojanerkrieg (b)

a.	<b>sine</b>	<b>ougen</b>	er	vf	hup
	his	eyes	he	raised	up
b.	sie	reip	<b>diu</b>	<b>ougen</b>	unde sprach
	she	rubbed	her	eyes	and spoke

NHG

er	schloss	seine	/	<b>die</b>	<b>Augen</b>
he	closed	his	/	the ‘his’	eyes

(21) Synchronic variation

EN He closed **his eyes**/\*the eyes.

DU Hij sluit **zijn ogen**/?de ogen.

GE Er schloss seine Augen/**die Augen**.

This first impression fits well into the general picture of article grammaticalisation, however, corpus data needs to be provided in future research.

#### 4.4 Formal reduction

Formal reduction is known as a typical side effect of increasing semantic bleaching during the process of grammaticalisation, a notion often referred to as ‘form follows function’. Accordingly, clitic or suffixed definiteness markers are expected in languages representing later stages of grammaticalisation (cf. Lehmann 1995: 59; van Gelderen 2007 on the definiteness cycle in Germanic). Coexisting with more recent free forms, suffixed articles represent a characteristic feature of Scandinavian languages (e.g. Swedish *ett hus* ‘a house’ vs. *hus-et* house-def. ‘the house’) (Dahl 2004; Askedal 2011). Among the three West Germanic languages considered, clitic articles are most prominent in German where masculine and neuter definite articles cliticise to the preposition (*zum Arzt* ‘to=the-MASC doctor’, *durch’s Fenster* ‘through=the-NEUT window’). With highly frequent, monosyllabic prepositions (e.g. *in* ‘in’, *zu*, ‘to’, *an* ‘on’), enclitic articles are obligatory and no longer interchangeable with their corresponding free forms without a change in meaning (Nübling 1992, 1998), cf. (22)–(24):

(22) Sie ist im Kino.

‘She is in=the cinema.’

Sie ist in dem Kino, das ich so gerne mag.

‘She is in the cinema that I like so much.’

(23) Sie ist im Urlaub / Sie ist in \*dem Urlaub.

She is in=the vacation / She is in \*the vacation.

‘She is on vacation.’

(24) Sie macht eine Ausbildung zur (> zu einer/\*der)

She makes a training to=the (> to a/\*the)

Krankenschwester

nurse

‘She is trained as a nurse’

Whereas in (22) the clitic article may denote either a definite or an indefinite entity, in (23)–(24) only an indefinite/generic reading is possible, and the clitic is no longer interchangeable with the free form. Clitic articles are already attested for Old and Middle High German (cf. Waldenberger 2009), but are most extensively used in Early Modern German (cf. Christiansen 2016). In Dutch, clitics are characteristic of Middle Dutch where both proclitic and enclitic articles, attached to the

noun (*dat/het* > *d, t*: *tkint* the=child, *dwater* the=water) and attached to prepositions (*int* < *in dat/het* ‘in the-neut.’), respectively, are attested (cf. van Loey 1970: 145f.; van der Horst 2008, I: 388f.).<sup>26</sup> In Modern Dutch, enclitics (preposition=article) subsist in informal speech giving rise to head-marked prepositions similar to German (e.g. *Ik zag haar in’t museum*; cf. van Gelderen 2007). In English, the invariant definite article is not the object of formal reduction; clitic forms are not attested in modern (standard) English. In earlier stages, however, proclitics do appear, especially in Early Modern English texts and, archaically, also later where *the* is regularly reduced to *th* in front of vowels and *h* (*th’ enemy*, *th’ hilt*) and some consonants (*th’ world*, *th’ miller*) (cf. Poutsma 1914: 513f.; van Gelderen 2007). With enclitics being attested in Dutch and particularly in German but not in English, the observable formal reduction reflects, at first glance, the extent of functional expansion. Unlike their Scandinavian counterparts, restrictions in use are, however, twofold – at least in standard varieties: syntactically to prepositional phrases (PP) and morphologically, to masculine/neuter (German) and neuter (Dutch) gender respectively, see Figure 10:

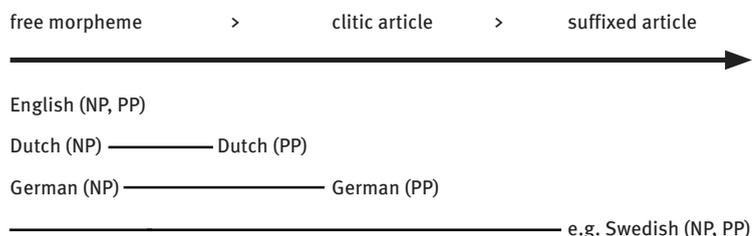
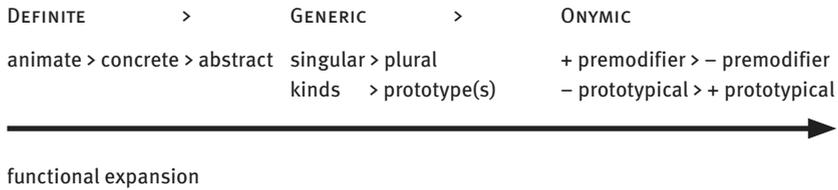


Fig. 10: Formal reduction of definite articles

## 5 Summary

The investigation of definite articles in three West Germanic languages revealed that the grammaticalisation and functional expansion that occurred independently in each of them, still follows the same underlying hierarchy presented in Figure 11:

<sup>26</sup> The fact that definite articles occurred regularly as clitics in Middle Dutch explains the modern form of the neuter article *het* (instead of *dat*): Clitic *t’* has erroneously been associated with the neuter pronoun *het* and, as a consequence, former *dat* was replaced by *het* on the way to modern Dutch (van Loey 1970: 145f.).



**Fig. 11:** Functional expansion of definite articles in Germanic

In all three languages investigated, the definite article may denote individual referents that are part of the shared pragmatic set (e.g. general knowledge, a prior conversation) and are as such identifiable by the hearer and thus markers of definiteness in a strict sense (Stage I articles). Generic reference, as a next step in Lyons' (1999) "hierarchy" of diachronic expansion, acts insofar as a first obstacle as, in all three languages, the generic article is well established only in the singular when referring to kinds (*the tiger/de tijger/der Tiger*) but restricted in use with mass nouns, which usually remain undetermined in English and Dutch (*\*the riz/??de rijst – der Reis*), see Figure 12.

I DEFINITE animate > concrete > abstract	II GENERIC singular >	plural	III ONYMIC + premodified > – prototypical >	– premodified + prototypical
<b>English</b>				
the woman the book the freedom	the tiger *the rice in *the spring	?the citizens ??the Americans *the books	*the ancient Rome *the little Mary	the Rhine *the Mount Everest *the Baker Street *the Mary
<b>Dutch</b>				
de vrouw het boek de vrijdom	de tijger de rijst in de lente	de burgers de Amerikanen *de boeken	het oude Rome de kleine Jan [Zwarte Piet]	de Rijn de Mount Everest de Bakkerstraat ??de Jan, *de Emma
<b>German</b>				
die Frau das Buch die Freiheit	der Tiger der Reis im Frühling	die Bürger die Amerikaner *die Bücher	das alte Rom der kleine Jan	der Rhein der Mount Everest der Jan (coll.)

**Fig. 12:** Stages in grammaticalisation of definite articles in English, Dutch, and German

Definite generics appear to be even more restricted in the plural for mainly two reasons. First, definite plural generics are principally only available for animate referents (*die Bürger/die Amerikaner/\*die Bücher, de burgers/?de Amerikanen/\*de boeken*). Second, being more strongly associated with kind-reference, definite (plural) generics (most common with nationality terms) tend to involve a negative reading and the notion of “othering” – a connotation which is most prevalent in English (*the citizens/??the Americans*), with bare plurals representing the unmarked option (*??the African-Americans/African-Americans*).

Onymic articles, i.e. definite articles combined with inherently definite proper names, constitute the third and so far final stage of extension in the languages considered. They establish first in combination with premodifiers for syntactical reasons. Syntactically conditioned onymic articles are already common in Middle High German and in Middle Dutch, but until now absent in English (*das alte Rom/het oude Rome/\*the ancient Rome*). For the spread of the onymic article to unmodified names, the presence/absence of appellative heads turned out to be crucial in that rather descriptive names and names with an appellative basic level term (e.g. names of streets and institutions) take the onymic article more readily than prototypical names (e.g. names of persons and cities) (e.g. DU *de Hoofdstraat* vs. *\*de Emma*, GE *die Hauptstraße* vs. *??die Emma*). Apart from that, name class has been identified as a decisive factor (EN *\*the Queen Mary* (person) vs. *the Queen Mary* (ship); DU *\*de Koningin Mary* vs. *de Queen Mary*). In English, proper names remain undetermined in most cases, which also holds true for many non-prototypical names with appellative heads (e.g. *\*the Bakerstreet, \*the Mount Everest – but the [River] Thames, the Atlantic [Ocean]*). Strikingly, the limited use of onymic articles in English as compared to Dutch and German parallels the situation with semantically definite uniques, where the expletive definite article likewise occurs less consistently (*\*the heaven, \*the paradise, (the) earth*) and, accordingly, is best described as a definiteness marker in a strict sense. In German, at the other end of the continuum, the functional expansion is most advanced, as, in large parts (Central and South German), the onymic article also combines with personal names in informal speech. As has been shown, personal names preceded by an onymic article are not a unknown feature in Dutch, either, but limited to southern dialects and to names of men.

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# A diachronic contrastive study of sentence-internal capitalisation in Dutch and German

**Abstract:** The present contribution analyses the sentence-internal capitalisation practice in selected Dutch bibles printed between 1450 and 1750. The use of majuscules proves to be highly sensitive to word class, i.e. it almost exclusively affects nouns. The Dutch case exhibits clear parallels to the emergence and development of sentence-internal capitalisation in German: In both languages, the majuscule was first conventionalised in proper names. Within common nouns, the use of uppercase letters is initially driven by pragmatic factors (i.e. emphatic and/or honorific use). By the end of the 16th century, however, the use of majuscules is increasingly motivated by cognitive factors, mainly animacy and concreteness of the referent. Finally, the comparison of Dutch bible prints with their German textual basis shows that Dutch printers did not adapt the capitalisation conventions of the German source-text on a one-to-one basis. Rather, Dutch printers appear to have temporarily established a capitalisation practice of their own with a clear preference to uppercase concrete nouns as opposed to abstract nouns. However, the capitalisation practice is generally characterised by a tremendous inconsistency across the single Dutch bible prints throughout the whole period under consideration. This inconsistency is considered to be one reason for the fact that sentence-internal capitalisation was abandoned in Dutch spelling in the long-run.

**Zusammenfassung:** Der vorliegende Beitrag untersucht die satzinterne Majuskelpraxis in ausgewählten niederländischen Bibeldrucken zwischen 1450 und 1750. Der Majuskelgebrauch erweist sich als extrem wortartsensitiv, d.h. er betrifft fast ausschließlich Substantive. Dabei tun sich beim Vergleich mit der Entwicklung der satzinternen Großschreibung im Deutschen deutliche Parallelen auf: So konsolidiert sich die Majuskel auch im Niederländischen zuerst bei Eigennamen. Innerhalb der Appellative dominiert ebenfalls zunächst eine pragmatisch gesteuerte Großschreibungspraxis (d.h. als Hervorhebungs- und/oder Ehrerbietungssignal), die im ausgehenden 16. Jahrhundert vom semantisch-kognitiven Faktor der Belebtheit bzw. Konkretheit des Referenten abgelöst wird. Der Vergleich zwischen niederländischen Bibelausgaben und ihren deutschsprachigen Übersetzungsvorlagen zeigt schließlich, dass der Majuskelgebrauch nicht eins zu eins aus dem Deutschen übernommen wurde. Vielmehr etabliert sich im Niederländischen die Tendenz zu einer beinahe exklusiven Großschreibung von Konkreta gegenüber

kleingeschriebenen Abstrakta. Allerdings divergiert der Majuskelgebrauch z.T. immens zwischen den einzelnen Bibelübersetzungen. Diese über den gesamten Untersuchungszeitraum dokumentierte Inkonsistenz dürfte mitunter für die Rücknahme der satzinternen Majuskel im Niederländischen verantwortlich sein.

## 1 Introduction

Sentence-internal capitalisation is probably one of the most outstanding hallmarks of modern German orthography: Each noun or nominalisation functioning as the head of the noun phrase is consistently marked with a majuscule, an orthographic rule which goes far beyond the capitalisation practices found across other standard language orthographies based on the Latin alphabet. Here, the use of sentence-internal majuscules is mainly restricted to a subclass of the noun category: the proper names. However, Maas (1995: 90) asserts that the capitalisation of nouns in sentence-internal position was once a pan-European phenomenon of Early Modern times. Though his claim remains rather tentative (he does not provide any empirical evidence), it is at least partially supported for the spelling systems of northwestern European languages either by anecdotal evidence in the literature or the few studies on the emergence and development of sentence-internal capitalisation in French (cf. Husson 1977; Meisenburg 1990) and English (see Osselton 1984, 1985; Schnaar 1907). Moreover, Bunčić (2012: 242) points out that majuscules were more widely spread in Polish in the 16th century. The use of uppercase letters in common nouns is attested for French until the 17th/18th century, for Swedish (cf. Maas 2007) and English until the 18th century, and for Icelandic until the 19th century (cf. *ibid.*). In Norwegian (cf. Lundeby/Torvik 1956) and Danish (cf. Hamburger 1981) we even find a sentence-internal capitalisation practice comparable to that of modern German orthography. In both languages, however, sentence-internal capital letters for common nouns were abandoned in the course of spelling reforms: in Norwegian in 1907, in Danish in 1948.<sup>1</sup>

Maas (1995, 2007) assumes that the practice to capitalise words in sentence-internal position originated from Germany, where it is increasingly attested in book prints since the 16th century and was then conventionalised during the 17th and 18th centuries (see section 2.1). According to Maas, this innovation diffused more broadly through cultural contact, i.e. the printing industry, by German book

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<sup>1</sup> I would like to thank two anonymous reviewers and Gunther De Vogelaer for helpful comments on a previous draft of this paper.

printers who spread their craft knowledge and capitalisation habits throughout Europe. The European book trade as well as book printing, was indeed dominated by Germans in the first decades since the printing revolution in Germany in the middle of the 15th century (cf. Hruschka 2012: 38). Hence, most early European printers were either Germans or had been trained in Germany. Though it seems reasonable to consider the pan-European sentence-internal capitalisation practice of Early Modern times as a type of contact-induced phenomenon, Maas' claim has not yet been verified empirically. This is precisely where the present contribution steps in: It aims to test Maas' hypothesis for Dutch, which is assumed to have at least temporarily exhibited a sentence-internal capitalisation tendency (cf. Maas 2007: 398). For this purpose, a corpus of 26 Dutch bible prints covering the period between 1450 and 1750 will serve as a testing ground (for details see section 3.1). Bible prints are particularly suitable for this purpose because identical passages can synoptically be compared to each other and to their German counterparts. This allows us to reliably detect convergences and discrepancies in the capitalisation practice between Dutch and German vernacular translations that are not attributable to the text type as intervening variable but rather to a possible influence of the German source which served as textual basis for the Dutch translation (for instance, the *Biestkensbijbel* 1560 and the *Lutherse Vertaling* 1648 which both relied upon a German translation of Luther's Bible). Thus, if the German capitalisation practice did exert an influence on Dutch spelling, it is most likely to be detected in those bible prints that used a German source (see section 3.4). The latter may apply even more in the light of a traditionalist writing or printing practice often found across bible reprints and later editions. As far as the German Bible tradition of Early Modern times is concerned, Sonderegger (1998: 230–233) points out that the editions relying on Luther avoided substantial modifications to the original text for centuries. In this vein, Dutch bibles based on a German source, in particular on Luther's Bible, may also exhibit an above average level of sentence-internal capitalisation as a consequence of indebtedness to the original. This likely conservative trait of bible prints leading to a specific and individual bible printing tradition (cf. Bergmann/Nerius 1998: 76f.) suggests, however, that one must be very cautious about generalisations concerning the sentence-internal capitalisation practice in Dutch and the language internal and external factors contributing to it.

Hence, the present study must be considered as a first contribution to the diachrony of sentence-internal capitalisation practice in Dutch and as an invitation for further research in this field. Whereas the use of sentence-internal majuscules has been neglected so far in the literature, the analysis presented here proves that word-initial capital letters are indeed well-documented in the bible prints (see section 3): As will be shown, sentence-internal majuscules in Dutch bibles spread along similar paths as in German and English spelling, starting out as

pragmatically driven reverence markers and signals of emphasis, which were then conventionalised in proper nouns (and some sacred nouns). Finally, the use of uppercase letters was temporarily extended to common nouns in general, however, with a clear preference for concrete nouns over abstract ones.

## 2 Sentence-internal capitalisation in German and English

In what follows, the emergence and development of sentence-internal capitalisation will be outlined for German, which has been most extensively examined so far (e.g. Bergmann/Nerius 1998), and then compared to that of English, for which we can rely upon Osselton's (1984, 1985) analysis of some fifty prose texts first edited by London printers. The focus of this diachronic sketch (section 2.1), which will serve as the backdrop and reference point for the analysis of Dutch bible prints in section 3, lies on the identification of common factors contributing to the use of word initial majuscules as well as of common paths for their spread in printed texts, on which the hypotheses for Dutch capitalisation practice will be elaborated (section 2.2).

### 2.1 Diachronic overview

It is generally agreed that sentence-internal capitalisation originates in a pragmatically driven usage of majuscules. That is, capital initials served as a signal of emphasis, highlighting words of special importance to the text irrespective of their word class and syntactic use. As far as German is concerned, this capitalisation practice prevailed until the beginning of the Early New High German period, as has been shown by Bergmann/Nerius (1998) in their comprehensive study on the diachrony of sentence-internal capitalisation in printed texts of different genres from 1500 to 1710 (see also Weber 1958; Kaempfert 1980; Labs-Ehlert 1993). This pragmatically driven usage corresponds to Osselton's (1985: 54f.) "word-prominence" principle documented for English between 1500 and 1800 (see also Schnaar 1907: 92–98).

Even though the prominence of a word is not tightly coupled to a specific word class, it is the noun category that is mainly affected by capitalisation in both languages (cf. Bergmann/Nerius 1998; Osselton 1984, 1985; Schnaar 1907). The overall tendency to uppercase nouns more frequently compared to other word classes results to a large extent from sociopragmatic factors, i.e. capital letters are a means of expressing reverence and respect either to deities, mainly to God and other con-

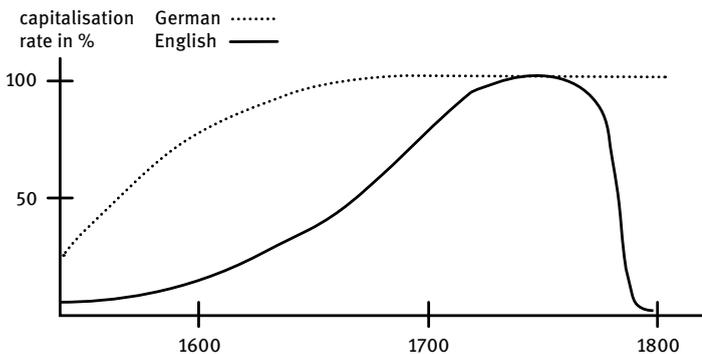
tigious theological concepts (i.e. *nomina sacra*, e.g. ‘church’, ‘prophet’), or to individuals of high social status (e.g. official titles). Remnants of such a honorific capitalisation usage are still found in various orthographic systems of the world’s modern languages, compare – for instance – the convention to capitalise ‘God’ and the pronouns referring to him in religious writings in English <He, Him, His> as well the capitalisation of formal address pronouns, amongst others in German (<Sie, Ihnen> etc.), Italian (<Lei, Loro> etc.) or Polish (<Ty> ‘thou’) (cf. Back 1995: 57f.).

Besides this emphatic or honorific capitalisation practice, the diachronic data reveal a cognitively motivated use of uppercase initials, mainly involving the categories individuality and animacy. The first relates to the conceptualisation of referents/entities in terms of saliency for the language user: Proper nouns as rigid designators with an identifying function (monoreferentiality) and individualising properties (they are inherently definite) are thus located at the top of the individuality scale compared to common nouns. Animacy, which is strongly interrelated with individuality, is based on the life concept, spanning from human entities through animate and inanimate objects (cf. Yamamoto 2008: 1). Individuality explains the fact that proper nouns were uppercased earlier and more consequently compared to their common noun counterparts, a tendency that is documented for French (cf. Meisenburg 1990) and which has also prevailed in many other modern orthographies (cf. Back 1978, 1991, 1995). In German, the capitalisation of proper nouns was conventionalised by the first half of the 16th century (cf. Bergmann/Nerius 1998), in English probably during the 16th century (cf. Osselton 1985: 53, Schnaar 1907: 94). In the case of German, the interaction between individuality and animacy becomes evident in the fact that the capitalisation of person names was conventionalised earlier than in other proper noun classes (e.g. toponyms). The higher an entity is located on the animacy scale, the more it is perceived as individuated in human cognition, and the more likely it will be highlighted by a word initial majuscule (cf. Szczepaniak 2011; Barteld/Hartmann/Szczepaniak 2016).

Animacy also played a key role in the further spread of sentence-internal capital letters in common nouns. This is best-documented for German, where person designations feature majuscules earlier and more frequently than nouns denoting non-human animate entities (e.g. animals or plants), which in turn are capitalised more consistently than concrete but inanimate ones. The last subclass to exhibit capital initials with a certain regularity is that of abstract nouns (in German during the 18th century). Osselton (1985: 56) observes a similar, semantically driven capitalisation practice for English in the 17th and 18th centuries, with some twenty animate nouns being consequently uppercased as opposed to other concrete but inanimate ones. This suggests that language-independent cognitive principles may have also played a key role in the capitalisation tendencies detected in Dutch bible prints (see section 3.3.2).

In addition to the influence of cognitive principles on the sentence-internal capitalisation practice, further factors have been pointed out to have an impact on the use of uppercase letters, most notably syntactic ones. Maas (1995, 2007) assumes that initial majuscules were introduced to mark syntactic boundaries, in the case of German to signal the right boundary of a noun phrase as a supporting parsing strategy for the reader (for English see Grüter 2009). Dücker (forthc.) tests Maas' hypothesis and disproves it empirically, showing that majuscules are mainly used to highlight the inner structure of complex genitives phrases: Here, however, it is the noun of the genitive attribute that is uppercased, whereas the head noun is lowercased. Recent studies on the emergence and development of sentence-internal capitalisation in German strongly suggest a multifactorial approach to satisfactorily account for the numerous possible influencing and interacting factors, including agency, the letter's shape, idiolectal parameters etc. (cf. Barteld/Hartmann/Szczepaniak 2016; Dücker/Hartmann/Szczepaniak forthc.).

As Osselton (1984: 127, 1985: 50) proves, English once came very close to the capitalisation practice of modern German, highlighting almost 100% of the common nouns in a running text during the 18th century, a capitalisation rate that corresponds to the state of development found in German book prints around 1700 (cf. Bergmann/Nerius 1998; Bergmann 1999: 66). The graphs in Figure 1 illustrate the sentence-internal capitalisation patterns for common nouns in English and German for the period between 1550 and 1800 based on Osselton's (1984: 127) and Bergmann/Nerius' (1998) data.



**Fig. 1:** Capitalisation patterns for common nouns in English and German

Two things are striking when comparing the patterns of English and German in Figure 1: First, German clearly precedes English with respect to the conventionalisation of uppercased common nouns: Around 1600, more than 70% were capi-

talised in German, whereas in English, this capitalisation rate is reached a hundred years later. Whether and to what extent this time-lag can be directly attributed to the influence of German capitalisation practice gradually diffusing throughout Europe as suggested by Maas (1995, 2007) remains an open question. Nevertheless, the trend to highlight common nouns with a majuscule drastically increases in both languages within approximately a century only. However, and that leads us to the second striking observation, the temporarily convergent developments rapidly drift apart by the turn of the 19th century: Whereas the use of sentence-internal majuscules is conventionalised in written German during the 18th century (and even extended to nominalisations, cf. Bergmann/Nerius 1998), English is characterised by a “sudden drop after 1750” (Osselton 1984: 127), thus falling back to the capitalisation practice which had been in use before 1550, see Figure 1.

Various arguments have been put forward in the literature to explain this abrupt and radical change. Maas (2007: 398) assumes that the introduction of minuscules for common nouns was politically and/or religiously motivated, i.e. it was a counter-reaction of the reformation and counter-reformation movements in European countries breaking away from a spelling convention strongly loaded with confessional, mainly Lutheran connotations. In this spirit, Luther’s works were censored in several, mainly Catholic European countries such as France and Spain, but also in England during the Anglican Revolution in the 16th century (cf. Müller-Oberhäuser 2011a, b). However, Osselton’s data clearly show that sentence-internal majuscules were introduced in common nouns after the Anglican Revolution (see Figure 1), proving Maas’ explanation – at least for the English case – untenable.

Osselton (1984: 128), in turn, attributes this change to the fact that sentence-internal capitals lost their emphatic potential to highlight words carrying a special emphasis or a greater semantic weight once they had developed into “a marker of word-class”. As a consequence of this functional change, they became “generally redundant [...] and could be dropped without inconvenience” (Osselton 1984: 128). The general problem with this argument is that majuscules were and are still used with proper nouns in English, i.e. they serve at least as an exclusive marker of a nominal subclass, a convention that also diminishes their emphatic potential. The abandonment of capitalised nouns was maybe less a matter of an increasing functionalisation as lexical class markers than the logical consequence of an overextensive use of sentence-internal majuscules attested throughout the 18th century, where (almost) every word of a sentence was uppercased, a spelling convention that comes close to the capitalisation practice found in English book titles (cf. Osselton 1985: 51f.). In this case, it seems reasonable that a capitalisation practice running riot contributed to an entire loss of any useful function sentence-internal majuscules “might previously have had” (Osselton 1985: 59).

## 2.2 Interim conclusion and hypotheses

The diachronic data thus strongly suggest the following **common paths** with respect to the use and spread of sentence-internal majuscules: The nucleus of capitalisation practice lies in a pragmatically driven usage, which then expands along the lines of a cognitive-semantic continuum ranging from human via non-human animate and inanimate concrete towards abstract entities. Within this gradual process, proper nouns and nomina sacra precede common nouns. Once all nouns have been captured by capitalisation, sentence-internal uppercase letters function as markers of a lexical class. This lexical principle, which has prevailed in English spelling throughout the 18th century but was then given up, has been superseded in German orthography by a syntactically motivated capitalisation principle: each head of a noun phrase requires a majuscule. Against this backdrop, the following hypotheses can be derived for the sentence-internal capitalisation practice, if there is any, in Dutch bible prints:

1. It is assumed that majuscules will be highly sensitive to the word-class, with nouns being generally more prone to feature initial capitals than any other word category (section 3.1).
2. It is expected that the use of majuscules will be first conventionalised in proper nouns and then in words of theological importance (i.e. nomina sacra), which in turn are expected to precede all other common nouns with respect to capitalisation (section 3.2).
3. The earliest attestations of word initial majuscules in common nouns are expected to be pragmatically driven, i.e. they highlight words of specific significance to the (con)text (section 3.3.1).
4. Within common nouns, those denoting concrete entities as opposed to those referring to abstract concepts will be more prone to feature an initial capital. Within concrete nouns, the use and spread of capital letters is expected to reflect the animacy scale (human > animate > non-animate entities; section 3.3.2).

The influence of syntactic factors (e.g. the complexity of the NP), which are not pursued here, will be the task of future studies. Finally, the question whether and to what extent the use of sentence-internal majuscules in Dutch bibles is attributable to an influence of the capitalisation practice in German bible editions that served as textual bases will be addressed in section 3.4.

### 3 Sentence-internal capitalisation in Dutch bible prints

This section is concerned with an in-depth analysis of the sentence-internal capitalisation practice in Dutch bibles across four centuries (sections 3.2–3.4). Before presenting the results, the data and the methodology will be outlined (section 3.1).

#### 3.1 Corpus and Methodology

For the present study a corpus of 26 Dutch bible editions spanning from the 15th to the 18th centuries was compiled relying upon the *Biblia Sacra* database<sup>2</sup>, compare Table 1: thirteen prints are first editions issued between 1477 and 1648, which will serve as the starting point of the analysis in sections 3.2–3.3. One part of the bible corpus comprises Dutch translations either exclusively or partially based on a German source text (e.g. Luther's Bible) as in the case of the *Lutherse Vertaling* 1648, the other part includes vernacular versions of the bible directly translated from the original sources, i.e. the Latin Vulgate (e.g. *Delftse Bijbel* 1477) or the Greek and Hebrew text (e.g. *Statenbijbel* 1637; for details see section 3.4). In the case of the historically most significant translations into Dutch, i.e. the *Biestkensbijbel* (1560), the *Deux-Aesbijbel* (1562), the *Statenbijbel* (1637), and the *Lutherse Vertaling* (1648), the corpus was extended by three to four subsequent editions, see Table 1: This allows us to capture possible modifications in the capitalisation practice within these bible versions (see section 3.3.2).

The analysis of sentence-internal capitalisation was exemplarily conducted on Genesis Chapter 1 (Book Moses, Old Testament), which comprises about 750 graphematic words in the sense of Fuhrhop (2008), i.e. written words between two spaces (e.g. <\_Licht\_> 'light') or between a whitespace and a punctuation mark (e.g. <\_Wateren.> 'waters' or <\_Dach/> 'day'). The total of tokens may slightly diverge in the single bible editions due to the translation practice itself (e.g. <wilde dieren> 'wild animals' vs. <beesten> 'beasts') or due to the amount of graphic contractions in the text, compare, e.g. 'in the': <INDen> (*Delftse Bijbel* 1477), <IN den> (*Deux-Aesbijbel* 1562), <IN't> (*Lutherse Vertaling* 1648). Each graphematic word was then assigned to its lexical/grammatical word class using STTS tags. Of the 750 tokens, c. 200 are nouns, c. 130 verbs, c. 45 adjectives including a few numerals, c. 15 adverbs, while the remaining 360 tokens account for

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2 For details concerning the *Biblia Sacra* database see Aalderink/Verbraak (2006).

functional, i.e. grammatical word classes such as articles, prepositions etc. Again, smaller deviations in the distribution over word-classes between the single bible editions can be attributed to the translation practice, for instance, some editions tend to pronominalize introduced referents more often, which directly affects the total amount of nouns and pronouns in the text. Moreover, the data were coded for animacy using the classification of the DFG-project “Development of Sentence-internal Capitalization in German”<sup>3</sup> which assigns nouns into the following entities (cf. Barteld/Hartmann/Szczepaniak 2016): super-human (e.g. *god*), human (e.g. *mensche* ‘mankind’, *wijf* ‘woman’), animate (e.g. *dieren* ‘animals’, *voeghel* ‘bird’), inanimate but concrete (e.g. *aerde* ‘earth’, *zee* ‘sea’), and abstract (e.g. *beghin* ‘beginning’, *onderscheit* ‘difference’).

**Table 1:** Dutch bible corpus

15th century	16th century	17th century	18th century
– 1477 Delftse B.	– 1513 Bijbel int corte – 1526 Liesveltb. – 1528 Vorstermanb. – 1548 Blanckartb. – 1548 Leuvense B. – 1558 Emden Bijbel – 1560 Biestkensb. (reissues 1582, 1646, 1702, 1750) – 1562 Deux-Aesb. (reissues 1579, 1597, 1633) – 1599 Moerentorfb.	– 1637 Statenbijbel (reissues 1670, 1708, 1747) – 1648 Lutherse V. (reissues 1671, 1701, 1748)	– 1711 Biblia Pentapla

The list under (1) comprises all nouns attested in Genesis Chapter 1 and arranges them according to the animacy scale, using Modern Dutch spelling for the sake of reader-friendliness. The distinction between concrete and abstract common nouns is based on Ewald (1992), who defines concrete nouns as concepts that are sensory perceivable phenomena in the broadest sense. In prototypical concrete nouns, several sensory perceptions are at work, for instance, a *cat* can be visually and acoustically perceived (but it can also be touched), in the case of *food* the

<sup>3</sup> The original project title: “Entwicklung der satzinternen Großschreibung im Deutschen” (cf. Barteld/Hartmann/Szczepaniak 2016).

gustatory and olfactory systems are involved. In contrast, in the case of peripheral concrete nouns, perception is restricted to one sense, compare *light* (vision) or *noise* (audition). Though the lemma *geest* ‘spirit’ generally represents a prime example of an abstract noun in the sense of Ewald (1992: 279), since it cannot be perceived by any sense, it has been classified under the sub-category “super-human” because it is exclusively used to refer to the ‘spirit of God’ (e.g. *gheest Godts*) in Genesis 1.

(1) Nouns attested in Genesis 1

CONCRETE .....				ABSTRACT
super-human	human	animate	non-animate	
<i>god</i> ‘god’	<i>man</i> ‘man’	<i>beest</i> ‘beast’	<i>aarde</i> ‘earth’	<i>aangezicht</i> ‘face’ <sup>4</sup>
<i>geest</i> ‘spirit’	<i>mens</i> ‘human; mankind’	<i>boom</i> ‘tree’	<i>aardbodem</i> ‘ground’	<i>aard</i> ‘kind’
	<i>vrouw</i> ‘woman’	<i>boomvrucht</i> ‘tree fruit’	<i>afgrond</i> ‘abyss’	<i>avond</i> ‘evening’
	<i>wijf</i> ‘woman’	<i>dier</i> ‘animal’	<i>diepte</i> ‘abyss’	<i>beeld</i> ‘image’
		<i>gedierte</i> ‘animals’	<i>droge</i> ‘the dry’	<i>begin</i> ‘beginning’
		<i>gevogelte</i> ‘birds’	<i>duisternis</i> ‘darkness’	<i>dag</i> ‘day’
		<i>gewemel</i> ‘swarm’	<i>firmament</i> ‘void’	<i>gelijkenis</i> ‘image’
		<i>gewormte</i> ‘worms’	<i>hemel</i> ‘heaven, sky’	<i>geslacht</i> ‘kin’
		<i>gras</i> ‘grass’	<i>hout</i> ‘wood’	<i>heerschappij</i> ‘reign’
		<i>kruid</i> ‘herb’	<i>licht</i> ‘light’	<i>jaar</i> ‘year’
		<i>vee</i> ‘livestock’	<i>meer</i> ‘sea’	<i>leven</i> ‘life’
		<i>vis</i> ‘fish’	<i>plaat</i> ‘(earth) plate’	<i>midden</i> ‘the middle’
		<i>vogel</i> ‘bird’	<i>plaats</i> ‘place’	<i>maan</i> ‘month’
		<i>vrucht</i> ‘fruit’	<i>spijs</i> ‘food’	<i>morgen</i> ‘morning’
		<i>walvis</i> ‘whale’	<i>ster</i> ‘star’	<i>nacht</i> ‘night’
			<i>water</i> ‘water’	<i>onderscheid</i> ‘difference’

<sup>4</sup> Since *aangezicht* appears in the context *en[de] die duysternisse was op dat aegesicht des afgrondts* ‘and darkness was over the face of the deep’ (Blanckartbijbel 1548, Gen. 1:2), it has been classified as abstract noun.

CONCRETE				ABSTRACT
super-human	human	animate	non-animate	
			<i>zaad, (be)zaadse</i> 'seed'	<i>teken</i> 'sign'
			<i>zee</i> 'sea'	<i>versameling, vergadering</i> 'gathering'
				<i>ziel</i> 'soul'

Before going into further details, it is worth noting the overall distribution of sentence-internal majuscules across word classes. Capital letters are almost exclusively used to highlight nouns, whereas other word classes only exceptionally exhibit majuscules, thus confirming hypothesis 1 formulated under section 2.2: Uppercase letters prove to be highly sensitive to the noun category. In the case of Genesis 1, the capitalisation of non-substantival words concerns the numerals used to refer to the six days of creation, e.g. <de Eerste dag> 'the first day', and the pronouns referring to God, e.g. <Hy, Hem>. In what follows, the analysis of sentence-internal majuscules will be restricted to nouns.

### 3.2 Proper nouns and *nomina sacra*

Within the fourteen first editions, sentence-internal majuscules are not attested earlier than the 16th century. They are introduced for the first time in the *Bibel int Corte* (1513) to highlight the person names <Adam> and <Eua> (the remaining bible translations of Genesis 1 do not exhibit any proper nouns at all), while <god> as *nomen sacrum* is still lowercased. However, this changes by the second quarter of the 16th century, when majuscules are not only consequently introduced as reverence markers for <God(t)> in the *Liesveltbijbel* (1526) but also in all subsequently issued bible prints, see the examples from the bible editions between 1477 and 1548 under Table 2.

**Table 2:** Capitalisation of God in early Dutch bible prints

1477	1513	1526	1528	1548	1548
Delftse Bibel	Bibel int Corte	Liesveltbijbel	Vorstermanb.	Blanckartbijbel	Leuvense Bijbel
<god>	<god>	<God(t)>	<God>	<God>	<Godt>

Since *god* is used monoreferentially to refer to the Christian God (here, it cannot be pluralised as opposed to contexts where the concept generally refers to individual deities, see Kopf *forthc.*), it can also be classified as a proper noun. Hence, it is hardly surprising that the initial majuscule is conventionalised here first, namely from the second quarter of the 16th century onwards, and only later in the case of *geest* ‘spirit’ in the NP <Gheest Godts, Godts Gheest>, which is consequently uppercased since the Emden Bijbel (1558). The capitalisation of *God* and *Geest* has prevailed in modern Dutch bible translations.

Though proper nouns and nomina sacra respectively seem to precede common nouns of non-theological importance with respect to sentence-internal capitalisation, it is not possible to draw any general conclusions solely on the basis of two lemmata. Therefore, an additional analysis of Genesis Chapter 2 (comprising c. 600 tokens, count based on the Statenbijbel 1637) was carried out, which includes several proper nouns such as names of persons (e.g. *Adam*), rivers (e.g. *Euphrates*, *Gihon*, *Pishon*, *Tigris*, also translated as <Hydekel>), and places (e.g. *Assyria*, *Ethiopia*, also translated as <Mo(o)renlant>, *Havilah*), as well as the sacred nouns ‘Lord’ (*here*) and ‘paradise’, the latter translated either as *paradijs* (e.g. Delftse Bijbel 1477; Liesveltbijbel 1526; Leuvense Bijbel 1548), *lusthof* ‘pleasure garden’ (e.g. Vorstermanbijbel 1528; Deux-Aesbijbel 1562) or *hof* ‘yard’ (e.g. Biestkensbijbel 1560; Statenbijbel 1637; Lutherse Vertaling 1648), compare Table 3: Whereas proper nouns are still lowercased in the Delftse Bijbel (1477), they are consequently capitalised from the 16th century onwards, compare the examples under (a) (only exception: *moorianen lant* in the Leuvense Bijbel 1548). Majuscules in nomina sacra, in contrast, are conventionalised not earlier than the middle of the 16th century, compare also the examples under (b).

Since an increasing capitalisation tendency in common nouns is not attested before the second half of the 16th century at the earliest, the data confirms hypothesis (2) (see section 3.3). More interestingly, the convention to uppercase proper nouns and nomina sacra in Dutch bibles coincides with the capitalisation practice attested in Early New High German prints, where initial majuscules are conventionalised in proper nouns around 1530 at the latest and in nomina sacra around 1560 (cf. Bergmann/Nerius 1998; Bergmann 1999: 69), see (2) (based on Table 3).

## (2) Conventionalisation of initial majuscules in noun classes

	proper nouns	nomina sacra	common nouns
German	c. 1530	c. 1560	c. 1590
Dutch	c. 1526	c. 1558	never fully conventionalised (first attested in the Vorstermanb. 1528)

**Table 3:** Capitalisation of proper nouns versus nomina sacra

	1477 Delftse Bijbel	1513 Bibel int corte	1526 Liesvelt- bijbel	1528 Vorsterman- bijbel	1548 Leuvense Bijbel	1558 Emden Bijbel
<b>(a)</b> proper nouns	phison	---	Phison	Phison	Phison	Pison
	euilath	---	Heuila	Heuilah	Heuilath	Heuila
	gyo[n]	---	Gihon	Gion	Gehon	Gihon
	ethiopie[n]	---	Moore[n]la[n]t	Moorenlant	moorianen lant	Morenlant
	tygris	---	Tigris	Tigris	Tygris	Hydekel
	Assierien	---	Assyrie[n]	Assyrien	Assyrien	Assyrien
	Eufrates	---	Euphrates	Euphrates	Euphrates	Phrath
	a(a)dam	Adam	Ada[m] <sup>5</sup>	Adam	Adam	Adam
		Eua	Eua	Eua	Heua	Eua
	---	---	Eden	---	---	Eden
<b>(b)</b> nomina sacra	God	god, God	God	God(t)	God(t)	God(t)
	Here	heere	HERE	HEERE	Heere	HEERE
	Paradijs	paradise	paradijs	paradijs, Paradijs	paradijs	Paradijs
	---	---	hof	---	---	Hof

### 3.3 Majuscules in common nouns

As already outlined in section 2.1, initial majuscules in German common nouns other than nomina sacra started out as an emphatic device to highlight words of special importance to the text (pragmatic use), and then spread along the animacy scale, thus becoming conventionalised first in nouns referring to persons around 1590, followed by animate and inanimate concrete nouns around 1620, and then by abstract nouns on the threshold of the 18th century, which marks the functional change of the initial majuscule from a semantically driven graphic device to a

<sup>5</sup> The Liesveltbijbel (1526) uses <Mannine> instead of *Adam*: *Me[n] salse Mannine hoete[n]* (Gen. 2:23). A similar translation is also found in the Leuvense Bijbel (1548) and the Emden Bijbel (1558): *Dese sal Manninne ghenaeft worden* (Gen. 2:23).

marker of lexical class (cf. Bergmann/Nerius 1998). This development is also reflected in Luther's High German bible editions from 1523, 1534, and 1545, for which Genesis Chapter 1 was additionally analysed to provide a basis of comparison with the results of the Dutch bible prints.<sup>6</sup>

In the first version from 1523, sentence-internal capital letters are sparingly used in common nouns (ca. 3% of the cases), and this only to highlight the words relating to the creation of the day and the night (<Tag, Nacht>), the creation of the sky/heaven, the earth, and the sea (<Hymel, Erde, Meere>). This pragmatic use of majuscules is only documented in Dutch bibles from the first half of the 16th century (see section 3.3.1). In the second edition from 1534, the capitalisation ratio in common nouns has tripled (ca. 9%), mainly due to a more consistent use of initial majuscules in concrete nouns such as <Feste> 'void', <Lichter> 'lights', and <Himel> 'sky, heaven'. Within only twenty years, sentence-internal capitalisation shoots up drastically to an average of ca. 82%, with 98% of the concrete nouns being uppercased as opposed to only 43% of the abstract nouns. This divergent behaviour of concrete versus abstract nouns with respect to capitalisation is also attested in the Dutch bibles under consideration (section 3.3.2). However, Dutch seldom scores capitalisation levels as high as its German counterparts.

### 3.3.1 Emphatic use of majuscules

A pragmatic capitalisation practice comparable to that of Luther's earliest version of the bible (1523) concerns the use of uppercase letters in words relating to the topic of the Genesis Chapter 1: the creation, more precisely, the single creation steps, a tendency that is first documented in the Vorstermanbijbel (1528). In this vein, the majuscule is found in the Blanckartbijbel (1548) in <Beghin> to emphasise the very beginning of the world or in the <Firmament> 'void' created between the waters (Gen 1:6), which God calls <Hemel> 'sky'. It is precisely the act of naming that entails capitalisation. This can be impressively demonstrated by the Vorstermanbijbel, see the examples in (3)–(5): Here, nouns like *dach* 'day', *nacht* 'night', *hemel* 'sky', *aerde* 'earth', and *zee* 'sea', which are usually written with minuscules (see (3)–(5b)), are capitalised in the context of naming (see (3)–(5a)):

- (3) a. “En naemde dlicht/den **Dach**/ende die dusternissen/den **Nacht**”  
 ‘And he called the light day, and the darkness night’

<sup>6</sup> For the capitalisation practice in further German bible prints of the first half of the 16th century, see Risse (1980). For the capitalisation practice in Luther's handwritten letters see Moulin (1990).

- b. “ende dmeeste licht den **daghe** voorzijn soude/en dminste licht/  
dat=tet den **nachte** voorzijn soude”  
‘and the greater light to govern the day, and the lesser light to govern  
the night’
- (4) a. “En God namede dat firmament/den **Hemel**”  
‘And God called the void sky’  
b. “Die wateren die onder den **hemel** zijn”  
‘The waters that are under the sky’
- (5) a. “En God naemde die drooghe plaetse/**Aerde**/en die vergaderin=ge  
des waters/naemde hi die **Zee**”  
‘And God called the dry ground earth, and the gathered waters he  
called seas’  
b. “ende veruult dat water der **zee**, ende dat geuogelte vermenichfuldige  
hem opter **aerden**”  
‘fill the water in the seas, and let the birds increase on the earth’

Other examples of a pragmatically driven capitalisation usage supporting hypothesis (3) are found in *hemel* ‘sky’, *aerde* ‘earth’, *zee* ‘sea’, *walvisschen* ‘great creatures of the sea’ (lit. ‘whales’), *dagh* ‘day’, *nacht* ‘night’, *man* ‘man’, and *wijf*, resp. *vrouwe*, ‘woman’ throughout the first half of the 16th century, which all represent God’s products of creation. These eight nouns are also the ones that are most frequently attested and more consequently highlighted with capital letters throughout the first editions, as indicated by the “+” in Table 4 (original spelling retained).

**Table 4:** The most frequently capitalised nouns in first editions

lemma		1528	1548	1558	1560	1562	1599	1637	1648
<i>hemel</i>	‘sky, heaven’	+	+	+	+	+	+	+	+
<i>aerde</i>	‘earth’	+	---	+	+	+	+	+	+
<i>zee</i>	‘sea’	+	---	+	---	+	+	+	+
<i>walv.</i>	‘whales’	---	+	+	+	+	---	+	+
<i>dagh</i>	‘day’	+	---	+	+	+	---	+	---
<i>nacht</i>	‘night’	+	---	+	+	+	---	+	---
<i>man</i>	‘man’	---	---	+	+	+	+	+	---
<i>wijf, vrouwe</i>	‘woman’	---	---	+	+	+	+	+	---

Interestingly, a pragmatic use of word initial majuscules prevails until the first half of the 17th century, as documented by the Lutherse Vertaling (1648). Here, only concepts denoting humans (i.e. <Menschen> ‘mankind’, <Man> ‘man’, <Vrouwe> ‘woman’) are uppercased besides <Hemel, Aerde, Zee, Waluisschen>, thus reflecting the Christian conception of humans as the climax of God’s creations.

### 3.3.2 Majuscules in concrete versus abstract nouns

As already pointed out in the previous section, an increasing non-emphatic use of word initial majuscules in common nouns becomes tangible from the second half of the 16th century onwards. However, as Figure 2 shows, sentence-internal capital letters in Dutch bible prints not only spread at a very slow rate from the middle of the 16th century onwards but their use is also characterised by a clear inconsistency across the first editions under consideration: In most cases, capital letters in common nouns do not exceed the 45 percentage mark attested for the Emden Bijbel (1558) and the Biestkensbijbel (1560).<sup>7</sup>

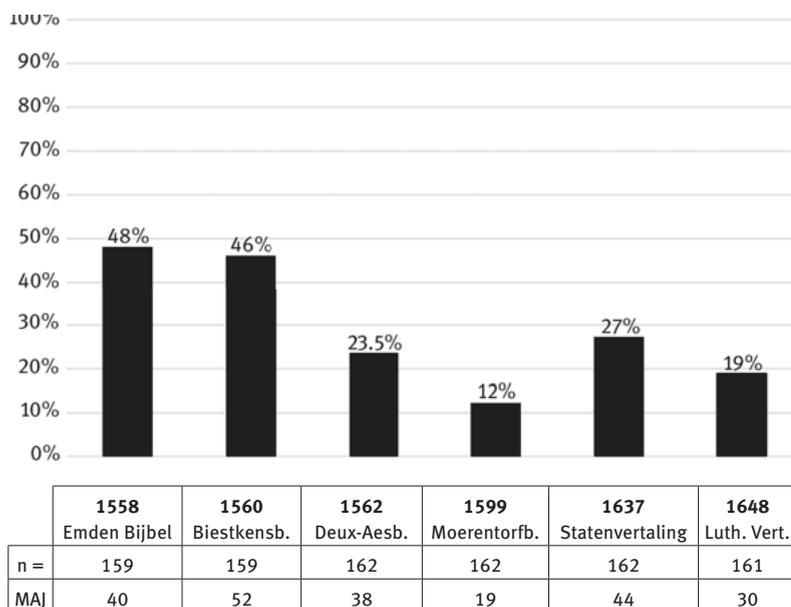
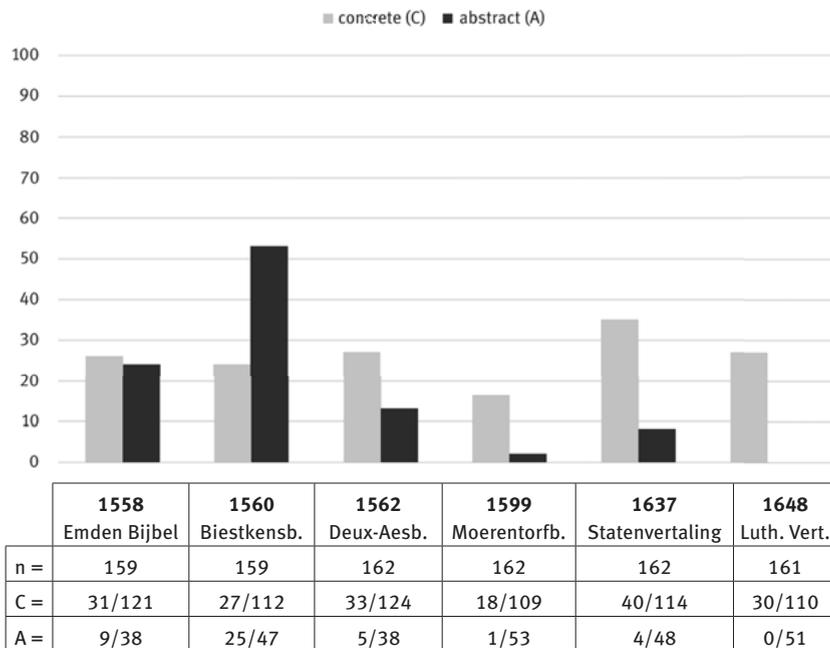


Fig. 2: Capitalisation patterns for common nouns in Dutch bible editions

<sup>7</sup> For the translation of the Statenbijbel (1637) reissued in the Biblia Pentapla (1711), see section 3.4.

A closer look at the new additions is particularly instructive for determining further factors contributing to the capitalisation of common nouns. Most of the newly uppercased noun types are concrete: Furthermore, most of them denote animate entities (e.g. <Ghewormte, Vee, Boomen> ‘worms, livestock, trees’), thus supporting the assumption that sentence-internal majuscules spread along the animacy scale (hypothesis 4). Consistent with this argument is the observation that word initial capital letters are most consequently applied with human entities throughout these six editions, i.e. with *man* ‘man’, *vijf/vrouwe* ‘woman’, and *mensche* ‘mankind’. The general tendency to capitalise the concepts denoting humans may also be influenced by pragmatic factors, reflecting a conception of the world with an ontological creation hierarchy, in which “humans are seen as the climax of creation content” (cf. Kennard 2013: 334).

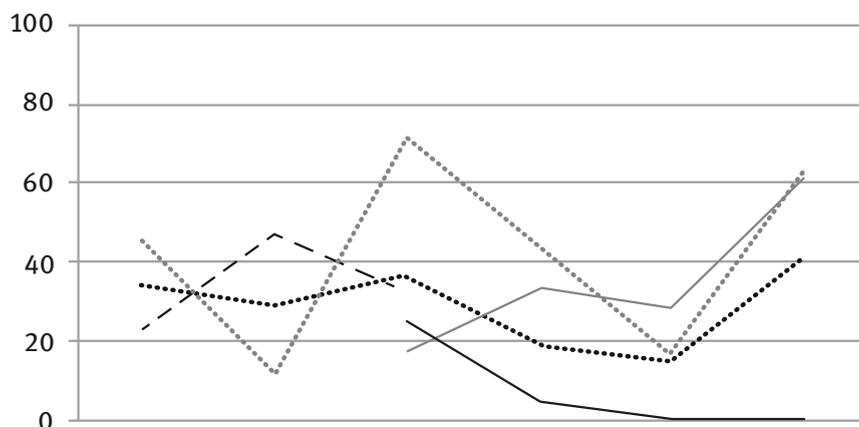


**Fig. 3:** Capitalisation patterns for concrete versus abstract nouns in Dutch bible editions (in %)

Figure 3, finally, displays the capitalisation practice in the respective six bible editions for concrete nouns (grey columns) as opposed to abstract ones (black columns). Whereas in the Emden Bijbel (1558) and the Biestkensbijbel (1560)

concrete and abstract nouns are capitalised almost to an equal extent (with abstract nouns even slightly outweighing concrete ones), the overall distribution of sentence-internal majuscules in the remaining four bibles clearly shows their strong affinity for concrete nouns. The percentage figures even suggest that while the use of uppercase letters in Dutch bibles generally decreases since 1560, it is increasingly restricted to concrete nouns at the same time: Whereas the Deux-Aesbijbel (1562) scores capitalisation rates two times higher for concrete as opposed to abstract nouns (27% vs. 13%), the levels of uppercased abstract nouns do not exceed 5% of the cases since 1599, see Figure 3.

The inconsistency in the capitalisation practice documented for the first editions becomes even more pronounced, if their subsequent editions are taken into account. Three to four reissues were additionally consulted for the Biestkensbijbel (1560, 1582, 1646, 1702, 1750), the Deux-Aesbijbel (1562, 1579, 1597, 1633), the Statenbijbel (1637, 1670, 1708, 1747), and the Lutherse vertaling (1648, 1671, 1701, 1748), see Figure 4:



**Fig. 4:** Capitalisation patterns for common nouns in the editions of the Biestkensbijbel, the Deux-Aesbijbel, the Statenbijbel, and the Lutherse Vertaling (in %)

The overall picture clearly shows tremendous differences in the use of word initial majuscules in common nouns between these four bible versions (e.g. the Statenbijbel vs. the Lutherse Vertaling) but also a great variation within the single editions of the bible versions themselves (e.g. the Biestkensbijbel). Whereas the editions of the Biestkensbijbel and the Lutherse Vertaling reissued around 1750 are characterised by a remarkable increase of uppercased nouns (c. 64% each), sentence-internal capitalisation is given up in the subsequent editions of the Statenbijbel, see Figure 4. This is particularly striking when compared to the developments in German and English sketched in section 2.1, which are characterised by a steady increase of uppercased common nouns from the 16th (German) and 17th (English) centuries onwards (see also Figure 1). In contrast, Dutch is rather characterised by an inconsistent zig-zag development with respect to word initial capitalisation illustrated by the trend-line in Figure 4. It thus can be assumed that the capitalisation of common nouns did not prevail in Dutch spelling for two reasons: First, the development was in itself inconsistent. Second and more importantly, the Statenbijbel, which had a great influence on the standardisation of Dutch language and spelling (cf. van der Sijs 2004), banned uppercased common nouns in its subsequent editions.

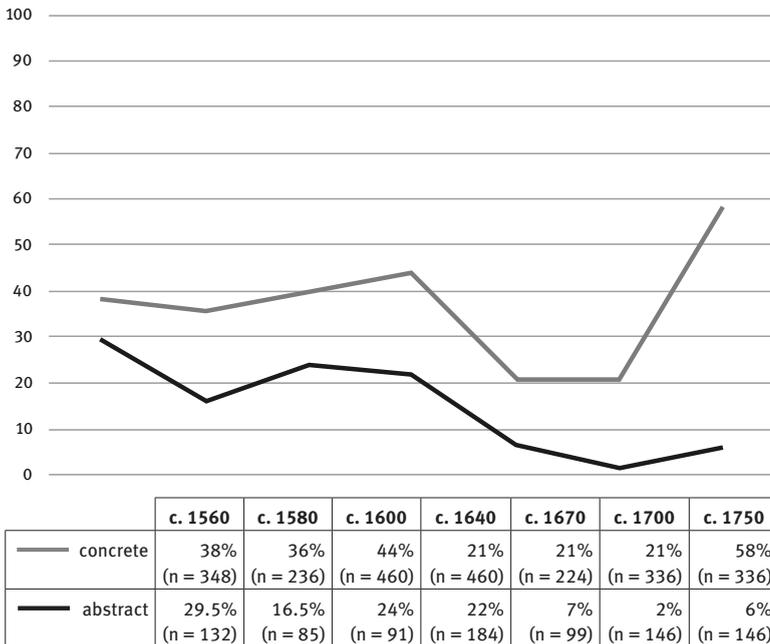
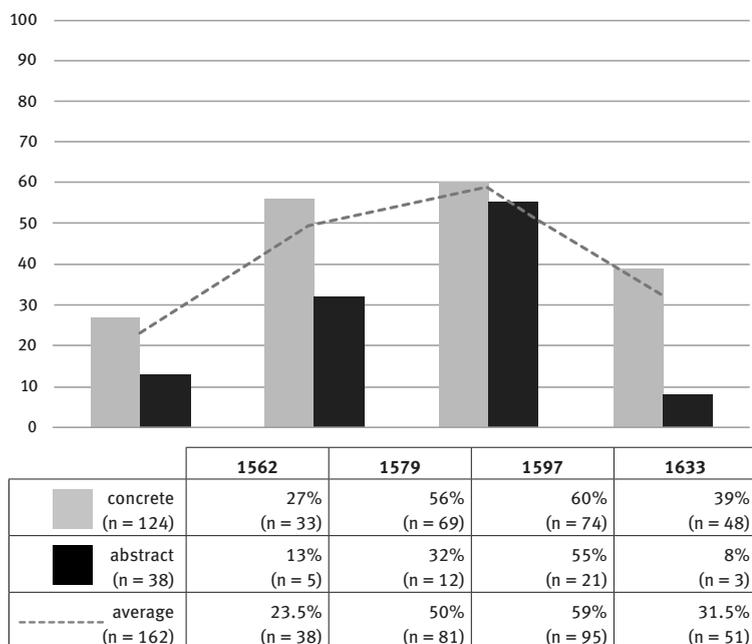


Fig. 5: Capitalisation patterns in concrete versus abstract nouns (in %)

Nevertheless, it is still instructive to take a closer look at the temporarily increasing capitalisation practice as attested in the subsequent editions of the *Deux-Aesbijbel*, the *Biestkensbijbel*, and the *Lutherse Vertaling*. Figure 5 displays the average capitalisation ratios for concrete and abstract nouns for seven decades from 1560 to 1750 that were calculated on the capitalisation ratios of these three bibles (for the concrete numbers, see Fig. 6–8). The graphs show that while abstract nouns were increasingly lowercased in the long-run (with a temporary capitalisation peak of c. 30% around 1560), concrete nouns were generally more prone to capitalisation, scoring their highest levels by the middle of the 18th century. The overall picture suggests that the spread of majuscules within abstract nouns more or less stagnated since the 17th century, while there is still a continuing extension within concrete nouns (see also Fig. 6–8).

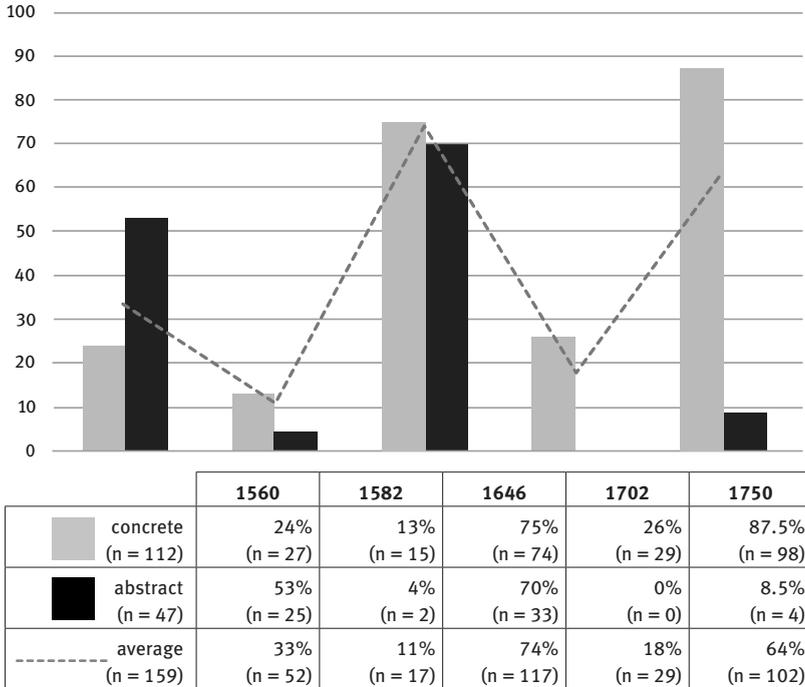


**Fig. 6:** Capitalisation patterns for concrete versus abstract nouns in the editions of the *Deux-Aesbijbel* (in %)

Similar pictures emerge for each of the three bible versions and their subsequent editions. In the case of the **Deux-Aesbijbel**, the capitalisation rate almost triples within only 35 years, from 23.5% in 1562 to 59% in 1597, see Figure 6. Again, this massive increase in the usage of majuscules in concrete nouns, mainly those

denoting living beings, is predicted by the animacy principle (hypothesis 4). Thus, nouns referring to humans are now always capitalised (<Menschen, Man, Wif>), followed by animate (e.g. <Dieren, Vogelen>) and inanimate concrete entities (e.g. <Wateren, Zee>).

In the case of the **Biestkensbijbel**, the edition of 1646 averages 74% compared to the first edition from 1560 with 46%, whereas the editions from the 18th century tend to capitalise almost exclusively concrete nouns, see Figure 7.



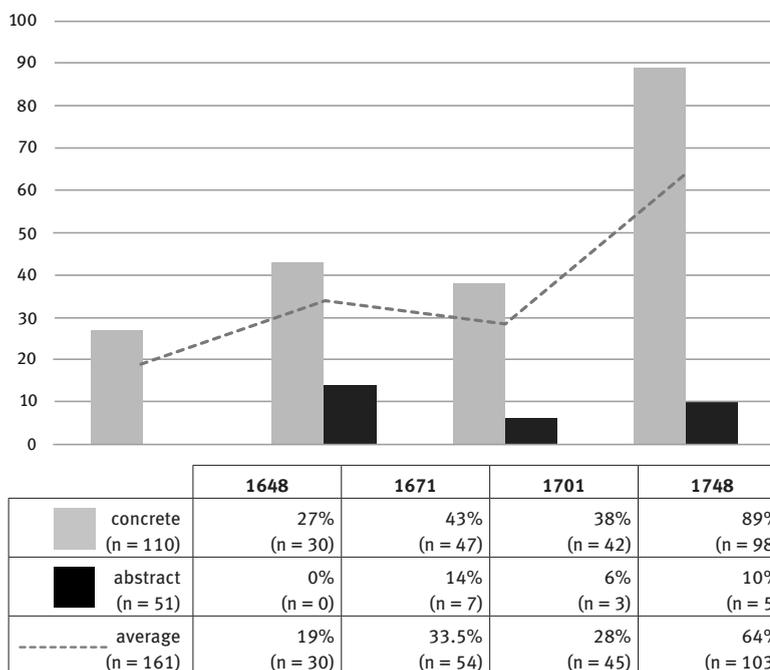
**Fig. 7:** Capitalisation patterns for concrete versus abstract nouns in the editions of the *Biestkensbijbel* (in %)

The general increase in capitalisation can on the one hand be attributed to a more consistent use of majuscules within nouns that had already been uppercased in 1560, mainly concrete ones such as <Menschen> ‘humankind’, <Boomen> ‘trees’, <Aerde> ‘earth’, and <Licht> ‘light’ as well as <Beeld> ‘image’, <Dach> ‘day’ and <Nacht> ‘night’ in the case of abstract nouns. On the other hand, uppercase letters are newly introduced in fifteen different types, among which there are almost exclusively concrete nouns: seven designating animate entities (<Dieren, Ghedi-

erte> ‘animals’, <Voghelen, Ghevogelte> ‘birds’, <Visschen> ‘fishes’, <Gras> ‘grass’, <Kruyt> ‘herb’), and five referring to non-animate objects (<Water> ‘water’, <Duysternis> ‘darkness’, <Firmament> ‘void’, <Zaet> ‘seed’, <Zee> ‘sea’). In the case of the two abstract nouns *tekenen* ‘signs’ and *tijden* ‘seasons’, the introduction of capital letters may be attributed to the context in which they appear: Together with *dagen* ‘days’ and *jaren* ‘years’ they are part of a noun series that emphasises the function of the lights, i.e. the heavenly bodies (e.g. the Sun, Moon etc.) created by God to separate day from night, and also to be signs for seasons, days, and years (cf. Genesis 1:14):

1560: Daer worden lichten aen dat firmament des **Hemels**/ende  
scheyden dach ende nacht/ende zijn  
tot teeckenen/tijden/daghen ende **Jaren**.

1646: Daer worden **Lichten** aen dat **Firmament** des **Hemels**/en=  
de scheyden **Dach** ende **Nacht**/ende zijn tot  
**Teeckenen/Tijden/Daghen** ende **Jaren**.



**Fig. 8:** Capitalisation patterns for concrete versus abstract nouns in the editions of the Lutherse Bijbel (in %)

The tendency to almost exclusively capitalise concrete nouns is also attested in the editions of the Lutherse Vertaling, see Figure 8. Whereas the use of majuscules is still pragmatically driven in the first edition from 1648 (see section 3.3.1), word initial capital letters are more frequently used in the subsequent editions. Within concrete nouns, majuscules are most consistently applied in words denoting living beings as opposed to inanimate ones, once again confirming the animacy principle of hypothesis (4) (e.g. <plaetsen> ‘places’, <drooge> ‘the dry’ vs. <Menschen> ‘mankind’, <Man> ‘man’, <Vrouw> ‘woman’, <Vee> ‘livestock’, <Dieren> ‘animals’, <Visschen> ‘fishes’ etc.).

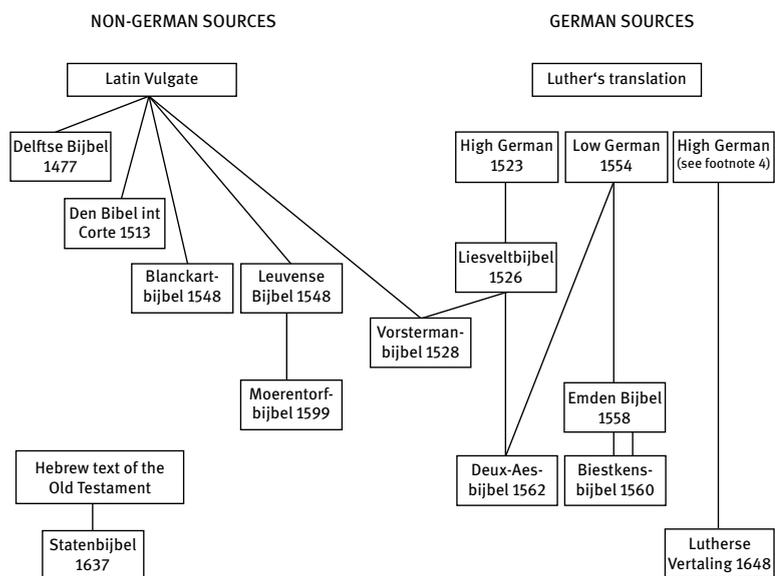
### 3.4 The influence of the source-text

The remaining question is whether the sentence-internal capitalisation practice documented for Dutch bibles can also be attributed to the influence of German printers introducing their capitalisation conventions into Dutch, as assumed by Maas (1995, 2007). This influence is – of course – difficult to operationalise. Thus, relying on the distinction between Dutch bibles with a German textual basis as opposed to those with a non-German source text to test Maas’ assumption can only be a first tentative approximation based on the hypothesis that higher capitalisation levels are to be expected in Dutch editions with a German textual basis as opposed to those which relied upon a non-German source text, be it the Latin Vulgate by Hieronymus or the Hebrew version of the Old Testament. The ratio behind this assumption is the following: It seems reasonable that Dutch printers may have adopted the capitalisation usage found in the German source texts in order to provide an accurate reproduction of the original.

Figure 9 arranges the bible editions according to their source text with bible translations based on a non-German source on the left (e.g. the Delftse Bijbel 1477; the Statenbijbel 1637) and those with a German one on the right (e.g. the Lutherse Vertaling 1648). Dutch translations that partially relied on a German translation of Luther’s Bible were also assigned to the second group (e.g. the Emden Bijbel 1558). The Biblia Pentapla (1711) represents a special case in so far as it is a polyglot edition in the widest sense, comprising the Dutch official version by the Staten-Generaal 1637, i.e. the translation of the Statenbijbel, plus four versions of the text in German – a Roman-Catholic one translated by Caspar Ulenberg, Martin Luther’s translation, Johann Piscator’s Reformed bible version, and a Hebrew-German (i.e. Yiddish) version (it is therefore excluded from Figure 9).

As shown in sections 3.2 and 3.3, sentence-internal majuscules are missing completely in the earliest printed Dutch bible from the late 15th century, and even until the middle of the 16th century, they are sparingly used except in pragmatically

driven but still isolated cases, irrespective of their source-text. On the one hand, this may be attributed to the fact that most of these early vernacular bible prints were based on the Latin Vulgate, which lacked word initial majuscules as well (compare, for instance, the edition of the Latin Vulgate in the Gutenberg-Bible from the middle of the 15th century).<sup>8</sup> On the other hand, we must keep in mind that the earliest Luther translation of the Old Testament issued in 1523, which served as textual basis for the Liestveltbijbel (1526), sparingly uses word initial majuscules with the exception of ‘God’ (see section 3.3). It thus seems plausible to assume that Van Liesvelt only consequently adopted sentence-internal capitals in the case of *God(t)*.



**Fig. 9:** The textual bases of the Dutch bible translations

An increasing use of uppercased nouns indeed appears for the first time in a bible edition that partially relied upon a German source: the Emden Bijbel 1558, which revised the text of the Liesveltbijbel (1526) by adapting the Low German edition of Luther’s Bible printed in Magdeburg in 1554. Similar capitalisation rates are also attested in the Biestkensbijbel (1560), which – in turn – reflects a revised version of the Emden Bijbel (1558) (see also Table 4). Interestingly, a synoptic comparison

<sup>8</sup> A digital copy of Genesis 1 is online available: [https://upload.wikimedia.org/wikipedia/commons/5/56/Gutenberg\\_Bible\\_B42\\_Genesis.JPG](https://upload.wikimedia.org/wikipedia/commons/5/56/Gutenberg_Bible_B42_Genesis.JPG) (last accessed: 28-2-2018).

of Genesis 1 reveals that neither the Emden Bijbel nor the Biestkensbijbel adopted the capitalisation practice found in Luther's Low German edition from 1554 on a one-to-one basis, suggesting that the Dutch printers themselves must be regarded as intervening variable in the overall process. This is exemplarily shown in the excerpt from Genesis 1 under (4) [boldface by J.N.]: Hence, despite the parallel use of majuscules and minuscules as in <Lycht> – <Licht>, <Auende> – <Auont>, <duesternisse> – <duysternisse> (underlined in (4)), there are also clear differences as shown by the boldfaced words:

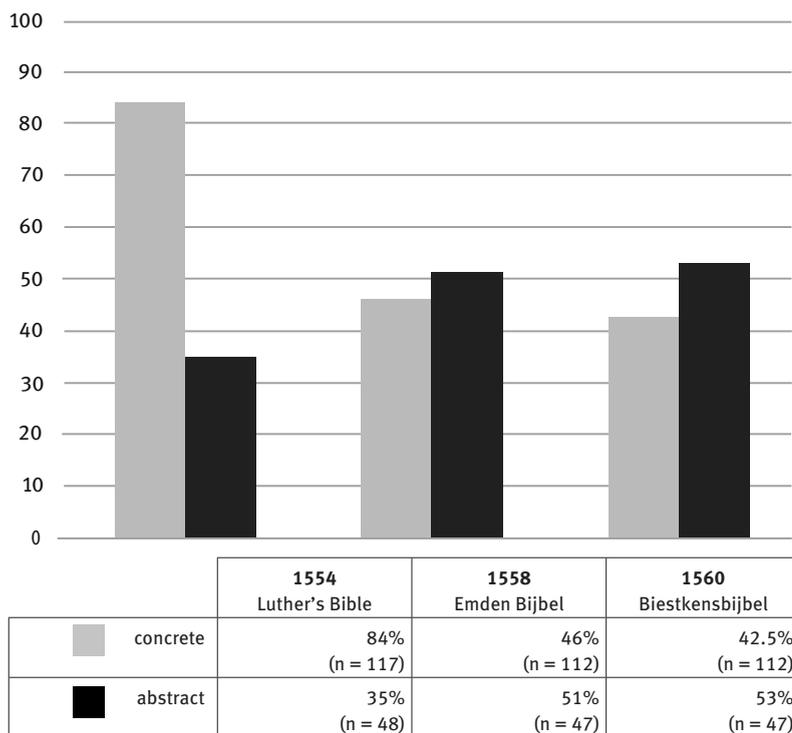
(4) Luther-Bible 1554 (Low German)	Emden Bijbel 1558
vnd ydt was duester up der <b>Duepe</b> /Vnd	en=de het was duyster op der <b>diepte</b> /ende
de <b>geist</b> <u>Gades</u> sweuede up dem <u>water</u> .	de <b>Gheest</b> <u>Gods</u> sweef=de op den <u>watere</u> .
[...]	[...]
Vnd ydt wart <b>lycht</b> /	En[de] het wert <b>Licht</b> .
[...]	[...]
Do scheidede <u>Godt</u> dat <u>Lycht</u>	Doe[n] schiet <u>Godt</u> dat <u>Licht</u>
van der <b>Dussternisse</b> /vnde noemed dat	va[n]der <b>duysternisse</b> /Ende noem=de dat
<u>Lycht</u> <b>dach</b> /vnd de <u>duesternisse</u> / <b>nacht</b> .	Licht/ <b>Dach</b> /en[de] de <u>duysternisse</u> / <b>Nacht</b> .
Do wart vth <u>Auende</u> vnde <b>morgen</b> /de	Doen wert wt <u>Auont</u> en[de] <b>Morgen</b> /den
<b>Erste</b> <u>dach</u> .	<b>eer=sten</b> <u>dach</u> .

On the one hand, in 12% of the cases capital letters are used in the Emden Bijbel (1558) for nouns which are not capitalised in the Low German version (e.g. 'spirit', 'light', 'day', 'night', 'morning'), and on the other, nouns that feature majuscules in the German text are lowercased in the Dutch print in 34% of the cases (e.g. 'depth', 'darkness'), see also Table 5, which summarises the total distribution of matches and mismatches in the use of sentence-internal majuscules in common nouns between Luther's Low German edition from 1554 and the Emden Bijbel 1558, resp. the Biestkensbijbel 1560.

**Table 5:** Convergences and divergences in the capitalisation practice between Luther's Bible (1554) and its Dutch counterparts

Luther 1554	Emden Bijbel		Biestkensbijbel 1560	
	majuscules	miniscules	majuscules	miniscules
majuscules	34% (n = 56)	34% (n = 56)	33% (n = 53)	36% (n = 59)
miniscules	12% (n = 19)	20% (n = 32)	12% (n = 20)	19% (n = 31)

Whereas both Dutch translations exhibit significantly (Fisher's Exact Test:  $p < .001$ ) lower capitalisation ratios than their Low German source-text from 1554 (46%, resp. 45% vs. 84%), they score higher capitalisations levels in the case of abstract nouns: 51%, resp. 53% vs. 35%, see Figure 10:



**Fig. 10:** Capitalisation patterns in concrete versus abstract nouns in Luther's Bible (1554) compared to the Emden Bijbel (1558) and the Biestkensbijbel (1560) (in %)

Difficult to assess in this context are the results of the Deux-Aesbijbel from 1562 and its revised versions from 1579, 1597, and 1633, which score capitalisation levels between 23.5% and 59% (see also Figure 7). Some researchers classify its Old Testament translation from 1562 as dependent on Liesvelt's edition (cf. Brandt 1952: 12, van der Sijs/Beelen 2009), whereas others claim that Luther's Low German version from 1554 (Magdeburg) was additionally consulted by the translator Godfried van Winghe (cf. Vogel 1958: 133; den Besten 2016: 113). In the first case, the increased use of majuscules in common nouns would not be attributable to the direct source (the Liesveltbijbel lacks them completely) but either to the translator and/or the

printer. If, however, Luther's Low German version served as textual basis as well, then the introduction of sentence-internal majuscules can indeed be – at least partially – influenced by the capitalisation practice in the Low German source.

Against this background, the low capitalisation levels in common nouns scored by the first edition of the *Lutherse Vertaling* in 1648 are rather surprising, since its High German basis<sup>9</sup> exhibits significantly higher capitalisation ratios: 19% vs. 82% (see also section 3.3). Even the *Statenbijbel* (1637) printed approximately at the same time features higher capitalisation levels (c. 27%), although it clearly reflects a translation based on the original Hebrew source-text lacking any uppercased common nouns. This suggests that Dutch printers did not blindly follow the German capitalisation conventions.

In this context, it is particularly interesting to take a closer look at the Dutch text printed together with four German versions of the bible in the *Biblia Pentapla* (1711). Although the Dutch translation is stated to represent the translation of the *Statenvertaling* (1637), the capitalisation practice fully corresponds to the conventions found for German translations with each head of a noun phrase being capitalised. This is the only Dutch bible translation with a 100% capitalisation ratio. In this case, the introduction of word initial majuscules may well be attributed to the influence of German printers, since the *Biblia Pentapla* was issued in Germany (Wansbek, near Hamburg) by a German printer (Hermann Heinrich Holle).

In sum, German printers' influence on the capitalisation practice in Dutch bible prints cannot be neglected at all, but it should be kept in mind that in most of the cases, Dutch printers did not follow the German original text and capitalisation conventions on a one-to-one basis. Further studies are needed to find out whether and to what extent the use of word initial majuscules, once initiated by the German printing habits, took on a dynamic of its own among Dutch printers, who – in turn – (may have) developed capitalisation conventions of their own. In the case of Dutch bible prints, such a scenario becomes rudimentarily tangible. Yet, the mere existence of a capitalisation practice in bibles does not mean that they were widely used in other printed texts. Again, further studies will be needed to provide a comprehensive picture of the capitalisation practice in Dutch.

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<sup>9</sup> It is not clear from the title page and the foreword which High German version of Luther's Bible was used, compare the subheading on the title page: "Van nieuws uijt D. M. Luthers Hoogh-Duijtsche Bibel in onse Neder-landsche tale getrouwelijck over-geset" 'Newly [and] faithfully translated from D. M. Luther's High German Bible into our Dutch language'. Given the fact Luther's High German editions of the bible exhibited capitalisation scores higher than 80% since the print from 1545, we can assume that the underlying version for the Dutch translation exhibited at least similar or even higher capitalisation levels.

## 4 Conclusion

The analysis of Dutch bibles printed between 1450 and 1750 has clearly shown that Dutch once exhibited a sentence-internal capitalisation tendency, which, however, varied tremendously throughout the whole period depending on external factors such as the year of publication and the textual basis of the translation. Thus, the earliest bible prints from the late 15th century and the first quarter of the 16th century lack word initial majuscules (almost) completely, whereas the editions from the second quarter of the 16th century onwards slowly introduce uppercase letters for nouns, mainly as reverence markers in the case of *God* and other religious concepts or as emphatic signals for single words of special significance to the context. Hence, Dutch capitalisation practice is initially pragmatically driven as assumed under hypothesis 3, thus paralleling the early developments of German and English capitalisation practice (see sections 2.1 and 3.3.1). Moreover, the use of word initial majuscules in Dutch bibles proves to be as highly sensitive to the noun category as in German and English (thus confirming hypothesis 1; see sections 2.1 and 3.1).

Within the noun category, capital letters are first conventionalised as expected under hypothesis 2 in proper nouns around the first quarter of the 16th century, and later in *nomina sacra* circa fifty years later (see section 3.2), while a semantically driven capitalisation practice in common nouns with majuscules spreading from concrete to abstract nouns does not become tangible earlier than the second half of the 16th century (and in some instances, the influence of pragmatic factors cannot be entirely excluded, see section 3.3). Though the spread of word initial majuscules in common nouns partially conforms to the animacy scale as attested for German and for English, lexemes designating non-human animate entities do not always show a significantly higher affinity for majuscules than their inanimate concrete counterparts (see section 3.3.2). Hence, hypothesis 4 is confirmed to a great extent.

As has been shown in section 3.4, German capitalisation practice probably exerted some influence on the use of word initial majuscules in Dutch bibles, as assumed by Maas (1995, 2007). However, it must be pointed out that Dutch printers did not adapt the capitalisation conventions of the German source-text on a one-to-one basis. Rather, Dutch printers appear to have temporarily established a capitalisation practice of their own with a clear preference to uppercase concrete nouns during the 17th and 18th centuries, a tendency that strikingly differs from the development attested in German (and English).

Finally, the abandonment of sentence-internal capitalisation in Dutch spelling was on the one hand attributed to the tremendous inconsistency of the overall development in Dutch capitalisation practice, which had never been characterised

by a steady increase of majuscules at any time. On the other hand, the Statenbijbel, which had a great impact on the standardisation of Dutch language and spelling, was the first bible translation to consequently ban uppercased common nouns from its printed editions since the second half of the 17th century.

Since this study was restricted to the analysis of bibles, the results cannot be easily generalised to other text sorts. Further research on this phenomenon is needed, which uses the present findings as a starting point but which widens the focus of the analysis, inter alia, on the influence syntactic factors such as NP complexity.

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- Biestkensbijbel 1582 = Den Bibel, Inhoudende dat Oude ende Nieuwe Testament. Haerlinghen: Peter van Putte [Pseudonym for Peter Hendricksz van Campen].
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- Biestkensbijbel 1702 = Biblia: dat is, De gantsche H. Schriftuere. Amsterdam: Jaques Lindenberg.
- Biestkensbijbel 1750 = Biblia: dat is, De geheele H. Schrift. Amsterdam: Johannes Erasmus Hynitzsch.
- Bijbel int Corte 1513 = Dat eerste capittel hoe God hemel ende eerde sciep met al datter in is. Antwerp: Claes de Grave/Thomas van der Noot.
- Blanckartbijbel 1548 = Die Bibel, wederom met groeter nersticheit oversien ende gecorrigeert, meer dan in ses hondert plaetzen, ende Collacioneert met den ouden Latinschen, ongefalsten Biblien. Duer B. Alexander Blanckart. Cologne: Jaspar von Gennep.
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- Deux-Aesbijbel 1562 = Biblia, dat is die gantsche Heylighe Schrift. Emden: Gillis van der Erven.
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- Deux-Aesbijbel 1633 = Biblia: dat is, De gantsche Heylighe Schrift. (n.p.): Jan Evertsz Cloppenburgh.

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- Leuvense Bijbel 1548 = Den gheheelen Bybel, Inhoudende het oude ende uieuwe Testament, Gedruct in die vermaerde Uniuersiteyt ende stadt van Loeuen, by my Bartholomeus van Graue, ghesworen boeckdrucker.
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- Luther-Bible 1545 = Martin Luther: Biblia. Das ist: Die gantze Heilige Schrifft: Deudsch Auff's new zugericht. Wittenberg: Hans Lufft.
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- Lutherse vertaling 1748 = Biblia, dat is De geheele H. Schrift, behelzende alle de boeken des Ouden en Nieuwen Testaments. Amsterdam: Samuel Schoonwald.
- Moerentorfbijbel 1599 = Biblia sacra dat is de geheele heylighe schrifture bedeylt int Oudt ende Nieu testament: verbeterd door sommighe doctoren inder heyligher Godtheyt inde vermaerde universiteyt van Loven. Antwerp: Jan I. Moretus/Jan van Keerberghen.
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- Statenbijbel 1747 = Biblia: dat is De gantsche H. Schrifture, Utrecht/Leiden/Rotterdam.
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# Middle High German and modern Flemish s-retraction in /rs/-clusters

**Abstract:** Late medieval High German experienced a systematic sound shift, although not consistently reflected in modern standard German, which transformed /rs/ into /rʃ/. It is argued that this sound shift must be analysed phonetically as a perseverative tongue shape and place of articulation assimilation from [rs] to an apical retracted alveolar [rʃ], followed by the phonological reanalysis of a perceptually ambiguous [rʃ] as /rʃ/. This analysis implies the hypothesis that only alveolar rhotics can trigger s-retraction in /rs/, not uvular rhotics. Approximately seven hundred years after the MHG s-retraction, a similar sound shift occurs in Flemish varieties of standard Dutch. A pilot study with Flemish speakers confirms that the motivation for s-retraction in /rs/ must be attributed to an alveolar /r/. Further typological inquiries into the historical phoneme inventories of English, Dutch and German varieties, reinforced by the comparison with other (non-)Germanic languages, also confirm this hypothesis.

**Zusammenfassung:** Im Mittelhochdeutschen trat eine Lautverschiebung auf, bei der /rs/ zu /rʃ/ wurde, obwohl sie nicht konsequent im modernen Hochdeutschen widerspiegelt ist. Es wird postuliert, dass diese Lautverschiebung phonetisch als eine progressive Zungenform- und Artikulationsortassimilation von [rs] zu einem apikalen retrahierten alveolaren [rʃ] zu verstehen ist, wonach ein perzeptuell zweideutiges [rʃ] als /rʃ/ reanalysiert wurde. Diese Analyse bringt die Hypothese mit sich, dass nur ein alveolares /r/ s-Retraktion in /rs/ verursachen kann, nicht aber ein uvulares /R/. Etwa siebenhundert Jahre nach der mhd. s-Retraktion tritt offensichtlich die gleiche Lautverschiebung in flämischen Umgangssprachen auf. Eine Pilotstudie mit Flämischsprachigen bestätigt, dass die Motivierung für s-Retraktion in /rs/ einem alveolarem /r/ zuzuschreiben ist. Weitere typologische Beobachtungen über die historischen Lautinventare des Englischen, Niederländischen und Deutschen, vom Vergleich mit anderen (nicht-)germanischen Sprachen ergänzt, bekräftigen diese Hypothese.

## 1 Introduction

The study of sound shift, to be most accurate and reliable, should be equally based upon three pillars: phonological theory, phonetic observations and typological

evidence. The risk of doing phonetics without phonology is that of missing the system-related reasons behind a specific observation, whilst the risk of doing phonology without phonetics is that of losing consideration of the practical articulatory reasons which motivate and condition a certain pattern. Finally, typology allows to verify phonetic observations and phonological generalisations inside the larger frame of natural languages.<sup>1</sup>

Furthermore, a well-balanced study needs not only to rely on diachronic, but also on synchronic comparison, since “no linguistic state of affairs can have been the case only in the past” (Lass 1997: 28). Synchronic evidence (in this case, from regional Flemish standard Dutch) sheds light on similar diachronic developments which are too old to have been studied in real time (in this case, Middle High German *s*-retraction in /rs/).

This paper will thus not only analyse the sound shift from /rs/ to /rʃ/ in West Germanic languages from a synchronic and diachronic perspective, but also illustrate more generally how phonology, phonetics and typology can (and should) work altogether to understand a specific development in natural languages. I first show that *s*-retraction in /rs/-clusters, at a phonetic articulatory level, is only triggered by alveolar rhotics, due to the shape and placement of the tongue; then, that at a phonological perceptual level, it consists of the reassignment of the resulting phonetic output [s̠]<sup>2</sup> to a more posterior phoneme category, due to acoustic closeness to that category; and I conclude with typological data which supports this.

In the next section (2.1), I describe two similar and independent processes of *s*-retraction in the consonant cluster /rs/: one which spread through late medieval Germany, and one which is active in modern Flemish standard Dutch. I then present in 2.2 the existing literature dealing with this sound shift and formulate in section 2.3 a hypothesis which accounts better for the empirical observations made in 2.1.

Section 3 contains a theoretical phonetic analysis of this sound shift as a perseverative tongue shape and place of articulation assimilation. On the phonological side, I show how the phonetic output is reattributed to a more posterior sibilant phoneme category.

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2 The IPA notation [s̠] (with a minus sign indicating retractedness) stands for a voiceless retracted alveolar sibilant. The additional subscript ◌̠ indicates apicality.

In section 4, I focus on the diachronic and synchronic rhotic and sibilant inventories of English, German, Frisian and Dutch to demonstrate the hypothesis of this paper by means of cross-linguistic comparison, supported by an acoustic study of Flemish Dutch.

In section 5, I present additional typological data from other languages which have or have had a similar sound shift, including e.g. Afrikaans and Basque. I then conclude with some remarks on the conservative sibilant inventories of Dutch, Frisian and Low German, compared to English and High German innovations.

## 2 Problem description and hypothesis

### 2.1 Two West Germanic processes of *s*-retraction in /rs/

Starting around the fourteenth century (Hall 2008: 231f.), High German dialects experienced a systematic sound shift from /rs/ to /rʃ/, which reached approximately the border with Low German dialects without spreading further northwards. This change is reflected, although not systematically, in modern standard German. Examples of this are (adapted from Hall 2008: 231, quoting Russ 1982: 77, 1978: 81):

- (1) a. MHG *ki[r̥s̥]e* > NHG *Ki[rʃ]e*      *Kirsche* “cherry”  
 b. MHG *hi[r̥s̥]* > NHG *Hi[rʃ]*      *Hirsch* “stag”  
 c. MHG *ve[r̥s̥]* > NHG *Ve[rʃ]*      *Vers* “verse”

As a) and b) illustrate, this sound shift affected /s/ both from an original Old High German \*/s/ (compare Dutch *kers*) and from the deaffrication of the result of the OHG consonant shift \*/t/ > /t(s)/ (compare Dutch *hert*). Example c) shows that not all standard German words were affected, something which is motivated by the historical process of heterogeneous variant selection in written standard German.<sup>3</sup>

Contrary to most modern German varieties, some German dialects still had *s*-retraction in /rs/ as a productive rule in recent times, for example the Swiss dialect from Jaun (adapted from Hall 2008: 232, quoting Stucki 1917):

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<sup>3</sup> Standard German, originally only a written language, is predominantly based on High German but also has Low German loanwords, compare e.g. the doublets *Wappen* “coat of arms” – *Waffen* “weapons”. *Vers* in 1c) can thus have been loaned from or influenced by varieties without *s*-retraction (compare French *vers*, Italian *verso*).

- (2) a. Ferse [fœ:rʃəna] “heel”  
 b. ein sauber-es [əssu:fərʃ] “a clean (one)”  
 c. gib mir (e)s [gimərʃ] “give it to me”

As b) and c) show, the rule is not only productive inside single morphemes, but also across morpheme and word boundaries respectively. When functioning productively, *s*-retraction in /rʃ/ seems to operate independently from morpheme and word boundaries, as long as /r/ is immediately followed by /s/. This is not the case in modern standard German, where it doesn't work across morpheme or word boundaries (compare e.g. *warst* [va:(ʁ)st] “you were”, not [va:(ʁ)t]; *wieder so* [vi.də(ʁ).zo] “again so”, not [vi.də(ʁ).zo] in the IDS database of spoken German, DGD: FOLK\_E\_00288). It can be concluded that the standard German words with /rʃ/ from /rs/ in fact contain “fossilised” traces of a once-active rule, something which is confirmed by its absence in newer loanwords (e.g. *Star Wars* [sta:ʁ.wɔ(ʁ)s], DGD: FOLK\_E\_00288).

This raises the following question: why did the MHG *s*-retraction in /rs/ continue to work in certain dialects, but stopped functioning in others and in modern standard German? Another question, raised by Hall (2008: 214) and more generally known as the *actuation problem* (Weinreich/Labov/Herzog 1968: 102), is: Why did only Middle High German experience this change, and not Middle Low German or Old High German? In this paper, I give answers to both questions, showing 1) that the phonetic properties of both /r/ and /s/ allow or impede *s*-retraction in /rs/, something which explains why it was maintained as a productive rule only in certain German dialects, and 2) that this sound shift was hindered in Low German, Frisian and Dutch because of their conservative sibilant inventories as compared to High German and English.

Seven hundred years after the hypothesised start of MHG *s*-retraction in /rs/, evidence from an own study on Flemish Dutch (Kokkelmans 2017) shows that the same rule is active in certain Flemish varieties, in which /s/ after /r/ has significantly different phonetic characteristics from [s], being much more [ʃ]-like. More precisely, phonetic measurements yield acoustic values halfway between those of [s] and [ʃ] (Kokkelmans 2017: 35f.), closest to those of a retracted alveolar [s̠].

In the regional Flemish standard Dutch varieties which have *s*-retraction in /rs/, it is observed to occur inside words as well as across morpheme or word boundaries, as demonstrated by the informant named *Alveolar4* in the study (Kokkelmans 2017):

- (3) a. *Uw pe[rʃ]oonlijke mening*  
 “your personal opinion”

- b. *Ande[rz]ijds* (= *ander* + *zijd*- + *-s*)  
 “on the other hand”
- c. *Dat er daa[r] [z]ogezegd*  
 “(...) that there, so to say (...)”

Example b) and c) show that in voiced contexts (with underlying /z/), the result of the sound shift is [z]. In these Flemish varieties, the /r/ is still phonetically realised, meaning that [s] and [z] are contextual allophones of /s/ and /z/ after /r/, but in other varieties (e.g. East Limburgish, see 3.2), the /r/ has been vocalised or dropped. Despite r-loss, listeners can often reconstruct the pattern as /r/ + /s, z/ thanks to grammatical and lexical paradigms (e.g. *Noors* [no:s] “Norwegian” vs. *Noorwegen* [no:r.we.xə] “Norway”).

The fact that the informant uses alveolar [r] as the phonetic realisation of /r/ is of crucial importance for this study, since I claim that only an alveolar /r/ allows s-retraction in /rs/ to start working as a productive rule. In fact, it has been claimed in the literature that the motivations of this sound shift are independent from the phonetic properties of /r/ and /s/, something which shall be refuted in this paper.

## 2.2 Existing literature about s-retraction in /rs/

Hall (2008: 215) describes the MHG shift from /rs/ to /rʃ/ as “a sound change that has perplexed generations of Germanicists”. According to him, “there has been a tradition in the literature of either simply describing [s-retraction in /rs/, JK] without explaining [it] or of proposing a superficial explanation that does not stand up under closer scrutiny”. He rightly recognises the lack of a comprehensive study to understand the motivations of this sound shift, since most mentions of s-retraction in /rs/ in various languages (e.g. Eliasson 2000; Ewald 2015; Pedersen 1895; Schmitt 2015; Torp 2001) are exclusively descriptive and do not formulate any hypothesis to explain it. Furthermore, I found no mention of the Flemish s-retraction in /rs/ in the literature, despite its contemporaneity making it especially relevant to understand this sound shift.

To explain why this change happened in MHG and not in OHG or Low German, Hall (2008) proposes a phonological analysis based on the distinctiveness of the feature [high] (which distinguishes /j/ from /s/) as the key in understanding what he considers as a height dissimilation. I will argue instead for a place and tongue shape assimilation from [(dento-)alveolar] and [laminal/apical] (features of [s])

to [retracted alveolar] and [apical] (features of [r/r]<sup>4</sup> and [s]). This analysis as an assimilation of the *alveolar* place of articulation implies the hypothesis that *s*-retraction in /rs/ only arises in languages in which /r/ is realised as an *alveolar* /r/. This contradicts Hall's (2008: 233) statement that the exact (place of) articulation of these sounds doesn't provide the explanation for the sound shift, and his assumption that it can also be triggered by a uvular /R/:

One might hypothesize that the precise articulation of /r/ provides a clue, but I contend that the surface phonetic facts are not important for an understanding of the [rs] > [r] change. Consider the fact that there are dialects like the one spoken in Jaun in which the change takes place after an apical /r/, but that there are also dialects in which the change occurs after a uvular /R/ [...]. It needs to be stressed that it is the phonology of /r/ and /s/ [...] and not the phonetics of these segments which explains rs-Dissimilation. Fine-grained surface phonetic facts are not important for the analysis I propose [...].

Against the view that *s*-retraction in /rs/ is not motivated by phonetic properties, I will argue and show that “it is mainly the concrete, phonetic properties of speech sounds that trigger or allow changes to take place in the sound system, and determine their subsequent development” (Chen/Wang 1975: 278). Taking phonetics, phonology and typology into account, this paper proposes another explanation for *s*-retraction in /rs/, and by pointing at the similarities between MHG and contemporary Flemish, it will account better for its motivations and its (non-)occurrence in Germanic languages.

A similar sound shift, described amongst others by Stausland Johnsen (2012: 509ff.), is the Scandinavian retroflex assimilation which transforms [s] into a postalveolar retroflex [ʂ] after an alveolar [r] or a retroflex postalveolar flap [ɾ]. He demonstrates that there has been an intermediate step where an apical alveolar [r] transformed a laminal alveolar [s] into an apical alveolar [s̺], which corroborates the hypothesis of a tongue shape assimilation, whilst he doesn't make any distinction in place of articulation between [alveolar] and [retracted alveolar]. Retroflex assimilation can likewise be understood as triggered by a place of articulation and tongue shape assimilation, but it distinguishes itself from “non-retroflex” *s*-retraction in /rs/ to the extent that it applies to *all* alveolar consonants, including /t, d, n, l/, to yield /t̺, d̺, n̺, l̺/.

Stausland Johnsen (2012: 513–519) shows that although the vast majority of Norwegian and Swedish dialects either have alveolar /r/ and retroflexion or uvular /R/ and no retroflexion (i.e., retroflex assimilation and uvular /R/ seem to be

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<sup>4</sup> I consider the prototypical place of articulation of [r/r] in languages with only one alveolar rhotic phoneme to be [retracted alveolar] for reasons detailed in section 3.1.

mutually exclusive), two exceptions exist at the border between /r/ and /R/: the Frogner dialect had retroflexion and later innovated by replacing /r/ with /R/, whilst the Arendal dialect had /R/ and no retroflexion, and “adopted the retroflexion process from neighbouring dialects” (Stausland Johnsen 2012: 508). In both dialects, the sound shift is productive, also across morpheme and word boundaries. Stausland Johnsen (*ibid.*: 506) considers retroflexion in these varieties with /R/ to be an ‘unnatural’ process which “lacks any synchronic phonetic motivation”. He shows that although these varieties seem to speak against the hypothesis of this paper, they are the historical consequence of intense language contact between varieties with /R/ and varieties which still today have productive retroflexion. That *s*-retraction in /rs/ can be learned as a productive rule even when its phonetic motivation is absent does not contradict the hypothesis that the phonetic motivation for *s*-retraction lies in the assimilatory effect of an alveolar /r/ on a following /s/; it rather shows that language contact and historical developments can make *s*-retraction in /rs/ synchronically unmotivated, yet still learnable.

### 2.3 Hypothesis

From a theoretical perspective, *s*-retraction in /rs/ is posited to be a phonetic assimilation of place of articulation and tongue position which generates the output [r̠s], and a subsequent phonological reanalysis of this phonetic output as a more posterior phoneme category. The hypothesis of this paper can be summarised as follows:

- From a phonetic perspective, *s*-retraction in /rs/ is a perseverative assimilation of the [apical] tongue shape and [retracted alveolar] place of articulation of [r/r]<sup>5</sup> to a following [(dento-)alveolar] and [laminal/apical]<sup>6</sup> [s], which yields an [apical] [retracted alveolar] [r̠s].
- From a phonological perspective, *s*-retraction in /rs/ is the allocation of this [r̠s] in the phonetic output [r̠s] to a more posterior phoneme category than its original category. To be phonological, *s*-retraction necessarily implies a change

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5 Since the difference between the alveolar trill [r] and the alveolar tap/flap [ɾ] plays no distinctive role in this paper, [r] will hereafter refer to both [r] and [ɾ] for economical purposes. The approximants [ɹ/ɻ], hereafter likewise written [ɹ], could theoretically also trigger *s*-retraction in /rs/, but this question could not be addressed here due to a lack of data. The retroflex approximant [ɻ] can trigger retroflex assimilation (see section 4.1).

6 The initial tongue shape of [s] is not relevant here, since it becomes [apical] by means of the assimilation in any case. Dart (1991: 21, 26) shows that the pronunciation of (dento-)alveolar [s] in English and French freely varies between laminal and apical.

of phoneme category, e.g. from /rs/ to /r̥s̥/, /r̥ʃ/ or /s̥/. In two-sibilant inventories with /s/ and /ʃ/, it consists more precisely of the reanalysis of a perceptually ambiguous phonetic output [r̥ʃ] as an underlying /r̥ʃ/ instead of /rs/.

- From a typological perspective, *s*-retraction in /rs/ is a sound shift which occurs, phonetically, in languages with a retracted alveolar [r̥] and a (dento-) alveolar [s] in /rs/-clusters, and phonologically, in languages which have a phoneme /s/ [s] and at least another more posterior sibilant phoneme category.

## 3 Phonetic and phonological motivations for *s*-retraction in /rs/

### 3.1 Phonetic articulatory theory

In this section, I explain why I consider the prototypical place of articulation of alveolar /r/ and /s/ in languages with only one alveolar /r/ or /s/ respectively to be [retracted alveolar] (as evoked in footnote 4), by referring to literature about articulatory economy and auditory dispersion. I then detail the articulatory motivations for *s*-retraction in /rs/.

The consonants [r] and [s] are standardly described in the literature as *alveolar* sounds, along with e.g. /t, d, n, l/, seldom with very detailed descriptions of their precise articulation place (as e.g. dento-alveolar, alveolar, retracted alveolar or alveo-palatal). For example, [r] is described as a sound produced when “the tongue blade and tip move up to the *dental-alveolar-prepalatal* region” (Barry 1997: 36, my emphasis). The wide range of described places of articulation is due to the wide range of different productions of these sounds: according to Ladefoged/Maddieson (1996: 221), realisations of [r] “vary across speakers and languages in the location of the contact on the upper surface”. Boyce (2015: 261) shows for the English /r/ that “although many textbooks refer to /r/ as having an alveolar place of articulation, it is more accurate to say that it has a relatively undefined ‘palatal’ or ‘post-alveolar’ primary place of articulation”. This variation is explained by the phenomenon of *permissible variation*: “a category is allowed more auditory variation if it is alone on its auditory continuum than if it has neighbours from which it has to stay distinct” (Boersma/Hamann 2008: 222). This holds of course not only for perception, but also for production. For example, a speaker of a language with one single sibilant will be free to realise it as e.g. alveolar, retracted alveolar or palato-alveolar, but a speaker of a language with two sibilants will need to keep them apart (e.g. alveolar vs. palato-alveolar) in order to avoid con-

fusion. This is described as auditory dispersion in Boersma/Hamann (2008). However, at the same time, articulatory economy tends to favour realisations which require less tongue movements from its average or rest position (Boersma/Hamann 2008: 220f., 230; Shariatmadari 2006), such as retracted alveolar sibilants. Adams (1975: 290), Vijūnas (2010: 42) and Martinet (1955: 236f.) confirm typologically that languages with only one sibilant tend to have it realised as a retracted alveolar, with average (acoustic) *centre of gravity*-values<sup>7</sup> on a scale from front (dental [ʃ], highest COG) to back (postalveolar retroflex subapical [ʂ], lowest COG). Articulatory economy thus favours retracted alveolar rhotics and sibilants from an *absolute* point of view (i.e. considering the sound itself, independently from its phonetic or phonological environment). Languages with two sibilants, on the contrary, tend to have a dispersed contrast with [s] and [ʃ], pronounced far enough from each other – as (dento-)alveolar and palato-alveolar, respectively, with less permissible variation and strictly distinct centres of gravity. This also holds for coronal rhotics: Russian, for example, has a contrast between a palatalised dental trill [rʲ] and a postalveolar trill [r̠] (Ladefoged/Maddieson 1996: 221). This thus means that the place of articulation of coronal rhotics and sibilants will tend towards [retracted alveolar] when they are the sole phoneme of their class, and towards the extremities of their articulatory-auditory spectrum ([dento-)alveolar] and [postalveolar]) when they contrast in place of articulation with another coronal rhotic or sibilant respectively.<sup>8</sup>

Concerning the apical-laminal distinction, Ladefoged/Maddieson (ibid.: 218) explain that trill and tap/flap [r]'s are predominantly apical:

Trills are much more easily produced if the vibrating articulator has relatively small mass, hence the most common trills involve the tongue tip vibrating against a contact point in the dental/alveolar region [...]. In fact by far the most common type of trill is one involving the tongue tip.

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<sup>7</sup> The centre of gravity (COG) of a sound is obtained by “weighing the frequencies in the spectrum by their power densities” (Boersma/Hamann 2008: 229).

<sup>8</sup> When it comes to the statistical distribution of rhotics and sibilants in the languages of the world, a notable difference is found: amongst the languages which have at least one rhotic, it is most common (75.3%) for a language to have exactly one rhotic, whilst only 18.9% of all languages have more than one (Wiese 2011: 713, based on UPSID). In particular, own calculations in the UPSID yield that, of languages with coronal trills or tap/flaps, 89.8% have just one. In contrast, only 52.6% of the languages with sibilants have exactly one, with 41.7% of all languages having more than one (UPSID). One is thus overall very likely to find languages with a retracted alveolar rhotic, and relatively likely to find languages with a retracted alveolar rhotic *and* a (dento-)alveolar sibilant.

The only exception to this tendency known to Ladefoged/Maddieson (1996: 228) is the Czech fricative laminal alveolar <ř> /r̥/, which however contrasts with a trilled apical alveolar /r/. In a language with one [r], it is thus predicted to be [apical] and [retracted alveolar]; in a language with two coronal rhotics, there will be at least one [apical] of both, either [retracted alveolar] as in Czech or [postalveolar] as in Russian.

Regarding sibilants, concrete phonetic observations made by Dart (1991: 22, 29, 32) show that there is a correlation between the configuration of the tongue and the backness of /t, d, s, z, n, l/ in French and English: “the more apical the articulation, the farther back on the palate it is articulated” (Dart *ibid.*: 22). A striking exception to this tendency is however found in English apical /s/ and /z/, which are consequently articulated further forward. Dart (*ibid.*: 29) explains it as follows:

The explanation for this difference may lie in the fact, as stated by Catford (1977: 157), that the acoustic and aerodynamic differences between apical and laminal /s/ are more evident if they are alveolar than if they are dental. A retracted apical fricative opens up a large sublingual resonance cavity, which is characteristic of [ʃ] production and would presumably cause the /s/ to trespass on the acoustic space of this contrasting segment, an effect naturally to be avoided.

Dart (1991) and Catford (1977) thus make the crucial observation that /s/, which is (dento-)alveolar in well-dispersed inventories with two sibilants such as English, is prone to auditory misinterpretation as /ʃ/ when it is apical and (retracted) alveolar. This explains phonetically the tendency of [s̠] to be reanalysed as /ʃ/ (see next section). Stausland Johnsen (2012: 512), citing Anderson (1997), confirms independently that “there is an observed tendency for listeners [...] to asymmetrically misperceive apical alveolars as apical postalveolars”. Fronting the English apical /s/ to a dental place of articulation can be considered a strategy to prevent such a misperception.

As said above, articulatory economy favours retracted alveolar rhotics and sibilants from an absolute point of view. From a *relative* point of view (i.e. in a given environment, here “after a retracted alveolar [r]”), articulatory economy also favours [s] in [rs] to become [s̠], since it requires fewer movements of the tongue: instead of needing to move from [retracted alveolar] to [(dento-)alveolar] and (optionally) from [apical] to [laminal], the tongue keeps the same position and shape throughout the entire articulation of the cluster (i.e. [retracted alveolar], [apical]). Pragmatic evidence for this articulatory ease is the observation that both sounds can be pronounced simultaneously (sounding somewhat like the Czech fricative trill <ř> [r̥]), whilst [r] and [s] cannot.

### 3.2 Phonological perceptual theory

How [s̠], the output of phonetic *s*-retraction in /rs/, will be interpreted by the phonological system of a language depends on the sibilant inventory itself: how many sibilant phonemes (contrasting in place of articulation) it has, and to which mean phonetic realisation they correspond. A first prerequisite for phonological *s*-retraction in /rs/ is that there must be at least two phonetically distinct realisations, namely a (dento-)alveolar [s] and a retracted alveolar [s̠] after /r/. In one-sibilant inventories with a retracted alveolar [s̠] as prototypical realisation of /s/, *s*-retraction cannot occur because /s/ after /r/ is acoustically undistinguishable from another /s/, and no phonemic split or reanalysis as another phoneme can thus take place. A second prerequisite for phonological *s*-retraction in /rs/ is that /s/ after /r/ must be reassigned to a more posterior phoneme category, either by provoking a phonemic split or undergoing a reanalysis. In the first case, [s̠] becomes a phoneme of its own and contrasts with /s/, something which implies the loss of the conditioning context (i.e. *r*-loss).<sup>9</sup> If however [s̠] fails to establish itself as a new phoneme, it will be reallocated to the phoneme category whose mean phonetic realisation is perceptually closest to [s̠]. In a three-sibilant inventory, this will be the middle phoneme category (e.g. /s/ [s̠] for Basque). In a two-sibilant inventory with a well-dispersed /s/-/ʃ/-contrast, the phonetic output [s̠] is prone to reanalysis as /ʃ/, as explained above by Dart (1991: 29) and confirmed typologically by Adams (1975) and Kwakkel (2008: 4). This is precisely what happened in Middle High German. The phonological motivation for *s*-retraction in /rs/ is thus the fact that [s̠] is perceptually biased towards being perceived as a more posterior phoneme category than its original category, and is therefore reallocated to that category.

## 4 Typological comparison of West Germanic sibilant and rhotic inventories

This section compares the phonetic realisations of the phonemes /r/, /s/ and /ʃ/ in West Germanic varieties, from a diachronic and synchronic perspective. Whilst these languages all have /r/ as a phoneme, they mainly differ in having either a

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<sup>9</sup> No clear-cut example of this is known to me for the *s*-retraction described here, but it occurred as a result of the Swedish retroflex assimilation (see section 5), where /s̠/ did not merge with what is now /ç/ and /ʃ/; and it could be the case for Afrikaans (Ewald 2015: 38), where /r/ before [s̠] “is almost inaudible” and [s̠] thus almost phonemic.

sole /s/ (in Dutch, Frisian and Low German) or in having a contrast between (dento-)alveolar /s/ and postalveolar /ʃ/ (in English and German). The West Germanic varieties described here have in total three different sibilants and three main realisations of /r/, as depicted in table I (NB: regardless of voicing).

**Table 1:** Attested combinations of rhotic consonants and sibilants in phonetic inventories of West Germanic languages

	Retracted alveolar [s]	(Dento-)Alveolar [s]	Postalveolar [ʃ]
Alveolar trill [r] or tap/flap [ɾ]	Some Netherlandic Dutch varieties	Some Flemish varieties	
			Scottish English, Middle High German, some southern German varieties
Uvular trill [ʀ] or fricative [ʁ]	Some Netherlandic Dutch varieties	Some Flemish varieties	
			Dutch Limburgish, modern standard German
Alveolar or retroflex approximant [ɹ] or [ɻ]	Some Netherlandic Dutch varieties	Standard English	

In the original Proto-Germanic sibilant inventory, there was most probably one /s/, for all modern occurrences of /ʃ/ not found in loanwords result from consonant mutations and correspond to original Germanic clusters (e.g. /sk/, /sj/). Considering the observation made in 2.1 that one-sibilant inventories tend to have a retracted sibilant, this sole /s/ must have been realised as [s], exactly as the modern pronunciation in the more conservative Germanic daughter languages (e.g. Icelandic, see Vijūnas 2010: 45).

The original phonetic realisation of /r/ is rather controversial in the literature, but considering the occurrence of [r] in Germanic languages which have been less exposed to direct or indirect French-speaking influence, it most probably corresponds to the original PG \*/r/ (see Trautmann (1880) and Chambers/Trudgill (1998), who consider the uvular /R/ a French innovation).

The following sections describe, for three groups of West Germanic varieties (English, High German and Dutch/Frisian/Middle Low German), first the development of /s/ and /ʃ/, then the development of /r/, and subsequently why *s*-retraction in /rs/ did or did not happen in that group of languages. This shall allow us to test the hypothesis enounced above in detail on the West Germanic group, before extending the typological scope to North Germanic and non-Germanic languages in section 5.

## 4.1 Middle English and modern English

English is most likely the earliest Germanic language to have developed the sibilant contrast /s/ - /ʃ/, by means of a palatal assimilation in /sk/-clusters which created /ʃ/. Although the time of appearance of /ʃ/ is (not undisputedly) estimated to be around the late Old English period (Cercignani 1983: 323), it must certainly have existed as a phoneme in the eleventh century, when a retracted [s] in Norman or Middle French loanwords was reanalysed as /ʃ/ (Adams 1975: 283f.). Examples of such loanwords are *push* (Fr. *pousser*), *leash* (Fr. *laisse*) and *punishment* (Middle French *punissement*).

In most English varieties, /r/ mutated to the alveolar approximant [ɹ].<sup>10</sup> In some varieties, amongst which American and Irish English, it is pronounced as a retroflex approximant [ɻ]. In varieties of Scottish and South African English, it is pronounced [r]. Northern Northumbria had a uvular /R/, which has become very rare if not almost extinct (Ogden 2009: 90–93), but has been in use “for at least the last 300 years” (Maguire 2017: 88).

In Middle English, be it in varieties which already had an approximant or in varieties which retained the trill or tap/flap, I found no traces of *s*-retraction in /rs/.

As Ball/Rahilly (1999: 56) point out concerning the retroflex approximant [ɻ], “some speakers use a retroflex approximant as their realization of ‘r’, and if they pronounce final ‘r’ in words like ‘reader’ and then add a plural ending to this, the final sound may well be [z]”. Retroflex assimilation is thus observed in rhotic varieties of English with a retroflex approximant, amongst which Scots and Scottish English. In those varieties, it is ascribed to Gaelic influence (Maguire 2012: 63), who mentions the occurrence of “retroflex approximant pronunciations of /r/, with retraction of following alveolars (as in *horse* [hɔɹs])”. Retroflex assimilation can be found in a range of Northern English dialects as wide as from Yorkshire (Hedevind 1967: 73) and Cumbria (Cathcart 2012: 80f.) to Orkney (Schmitt 2015: 67f.) and the Hebrides (Cathcart 2012: 81), and occurs with all “following alveolar consonants” (Maguire 2012: 63).

In his short description of retroflex consonants in English, Orton (1939) notes that Northumbrian dialects have retroflex /t, d, s, z, ɳ, l/ for the clusters /rt, rd, rs, rz, rn, rl/, and that the uvular /R/ is no longer pronounced in this context but seems to have “left its mark upon adjacent sounds” in the speech of “many people from all parts of the British Isles, especially Scotland” (Orton

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<sup>10</sup> Little is known about the precise period of the shift to an approximant, which has occurred at a different pace according to phonotactic context (e.g. [r] still being preserved in some clusters such as /thr/) and geographically (e.g. not having reached parts of Scotland).

1939: 40). This allows the interpretation that Northumbrian dialects could have had productive *s*-retraction in /rs/ with a uvular /R/. However, considering the occurrence of retroflex and non-retroflex *s*-retraction in /rs/ (see next paragraph) in the neighbouring dialects with [ɹ] and [r] respectively, the Northumbrian retroflexes might have been relics of an earlier retroflex assimilation with a coronal rhotic, or a consequence of language contact. Wells (1982: 370) cites Orton (1939) but gives as example of the backing of central vowels before a (now disappeared) Northumbrian uvular /R/ the word *first* [fɔ:st] (Wells 1982: 374f.), not [fɔ:ʂt], which even speaks against any *s*-retraction in /rs/ in Northumbrian dialects.

Some Scottish varieties of English with trilled [r] also have *s*-retraction in /rs/ as an active rule, inside words as well as across morpheme or word boundaries. For example, *s*-retraction after [r] can be heard distinctly in a dialect interview from the Isle of Skye, yielding e.g. *of courshe* or *speakersh* (BBC Voices, at 0:52 and 1:09). The speaker produces non-retracted non-sibilants after /r/ (e.g. *words* [wɜ:ʔts] at 0:58), unlike other speakers with retroflex assimilation (e.g. *start* [sta:t] at 0:03), which underlines the difference between both phenomena despite their occurrence in the same region.

*S*-retraction with an approximant /ɹ/ is also found in the clusters /str/, /skr/, /spr/ and /sr/ in English varieties of the United States, New Zealand and the United Kingdom (Baker/Archangeli/Mielke 2011; Stevens/Harrington 2016). Baker/Archangeli/Mielke (2011: 359) note however that “/str/ strongly favors a bunched /ɹ/ over a retroflex /ɹ/ and all of the subjects in [their] study produced a bunched /ɹ/ variant [...] in /str/ clusters”. It thus seems that *s*-retraction in /str/ is triggered by a (post-)alveolar affricated [t̪ʃ/t̪ʃ̥] rather than by retroflexion, which makes it more similar to “non-retroflex” *s*-retraction. Rutter (2011: 31) mentions as a possible phonetic trigger the fact that “both /ɹ/ and /ʃ/ share a tongue position that is further back than /s/”, thus evoking an assimilation of place of articulation in /str/.

## 4.2 Middle High German and modern German

Starting from a pre-Old High German inventory with a sole /s/, the second Germanic consonant shift appeared around the sixth century in Upper German and spread gradually to Central German dialects (Stedje 2007: 75), transforming amongst others the PG \*/t/ into the affricate [t͡s]. It was at first realised as an affricate in all positions (i.e. also after vowels, contrarily to modern German, see Lange 2007: 17), which means that Old High and Early Middle High German /s/ continued to be the sole member of its sibilant inventory, since the original PG \*/sk/ had not been assimilated to [ʃ] yet (similarly to the English palatalisation

of /sk/). Old High and Early Middle High German thus had a sole /s/, which must have been a retracted alveolar [s̠].<sup>11</sup>

The phonetic realisation of /r/ was probably still identical to the PG trill \*[r] in almost the entire German-speaking area up to the 18th century (see the map in Wiese 2011: 718), except for a small area in Southwest Austria which is claimed to have developed uvular /R/ autonomously in the Middle Ages (Bisiada 2009: 89–91).

Phonological *s*-retraction did not occur in Early Middle High German as long as /f/ [f] did not exist as a phoneme. Judging from MHG orthography, *s*-retraction did probably not occur phonetically or phonologically, since [s] after /r/ was written <z> and not <s> (compare *hirz* in Engeliien 1892: 46). In Middle High German, around the eleventh century (Hall 2008: 217), /sk/ became phonemicised as /f/ in all positions, creating a contrast with the original /s/ ([s̠]). Before the twelfth century as well, [ʃs̠] had become deaffricated to [s] after vowels, which made all three sibilants contrast with each other, [s] being rendered in the orthography as <z>, [s̠] as <s>, and [f] as <sch> (Hall 2008: 218). The one-sibilant inventory of Early Middle High German thus became a three-sibilant inventory, with a contrast between [s], [s̠] and [f] (Adams 1975: 284; Benware 1996: 266f.). In the twelfth century, [s̠] merged with [s] to [s] (Hall 2008: 218), leading to a two-sibilant inventory consisting of /s/ [s] and /f/ [f], as in modern German. The conditions necessary for phonological *s*-retraction to /r/ were reunited, and *s*-retraction in /rs/ occurred (ibid.: 231f.).

This provides an answer to the actuation problem: *s*-retraction in /rs/ did not occur phonologically in Low German varieties, because they still had one single /s/ pronounced [s̠].<sup>12</sup> Dialects located north of the boundary of the /t/ → /t(s)/

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**11** Additional evidence supporting this view are Transylvanian place names, which demonstrate that the first German settlers who migrated from the Moselle and Rhine region to Transylvania in the 12th century still had a retracted [s̠] for /s/. Rosenau has been reanalysed in Romanian (which already had a contrast with [s] and [f]) as Râșnov ([rifnɔv]), and in Hungarian (which also has this contrast) both as (Barca)rozsnyo ([rɔʒnɔ]) and Rosznyó ([rɔʒnoː]) (Siebenbuerger.de: Rosenau). It must thus have been pronounced [s̠] or [z] in Early Middle Central German to have been interpreted as [f], [ʒ] and [s] in Romanian and Hungarian, something which is cross-linguistically attested for the transfer of [s̠] and [z] into languages with a [s]–[f] contrast (Adams 1975). The same reanalysis is observed in other Transylvanian place names, e.g. *Klausenburg* (Rom. *Cluj*, Hun. *Kolozsvár*) (Siebenbuerger.de: Klausenburg). An [s̠] from PG \*/t/ consistently corresponds to Romanian [s], e.g. Weißkirch – Viscri (Siebenbuerger.de: Deutsch-Weisskirch). The merger of <s> [s̠] and <z> [s] as well as *s*-retraction in /rs/ occurred later as witnessed by place names, e.g. *Donnerschmuert* (Ger. *Donnersmarkt*), *Hamerschderf* (Hammersdorf) and *Mäterschdref* (Mettersdorf) (Siebenbuerger.de).

**12** They had not assimilated /sk/-clusters to /f/ (compare e.g. [sk] in modern Afrikaans, meaning that dialects from South Holland in the 17th century still had unassimilated /sk/) and they had no [ʃs̠] to deaffricate at all (for not having taken part in the High German consonant shift).

shift and south of the boundary of the /sk/ → /ʃ/ shift (i.e. dialects which have *dat* and *Schule*, e.g. in East Limburg) developed a contrast between the original /s/ → [s] and the assimilated /sk/ → [ʃ]. In these dialects, s-retraction in /rs/ could also happen, and did happen (see next paragraph).

Evidence demonstrating that only [r] and not uvular /R/ triggers s-retraction is given by different outputs in different diachronic lexical layers in the dialect of Eys (Dutch Limburg). The modern dialect uses uvular /R/ in all positions, and exactly as in standard German, s-retraction in /rs/ is no longer productive. Yet, in words which are old and common enough to belong to the vocabulary of Limburgish farmers of the 17th century, a historical and standard Dutch or German /rs/ corresponds to /əʃ/ (where /r/ vocalised to /ə/ in stressed syllables and disappeared in unstressed ones). Newer or “higher educated” words exhibit no trace of s-retraction, but contain [RS] instead.

(4)	a.	Eys dialect <i>veë</i> [ʃ] <sup>13</sup>	Ge. <i>Ferse</i>	En. heel
	b.	Ey. <i>po</i> [ʃ] <i>elei</i>	Nl. <i>porselein</i>	En. porcelain
	c.	Ey. <i>ange</i> [ʒ] <i>öm</i>	Nl. <i>andersom</i>	En. the other way around
	d.	Ey. <i>get ange</i> [ʃ]	Nl. <i>iets anders</i>	En. something else
	e.	Ey. <i>get bete</i> [RS]	Nl. <i>iets beters</i>	En. something better
	f.	Ey. <i>Noo</i> [RS]	Nl. <i>Noors</i>	En. Norwegian
	g.	Ey. <i>peë</i> [ʃ]	Nl. <i>pers</i>	En. (fruit) press
	h.	Ey. <i>pe</i> [RS]	Nl. <i>pers</i>	En. (written) press

The arrival of uvular /R/ in the language can be dated to after the borrowing of *posjelei* “porcelain” from French or Dutch, but before the borrowing of *pers* “written press” from standard Dutch. Uvular /R/ impeded s-retraction in /rs/ to continue working in the Eys dialect, as can be observed in newer words and morphosyntactic constructions. In e.g. the Swiss dialect of Jaun, however (Stucki 1917; Hall 2008: 232), /r/ is realised as [r] and therefore, s-retraction is still active across morpheme and word boundaries.

### 4.3 Middle Low German and modern Dutch and Frisian

As detailed in the previous section, Middle Low German had a sole /s/ in its sibilant inventory, which was a retracted one (Adams 1975: 289). This retracted

<sup>13</sup> Data provided by a native speaker of the Eys dialect.

[s] has also historically been the variant used in the Low Countries until recent times, and it still is in Frisian and some Netherlandic varieties (compare the assumption made in Boersma/Hamann (2008: 230) that Dutch /s/ is [s]). These varieties with retracted [s] are found mostly in e.g. Zeeland, Holland and Friesland (i.e. in the inner Low Countries, far from the border with French and Central German), whilst (dento-)alveolar [s] is found closer to the border with French and Central German, mainly in Flanders and Limburg.<sup>14</sup> In all varieties, the phoneme /ʃ/ is present in loanwords (e.g. *China*). Some West Flemish and Limburgish dialects have [ʃ] in /sk/-clusters (Goossens/Taeldeman/Verleyen (eds.) 2000: 19), but the other varieties have unassimilated /sk/-clusters ([sk] or [sx]). Some varieties such as West Flemish, Netherlandic Dutch and Frisian assimilate clusters of /sj/ to [ç] (e.g. *meisje* “girl”). This doesn’t prevent the Netherlandic Dutch and Frisian varieties to keep /s/ pronounced as [s], coexisting with [ç] in a poorly dispersed sibilant inventory (Boersma/Hamann 2008: 230, 254). To sum up, Netherlandic Dutch and Frisian have sibilant inventories consisting of one retracted alveolar sibilant coexisting with [ç] in /sj/ and [ʃ] in loanwords; some West Flemish and Limburgish varieties have both [s] and [ʃ]; and other Flemish varieties have [s] and [ʃ] in loanwords only.

The phoneme /r/ in the Low Countries exhibits an even higher diversity of realisations, since “almost all variants of /r/ found in the languages of the world [...] are observed in the Dutch language area” (Verstraeten/Van de Velde 2001: 45). The original alveolar trill or tap/flap [r] is rivalled by the more recent approximant [ɹ] and uvular /R/. A glance into the phonological atlas of Dutch dialects (Goossens/Taeldeman/Verleyen (eds.) 2000: 357) shows that uvular /R/ is well-established along the Rhine and Meuse region, in Limburg and Brabant, as well as in cities (e.g. Ghent), spreading from one centre to another (Verstraeten/Van de Velde 2001: 46). The approximant is gaining ground in the Netherlands, and has become known as the *Gooise R*.

As explained in 2.2, in the varieties with a retracted [s], *s*-retraction in the phonological sense cannot occur because all occurrences of [s] are interpreted as /s/ regardless. Nevertheless, in Dutch varieties with [ɹ] and [s], but not in those with uvular /R/ and [s], phonetic *s*-retraction in /rs/ occurs produc-

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<sup>14</sup> An acoustic analysis of /s/ in sound files of the *Nederlandse Dialectenbank* (van Oostendorp 2014) indeed shows that /s/ is more retracted in Dutch regions centred around Holland and the north (tested in Ouddorp, Zwanenburg and Hallum, with a mean centre of gravity of 3,784 Hz), and in the speech of older people in the Low Countries. A fronted [s] is found in regions closer to French and German (tested in Tongeren, Elingen and Clairmarais, mean COG: 4,628 Hz), and in the speech of younger people.

tively, as described in the next section. Due to a lack of data, nothing can be said here about Netherlandic Dutch varieties with an approximant /r/ and [s]. Nevertheless, Plug/Ogden (2003) show that in those varieties, /t/ and /d/ are pronounced as apical alveolars after an approximant /r/, whilst they are generally laminal in other contexts (Scobbie/Sebregts 2010). This suggests that the approximant could exert a similar influence on a following /s/, making it apical and thus prone to reanalysis as a posterior phoneme category (see section 3.1).

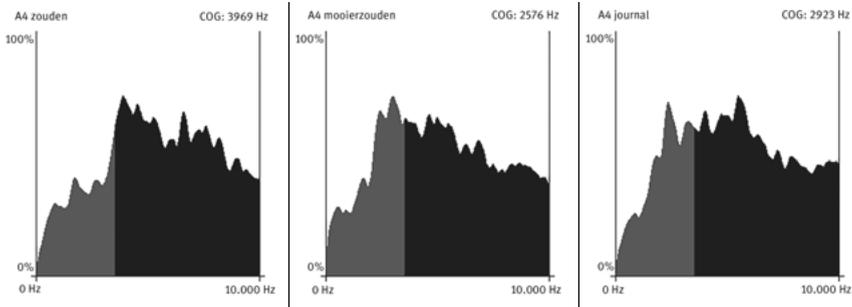
#### 4.3.1 A phonetic study of Flemish s-retraction in /rs/

To quantify the observed Flemish s-retraction in /rs/, Kokkelmans (2017) proposes a pilot study which compares /s/ after /r/ to /s/ in other contexts and to /ʃ/ in loanwords (including their voiced counterparts), in regional varieties of standard Dutch spoken by Flemish students. Six informants, with a homogeneous background in order to make results comparable and unperturbed by the potential influence of additional factors (native Flemish men between 18 and 30 years old, with a higher education background), were recorded reading the same text, and subsequently holding a colloquial conversation with the interviewer. Three of them are from East Flanders, one is from West Flanders, one from Brabant and one from the province of Antwerp. Four of them use an alveolar trill /r/ in usual speech, two use a uvular /R/, and all pronounce /s/ as a (dento-)alveolar [s]. They are anonymously labelled *Alveolar1*, *Alveolar2*, *Uvular1*, *Uvular2* etc. according to their own place of articulation for /r/, i.e. either [r] or /R/. All speak regional varieties of standard Dutch, with a moderate extent of regional or local features. No participant knew what the experiment was about, with the purpose of guaranteeing a spontaneous speaker input.

Calculations were made using *Praat* (Boersma/Weenink 2005) on the acoustic characteristics of sibilants contained in a total number of 64 different words:

- (5) – 37 words containing the cluster /rs/
  - 13 containing its voiced equivalent /rz/
  - 3 containing /s/ in another context (e.g. *steden* “cities”)
  - 3 containing /z/ in another context (e.g. *zouden* “should”)
  - 3 containing /ʃ/ (e.g. *pêche* “peach”, loanword from French)
  - 3 containing /ʒ/ (e.g. *journal* in English, with the exclusion of the preceding /d/)
  - 2 Dutch words containing /sj/ (*nationale* and *sociale*), to test if speakers realise it as [e] or [sj]

These 64 words were all to be read in the same (con)text by the 6 informants, so that no different phonetic context could interfere. All 374 sibilant realisations<sup>15</sup> were manually extracted in *Praat*, and an automated *Praat* script calculated the COG of the extract to determine “how sh-like” the sibilant is. As Ladefoged (2001: 56) explains, [s] is characterised by “a large amount of energy in the upper part”, “comparatively little energy below 3,500 Hz, and a noticeable intense band above 5,000 Hz”. In turn, [ʃ] “has more energy at a slightly lower frequency, centered at a little above 3,000 Hz”. Similarly, the difference between voiced [z] and [ʒ] consists of a lower concentration of energy for the latter.



**Fig. 1:** Graphs representing the mean intensity (vertical axis) in function of the frequency (horizontal axis), for /z/ in “zouden” and “mooierzouden”, and /ʒ/ in “journal” (from left to right), produced by informant Alveolar4. The grey part corresponds to all frequencies below or equal to 3,500 Hz.

As an example, the three graphs in figure 1 reveal the striking difference between /z/ in *zouden* “should” when following an alveolar /r/ in the previous word, and /z/ in *zouden* when not preceded by [r]. Despite the word boundaries, *s*-retraction operates in this example to such an extent that /z/ after [r] is “even more [ʒ]” than the /ʒ/ in *journal* pronounced by the same speaker.

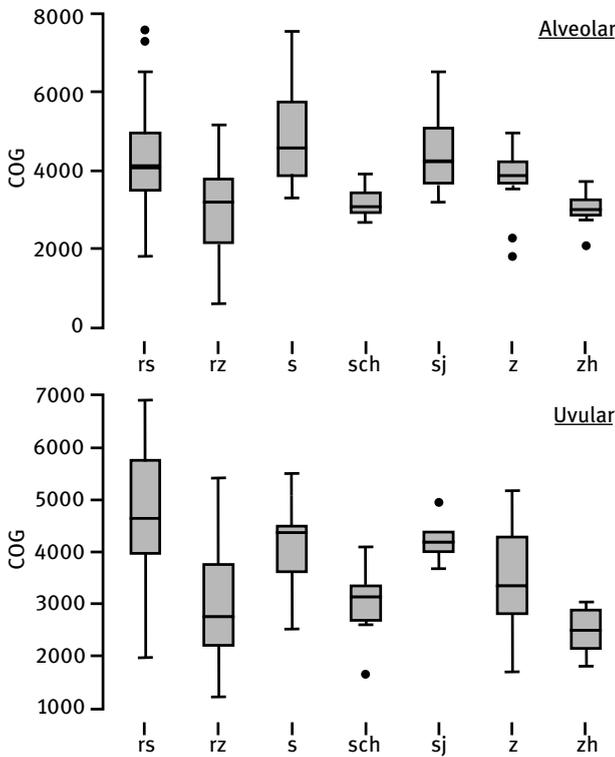
The results for all 64 words of the study are illustrated in figure 2. As figure 2 shows, informants with alveolar /r/ have lower COG values (i.e. more “sh-like” pronunciations) for /s/ and /z/ when preceded by /r/ than in other contexts, but they are generally not as low as those of /ʃ/ and /ʒ/. On a scale from the mean /ʃ/ and /ʒ/

<sup>15</sup> Out of the 384 predicted occurrences (64 words x 6 informants), 10 occurrences were excluded because the informant mispronounced the word or used another pronunciation, e.g. reading the sign “%” as *procent* instead of *percent*.

(3,185 and 3,055 Hz, respectively) to the mean /s/ and /z/ (4,933 and 3,742 Hz), the mean /s/ and /z/ after /r/ are located at 4,287 and 3,057 Hz respectively, i.e. 45.34% “s-ness” if the mean /ʃ/ and /ʒ/ correspond to 0% and the mean /s/ and /z/ to 100%.

The two informants with uvular /R/ do not exhibit active s-retraction in /rs/. On a scale from the mean /ʃ/ and /ʒ/ (2,988 and 2,473 Hz) to the mean /s/ and /z/ (4,113 and 3,465 Hz), the mean /s/ and /z/ after /R/ are located at 4,781 and 2,991 Hz, i.e. 109.16% if the mean /ʃ/ and /ʒ/ correspond to 0% and the mean /s/ and /z/ to 100%.

An inquiry into individual mean values shows that s-retraction is the strongest in the speech of *Alveolar1* (-22.55%), followed by *Alveolar3* (46.85%), *Alveolar4* (62.52%) and *Alveolar2* (65.64%). *Uvular1* (86.68%) and *Uvular2* (121.63%) do not seem to have s-retraction as an active rule.



**Fig. 2:** Boxplot representation of the mean COG values for speakers with alveolar or uvular /r/ in Kokkelmans (2017) according to phoneme and phonetic context, generated using the statistical software JASP (JASP Team 2018). <sch> stands for /ʃ/ and <zh> for /ʒ/. Dots represent outliers (i.e. exceptionally diverging values).

A striking observation is that the informants who have the lowest mean COG values for /sj/ (indicating *s*-retraction to [ç/], compare 3.3) are alveolar speakers with active *s*-retraction in /rs/, namely *Alveolar1* (07.36% for /sj/) and *Alveolar3* (56.04% for /sj/). On the contrary, *Uvular2* (80.75%), *Alveolar4* (98.60%), *Alveolar2* (99.68%) and *Uvular1* (148.72%) do not productively retract /sj/ towards [ç]. This could mean that *s*-retraction in /rs/ favours *s*-retraction in /sj/ (and perhaps also the other way around). This pattern resembles the one observed in the MHG *s*-retraction after /r/ and before consonants, with *s*-retraction in a specific context (e.g. before /p/) triggering *s*-retraction in other contexts (e.g. before /n/), i.e. “dragging” other clusters towards /j/ (described as “processual change” in Benware 1996: 268, 275). One can thus conclude that these Flemish varieties with alveolar [r] exhibit the same phenomenon of productive *s*-retraction in /rs/-clusters as Middle High German.

## 5 Final observations and conclusion: Answering the actuation problem

The cross-linguistic part of this study has focused in detail on West Germanic languages. However, other languages also show traces of once-productive *s*-retraction in /rs/, or have it as a productive rule.

In the Germanic family, a large group of Faroese, Swedish and Norwegian varieties have active retroflex assimilation in /rs/-clusters to [ʂ], also across morpheme and word boundaries (Eliasson 2000: 40f.). As explained in sections 2.2 and 4.1, this kind of *s*-retraction is different from the one described here, in the sense that it applies to all alveolar consonants preceded by /r/ (also /t, d, n, l/). Exactly as for “non-retroflex” *s*-retraction, retroflex assimilation and uvular /R/ are mutually exclusive in Scandinavia (Torp 2001), despite their co-occurrence in Frogner and Arendal, as detailed in section 2.2. Torp (2001: 82) remarks concerning this exception to the complementary distribution of /R/ and retroflexion that we “have to reckon with some special kind of dialect contact in order for the dorsal /r/ to penetrate into a dialect area with retroflexes”.

10,000 kilometres further south, *s*-retraction in /rs/ also occurs productively in Afrikaans, according to recent phonetic analyses (Ewald 2015; Wissing/Pienaar/Van Niekerk 2015) which found /s/ to be realised after the alveolar [r] “as a voiceless retracted alveolar sibilant [ʂ]” (Ewald 2015: 35) instead of [s]. This must be an independent rather than inherited phonological development, since Afrikaans is mainly based on dialects from southern Holland (Kloeke 1950), which still today have a retracted alveolar [ʂ].

*s*-retraction in /rs/ also happened in Indo-European *satem* languages such as Balto-Slavic and Indo-Iranian, in contexts in which /s/ was preceded by /r/, /u/, /k/ or /i/ (known as the *ruki*-rule, see Pedersen 1895: 53f., 74). In this case, *s*-retraction in /rs/ only started to operate phonologically after the /s/–/ʃ/ contrast appeared (from the assibilation of the PIE palatovelar series \*/k̑, ǵ, ǵʰ/), triggered by an /r/ pronounced (most probably) as an alveolar trill or tap/flap (which is still the pronunciation of /r/ in almost all their daughter languages).

Outside the Indo-European language family, Western Basque varieties are found to have a single <s> (apical [s̺]) corresponding to historical [rs]-clusters, whereas Eastern varieties have retained <rz> ([rs]), as e.g. in *uso* [u.ʃo] vs. *urzo* [ur. so], “pigeon, dove” (Trask 1996: 77). This example of *s*-retraction in /rs/ with *r*-drop perfectly corroborates the hypothesis of a retracted alveolar place of articulation and apical tongue shape assimilation, since the phonetic output [s̺] is preserved exactly as such in the phoneme /s̺/ which exists in the language, and not reanalysed as the laminal /ʃ/ <x> which also exists in Basque’s three-sibilant inventory. In Western and Central Basque, /r/ surfaces as an alveolar trill or tap/flap, unlike in the French (i.e. Eastern) Basque country, where it has partly become a uvular /R/ (McColl Millar/Trask 2015: 285).

The typologically recurring pattern observed here confirms the hypothesis of this paper: *s*-retraction in /rs/-clusters only arises phonetically in languages with an alveolar /r/ and a (dento-)alveolar /s/, and phonologically in inventories with an /s/ [s̺] and at least one other more posterior category. This provides an answer to the actuation problem: by knowing which phonetic properties and which phonological inventories allow *s*-retraction in /rs/ to start operating, one can explain why it does or does not occur productively in different languages.

In the context of the general shift, in IE languages, from a one-sibilant inventory with [s̺] (Adams 1975: 290) to one with several contrasting sibilants, Low German, Dutch and Frisian have shown themselves to be the most conservative West Germanic varieties by keeping their sole retracted [s̺] up to recent times. English first led the innovation of phonemicising /ʃ/, and later experienced *s*-retraction in /rs/ in its varieties with [r] and [ɹ]. At the other end of the West Germanic family, High German phonemicised /ʃ/ from the same /sk/-cluster and also underwent *s*-retraction, which did not reach as far north as northern Germany and the Low Countries because of their conservative sibilant inventory. It has thus been shown that as soon as the required conditions are met, all Germanic languages start to undergo *s*-retraction in /rs/, something which sheds light on how related languages experience parallel developments in the same direction despite being separated from each other (compare e.g. Flemish and Afrikaans). On the other hand, I found no trace of *s*-retraction in /rs/ at all in Romance languages. This leads to the crucial observation that although both groups arose from a variety

which could not and did not experience *s*-retraction in /rs/, namely Proto-Germanic and Latin, only the members of the former language group later developed in that direction regardless of geographical barriers. This raises the question to which extent the potentiality of *s*-retraction in /rs/ was already “contained in the grammar” of Proto-Germanic and not in that of Latin. This question opens possibilities for further investigation in the domain of the underlying phonological grammars, to address the questions which remain with respect to the actuation problem.

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# The role of verb-second word order for L1 German, Dutch and Norwegian L2 English learners: a grammar competition analysis

**Abstract:** This paper investigates the role of verb-second (V2) word order in second language acquisition. It addresses the question whether a first language (L1) that is a V2 language affects acquisition of a second language (L2) that is not a V2 language. To test this, the paper investigates the interpretation of *wh*-+particle constructions of L2 English speakers with L1 German, Dutch and Norwegian. The experiment shows a V2 effect in L2 English for these speakers, which, however, is not uniform in terms of amplitude across all speaker groups and thus strongly suggests that there is no generalized V2-parameter.

**Zusammenfassung:** In diesem Beitrag wird die Rolle von V2 (Verbzweitstellung) im Zweitspracherwerb untersucht. Im Mittelpunkt steht dabei die Frage, ob eine Erstsprache (L1), die eine V2-Sprache ist, den Erwerb einer Zweitsprache (L2), die keine V2-Sprache ist, beeinflusst. Um dies zu testen, untersucht das Papier die Interpretation von *wh*-+Partikel-Konstruktionen von L2 Sprechern des Englischen, deren L1 Deutsch, Niederländisch oder Norwegisch ist, und zeigt, dass in der L2 Englisch dieser Sprecher ein V2-Effekt nachgewiesen werden kann. Allerdings ist dieser Effekt für die unterschiedlichen Sprechergruppen unterschiedlich hoch, was nahelegt, dass es keinen generalisierten V2-Parameter gibt.

## 1 Introduction

German, Dutch and Norwegian are V2 languages. English may have had some V2 properties in its earlier stages but is no longer regarded as a V2 language today. However, it still has some residual V2 properties, for instance in questions (Rizzi 1990) and quotation contexts (Roeper 1999, 2016), and is thus sometimes characterized as a residual V2 language (Rizzi 1990). This paper investigates in how far an L1 that is a V2 language influences the acquisition of an L2 that is a non-V2/residual V2 language. In other words, we address the question in how far V2 can be unlearned in second language acquisition (SLA). It will be shown that V2 characteristics in L2 English of L1 speakers of German, Dutch and Norwegian are real, testable and quantifiable and very persistent even in advanced L2 speakers.

It will also be shown that the ‘V2 effect’ is stronger in L1 speakers of German than in L1 speakers of Dutch and almost non-existent in L1 speakers of Norwegian. These results challenge the idea of simple parameter resetting in SLA because unlearning V2, i.e. a simple switch from V2 in L1 to non-V2 in L2, would entail that L1 speakers of V2 languages show uniform characteristics in L2 English. We argue for a grammar competition/multiple grammar (GC/MG) analysis instead (Kroch 1989; Kroch/Taylor 1997, 2000; Roeper 1999; Yang 2003), which shares the assumptions of the full access/full transfer (FA/FT) hypothesis of Schwartz/Sprouse (1996), but argues against parameter resetting in SLA. Section 2 provides an introduction into GC/MG theory. Section 3 discusses the role of GC/MG theory in SLA in more detail and section 4 provides experimental data for GC/MG in *wh*-+particle constructions in L2 English. Section 5 concludes the paper.

## 2 GC/MG theory in diachronic linguistics and L1 acquisition

Grammar competition theory was first introduced in the context of diachronic linguistics (e.g. Kroch 1989; Kroch/Taylor 2000; Pintzuk 1999). Here Old English, which is traditionally classified as a language in which the object comes before the verb (OV language) (e.g. van Kemenade 1987; Kiparsky 1995; Fischer et al. 2000), is shown to also feature VO orderings in embedded clauses. These alternative orderings are accounted for under the assumption that two rules exist side by side in the grammar of Old English. One that generates the ‘traditional’ OV order and one that generates the verb-object (VO) order. Thus, the two rules exist within a single grammar and provide radically different and potential contradicting structures. This idea is further developed in Pintzuk (1999)<sup>1</sup> under the name Double Base Hypothesis (DBH). According to the DBH the two word orders attested in Old English can be ascribed to the presence vs. absence of verb movement from V to a higher functional projection and the availability of head-initial and head-final structures in both projections. The higher projection may be T/Infl (Tense or Inflection) (Pintzuk 1999) or some lower head, e.g. *v* (Roberts 1997; Fuß/Trips 2002). Either way, two radically different structures can be derived.

Roeper (1999) argues that GC effects can also be found in language acquisition and that this can be regarded as another indication of the frequently stated paral-

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<sup>1</sup> Pintzuk presents her analysis in the generative framework of the theory of principles and parameters (see e.g. Chomsky 1981 and subsequent publications).

lelism between language acquisition and diachronic language development. In those contexts where a language exhibits seemingly contradicting properties that can only be derived by two conflicting rules, grammar competition is at work. Thus, in early L1 acquisition when children simultaneously produce the structures in (1a) and (1b) grammar competition is involved (ibid):

- (1) a. Him want ...  
b. He wants ...

Here, Roeper (1999) argues, the child switches between a minimal default grammar that derives the structure in (1a) with default Case-assignment on the pronoun and no agreement marker on the verb and the structure in (1b) where nominative Case is assigned structurally and where the verb shows agreement morphology. Eventually, the child will progress from the minimal default grammar to the grammar that generates the structure in (1b) but this, according to Roeper (1999), does not involve parameter resetting nor deletion of the minimal default grammar that generates (1a)<sup>2</sup>. In this context, too, two seemingly contradicting rules thus exist side by side, of which one is productive and the other is non-productive and possibly deactivated. In more recent publications this idea is extended to contexts of SLA (Roeper 2003, 2016; Amaral/Roeper 2014) and the term *multiple grammars* rather than *grammar competition* is used. For the example from Old English and for language acquisition illustrated in (1), GC/MG can be regarded as an unstable state in which two rules are in competition within one and the same language. The unstable state of Old English is resolved to a stable condition in Early Middle English, where VO is the predominant order. In language acquisition the grammar that derives the structure in (1b) is the stable state at the end of the acquisition path. This, however, need not be the case. Particularly in acquisition contexts the competition between two conflicting rules can remain a stable state at the end of the acquisition path, or in other words, the acquisition path can be marked by two seemingly optional and conflicting rules. For further clarification let us look at another example from language acquisition in some more detail.

According to Chomsky (2005), three factors determine language acquisition. The first is genetic endowment, i.e. the basic principles of Universal Grammar (UG). The second is experience, i.e. empirical data that the child is confronted with

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<sup>2</sup> Note, incidentally, that simple deactivation – instead of full deletion – of the minimal default grammar in (1a) allows older children or adult speakers to tap into this grammar to understand and mimic baby-talk (Amaral/Roeper 2014).

in the acquisition process. Based on these data the child determines a limited number of parametric choices provided by UG. The third and final factor encompasses several cognitive principles that are language (and potentially even organism) independent, i.e. general learning principles that are not language specific. From the minimalist perspective the main research question in recent years has been how much can be attributed to the third factor and how much remains language specific (Chomsky 2005 and subsequent publications). Although a definitive answer has not yet emerged, it is clear that language acquisition cannot do without genetic predisposition, i.e. some version of UG, and primary linguistic data, i.e. language input (e.g. Chomsky 2001, 2005 and subsequent publications). This paper adopts these assumptions and argues for the existence of UG with some narrowly confined parametric options that are determined by language input. More specifically we argue that MG/GC theory exploits these assumptions in the sense that language acquisition is constrained only by UG, i.e. all languages that conform to UG are in principle acquirable, while, on the other hand, language learners will never postulate any rules that are not in line with UG. The learner of any language *X* will thus acquire the rules of this language which are a subset of the possible rules of UG. These rules, once acquired, cannot be modified nor replaced or deleted during the acquisition process. The only option for the language learner is to add new rules to the grammar of their language if required by linguistic evidence. In this scenario, seemingly contradicting rules can very easily arise. In these cases, the learner needs to determine which rules are productive in their language and which are lexically or contextually (or otherwise) constrained. Unusual though this might seem at first sight, it has immediate empirical and theoretical appeal and is strictly in line with the assumption that there is no (real) optionality in language (Chomsky 1995). Hence, real optionality in language never arises and is always attributable to independent and potentially contradicting rules of grammar. In line with standard minimalist assumptions, we will further assume that these rules of grammar are maximally simple. How maximal simplicity is to be defined or measured exactly is still open to debate in minimalist theory and we will not provide an answer here (but see Chomsky 1957 for an early debate). It is equally unclear what a rule of grammar is and we will also leave this open for further research. However, we will follow standard assumptions in minimalist theory that rules operate over features. Thus, the exact determination of features that lead to syntactic rules will henceforth be left open, while it is assumed that features are the only necessary and sufficient factor for rule formation and that no other devices such as indices, diacritics or features of features are required (for discussion, see *inter alia* Adger 2010; Boeckx 2010; Reuland 2011; Bauke 2014; Amaral/Roeper 2014). Now let us discuss how this theory accounts for the postulation of seemingly contradictory rules as a stable state in language acquisition.

Any child acquiring English will be faced with the question whether English requires the overt realization of subjects or not. Both options are available in UG and linguistic data will eventually lead the child to the postulation of a rule that requires the overt realization of subjects.<sup>3</sup> For lack of a better representation we will pre-theoretically represent this rule as follows (cf. also Amaral/Roeper 2014 for a similar representation):

(2) [Subj/: +phon]

However, the constructions in (3) (adapted from Amaral/Roeper 2014), which are all frequently attested in English, are all incompatible with the rule in (2):

- (3) a. Where's Khatia? \_\_\_\_ just left.  
 b. \_\_\_\_ cold today, isn't it.  
 c. \_\_\_\_ sounds all right to me.

Thus, all speakers of English must also have a rule in their grammar that generates the structures in (3) and this rule is likely to contrast with the rule in (2). In principle, there are two options for integrating the rule for the data in (3) into the grammar. The first is to augment, i.e. change, the rule in (2) in the following way<sup>4</sup>:

(4) [Subj/: +phon; iff Subj = Topic: -phon]

This, however, would mean that the rule in (2) is manipulated and changed in the acquisition process. This is an option that MG/GC does not allow and it is theoretically unclear how editing an existing rule can be accounted for in language acquisition. The second option is to add a new rule to the grammar of English. This is in line with requirements from MG/GC theory and we thus suggest the informal rule in (5):

(5) [Subj = Topic: -phon]

This rule conflicts with, but does not change, the rule in (2) in any way. As a result, the grammar of English now holds both rules, i.e. (2) and (5), and this is

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<sup>3</sup> We will not go into the exact nature of the acquisition path here (see for instance Hyams 2014 for discussion in FLA contexts and Rothman/Slabakova 2017 for discussion in SLA contexts)

<sup>4</sup> Again, we use this rather informal representation for lack of a more concise alternative expressed simply by features and we also remain silent on the question whether an analysis of (3) in terms of topic drop is ultimately correct.

what marks a stable state in the grammar of English that allows for the generation of sentences with and without overt subjects. When comparing the rules in (2) and (5), we can clearly see that the apparent optionality of sentences without subjects in English, as in (3), boils down to specific contexts.

### 3 GC/MG theory in SLA

Provided GC/MG theory is real and attested in diachronic contexts and in contexts of first language acquisition, it is relevant to ask whether it also exists in SLA contexts. The assumption that the final state of L1 is the initial state of L2 (Schwartz/Sprouse 1994, 1996; White 2003 and many others) is in line with GC/MG theory.<sup>5</sup> The rules of L1 will thus provide the starting point for L2 acquisition. Whenever these rules can also account for the L2 data no further learning is required. This will only occur in contexts where the L2 data are not compatible with the already acquired rules.<sup>6</sup> Note that this does not necessarily mean that the use of L1 rules in L2 acquisition leads to target language rules. The interlanguage rules of the L2 learner may still be radically different from the native language rules of the L1 learner (cf. Schwartz/Sprouse 1994, 1996 for further details) but if they are not in conflict with surface representations, the L1 grammar will be applied to the L2 without further modification. So far, there is thus no difference between GC/MG theory and some version of the full-access/full-transfer model. The only difference

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<sup>5</sup> We will therefore limit our explorations henceforth to the interaction of GC/MG with full-access/full-transfer. This is, of course, by no means the only theory of SLA, and it is impossible to do justice to the full spectrum of (generative) approaches to SLA here. For a comprehensive and accessible overview of these theories we refer the reader to Rothman/Slabakova (2017).

<sup>6</sup> An anonymous reviewer asks in this context how much input is required to trigger the postulation of an additional rule. This is a highly relevant but also very intricate question that we cannot fully address in this paper. It is well-known that L1 acquisition is marked by a certain amount of conservatism (e.g. Roeper 2016), which means that the child starts with conservative and narrow hypotheses and is somewhat reluctant to generalize to a general V2 grammar e.g. only on the basis of auxiliary raising in English. Only the full spectrum of constructions, e.g. main verb raising, auxiliary raising, object fronting, PP-fronting, etc. in German leads to a full-fledged V2 grammar. The situation may, however, be different for L2 acquisition – possibly depending on the nature of the L1 – where full access/full-transfer may lead to a situation in which the L2 learner tests a rule of maximum generality and moves to more specific additional rules only on the basis of evidence that is incompatible with the maximal rule. In any case, we would argue that to the extent that frequency plays a role here it is type- rather than token-frequency that drives the learning process (see also Yang 2008 for more sophisticated arguments in the same direction).

between the two approaches is that in those cases where further learning is required GC/MG theory assumes the addition of new and simple rules only confined by UG to the grammar. Whereas under full-access/full-transfer restructuring and/or parameter resetting is assumed. Thus, in GC/MG theory the strict absence of any kind of rule restructuring that is postulated for L1 acquisition is also maintained in L2 acquisition contexts. Let us consider an example: we have seen above that an L1 speaker of English will have the rules in (2) and (5) in their grammar. Now let us assume that this speaker acquires Spanish as an L2. Neither of the rules in (2) and (5) can account for the Spanish data. Thus, further learning is required and again two options are available. Under the first option either of the two L1 rules above could be restructured in such a way that it also allows for the L2 data. This, however, raises the question how the learner decides which of the two rules are restructured and whether this impacts the L1 in any way. In GC/MG theory, by contrast, these questions do not arise because here all that needs to be added to the grammar is a new (simple) rule:

(6) [Subj/: -phon]

This rule readily accounts for the Spanish data. It conflicts with the rule in (2) just as much as the rule in (5) does and we already argued with regard to (5) that such a conflict is unproblematic and indeed desirable in L1 contexts where seemingly optional data need to be accounted for. Adding new rules is therefore unlikely to cause problems in SLA. Yet, what is needed for SLA is information on which rule belongs to which language (Amaral/Roeper 2014). This information is probably encoded in the feature geometry of the relevant rules. Hence, the grammar of an L1 English/L2 Spanish speaker will eventually accommodate the rules in (2) and (5) for English and the rule in (6) for Spanish, repeated below for convenience:

(2) [Subj/: +phon]

(5) [Subj = Topic: -phon]

(6) [Subj/: -phon]

There is an obvious conflict and contradiction between the rules in (2) and (6). Yet neither is restructured or modified in any way. On the contrary, both rules are part of the grammar of an L1 English/L2 Spanish speaker and both are used productively by the speaker.

With this much in place, let us now turn to another case of GC/MG and the impact of a V2 rule for L1 speakers of German, Dutch and Norwegian acquiring L2 English.

## 4 V2 in German, Dutch and Norwegian speakers of L2 English

### 4.1 Word order in German, Dutch and Norwegian vs. English main clauses

V2 word order is typical of Germanic languages and German, Dutch and Norwegian display this word order pattern very robustly in main clauses<sup>7</sup>. The examples in (7)–(9) illustrate for each language respectively that various kinds of constituents can occur in sentence initial position (7a/8a/9a–7d/8d/9d) as long as the verb is in second position (7e/8e/9e–7g/8g/9g):

- (7) a. Gestern tanzte die Staatsanwältin mit dem Professor.  
 Yesterday danced the state attorney with the professor.  
 ‘Yesterday the state attorney danced with the professor’.
- b. Die Staatsanwältin tanzte gestern mit dem Professor.  
 c. Mit dem Professor tanzte die Staatsanwältin gestern.  
 d. ...  
 e. \*Gestern die Staatsanwältin tanzte mit dem Professor.  
 f. \*Die Staatsanwältin mit dem Professor tanzte gestern.  
 g. ...
- (8) a. Gisteren danste de officier van justitie met de professor.  
 Yesterday danced the state attorney with the professor.  
 ‘Yesterday the state attorney danced with the professor’.
- b. De officier van justitie danste gisteren met de Professor.  
 c. Samen met de professor danste gisteren de officier van justitie.  
 d. ...  
 e. \*Gisteren de officier van justitie danste met de professor.  
 f. \*De officier van justitie met de professor danste gisteren.
- (9) a. I går danset statsadvokaten med professoren.  
 Yesterday danced the state attorney with the professor.  
 ‘Yesterday the state attorney danced with the professor’.
- b. Statsadvokaten danset i går med professoren.

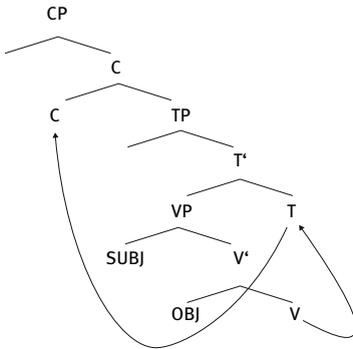
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<sup>7</sup> This paper has nothing to say on embedded V2 in German nor on embedded non-V2 orders in Norwegian dialects.

- c. Med professoren danset i går statsadvokaten.
- d. ...
- e. \*I går statsadvokaten danset med professoren.
- f. \*I går med professore danset statsadvokaten.
- g. ...

According to standard analyses (cf. Grewendorf/Hamm/Sternefeld 1987) the V2 structure is generated by movement of the verb from V-final to C-head position. Here we will remain agnostic as to whether the verb passes through an intermediate T-head position or not (cf. Haider 2010) as this is orthogonal to the analysis. Nor will we take a stand on whether  $V^{\circ}$  and possibly  $T^{\circ}$  are head-initial or head-final (cf. Kayne 1994), i.e. whether head-directionality can be reversed or whether all structures are asymmetrical and universally head-initial. All that matters is that the verb in main clauses moves to  $C^{\circ}$  and thereby generates the surface V2 order, with just one specifier position in CP to be filled by a maximal projection. Thus, we will assume the standard analysis by Grewendorf/Hamm/Sternefeld (1987) in the following slightly revised and updated version:

(10)



We argue that (10) is representative of German, Dutch and Norwegian main clauses, where the verb moves, as indicated, from V to T to C. This is called *Finitumvoranstellung*, i.e. fronting of the finite verb (Grewendorf/Hamm/Sternefeld 1987). This operation on its own generates the verb-first (V1) structure that characterizes polar interrogatives in all three languages:

- (11) Tanzte die Staatsanwältin gestern mit dem Professor?
- (12) Danste de officier van justitie gisteren samen met de professor?
- (13) Danset statsadvokaten i går med professoren?

In a second step towards generating V2 order, another constituent is topicalized, i.e. moved to the specifier position of CP (Spec, CP), and the examples in (7)–(9) illustrate that the topicalized constituent can either be a subject, an object or an adverbial. In fact, with a few exceptions (i.e. reflexives, anaphoric accusative pronouns and some particles (Grewendorf/Hamm/Sternefeld 1987) almost any constituent can be topicalized in the three languages). Thus, it can be concluded that the rule that generates V2 in German, Dutch and Norwegian main clauses is a very robust characteristic of the L1 grammars of speakers of these languages.

English, on the other hand, is not a V2 language, as illustrated by the example in (14):

- (14) Yesterday the state attorney danced with the professor.

Here the verb is in third position preceded by two other constituents, viz. the adverbial *yesterday* and the subject DP *the state attorney*. This is because the verb does not move to C° in English, hence *yesterday* may occupy the Spec, CP position and the subject DP may occupy the specifier position of TP below and the verb, which has (arguably) moved as high as T°, is in third position. With this much in place let us now turn to *wh*-constructions in L2 English and let us define the learning paths for all three L1 speaker groups separately.

## 4.2 *Wh*-constructions

The learning task for any L1 speaker of German, Dutch and Norwegian acquiring L2 English is to ‘unlearn’ the V2 properties of the respective L1. However, the learning task is complicated by the fact that English shows some residual V2 properties (Rizzi 1990). In *wh*-constructions in English auxiliaries move from T to C and thus mirror the movement of auxiliaries and main verbs in main clauses in German, Dutch and Norwegian, where the verb also ends up in C° and arguably moves through T° along the way. Of course, this movement operation does not occur with main verbs (any more – it still was a commonplace in Early Modern English but is lost in Present Day English) and is limited to auxiliaries but still, it is a persistent characteristic of *wh*-constructions, as is illustrated in the following examples for subject and object questions:

- (15) a. Who will kiss Khatia?  
 b. Who will [<sub>TP</sub> ~~who~~ ~~will~~ kiss Khatia]?
- (16) a. Who will Ted kiss?  
 b. Who will [<sub>TP</sub> Ted ~~will~~ kiss ~~who~~]?

It is this dichotomy between generalized verb movement in German, Dutch and Norwegian on the one hand and residual verb movement in English on the other that is explored further in this paper. According to GC/MG theory, a competition between the generalized verb movement operation in the L1 and the residual verb movement operation in L2 is expected. For German, Dutch and Norwegian learners of L2 English partial ‘unlearning’ of the V2 movement rule is required. According to MG/GC theory, where full or partial restructuring is not an option, this means that an additional rule is added to the grammar that accounts for residual V2, i.e. movement of auxiliaries only, from T° to C° in L2 English. In the remainder of our study, we probe into the interpretation of *wh*-+particle constructions of the target learner groups.

#### 4.2.1 L1 German – L2 English

(17) illustrates the relevant *wh*-+particle constructions for German and English.

- (17) a. Who picked Ann up?  
 b. Wer holte Anna ab?

So, in the German example in (17b) the verb has moved to C° and the Spec, CP position is filled by the *wh*-constituent. In the English example in (17a) on the other hand, the verb has not moved to C°, as this movement operation is restricted to auxiliaries. Nevertheless, Roeper (2016), referring to work by Rankin<sup>8</sup>, reports that L1 German speakers tend to assign non-target interpretations to the question in (17a), which is then either interpreted as ambiguous between a subject- and an object question or as an object question only. According to Roeper, L1 German learners of L2 English tend to apply the L1 grammar rule in their L2 interlanguage because there is no immediate evidence of any conflict. Any potential evidence could only come from an alternative construction that is available in English but illicit in German, i.e. the one in which the particle is pied-piped to sentence medial position:

- (18) a. Who picked up Ann?  
 b. \*Wer holte ab/abholte Anna?

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<sup>8</sup> For instance, Rankin (2014) shows that L2 English speakers with L1 German interpret *wh*-subject questions (without particles) as ambiguous or as object questions, particularly when the *wh*-word is [+animate]. [-animate] constructions are much more consistently interpreted as subject questions only. We took these results into account in our study and tested [+animate] constructions only.

So, while the data in (18a) clearly signal for the L2 English speaker that the L1 grammar cannot be applied in these contexts, the data in (17a) do not provide any such evidence and a competition from the L1 grammar is very likely, leading the L2 English speaker to optionally assign an object interpretation to the question in (17a). Of course, the target language grammar does not provide this option and requires *do*-insertion:

- (19) a. Who(m) did Ann pick up?  
b. Wen holte Anna ab?

In German *do*-insertion is not required and the difference between the subject and the object question is marked by Case-assignment on the *wh*-constituent.<sup>9</sup> So we argue that for L2 English speakers with L1 German there is a representational conflict for the construction in (17a) that originates in GC/MG between a generalized V2 rule in the L1 and a residual V2 rule in the L2 and leads speakers to assign an ambiguous or even an object interpretation to the subject question. We further argue that this competition is even stronger in those contexts where the morphological form of the *wh*-constituent does not bias speakers towards a subject interpretation. The relevant data is illustrated in (20) below:

- (20) a. Which one picked Ann up?  
b. Which one picked up Ann?

Here again, we expect that the construction in (20a) leads to grammar competition between generalized V2 in L1 and residual V2 in L2, while the construction in (20b), where the particle is pied-piped again signals that the L2 grammar must be used because particle pied-piping is ungrammatical in the L1.

#### 4.2.2 L1 Dutch – L2 English

At first sight German and Dutch seem to pattern alike and we would not expect any major differences in the L2 learning path for the two L1 speaker groups. Both languages display solid V2 properties and verb particle constructions have a very

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<sup>9</sup> Arguably English also marks the distinction between subject- and object *wh*-pronouns morphologically in *who* vs. *whom* but this distinction is not realized systematically and it is absent in other *wh*-constituents, cf. e.g. *what*.

similar distribution in both languages, as is illustrated in the following examples (cf. Neeleman/Weerman 1993 for examples from Dutch):

- (21) a. Jan belt het meisje op.  
 Jan calls the girl up.  
 ‘Jan phones the girl.’
- b. Jan ruft das Mädchen an.  
 Jan calls the girl up.  
 ‘Jan phones the girl.’
- (22) a. dat Jan het meisje opbelt  
 that Jan the girl up-phones  
 ‘that Jan calls the girl’
- b. dass Jan das Mädchen anruft  
 that Jan the girl up-phones  
 ‘that Jan calls the girl’

In questions, on the other hand, we find one factor that distinguishes Dutch from German and eventually likens Dutch and English grammars in a relevant way. As we saw above, German, in contrast to English, makes a morphological distinction between subject and object *wh*-pronouns. Further relevant examples are provided in (23):

- (23) a. Wer liebt Anna?  
 Who.NOM loves Anna  
 ‘Who loves Anna?’
- b. Wen liebt Anna?  
 Who(m).ACC loves Anna  
 ‘Whom does Anna love?’

Now let’s compare this to Dutch:

- (24) a. Wie ziet Anna?  
 Who.NOM sees Anna  
 ‘Who sees Anna?’
- b. Wie ziet Anna?  
 Who(m).ACC sees Anna  
 ‘Whom does Anna see?’

As we can see from the examples in (24a/b) Dutch, unlike German, does not mark the distinction between subject and object (nominative and accusative) *wh*-pronouns morphologically. Dutch and English are thus almost indistinguishable in this respect, with English marking the distinction only optionally (cf. footnote 9). Hence L1 Dutch L2 English speakers are much more used to syncretism on *wh*-constituents than L1 German L2 English speakers and we can expect L1 Dutch speakers to be able to resolve morphological ambiguity resulting from syncretic *wh*-constituents much more easily than L1 German speakers – possibly by making use of a universal subject bias that can be observed cross-linguistically (Culbertson/Kirby 2016).

This then leaves the question of particle placement in Dutch and again, we can observe a crucial difference between Dutch and German and an effect where particle placement and syncretic Case-marking on pronouns conspire. This is illustrated in the following examples in (25):

- (25) a. Wie           houdt van   Jan?  
           Who.NOM   loves       Jan  
           ‘Who loves Jan?’
- b. Van wie       houdt       Jan?  
           Whom.ACC loves       Jan  
           ‘Whom does Jan love?’

So, in (25a/b) the morphological form of the *wh*-pronoun remains syncretic, just like in the examples (24a/b) above. In contrast to the examples in (24a/b), however, there is a way in Dutch to disambiguate between a subject and an object reading for the *wh*-pronoun in *wh*-+particle constructions. Crucially, this disambiguation goes along with moving the particle to sentence initial position. Pied-piping the particle no further than sentence medial position, i.e. to the position that is grammatical in English and ungrammatical in German (cf. examples in section 3.2.1 above), yields a subject interpretation for the *wh*-pronoun in Dutch.<sup>10</sup>

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**10** Notice incidentally, that stranding the particle in sentence final position is not an option for the sample sentences in (25) in Dutch:

(25)’ \*Wie houdt Jan van?

Interestingly, it is grammatical in Frisian though (many thanks to Arjen Versloot for pointing this out):

(25)’’ Wa hâldt Jan fan?

We will leave a more detailed investigation of this interesting observation to future research.

### 4.2.3 L1 Norwegian – L2 English

Given that Norwegian is also a V2 language, as shown in section 4.1 above, we again expect to find a grammar competition effect in *wh*-+particle constructions for L1 Norwegian and L2 English speakers<sup>11</sup>. Again, however, we have to take some further aspects of Norwegian syntax into account. The examples in (26) (taken from Åfarli 1985) illustrate that particle pied-piping is licit in the same contexts in Norwegian as in English. This marks a clear difference from the particle placement options for German and Dutch respectively, which were illustrated in sections 4.2.1 and 4.2.2 above:

- (26) a. Jon sparka hunden ut.  
 John kicked dogs out  
 'John kicked the dogs out.'
- b. Jon sparka ut hunden.  
 John kicked out the dogs  
 'John kicked the dogs out.'

Furthermore, Norwegian *wh*-constituents are ambiguous between a subject and an object interpretation, as is illustrated below. This makes these constructions reminiscent of the syncretic *wh*-constructions that we find in Dutch but it is clearly different from German, where morphological marking allows for a clear distinction between subject and object questions:

- (27) Hvem elsker Lasse?  
 Who loves Lasse  
 a. 'Who loves Lasse?'  
 b. 'Who does Lasse love?'

However, in Norwegian the ambiguity vanishes in *wh*-+particle constructions, in the sense that those constructions in which the particle is pied-piped can only be interpreted as subject-questions. Here, then, the Norwegian and the English grammar conspire towards a subject-only reading. The ambiguity remains when the particle is stranded, as is shown in (28):

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<sup>11</sup> See also Westergaard (2003) for arguments that V2 is hard to unlearn in English.

- (28) Hvem kastet hundene ut?  
 Who kicked dogs out  
 a. 'Who kicked the dogs out?'  
 b. 'Whom did the dogs kick out?'
- (29) Hvem kastet ut hundene?  
 Who kicked out the dogs  
 'Who kicked the dogs out'  
 \*'Whom did the dogs kick out?'

For those L2 English *wh*-+particle constructions in which the particle is pied-piped, we thus expect a strong tendency towards subject-interpretations. For those constructions where the particle is stranded, we expect a higher tendency towards ambiguous or object-interpretations of the *wh*-+particle constructions, unless this is again counter-balanced by a universal subject bias. Another potential factor is that the construction gets a very strong subject reading in several Norwegian dialects even with the particle stranded. Consider the following data from Northern Norwegian:

- (30) Kvem kasta han Ole ut?  
 Who kicked he Ole out  
 'Who kicked Ole out?'

The object reading is preferably generated in a cleft-construction, in order to disambiguate it from the subject reading:

- (31) Kvem va det som kasta han Ole ut?  
 Who was that SOM kicked he Ole out  
 'Who was it that Ole did kick out?'

The same patterning can be found in the southwestern Rogaland dialect and in Bergensk (spoken in Bergen, where the data were collected). Such disambiguation by clefting which can be found in several dialects, may well have a GC/MG effect on the interpretation of English *wh*-+particle constructions in which the particle is stranded and push L2 speakers towards a target-like interpretation.

A final factor that needs to be taken into account comes from the English grammar itself. We argued above that the GC/MG effect should decrease for L1 German speakers if the particle is pied-piped because this option is not available in their L1 and thus is a clear signal to use the English grammar in these contexts.

For L1 Norwegian speakers the logic can be reversed in the sense that the construction with particle stranding in (30) remains ambiguous, at least in Bokmål and in some dialects. This would again suggest a higher tendency towards ambiguous or object-interpretations. Note, however, that in English the object question would require *do*-support and for L1 Norwegian speakers the lack of *do*-support, combined with the two other factors discussed above, might be enough to prevent an object reading. Note further that this signal would not be enough for the German speakers, because here the verb is always in V2 position and the particle is always stranded:

- (32) a. Wer trifft Hans an?  
 Who hits John at?  
 ‘Who meets John?’
- b. Wen trifft Hans an?  
 Who hits John at?  
 ‘Who does John meet?’
- (33) a. Wer hat Hans angetroffen?  
 Who has John at.hit  
 ‘Who has met John?’
- b. Wen hat Hans angetroffen?  
 Who has John at.hit  
 ‘Who has John met?’

So even though Norwegian is a V2 language like German and Dutch and unlike English, we would expect a lower grammar competition effect in L1 Norwegian L2 English speakers than for L1 German/Dutch L2 English speakers. This, we would argue, is not due to the fact that there is no GC/MG between the two languages. Rather, it stems from the fact that applying Norwegian grammar in English (in line with full-access/full-transfer) does not cause any interference effect precisely because the two grammars are not in conflict here.

### 4.3 Testing GC/MG in German, Dutch and Norwegian speakers of L2 English

Based on the observations in the preceding sections, we can now formulate the following hypothesis:

- (34) Hypothesis: role V2 in MG/GC of L1 V2 and L2 English speakers:
- a. L1 V2 speakers with L2 English are much more likely to assign an ambiguous interpretation to unambiguous subject-questions than L1 English native speakers (and speakers of a L1 that is not V2)
  - b. The effect of an ambiguous interpretation is strongest in contexts where neither Case-marking on the *wh*-word nor particle pied-piping is present.

Furthermore, we predict the following language-specific effects for German, Dutch and Norwegian speakers:

- (35)
- a. For L1 German speakers we predict the highest effect for those constructions where the particle is in sentence final position and the *wh*-constituent is ambiguous between a subject and an object reading.
  - b. For L1 Dutch speakers we predict the effect of the absence of Case-marking on the *wh*-constituent to be lower than for L1 German speakers.
  - c. For L1 Norwegian speakers we predict target-like interpretations for those constructions where the particle is pied-piped and a possibly very low effect for those constructions where the particle is stranded.

Both (34) and (35) are addressed in a series of studies that are presented in the following sections.

## 5 Study 1: L1 German, Dutch or Norwegian L2 English

### 5.1 Participants

We tested four groups, three experimental groups for the three different L1 V2 languages and one control group of L1 English speakers.<sup>12</sup> The first group encompassed 185 students enrolled in the BA study program of the Department for English and American Studies at the University of Wuppertal (Germany). 166 of these participants identified German as (one of) their native language(s). We did

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<sup>12</sup> Cf. also Bauke (2019) for discussion of the L1 German data.

not distinguish between monolingual and bilingual L1 speakers but those participants who did not identify German as their mother tongue were excluded from the statistical analysis.<sup>13</sup> Students were aged between 18 and 28 years ( $M = 21.37$ ,  $SD = 2.104$ ) and they started learning English between 6 and 10 years of age ( $M = 8.53$ ;  $SD = 1.071$ ). Their proficiency level ranges between C1 and C2 in CEFR (measured by an in-house ‘placement test’ that all students entering the program have to take).

The second group consists of 30 BA students enrolled in the program of English language and culture at the University of Amsterdam (Netherlands). These students are in the first year of the program and they all identified Dutch (and Dutch only) as their first language. Participants were aged between 19 and 27 years ( $M = 22.03$ ;  $SD = 2.282$ ) and they started learning English between 8 and 12 years of age ( $M = 9.90$ ;  $SD = 1.918$ ). Thus, the age range and the onset of acquisition range in the group of L1 Dutch speakers are relatively similar to the group of L1 German speakers.

The third group contains 32 BA students enrolled in the program of English in the Department of Foreign Languages at the University of Bergen (Norway). These students are in the first year of said program. All participants identified Norwegian as their native language and several identified a Norwegian dialect as an additional first language. Students were aged between 18 and 33 years ( $M = 20.94$ ,  $SD = 3.079$ ) and are thus comparable to the groups of L1 German and L2 Dutch speakers. However, at least some of them started learning English at a younger age than the speakers in the L1 German and L1 Dutch groups. Students were aged between 4 and 10 years when they started learning English ( $M = 6.84$ ,  $SD = 1.725$ ).

The control group consists of 20 participants of native speakers of English. These participants were recruited through private contacts, the age range in this group is between 19 and 73 years ( $M = 40.00$ ,  $SD = 14.287$ ).

## 5.2 Materials and procedure

Participants were asked to complete a pen and paper questionnaire that consisted of a free choice answer task. The questionnaire contained 32 questions that tested the interpretation of English *wh*-questions in *wh*-+particle constructions. Participants were unaware of the aim of the study, and had no time restrictions for com-

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<sup>13</sup> All in all 23 speakers in this group identified as bi- or multilingual and since the other two experimental groups consisted either of monolingual speakers or of monolingual and dialect speakers, we did not further distinguish between monolingual and bi- or multilingual speakers in this group either.

pletion of the questionnaire. They were instructed to read a short scene, like the one illustrated below, and to answer a follow-up question:

- (36) Susie, Ann and Maggie are carpooling. On Mondays Maggie picks Susie up. On Tuesdays Ann picks Maggie up and on Fridays Susie picks Ann up.

Each scene is followed by a free choice question. This follow-up question tests the variables presented in chapter 4, indicated here in the right-hand column of (37). So the scene in (36) is followed by one of the questions in the left-hand column in (37):

- (37) a. Which one picked Ann up? – which one – V – XP – Part(icle)  
 b. Which one picked up Ann? – which one – V – Part – XP  
 c. Who picked Ann up? – who – V – XP – Part  
 d. Who picked up Ann? – who – V – Part – XP

In (37a/b) the *wh*-constituent does not indicate any morphological marking, in (37c/d) on the other hand *who* (as opposed to *whom*) contains a mild bias towards subject morphology (cf. discussion in chapter 4 above). In (37a/c) the particle is stranded in sentence final position, in (37b/d), on the other hand, the particle is pied-piped.

Each of the four question patterns illustrated in (37) occurs eight times throughout the questionnaire in randomized order. Data collection was distributed over four different undergraduate courses at Bergische Universität Wuppertal, and all data were collected within three consecutive days. All courses received the same 32 scenes and follow-up questions. However, the order of scenes and questions was varied and randomized for the four groups in order to control for pattern learning that might arise while participants complete the study. Since pattern learning did not turn out to be a determining factor, it is not taken into further consideration in the discussion of the results below nor in the questionnaires for the Dutch and Norwegian speakers. Here, all data were collected in a single session on a single day. All meta-data were collected in the respective L1s German, Dutch or Norwegian.

Answers were coded as correct/target-like if participants provided answers that showed a subject-only interpretation for the *wh*-constituents. So for the questions illustrated in (37) the only correct/target-like answer would be *Susie*. All answers that showed an ambiguous interpretation between a subject and object interpretation (e.g. when a participant answered both *Susie* and *Maggie*) were coded as non-target like generalized V2 interpretations. Similarly, all answers

that showed an object-only interpretation for the *wh*-constituent were also coded as non-target like generalized V2 interpretations. For the examples above this would be all answers that contained *Maggie*. All other answers, i.e. blank answers, obvious statements of confusion such as *I don't know* or unexpected choices such as *Ann*, which occurred occasionally, were coded as missing values.

### 5.3 Results

The results for the experimental groups of German, Dutch and Norwegian L2 English speakers and for the control group of L1 English speakers are summarized in tables 1–4 below:

**Table 1:** generalized V2 readings – L1 German speakers

German	subject reading	generalized V2
which one – V – XP – Part	72.97%	27.03%
which one – V – Part – XP	90.67%	9.33%
who – V – XP – Part	83.82%	16.18%
who – V – Part – XP	91.57%	8.43%

**Table 2:** generalized V2 readings – L1 Dutch speakers

Dutch	subject reading	generalized V2
which one – V – XP – Part	86.67%	13.33%
which one – V – Part – XP	98.4%	1.6%
who – V – XP – Part	91.67%	8.33%
who – V – Part – XP	92.5%	7.5%

**Table 3:** generalized V2 readings – L1 Norwegian speakers

Norwegian	subject reading	generalized V2
which one – V – XP – Part	94.514%	5.468%
which one – V – Part – XP	98.829%	1.171%
who – V – XP – Part	98.438%	1.562%
who – V – Part – XP	97.657%	2.343%

**Table 4:** generalized V2 readings – L1 English speakers

English	subject reading	generalized V2
which one – V – XP – Part	100%	0%
which one – V – Part – XP	100%	0%
who – V – XP – Part	100%	0%
who – V – Part – XP	100%	0%

The results show that even very advanced L1 German speakers of L2 English speakers tend to interpret subject *wh*-questions in *wh*-+particle constructions as generalized V2 constructions, i.e. either as object questions or as ambiguous between subject and object interpretations. The effect is much stronger when the particle is stranded and strongest in the absence of (potential) Case-marking on the *wh*-constituent, where it reaches a level of almost 30%. If the particle is pied-piped in the *wh*-+particle constructions, error rates drop to levels below 10% for both *wh*-constituents and there is hardly any difference in the interpretation of questions introduced by *who* and *which one* respectively.

For the L1 Dutch speakers, too, generalized V2 plays a significant role in the interpretation of *wh*-+particle constructions. The results further show that L1 Dutch L2 English speakers with a very high proficiency level in English show tendencies that are similar to those observed for L1 German L2 English speakers. There seems to be GC/MG between generalized V2 in L1 Dutch and residual V2 in L2 English, particularly when the particle is stranded. The effect is again strongest (peaking just below 15%) in the absence of (potential) Case-marking on the *wh*-word. Pied-piping the particle also leads to a decrease in error rates, and in the *wh*-construction in which the *wh*-constituent is not Case-marked the generalized V2 effect is completely absent (1.6%). L1 Dutch L2 English speakers show native-like proficiency in their interpretation of this construction. Though the tendencies in conditions 1–3 are the same for both the German and the Dutch L2 English speaker groups, the overall error rates for L1 Dutch speakers are significantly lower than those for the L1 German speakers. In other words, the GC/MG effect for L1 Dutch speakers is lower overall than for the L1 German speakers. When comparing the results for the fourth condition from the L1 Dutch speakers to the results in the same condition for the L1 German speakers, we notice another effect. In conditions two and four, i.e. in those constructions where the particle is pied-piped, L1 German speakers produce the lowest overall error rates and the error rates for both conditions are almost on the same level. We already pointed out that L1 Dutch speakers show the same tendencies like the L1 German speakers in their error

rates in conditions 1–3. The overall error rate for condition four, however, is lower than the error rate in which the particle is not pied-piped and the *wh*-constituent is not Case-marked (i.e. condition 1), but it is at almost the same level as in condition 3, i.e. the *wh*-construction in which the *wh*-constituent is Case-marked (but the particle is not pied-piped). Thus, while error rates drop to native speaker level in condition 2 with pied-piping, in condition 4 pied-piping does not have the same effect. On the contrary, if the *wh*-constituent is *who* as opposed to *which one*, pied-piping and preposition stranding both pattern alike.

The results for Norwegian L2 English speakers show target-like interpretations regardless of whether the particle is stranded or pied-piped and regardless of whether *wh*-constituents are overtly Case-marked or not. There seems to be a very small and only marginally significant effect for the first condition, i.e. the construction in which the *wh*-pronoun is not Case-marked and the particle is stranded. Closer inspection, however, reveals that the error rate of just over 5%, which is on the brink of being statistically significant, comes from a single speaker who interpreted all 8 occurrences of this construction as object questions. The other 31 L1 Norwegian speakers did not make any errors in this condition. So, we will not take the question whether the error rate is significant or not into further account here.

The results in table 4 clearly illustrate that native speakers of English performed as expected. They did provide some unexpected answers or occasionally left some answers blank. These were coded as missing values just like in the other groups. What is striking is that none of the L1 English speakers provided any answers that indicated an ambiguous or object-only interpretation for any of the question patterns illustrated in (37). We interpret this high-level performance of the control group as an indication that the test is not intrinsically flawed.

A 2x4 ANOVA that checks for statistical significance of the results between the various groups (L1 vs L2 speakers) and across the four test conditions (which one – V – XP – Part = type 1; which one – V – Part – XP = type 2; who – V – XP – Part = type 3, who – V – Part – XP = type 4) shows a significant effect of L1/L2 and of type 1 and type 3 ( $p < .001$ ) and a significant effect for type 2 and type 4 ( $p < .01$ ) for L1 German speakers. For L1 Dutch speakers results show a significant effect of L1/L2 and of type 1, 3 and type 4 ( $p < .01$ ) and no significant effect for type 2 ( $p > .05$ ). For L1 Norwegian speakers results show a marginally significant effect of L1/L2 for type 1 ( $p < .05$ ), which, as indicated above, we will ignore, and no significant effect for types 2, 3 and 4 ( $p > .05$ ). The results of the between group comparison are summarized in Figure 1:

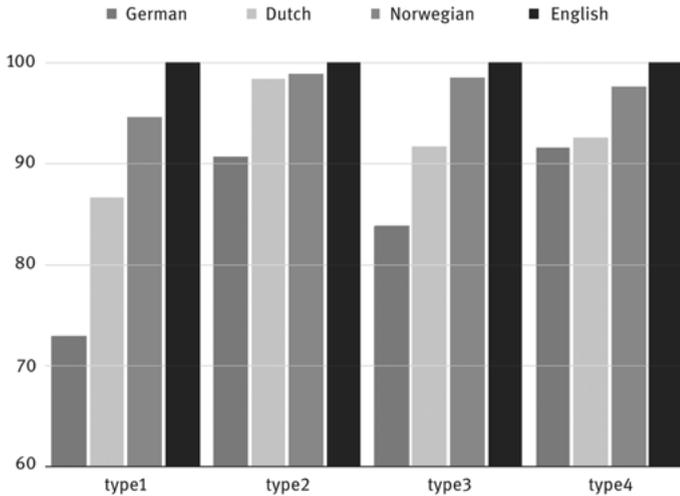


Fig. 1: subject interpretation in %

## 5.4 Interpretation

We can now return to the hypothesis and predictions we formulated in chapter 4.3, repeated here for convenience:

- (34) Hypothesis: role of V2 in MG/GC of L1 V2 and L2 English speakers:
- a. L1 V2 speakers with L2 English are much more likely to assign an ambiguous interpretation to unambiguous subject-questions than L1 English native speakers (and speakers of a L1 that is not V2)
  - b. The effect of an ambiguous interpretation is strongest in contexts where neither Case-marking on the *wh*-word nor particle pied-piping is present
- (35) Further predictions:
- a. For L1 German speakers we predict the highest effect for those constructions where the particle is in sentence final position and the *wh*-constituent is ambiguous between a subject and an object reading.
  - b. For L1 Dutch speakers we predict the effect of the absence of Case-marking on the *wh*-constituent to be lower than for L1 German speakers.
  - c. For L1 Norwegian speakers we predict target-like interpretations for those constructions where the particle is pied-piped and a possibly very low effect for those constructions where the particle is stranded.

As the results from this study show, GC/MG in the interpretation of *wh*-+particle constructions is an issue for German L2 English speakers that leads to a non-target generalized V2 interpretation for these constructions. The effect is strongest for those constructions where the particle is stranded and it peaks for the construction in which the particle is stranded and the *wh*-constituent is syncretic between nominative and accusative Case-marking. Note that if the L2 grammar were simply to be restructured, we would expect the error rates of highly proficient L2 speakers to be much lower, ranging somewhere at the level of type 2 and type 4 constructions. At these levels, grammar competition is much less of an issue because particle pied-piping is ungrammatical in German.

For Dutch speakers we find a GC/MG effect as well. However, since Dutch, like English, allows for particle pied-piping to sentence medial position in subject *wh*-+particle constructions and also shows syncretism on *wh*-constituents it is impossible to determine which of the two factors is more relevant. What we can say, however, is that particle placement has a highly significant effect in condition 1 and 2. Here error rates are brought down from the highest level overall to native speaker like competence depending on particle placement. While particle placement has virtually no effect in L1 Dutch speakers in conditions 3 and 4, error rates in these conditions are significantly lower than in condition 1 and significantly higher than in condition 2. This conspires with the results from German, i.e. with Case-marking taking a back-seat to particle placement for speakers of L1 V2 L2 English. Hence, when comparing L1 German and L1 Dutch speakers to L1 English speakers, there seems to be a GC/MG effect between generalized and residual V2 for the two L1 German and Dutch speaker groups. Thus, there seems to be a general V2 effect. However, the strength of the effect is different for the two L1 speaker groups, with L1 German speakers showing a much stronger effect than L1 Dutch speakers. This, we argue, indicates that V2 may not be as broad a parameter as frequently assumed.

This is further corroborated by the fact that L1 Norwegian L2 English speakers, unlike L1 German/Dutch L2 English speakers, show target-like results in their interpretation of *wh*-+particle constructions regardless of whether the *wh*-constituent is overtly Case-marked or not and regardless of whether the particle is pied-piped or stranded. If there were a broad V2 parameter that applies cross-linguistically, we would not expect such a strong counter-balancing effect from particle placement and morphological marking in Norwegian. Additionally, following Roeper (2016), we take this as an indication that if the GC/MG effect is observed only in specific groups of advanced V2 speakers then it is less likely to be accounted for by a production or processing error. Rather, it indicates a representational conflict in terms of competing grammars.

## 6 Further predictions and conclusion

Our observations on the role of GC/MG in German, Dutch and Norwegian speakers allow us to make the following predictions on acquisition path in L2 English for L1 speakers of other V2 languages:

For Icelandic, we expect L1 Icelandic speakers of L2 English to pattern with L1 Norwegian speakers because verb-particle constructions in Icelandic show the same distribution as in Norwegian, as is shown in the examples in (38) taken from Svenonius (1996):

- (38) a. Þjónninn þurrkaði rykið af  
 waiter wiped dust off  
 ‘The waiter wiped off the dust.’  
 b. Þjónninn þurrkaði af rykið  
 waiter wiped off dust  
 ‘The waiter wiped off the dust.’

As we can see in the examples in (38) particles in Icelandic can be either pied-piped or stranded and hence L1 Icelandic speakers should pattern with L1 Norwegian speakers, i.e. we do not expect any interference effect when they apply the Icelandic grammar to English *wh*-+particle constructions. If anything, we expect L1 Icelandic speakers to be even more robust than L1 Norwegian speakers in their interpretations of *wh*+particle constructions in English, at least under the analysis that in Icelandic, as in Yiddish, V2 is movement to T rather than C (cf. Diesing 1990). In this respect, too, Icelandic patterns much more closely with English than any of the other V2 languages investigated where V2 is movement to C.

Swedish does not allow particle stranding, as is illustrated by the following data from Svenonius (1996):

- (39) a. \*Kyparen torkade dammet av.  
 waiter wiped dust off  
 ‘The waiter wiped off the dust.’  
 b. Kyparen torkade av dammet.  
 waiter wiped off dust  
 ‘The waiter wiped off the dust.’

Hence, L1 Swedish L2 English speakers should pattern with the other Scandinavian V2 speakers and should not show a GC/MG effect in these constructions, since the particle placement in sentence final position is not an option, and even if there is CG/MG, there is again no conflict between the L1 and the L2 data.

Danish is the more interesting test-case here. Consider the following data from Svenonius (1996):

- (40) a. Tjeneren tørket støvet af.  
 waiter wiped dust off  
 ‘The waiter wiped the dust off.’  
 b. \*Tjeneren tørket af støvet.  
 waiter wiped off dust

A brief comparison of the data in (39a/b) and (40a/b) shows that Danish is the mirror image of Swedish with respect to verb-particle constructions. Hence Danish, unlike Swedish, allows particle stranding but does not allow particle pied-piping. In that respect, Danish patterns with the other Germanic V2 languages tested here, i.e. German and (to some extent) Dutch. We may therefore expect L1 Danish speakers of L2 English to produce higher error rates than L1 Norwegian/Icelandic/Swedish L2 English speakers and thus to pattern with the L1 Dutch/German L2 English speakers in this respect. Further testing for these constructions is in progress.

From the studies discussed in this paper we can conclude that unlearning V2 in SLA is a challenging task. L1 speakers of a V2 language show a GC/MG effect in *wh*-+particle constructions in L2 English that can be attributed to the V2 properties of their L1.

However, when comparing the results from L1 speakers of various V2 languages, we can also see that these speakers do not behave as a uniform group in L2 English. Rather, the specific properties of the V2 language need to be taken into account in order to determine how strong the GC/MG effect is going to be. We take this as an indication of two things. First, the data seem to suggest that a broad V2 parameter does not exist. Instead, several factors seem to conspire in generating a V2 effect, which can be dissected into a number of micro-parameters or micro-cues (cf. e.g. Westergaard 2009, 2014; Biberauer et al. 2014, and many others). Second, the data seem to indicate that the effect cannot be related to processing difficulties in L2. If processing were a relevant factor, the various groups of L1 speakers should pattern uniformly as they are all very advanced L2 speakers with relatively similar levels of competence. Since they do in fact pattern differently, we argue for an explanation in terms of GC/MG and underlying grammatical representations instead.

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# Syntactic or semantic gender agreement in Dutch, German and German learner Dutch: a speeded grammaticality judgement task

**Abstract:** Dutch is currently undergoing a ‘resemanticisation’ of its pronominal gender, in which syntactic agreement is replaced with a system in which pronouns are chosen in accordance with the degree of individuation of the antecedent. Current accounts of resemanticisation link the process to the extent to which the three-way nominal gender distinctions are still entrenched. Using experimental data gathered with speeded grammaticality judgements from speakers of both Netherlandic and Belgian varieties of Dutch, of German, and of German learners of Dutch, we unambiguously relate the rise of semantic agreement in Dutch to an increased uncertainty with respect to grammatical gender. In addition, reaction time measurements suggest that an agreement system with a strong propensity towards grammatical agreement allows for faster processing of agreement relations than systems in which semantic agreement plays a larger role.

**Zusammenfassung:** Im Niederländischen findet zurzeit eine ‘Resemantisierung’ des pronominalen Genus statt, durch die syntaktische Kongruenz zunehmend durch ein System ersetzt wird, in dem die Wahl pronominaler Formen vom Grad der Individuierung des Antezedenten abhängt. Es wurde vermutet, dass der Prozess mit dem Grad der Verankerung (entrenchment) des Drei-Genera-Systems zusammenhängt. Anhand von Grammatikalitätsurteilen unter Zeitdruck (speeded grammaticality judgements) mit Sprechern niederländischer und belgischer Varietäten und mit Sprechern des Deutschen durchgeführt, sowie auch mit deutschen Niederländischlernern, demonstrieren wir eindeutig den Zusammenhang zwischen der Zunahme semantischer Kongruenz und einer Unsicherheit in Bezug auf das grammatische Genus. Darüber hinaus sprechen die Analysen der Reaktionszeiten dafür, dass sein stark grammatisch basiertes Genussystem eine schnellere Verarbeitung von Kongruenzbeziehungen erlaubt als ein System, in dem semantische Kongruenz eine größere Rolle spielt.

# 1 Introduction

As is well-documented, Dutch is currently undergoing a transition by which a predominantly syntactic system of pronominal gender is resemanticised, which means replaced with a system in which semantics plays a larger role (e.g., Audring 2009a). This yields several contrasts with the neighbouring German language, which has preserved a more conservative pronominal gender system. Two of these contrasts are illustrated in (1), adopting Dutch examples from Audring (2009a: 73, 98):<sup>1</sup>

(1) Semantic gender agreement in Dutch vs. German.

(1a) ...maar het **meisje** [...] hoe oud is **ze** dan? (*rarely: het*, 'it')  
 ...aber das **Mädchen** [...] wie alt ist **es** dann? (*also: sie* 'she')  
 ...but the **girl** [...] how old is **she/it** then?  
 'About the girl [...] how old is she really?'

(1b) da 's zo handig met **wol** [...] want je kunt **'t**  
 dasist so praktisch mit **Wolle** [...] denn du kannst **sie**  
 that is so handy with **wool** [...] because you can **it**  
 overall tussen stoppen (*also: hem, ze*)  
 überall zwischen stopfen (*not: ihm, es*)  
 everywhere between stuff (*not: him, her*)  
 'that's so handy about wool [...] because you can stuff it between everything'

The example in (1a) concerns the noun *meisje/Mädchen* 'girl', which refers to an animate entity ranking high on the so-called Individuation Hierarchy (Sasse 1993; Siemund 2008), as do all entities that carry biological gender. In this case, there is a conflict between biological gender (female) and the noun's neuter gender, which yields the possibility to use feminine pronouns like Dutch *ze* or German *sie* 'she', rather than the neuter pronoun (Dutch *het*, German *es* 'it'). In this and comparable cases in the animate domain, Dutch more commonly applies the so-called natural gender rule than German (Kraaikamp 2017: 63–73). Example (1b) concerns the low end of the Individuation Hierarchy, in that a mass noun, viz. *wol/*

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*Wolle* ‘wool’, refers to an unspecific quantity of a substance. In such conditions, Dutch shows an increasing tendency to use the neuter pronoun (*het*), even if the noun involved has common gender (or is feminine in three-gender varieties of Dutch). Whereas the same phenomenon exists in German as well (see Audring 2009a: 193 for examples), it is by no means as widespread as in Dutch (Kraaikamp 2017: 74). (1b) also hints at a further difference between Dutch and German: in line with its tryadic gender system, German uses masculine and feminine pronouns to refer to masculine and feminine nouns, respectively. Most varieties of Dutch, however, have collapsed masculine and feminine gender into common gender (or *de*-nouns), and use masculine pronouns for syntactic agreement with this category. Example (1b) is a case in point: the pronoun *hem* ‘him’ is much more commonly used than *ze* ‘her’ in Dutch, even though the noun *wol* is, as a cognate of German *Wolle* ‘wool’, historically feminine.

This article zooms in on the changes illustrated in (1b), and investigates the psycholinguistic status of the variants involved. Current research on resemanticisation has primarily dealt with data from language usage and has proposed a number of explanations for the phenomenon. While these are, essentially, psycholinguistic in nature, there have been few attempts to tap into speakers’ knowledge of their gender system more directly. Section 2 provides an overview of research carried out by means of usage data and formulates several hypotheses regarding the psycholinguistics of pronominal gender in Dutch. Section 3 then describes the method adopted in our own investigation, which is geared at providing more insight into the status of syntactic vis-à-vis semantic gender agreement by means of two speeded grammaticality judgement tasks, targeting the relation between syntactic and semantic agreement (Experiment 1), and the masculine-feminine distinction (Experiment 2), respectively. Section 4 describes the results, and in section 5 some conclusions are drawn.

## 2 Production data on Dutch and German pronominal gender: Overview

As said above, this article zooms in on the resemanticisation of pronominal gender in the inanimate domain, which was illustrated by means of (1b). The term ‘resemanticisation’, coined by Wurzel (1986), considers that all gender systems are assumed to have a semantic core (Corbett 1991: 63), including the common ancestor languages of Dutch and German. Audring (2006: 108) therefore evaluates the change observed in Dutch as a result of semantic agreement merely becoming more visible (again), rather than as an original development

(cf., among others, Schwink 2004 and Jobin 2011 on Proto-Germanic, Matasovič 2004 and Luraghi 2011 on Proto-Indo-European, and Kraaikamp 2017 for further evidence on Dutch).

Whether semantic or syntactic agreement is used in a given situation, depends on many factors, some of which are inherent to the referent of the pronoun (e.g., whether it is highly individuated or not) or the noun involved (e.g., usage frequency, cf. De Vos/De Vogelaer 2011), whereas others relate to the syntactic or discourse context in which the pronoun or its antecedent are used. Among the factors that have been proposed for Dutch are the pronoun's grammatical case, the distance between antecedent and pronoun (Audring 2009a), the antecedent's definiteness and its grammatical function, the verb of both the antecedent and the pronoun sentence (De Vos 2014), anaphoric vs. deictic reference, and the presence of a gender marker in the antecedent NP (Kraaikamp 2017). In addition, in a change-in-progress like resemanticisation in Dutch, sociolinguistic factors like speakers' gender, age and social background may play a role as well (see Audring 2009a: 168f. and De Vos 2014: 166–186 for discussion). Not all of these parameters can be included in a comparative study, however, even more so because many of them interact and their effects should therefore be studied in a multivariate analysis of a larger dataset than the one used below. For the present investigation, most of them will be kept constant.

As for the most important factor, viz. the semantics of the pronoun's referent, the investigation needs to take into account variation in the way semantic agreement is implemented. While the use of neuter pronouns in reference to non-neuter mass nouns has been documented throughout (and beyond) the West Germanic languages, there appears to be variation with respect to inanimates ranking more highly on the Individuation Hierarchy: for instance, Audring's (2009a) analysis of the Spoken Dutch Corpus zooms in on the geographical centre of the Dutch language area (Holland or the broader Randstad area), and reveals a tendency to generalize masculine pronouns for highly specific and/or delineated referents, typically count nouns, even if these have neuter gender (e.g., a count noun like *het boek* 'the book' would increasingly be referred to with *hij* 'he' or *hem* 'him'). Similar examples from peripheral areas in the Netherlands and from Belgium are lacking, however; it appears as if in these areas neuter *het* 'it' is expanding its use in referring to all inanimates, including count nouns (e.g., a count noun like *de doos* 'the box' would be referred to with *het* 'it', albeit less frequently than mass nouns). In a schema such as (2), the variation is described in terms of different cut-off points between the usage ranges of different pronouns: whereas Holland distinguishes between highly and lowly individuated inanimates for pronominal reference, the semantic system elsewhere treats inanimates as a single category that triggers, from a semantic point of view, the use of *het* 'it'.

## (2) Semantic gender in Dutch: different cut-off points.

	Human	> Other animate	> Bounded object/Abstract	> Specific mass	> Unspecific mass, Unbounded abstract
Holland (cf. Audring 2006: 103):		Hij/Zij		Hij	HET
Belgium, periphery of the Netherlands (cf. Klom/De Vogelaer 2017):		Hij/Zij			HET

Similar variation is known from English, where the standard variety has generalized *it* for inanimates and animates with unknown (or backgrounded) biological gender, much like the varieties of Dutch spoken in the periphery of the language area are doing. Several non-standard varieties have alternative systems at their disposal, however, which resemble the Hollandic system, in which *he/him* are used in combination with highly individuated inanimates (see *cask* in example 3a from Siemund 2008). The few data that are available for German, which has only marginal proportions of semantic gender, indicate that it behaves like peripheral varieties of Dutch: a few exceptions notwithstanding, deviations from lexical gender are explained either as effects of the natural gender rule, or as neuter pronouns used in line with a masculine/feminine referent's low individuation (Kraaikamp 2017: 68–73; cf. example 3b).

## (3) Examples of semantic gender in English and German.

(3a) Thick there cask 'ont hold, tidn no good to put *it* [the liquid] in *he* [the cask]  
 (Southwest of England; Siemund 2008: 46)

(3b) Wir müssen zuerst *Erde*<sub>fem</sub> entsorgen. Ich hoffe, dass *es*<sub>neut</sub>  
 we must first earth dispose.of. I hope that it  
 mit einem mal transportiert werden kann. (Kraaikamp 2017: 70)  
 with one time transported become can  
 'First we must dispose of the earth. I hope it can be transported in one time.'

Apart from different implementations of semantic gender in the inanimate domain, Dutch also shows extensive variation with respect to the degree of semantic gender that is observed. In general, Netherlandic Dutch has developed a stronger prefer-

ence for semantic gender, whereas Belgian varieties show higher proportions of syntactic agreement (compare Audring 2009a and De Vos 2014). This is correlated to the fact that Belgian varieties have preserved richer gender marking in the noun phrase: in the inflectional paradigm of articles and/or adjectives, many Belgian varieties still distinguish between masculine and feminine gender (usually by attaching an *-en*-suffix to articles and adjectives preceding masculine nouns) and therefore qualify as three-gender varieties of Dutch. In contrast, the two-gender varieties spoken in the northern half of the language area have merely preserved the common-neuter distinction (see Van Ginneken 1934f. and 1936f. for maps). While suffixes marking the masculine-feminine distinction in the adnominal domain are associated with non-standard varieties, the distinction between two- and three-gender varieties is also relevant for Standard Dutch, in that it is reflected in pronominal reference: the south, most notably Belgian Dutch, (also) uses *ze* to refer to feminine *de*-words, whereas the north has generalised masculine *hij/hem* 'he/him' for all *de*-words. The three-gender area appears to be eroding: Hoppenbrouwers (1983) documents the loss of the masculine-feminine distinction in both pronominal and adnominal gender in a North-Brabant variety of Dutch, and relates it to processes of dialect levelling and loss. De Vogelaer/De Sutter (2011) show that, within the three-gender area, the varieties with the richest adnominal system are also the most resilient ones with respect to resemanticisation.<sup>2</sup>

The tight link between richness of the adnominal paradigm and degree of resemanticisation is observed in other languages: both in Germanic and in Romance, resemanticisation appears to have affected two-gender systems more systematically than three-gender systems (Siemund 2008; Fernández-Ordóñez 2009; Audring 2009a: 198f.). In addition, Audring (2009a: 211, 2009b) reveals a typological link between purely pronominal gender marking and semantic gender, with distinctions relating to individuation (count/mass, animate/inanimate) ranking among the most common semantic parameters steering pronominal agreement. This suggests a causal link between the (partial) collapse of the inflectional system in the adnominal domain, and resemanticisation, in that syntactic systems of pronominal agreement can only be upheld if they are 'supported' by

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<sup>2</sup> The state border between Belgium and the Netherlands does not coincide at all with the isogloss separating the two- and three-gender area. Since the latter area stretches out until deep in the Netherlands, it is common in the dialectological literature on the topic to distinguish northern and southern varieties rather than Netherlandic and Belgian ones. Since standardisation processes have exerted stronger pressure on the three-gender varieties in the Netherlands, the two- and three-gender systems have become associated with Netherlandic and Belgian Dutch, respectively, and we conveniently describe the contrasts as differences between national varieties of Dutch (see Klom/De Vogelaer 2017 for elaboration, however).

an adnominal system. Ultimately, resemanticisation would then be explained psycholinguistically by means of scenarios that can be called ‘learnability’ or ‘entrenchment accounts’: in a language with covert gender like Dutch, nouns’ gender can only be learned through the behaviour of associated words. To be successfully acquired, then, gender must be properly entrenched in the input. Audring’s findings indicate that this is only the case in languages with sufficiently rich and consistent gender marking in the adnominal system.<sup>3</sup> If gender marking no longer allows learners to acquire the system, language users increasingly have to resort to semantic rules in pronominal reference, which, in the long run, could lead to language change.

There are different hypotheses on the precise features of the adnominal system that ensure grammatical gender to be properly entrenched. Audring’s (2009a: 172) ‘mismatch hypothesis’ points out that the contrast between two genders in the adnominal domain and three pronominal genders may be problematic. Since resemanticisation is also observed in three-gender varieties of Dutch, however, incomplete patterns of syncretism may suffice to trigger the change. In this vein, De Vogelaer/De Sutter (2011: 195) discuss the role of *n*-deletion in paradigms in which *-n* is used as the main marker for masculine gender, and also illustrate the role of the masculine indefinite article *ne* (*n*), which apparently causes East-Flemish varieties of Dutch to lag behind in resemanticisation in comparison to West-Flemish, which has an invariable indefinite article. The loss of gender marking on the indefinite article is also mentioned by Kraaikamp (2017: 126f.), who points out that gender marking has been lost in more agreement targets in Dutch, such as most possessives, and attributive articles in definite NPs. Apart from the distinctiveness of agreement suffixes and the number of agreement targets, the gender assignment system may also play a role: Dutch gender is assumed to be by and large arbitrary (Audring/Booij 2009), which contrasts with languages in which lexical gender is motivated on formal or semantic grounds (e.g., German, in which nouns on schwa tend to be feminine, or long objects tend to be masculine; see Köpcke/Zubin 1983), and/or even morphologically marked on the noun (e.g., Italian has masculines on *-o* and feminines on *-a*).

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<sup>3</sup> One can speculate about the reasons why pronominal agreement would not fulfill such an entrenchment requirement. A possible factor would be the, on average, larger distance between pronouns and their controllers (the noun), and their, in typological perspective, stronger preference for semantic agreement. Both blur the agreement relationship between pronouns and their antecedents. In addition, languages like Dutch use surprisingly few pronouns to refer to inanimates. The latter point can be illustrated with data from De Vos (2014), who finds a mere 3463 references to inanimates in the entire Flemish part of the Spoken Dutch Corpus, which consists of about 3 million words.

Numerous acquisition studies illustrate that gender, as entrenchment accounts would predict, is indeed much harder to acquire in Dutch than in German. Whereas mistakes in the adnominal domain are rare even in young German-speaking children (Mills 1986; Szagun et al. 2007), these abound in Dutch (Van der Velde 2003: 128, 138; Cornips/Hulk 2006; Blom/Polišenská/Weerman 2008). In the pronominal domain, Dutch-speaking children conceive of pronominal gender predominantly as a semantic system; syntactic gender is acquired later (De Houwer 1987; De Vogelaer 2010; De Vos/De Vogelaer 2011). Children growing up in the three-gender area apply the grammatical gender system more consistently, both in the adnominal and pronominal domain (see, respectively, Cornips/Hulk 2006 and De Vogelaer 2010). Not surprisingly, the grammatical gender system poses an even bigger challenge for non-native learners of Dutch (see Cornips/Hulk 2006; Blom/Polišenská/Weerman 2008, and Loerts 2012 for adnominal gender, and van Emmerik et al. 2009 for pronouns). German learners of Dutch are an exception to this, however. Since these have been found to use a “direct gender translation strategy” (Sabourin/Stowe/De Haan 2006: 24), and given extensive correspondences between German and Dutch gender both on the systemic and the lexical level, syntactic agreement should be acquired with relative ease. Since they have also been found to exploit knowledge of their native language (L1) even in circumstances where correlations between the L1 and the L2 are missing (Lemhöfer/Schriefers/Hanique 2010: 157), an investigation into German-speaking learners of Dutch may reveal whether some of the recent findings regarding the Dutch gender system transfer to German as well.

The results of acquisition studies are, broadly speaking, in line with the predictions yielded by entrenchment accounts of resemanticisation. Yet these acquisition data, as other production data, do not provide any direct insight into the grammatical knowledge of the language users involved. Even if resemanticisation is observed, for instance, it cannot be determined to what extent this is caused by a weakened entrenchment of lexical gender or whether this relates to the acceptability of syntactic agreement being affected. Changing usage preferences may also be explained by conscious attempts to adopt a system increasingly favouring semantic agreement, especially since resemanticisation appears to be most strongly observed in Holland, which is the normative centre of the Dutch language area. Therefore, this article aims at tapping more directly into the Dutch and German gender system, using data from a psycholinguistic experiment carried out on German, Netherlandic Dutch, and Belgian Dutch speakers, and on German learners of Dutch. The following hypotheses will be explored:

- Syntactic agreement is expected to be the dominant agreement mode in German, and be more stable in Belgian Dutch than in Dutch from the Nether-

lands. German learners of Dutch are expected to rely on lexical gender, which means use syntactic agreement, more than on semantics.

- German still shows a stable three-gender system, whereas feminine gender is vulnerable in Dutch, and even no longer found in Netherlandic varieties.
- Semantic agreement is more strongly observed in Netherlandic Dutch than in Belgian Dutch. German shows a non-negligible amount of semantic agreement, too, and in particular allows combinations of lowly individuated non-neuter nouns and neuter pronouns.

## 3 Method

### 3.1 Participants

The method adopted for this psycholinguistic investigation is the so-called speeded grammaticality judgement task: participants are asked to evaluate the grammaticality of a number of test sentences as fast as possible. Both the participants' evaluations and their reaction times provide insight into their underlying grammatical knowledge.

[T]he speeded presentation of the stimuli and the rapidly enforced judgement are taken to reflect processing strategies because the pace of the task (a) forces the parser to adopt its preferred parsing route and (b) does not allow for enough time to complete reanalysis [...]. The rationale underlying the speeded judgement paradigm is that, under time pressure, sentences dispreferred by the parser elicit lower accuracy scores and higher reaction times than comparable control sentences. (Hopp 2007: 238)

Speeded grammaticality judgements allow investigating separately the role of semantic vis-à-vis syntactic agreement in sentence processing, because all conceivable combinations of noun gender and particular pronouns can be tested, including infrequent and ungrammatical patterns. As such they provide information that remains invisible in an analysis of production data, which primarily yield insight into which variants are preferred (cf. Tremblay 2005: 159). In order to test the hypotheses formulated above, two experiments were developed, focusing on the alternation between syntactic and semantic agreement for masculine and neuter antecedent NPs, and on the masculine-feminine distinction, respectively. Both experiments were carried out in four groups of participants, viz. L1 speakers of a Netherlandic variety of Dutch (recruited in Utrecht; n=23), L1 speakers of a Belgian variety of Dutch (recruited in Ghent; n=25), German learners of Dutch (recruited in Münster; n=28), and L1 speakers of German (recruited in Münster

and Vienna;  $n=20$ ). All participants were university students in the age range 20–45 years.

### 3.2 Material

The investigation focused on mass nouns, since only lowly individuated nouns behave uniformly with respect to resemanticisation (see above). To address our hypotheses, nouns of a given lexical gender were combined with certain pronouns, with Experiment 1 testing the effect of semantic vis-à-vis syntactic agreement, and Experiment 2 testing the resilience of feminine gender. Of nine possible gender-pronoun combinations, two were excluded, because they do not occur in production data (neuter noun – feminine pronoun), or because their behaviour can be predicted on the basis of other categories (the combination feminine noun – neuter pronoun is expected to behave similarly as masculine noun – neuter pronoun). The experimental items were selected on the basis of both the German and the Dutch gender system, as described in the Duden (2015 edition) and the Grote Van Dale (2015 edition), respectively. For Dutch gender, the opposition between masculine and feminine *de*-words was considered, since the investigation also targets three-gender varieties of Dutch. Some investigations on Dutch gender have yielded frequency effects (e.g., De Vos/De Vogelaer 2011; De Vogelaer 2012), so usage frequency was included in the analysis, too. Whereas the nouns were not selected to vary systematically in frequency, and only cover a limited frequency range, it was investigated whether frequency affected the acceptance of the conditions in both experiments, by adding the frequency of the nouns according to the sublex-NL corpus (Keuleers/Brysbaert/New 2010) to all models as a continuous predictor variable.

All nouns are cognates in Dutch and German, with identical gender in both languages (however, with one exception)<sup>4</sup>; hence, the Dutch and German versions of the test consisted of maximally equivalent test sentences. Both experiments consisted of 75 sentences each, which means 36 experimental items and 39 fillers (15 grammatical and 24 ungrammatical ones), which were included to avoid routine answering strategies (cf. Hopp 2007: 240). The order of the test items was

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<sup>4</sup> The one exception, viz. *stoff/Stoff* ('fabric'), has feminine gender in Dutch and masculine in German, which in fact allows detecting a "direct gender translation strategy" (Sabourin/Stowe/De Haan 2006: 24) on the part of the German learners of Dutch. Indeed they do not use any feminine pronouns in the production task and consistently rate feminine pronouns as ungrammatical (see Urbaneck et al. 2017: 162–164 for further discussion).

randomised, with experimental and filler sentences alternating in an unpredictable manner.

The test sentences from Experiment 1 represent four conditions, with 18 masculine nouns and 18 neuter nouns, of which half are combined with a masculine subject pronoun (Dutch *hij*, German *er*), and the other half with a neuter pronoun (Dutch *het*, German *es*). In Experiment 2, four conditions were tested as well: half of 18 masculine and 18 feminine nouns combine with masculine subject pronouns (Dutch *hij*, German *er*), and the other half with a feminine pronoun (Dutch *ze*, German *sie*). Since the masculine test items were used in both Experiment 1 and 2, the total number of nouns in the test equals 54. To ensure maximal comparability across the experimental conditions, two versions of both experiments were designed, in which test items were combined with a different pronoun, yielding A and B versions of both experiments. Table 1 presents a few examples of test sentences from both versions (of the Dutch test).

**Table 1:** Examples of test sentences in Dutch

List A:	List B:
Experiment 1	
De <b>suiker</b> <sub>masc.</sub> is gevaarlijk, want <b>het</b> <sub>neut.</sub> is oud. The sugar is dangerous because it is old.	De <b>suiker</b> <sub>masc.</sub> is gevaarlijk, want <b>hij</b> <sub>masc.</sub> is oud. The sugar is dangerous because he is old.
De <b>lijm</b> <sub>masc.</sub> vloeit niet, want <b>hij</b> <sub>masc.</sub> is droog. The glue does not flow because he is dry.	De <b>lijm</b> <sub>masc.</sub> vloeit niet, want <b>het</b> <sub>neut.</sub> is droog. The glue does not flow because it is dry.
Het <b>gras</b> <sub>neut.</sub> brandt niet, want <b>het</b> <sub>neut.</sub> is sappig. The grass does not burn because it is juicy.	Het <b>gras</b> <sub>neut.</sub> brandt niet, want <b>hij</b> <sub>masc.</sub> is sappig. The grass does not burn because he is juicy.
Het <b>koper</b> <sub>neut.</sub> glanst sterk, want <b>hij</b> <sub>masc.</sub> is nieuw. The copper shines brightly because he is new.	Het <b>koper</b> <sub>neut.</sub> glanst sterk, want <b>het</b> <sub>neut.</sub> is nieuw. The copper shines brightly because it is new.
Experiment 2:	
De <b>maïs</b> <sub>masc.</sub> smaakt goed, want <b>ze</b> <sub>fem.</sub> is vers. The maize tastes well because she is fresh.	De <b>maïs</b> <sub>masc.</sub> smaakt goed, want <b>hij</b> <sub>masc.</sub> is vers. The maize tastes well because he is fresh.
De <b>azijn</b> <sub>masc.</sub> brandt wat, want <b>hij</b> <sub>masc.</sub> is pikant. The vinegar burns a bit because he is spicy.	De <b>azijn</b> <sub>masc.</sub> brandt wat, want <b>ze</b> <sub>fem.</sub> is pikant. The vinegar burns a bit because she is spicy.
De <b>zeep</b> <sub>fem.</sub> kost veel, want <b>hij</b> <sub>masc.</sub> is mild. The soap costs much because he is mild.	De <b>zeep</b> <sub>fem.</sub> kost veel, want <b>ze</b> <sub>fem.</sub> is mild. The soap costs much because she is mild.
De <b>soep</b> <sub>fem.</sub> ruikt lekker, want <b>ze</b> <sub>fem.</sub> is gekruid. The soup smells nice because she is seasoned.	De <b>soep</b> <sub>fem.</sub> ruikt lekker, want <b>hij</b> <sub>masc.</sub> is gekruid. The soup smells nice because he is seasoned.

Since the likelihood of semantic agreement in Dutch is influenced by the syntax of the antecedent NP (e.g., definiteness) as well as by the predicate of both the antecedent clause and the pronoun clause (De Vos 2013, 2014), test sentences uni-

formly contained antecedents used in a definite NP, in a clause with an activity verb (n=32), a state verb (n=32), or a combination of the copula *zijn/sein* ‘to be’ and an adjective (n=8). The activity and state verbs in the antecedent sentences were followed by an adverb to keep the length of the sentence equivalent. The pronoun sentence was invariably introduced by the complementizer *want/denn* ‘because’, followed by the anaphoric pronoun, the copula *zijn/sein* ‘to be’ and an adjective. All lexical items consisted of maximally three syllables.

The ungrammatical fillers contained ungrammatical plurals, ungrammatical word orders, and false verb agreements. The grammatical filler sentences were modelled after the ungrammatical ones, but did not contain any ungrammaticalities.

### 3.3 Procedure

The two experiments were designed with the software package E-Prime (Schneider/Eschman/Zuccolotto 2012). Sentences were shown in a word-by-word fashion on a computer. Each word was shown for 250 milliseconds (ms) plus 18ms per letter, before a blue screen appeared and participants were asked to evaluate the sentences’ grammaticality by means of a red (ungrammatical, rightmost button) and green button (grammatical, leftmost button). The maximal time allotted for the judgements was 4 seconds. In between both experiments, participants were administered a language background questionnaire (LSBQ, Anderson et al. 2017). After the second experiment they were asked to take part in a production test, in which they had to fill out pronouns in a questionnaire containing the same test sentences as the experiments. For the analysis carried out in this contribution, the language background questionnaire was merely used to detect participants with special backgrounds (e.g., bilingual education, non-native speakers, ...); results of the production test are not analysed here (but see Urbanek et al. 2017). The entire procedure took about 30 minutes per participant.

## 4 Results

### 4.1 Experiment 1: syntactic vs. semantic gender

Experiment 1 was designed to evaluate the status of syntactic and semantic agreement in the language varieties involved. Nouns of masculine and neuter gender were combined with either a masculine or a neuter pronoun, constituting

four different conditions. Given the fact that all nouns involved were mass nouns, combinations with masculine nouns present unambiguous examples of syntactic agreement (masculine > *hij/er* ‘he’) or semantic agreement (masculine > *het/es* ‘it’). Combinations of neuter nouns with masculine pronouns are neither motivated by syntactic, nor by semantic agreement; for combinations of neuter nouns with neuter pronouns, syntactic and semantic agreement match. While a detailed analysis of the data is carried out below using mixed effect models, a first glance at the overall results in Figure 1 already shows that, in general, combinations with neuter nouns trigger the clearest evaluations: the combination of neuter nouns with neuter pronouns yields the highest acceptance ratios, and the combination of neuter nouns with masculine pronouns is most strongly, but not across the board, judged ungrammatical. This corresponds to the fact that syntactic and semantic agreement have matching outcomes for neuter nouns. The results with masculine nouns, for which syntactic and semantic agreement conflict, tend to be more mixed. A slight preference for masculine pronouns is observed in the German L1 speakers and the German learners of Dutch, and for neuter pronouns in both Netherlandic and Belgian L1 speakers of Dutch.

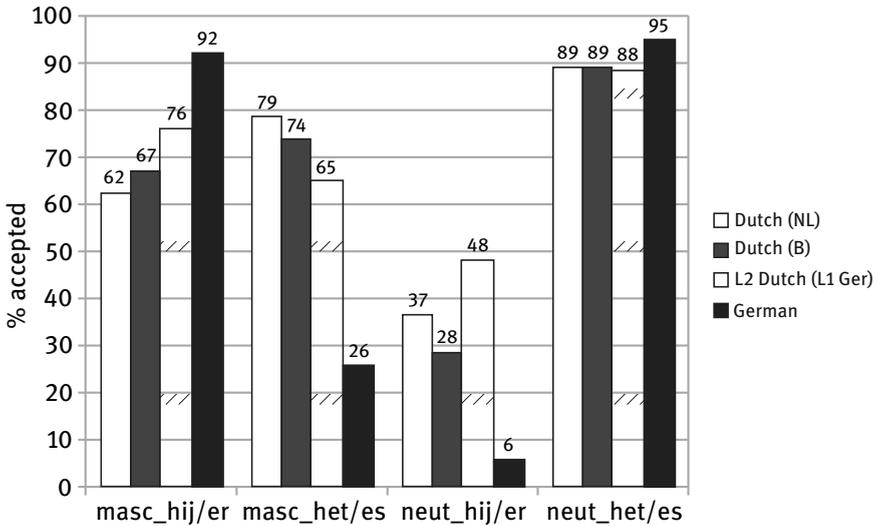


Fig. 1: Grammaticality judgements on syntactic vs. semantic agreement

To analyse the differences between the tested groups, we used logistic mixed effects models with ‘choice’ (grammatical, ungrammatical) as dependent variable and random intercepts for items and participants. As a complex model that

included the three-way interaction between (participant) ‘Group’, ‘Pronoun’ and ‘Antecedent’ (gender: masc/neut) did not converge, and as our research questions do not concern potential main effects of ‘Group’ as far as the judgements are concerned, we conducted separate subset models, testing for effects of Pronoun, Antecedent (masc/neut), and their interaction in each of the four groups. A further parameter, ‘Frequency’, was not included in the final model, since an initial analysis including this factor showed that neither a main effect of Frequency nor an interaction with another factor was observed in the three varieties of Dutch in the investigation. The results of these analyses are summarized in Table 2, which includes z-scores as a measure for effect size, and p-values for significance.

**Table 2:** Experiment 1: Mixed effect modelling of factors ‘Antecedent’, ‘Pronoun’ and their interaction, for four participant groups

	Antecedent (masc/neut)	Pronoun	Antecedent * Pronoun
Dutch (NL)	n.s.	z=10.40 p<.001 ***	z=-5.68 p<.001 ***
Dutch (B)	z=1.90 p=.05	z=10.82 p<.001 ***	z=-8.94 p<.001 ***
L2 Dutch (L1 German)	n.s.	z=5.44 p<.001 ***	z=-8.90 p<.001 ***
German	z=1.90 p=.05	z=3.90 p<.001 ***	z=-14.45 p<.001 ***

These results show a significant interaction between Pronoun and Antecedent (masc/neut) in all groups, which was also visible in Figure 1 through the fact that the two pronouns do not have the same acceptability depending on the antecedent. This is the expected effect of syntactic agreement. More interestingly, the data also reveal a main effect of pronoun in all groups, because the pronoun *het/es* ‘it’ is overall more acceptable than the pronoun *hij/er* ‘he’. This is most strongly the case in the L1 varieties of Dutch, where it is in line with the expected semantic agreement pattern, but the effect is also observed in German learner Dutch and L1 German. Finally, the marginal effect of Antecedent (masc/neut) in the Belgian Dutch and the German group is due to the overall less positive judgements for neuter antecedents. This effect is carried by the low acceptability of the combination of a neuter antecedent and the pronoun *hij/er* in these two groups.

Examining some of the patterns in more detail, the combinations of neuter nouns with masculine pronouns (*hij/er* ‘he’), first, yielded the least approval,

which is in line with the fact that they are neither the outcome of syntactic, nor of semantic agreement. Still, much more instances of this type are judged grammatical in varieties of Dutch than of the ungrammatical fillers. This holds both for L1 speakers (where ungrammatical fillers on average get some 10% positive evaluations vs. 28% (B) or 37% (NL) of neut\_hij/er combinations) and for German L2 learners of Dutch (with 30% of ungrammatical fillers approved of vs. 48% of neut\_hij/er combinations). Hence, in addition to resemanticisation, the answers of the Dutch L1 speakers, and likely also those of German L2 learners, can be interpreted as indications of uncertainty regarding gender agreement, which cannot be explained on semantic grounds. This uncertainty is not found in L1 German. Second, the combinations with masculine nouns are particularly insightful to determine the alternation between syntactic and semantic agreement. In both Netherlandic and Belgian Dutch, acceptance of semantic agreement (around 75%) is higher than of syntactic agreement (around 60%). Although Belgian Dutch tends towards syntactic agreement slightly more than Netherlandic Dutch, the difference between both varieties is smaller than could have been expected from the literature. In contrast, in L1 German syntactic agreement (masc\_hij/er) is by far the preferred option, despite a non-negligible acceptance of semantic agreement (masc\_het/es) of 26%. The German L2 learners, finally, show a preference for syntactic agreement, which can be considered a transfer effect. They also show a high acceptance of semantically motivated neuter pronouns for masculine mass nouns, however, which could, in principle, both be transferred from their L1 or learned. Even though the 65% proportion of semantic agreement exceeds the proportion of 26% found in the L1 German group, Urbanek et al. (2017) argue that semantic agreement in German L2 Dutch is transferred, since the pattern does not become stronger in more proficient learners.

Regarding the participants' reaction times (RT), the general expectation is that a low acceptance correlates with slower RTs (Hopp 2007: 238). However, the availability of both syntactic and semantic agreement may already impact RTs, in that computing the outcome in such a complex system may require additional processing effort. It can be hypothesized that processing will be faster when the grammatical principles involved yield the same outcome than in cases of conflict. In Experiment 1, syntactic and semantic agreement yield matching outcomes for neuter nouns (with *het/es* 'it' being grammatical and *hij/er* 'he' ungrammatical) and mismatching outcomes for masculine gender nouns (with syntactic agreement yielding *hij/er* 'he' and semantic agreement *het/es* 'it', given that all nouns involved are mass nouns). The results are displayed in Figure 2, which orders data per investigated variety to highlight intra-group differences. In contrast with Figure 1, a first glance reveals few tendencies holding across the board, apart from the fact that both in native and non-native Dutch, the neut\_het/es-condition yields the fastest RTs.

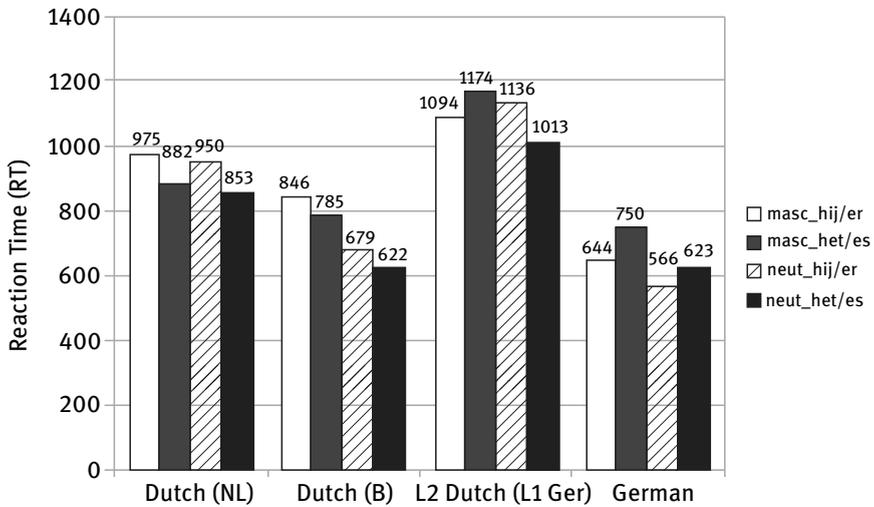


Fig. 2: Reaction times (milliseconds) on syntactic vs. semantic agreement

Again, there are substantial differences between the varieties involved. The data were analysed with a linear mixed effect model with the judging time as dependent variable, random intercepts for participants and items, and ‘Group’, ‘Pronoun’, ‘Antecedent (masc/neut)’ as well as all two- and three-way interactions as predictors. As this analysis yielded several significant two-way and three-way interactions, we conducted additional separate analyses in the following. In a first step, we focused on potential overall effects of Group on the decision times. As non-native speakers plausibly will show slower reaction times due to their status as non-native speakers, this group was excluded from this analysis. Linear mixed effect models with Group (Netherlandic Dutch, Belgian Dutch, German) as predictor revealed a marginally significant difference in overall decision time between Netherlandic and Belgian Dutch ( $z=1.92$ ,  $p=.06$ ), a significant difference between Netherlandic Dutch and German ( $z=.68$ ,  $p < .01$ ), and no significant difference between Belgian Dutch and German ( $z=0.88$ , ns). These differences reflect the fact that the Netherlandic participants made their decisions more slowly than the German participants, with the Belgian participants situated between these two groups.<sup>5</sup> This may be interpreted to indicate that a system in which semantic

<sup>5</sup> To interpret the RTs of the Belgian participants properly, it should be pointed out that these were recruited from a pool of experienced test persons, whereas the Netherlandic and German participants were novices. This may have affected RTs. Note that for the second experiment, differences between RTs obtained from Belgian and Netherlandic participants are much smaller.

rules have more weight could lead to slower processing of agreement than a system in which syntactic rules are predominant.

In a subsequent step, we focused on effects of the two experimental factors and their interaction for subset models for each group, as done above for the offline decisions. The results are summarized in Table 3. These results reveal a heterogeneous picture, with subtle differences, but also common tendencies among the groups.

**Table 3:** Mixed effect modelling of reaction times (RT) from Experiment 1, in relation to ‘Antecedent (masc/neut)’, ‘Pronoun’ and their interaction, for four participant groups

	Antecedent (masc/neut)	Pronoun	Antecedent * Pronoun
Dutch (NL)	n.s.	z=2.35 p<.05 *	n.s.
Dutch (B)	z=4.42 p<.001 ***	z=1.77 p=.08	n.s.
L2 Dutch (L1 German)	n.s.	n.s.	z= 2.96 p<.01 **
German	z=2.59 p<.05 *	z=2.51 p<.05 *	n.s.

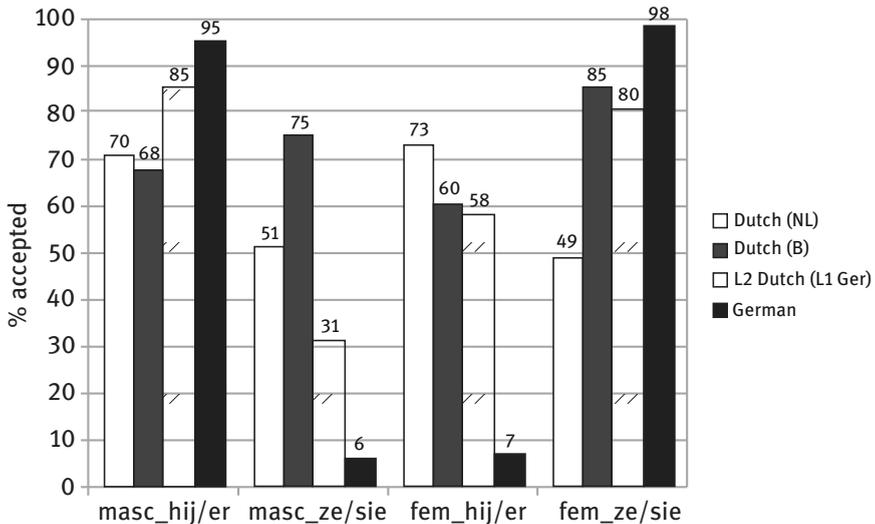
Across the board, RTs with neuter nouns are shorter than with masculine nouns, leading to a significant effect in the Belgian Dutch and the German group. The effect is most strongly observed in Belgian Dutch, where it can be related to the fact that syntactic and semantic agreement yield conflicting outcomes for masculine mass nouns. That the effect is not found in Netherlandic Dutch is due to the strikingly slow RTs for neut\_hij/er, causing an overall asymmetry between RTs for neuter and masculine pronouns. An opposite effect for Pronoun is found in German, which shows slower RTs for combinations with neuter *es* ‘it’ than with masculine pronouns, and especially for masc\_het/es. Since this relates to a non-marginal acceptance of masc\_het/es in comparison to neut\_hij/er, it is possibly the result of semantics interfering with grammatical agreement.

The slow RTs for masc\_hij/er illustrate that grammatical agreement is no longer the most expected option for L1 speakers of Dutch. The German learners, in contrast, provide the clearest evidence for a mainly grammatically dominated agreement system. In this group, a mismatch between the gender of the antecedent and the gender of the pronoun consistently led to longer reaction times, yielding a significant interaction between the two factors in this group. That such

an effect is not visible in L1 German is due to the unexpectedly fast decision times for the neut\_hij/er condition. It is possible that the ungrammaticality of this structure was so striking for the L1 German group that it led to particularly fast rather than particularly slow decision times. Whether and under which conditions such a pattern surfaces could be further investigated in future studies.

## 4.2 Experiment 2: preservation of feminine gender

Experiment 2 is geared towards testing the resilience of feminine gender. Figure 3 shows the proportions in which combinations of both masculine and feminine nouns with masculine and feminine pronouns are accepted. German is expected to have maintained a clear distinction between masculine and feminine gender, unlike Netherlandic varieties of Dutch, which have collapsed masculine and feminine gender. Such a tendency towards ‘masculinisation’ is also observed in Belgian Dutch production data (Geeraerts 1992), but has not reached completion there. Figure 3 confirms that the masculine-feminine distinction is still clear-cut in German, whereas it has blurred in Dutch, including German learner Dutch.



**Fig. 3:** Grammaticality judgements on syntactic agreement with masculine vs. feminine gender

As was done for Experiment 1, the data were analysed with generalized linear mixed effect models. A complex model involving the three-way interaction between

‘Group’, ‘Antecedent (masc/fem)’ and ‘Pronoun’ did not converge. Given that as in Experiment 1, we had no hypotheses regarding a main effect of Group, we conducted subset analyses for each of the four Groups. The results are summarized in Table 4.

**Table 4:** Experiment 2: Mixed effect modelling of factors ‘Antecedent’, ‘Pronoun’ and their interaction, for four participant groups

	Antecedent (masc/fem)	Pronoun	Antecedent * Pronoun
Dutch (NL)	n.s.	z=7.59 p<.001 ***	n.s.
Dutch (B)	n.s.	z=-6.36 p<.001 ***	z=-3.66 p<.001 ***
L2 Dutch (L1 German)	z=2.30 p<.05 *	z=5.12 p<.001 ***	z=-12.16 p<.001 ***
German	n.s.	n.s.	z=-11.38 p<.001 ***

These results show that the Netherlandic Dutch participants are the only ones who do not take the masculine-feminine distinction into account at all, as reflected in the fact that it is the only group in which there is no interaction between the two experimental factors. Instead, there is a main effect of Pronoun, which is due to the fact that *hij* ‘he’ is judged as acceptable in about 20% more of the cases than *ze* ‘she’, irrespective of the grammatical gender of the antecedent. This confirms the process of masculinisation for Netherlandic Dutch that was mentioned above. In the three other groups, there is an interaction between the two experimental factors, due to the fact that the pronouns *hij/er* ‘he’ and *ze/sie* ‘she’ are judged differentially depending on the grammatical gender of the antecedent, thus reflecting the masculine-feminine distinction. This interaction differs in strength in the three groups, however. As expected, it is clearest in the L1 German group, where Figure 3 shows that more than 90% of masculine pronouns are accepted with masculine nouns, and a similar proportion of feminine pronouns with feminine nouns. Use of a non-agreeing pronoun is judged ungrammatical (the scores of <10% are comparable to those of ungrammatical fillers). The absence of a main effect of Pronoun demonstrates that both pronominal forms are accepted to similar degrees. In the Belgian speakers of Dutch, there is only weak evidence of a distinction between masculine and feminine gender. While the interaction between Pronoun and Antecedent (masc/fem) plausibly

reflects some knowledge of grammatical gender, the preference of *ze* ‘she’ over *hij* ‘he’ is more general, since it is also observed in masculine nouns (where it amounts to a mere 7% difference, which is much less than 25% for feminine nouns), and yields a reverse effect for Pronoun in comparison to Netherlandic Dutch. Finally, in the German learners of Dutch, the interaction between the factors ‘Antecedent (masc/fem)’ and ‘Pronoun’ reaches the same strength as in L1 German, suggesting that grammatical gender is transferred from the L1 to the L2, and that it is the dominant factor of influence on the judgements. In addition, however, the learners show masculinisation: they accept *hij* ‘he’ with feminine antecedents much more often (i.e. 27% more) than *ze* ‘she’ with masculine antecedents, yielding a main effect of pronoun. As there are no signs of a similar tendency in the L1 German data, this is probably knowledge that these learners have acquired in the target language.

A separate analysis was run for the variable ‘Frequency’. Since it may be hypothesized that the lexical gender of more frequent nouns has a higher chance to be acquired, high frequency is expected to hamper masculinisation, at least in varieties marking the masculine-feminine distinction. In general, the attested frequency effects link high frequency to resilience to change, as expected, but the effects appear relatively unsystematically and are weak. The Belgian Dutch data reveal a marginally significant interaction between the factors Antecedent (masc/fem) and Frequency ( $z=1.94$ ,  $p=.05$ ), which is predominantly carried by the high acceptance of the *fem\_hij* condition for less frequent nouns. In the learner group, Experiment 2 yielded a significant three-way-interaction between Frequency, Antecedent (masc/fem) and Pronoun ( $z=2.80$ ,  $p< 0.01$ ), which is mainly due to the higher acceptance of *hij* ‘he’ with the less frequent feminine antecedents, and the higher acceptance of *ze* ‘she’ with the more frequent feminine antecedents.

The overall picture thus is one of a continuum, in which the Netherlandic Dutch group and the German group represent two extremes, with no knowledge of grammatical gender in one group, and no baseline preference for one of the two pronouns in the other group. The German learners of Dutch show an intermediate position, with a moderate degree of masculinisation, as does the Belgian Dutch group, which reveals an overall preference for feminine *ze* ‘she’. To our knowledge, this overall preference for *ze* ‘she’ has not been found in other studies, and contrasts rather sharply with spontaneous production data. For masculine inanimates in the Belgian part of the Spoken Dutch Corpus, De Vos (2014: 55) calculates figures of 62% masculine vs. 2% feminine pronouns; for feminine nouns figures are found of 43% feminine and 6% masculine pronouns, respectively. Rather than the preference for *ze* ‘she’ observed in our Experiment 2, then, spontaneous production data show a fairly resilient masculine-feminine

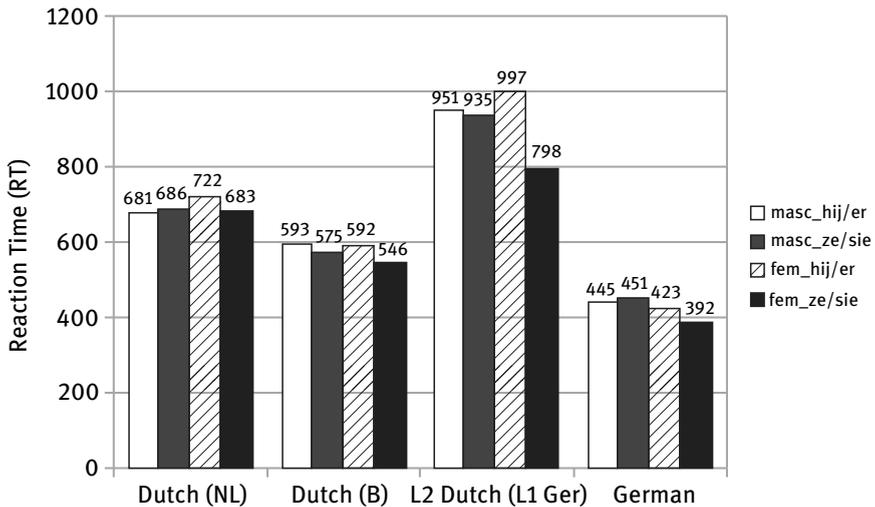
distinction, and most deviations from grammatical gender in spontaneous speech can be analysed as semantically motivated instances of *het* 'it'. Still, there appears to be some asymmetry in the production data, too, in that feminine gender triggers more semantically motivated *het* 'it', and some masculinisation is observed (6% of pronominal references to feminines are with masculine pronouns).

When comparing the overall acceptance rates from Experiment 2 to previous production studies, it becomes evident that in the Netherlandic data, too, a remarkable tolerance is observed towards combinations that are rare in spontaneous production, in particular combinations with *ze* 'she'. Thus, Audring (2009a: 96) finds feminine pronouns only for animate reference in her Netherlandic data, in contrast to their acceptance ratio of around 50% (51% for masculines and 49% for feminines) in Figure 3. While such a high acceptance may partly result from exposure to alternative variants (for instance because Belgian Dutch shows masculinisation, too, and Netherlandic speakers may be familiar with three-gender varieties of Dutch), the remarkable discrepancies with usage data also point towards a general uncertainty regarding gender agreement. This uncertainty may be more visible in the current paradigm, where participants cannot avoid judgements for forms of which they feel unsure, whereas in spontaneous production, gender-marked pronouns are indeed avoided (Audring/Booij 2009). In combination with the so-called acquiescence-bias (or 'yes'-bias effect), this may explain a substantial proportion of yes-answers (cf. Sabourin et al. 2006: 17). A comparison with Experiment 1, however, allows the generalisation that the distinction between common (i.e., masculine and feminine *de*-words) and neuter nouns (*het*-words) is much more solid in Dutch than distinctions within common gender.

With respect to RTs, the expectation that ungrammaticality correlates with longer RTs (Hopp 2007: 238) often does not allow strong predictions, in that differences in acceptability between the conditions in Experiment 2 are very subtle for most varieties involved. In addition, even in L1-German, which is the only variety with clearly ungrammatical combinations in the experiment, RT differences remain limited. The descriptive results are presented in Figure 4.

A complex statistical model involving all factors yielded several two-way as well as a marginally significant three-way interaction. As for Experiment 1, we thus proceeded to subset analyses. In a first step, we tested for a main effect of Group on Judgement times, again excluding the non-native speakers. These analyses revealed no significant difference between the Netherlandic and Belgian Dutch speakers, a marginal difference between the data for Belgian Dutch and for German ( $z=-1.91$ ,  $p=.06$ ), and a significant difference between Netherlandic Dutch and German ( $z=3.34$ ,  $p<.01$ ). These results correlate clearly with the resilience of

the three-gender system. The consistently faster RTs for German seem to confirm that a system with a strong propensity towards grammatical agreement allows for faster processing of agreement relations.



**Fig. 4:** Reaction times (milliseconds) on syntactic agreement with masculine vs. feminine gender

Turning to potential effects of the factors on RTs in the four groups, there were no significant effects in any of the three L1 groups. While in the two Dutch-speaking groups, this may be taken as a reflection of rather subtle differences, it probably reflects particularly striking and categorical differences for the L1 speakers of German, which led to the grammatical sentences being quickly recognized as grammatical, and the ungrammatical ones as ungrammatical. As for the learners, there was a significant main effect of Pronoun ( $z=2.83$ ,  $p<.01$ ), and a significant interaction between Pronoun and Antecedent (masc/fem) ( $z=2.48$ ,  $p<.05$ ) (see also Urbanek et al. 2017). Both effects are probably carried by the particularly fast reaction times for the fem\_ze/sie condition. While one should be wary of premature generalisations, this may result from feminine *ze/sie* ‘she’ not being available for semantic agreement in the inanimate domain, and the fem\_ze/sie-condition thus being the one in which the least competition between syntactic and semantic agreement is observed.

## 5 Conclusions

At the outset of this article, three hypotheses were formulated regarding the psycholinguistic status of grammatical gender in the varieties included in the investigation. First, syntactic agreement was expected to be the dominant agreement mode in German pronouns, and be more stable in Belgian Dutch than in Dutch from the Netherlands. German learners of Dutch are expected to rely on lexical gender, which means use syntactic agreement, more than on semantics. The expectation that German speakers and German learners of Dutch predominantly rely on syntactic agreement was borne out, whereas differences between the resilience of syntactic agreement in Netherlandic and Belgian Dutch were more subtle than could have been expected on the basis of the literature on spontaneous production. Second, German has a stable three-gender system, whereas feminine gender is vulnerable in Dutch: Netherlandic Dutch yields similar results for masculine and feminine nouns, which are thus collapsed into the category of common gender; Belgian Dutch maintains the distinction but hardly in a robust fashion. This is not to say that there are no differences between Belgian and Netherlandic Dutch, however, in particular with respect to the degree with which *hij* 'he' vs. *ze* 'she' is accepted by default for common gender antecedents. Third, semantic agreement is more strongly observed in Netherlandic Dutch than in Belgian Dutch although here too, the difference is far from spectacular. German shows a non-negligible amount of semantic agreement as well, and in particular allows combinations of lowly individuated non-neuter nouns and neuter pronouns.

With respect to the 'entrenchment accounts' of resemanticisation (De Vogelaer/De Sutter 2011; De Vos/De Vogelaer 2011; Kraaikamp 2017), our experiments show that the rise of semantic agreement in Dutch relates to an increased uncertainty with respect to grammatical gender, yielding highly mixed answers for several conditions in our experiments, and high RTs across the board. Our results are complementary to studies on usage documenting highly variable pronominal gender in Dutch and slow acquisition processes, and more directly link such findings to linguistic cognition. They support a scenario assuming a causal link between linguistic uncertainty and change, in that semantic agreement can be considered a default option that is becoming more important as the knowledge of the grammatical gender system is affected by processes of deflection rendering invisible the distinction between masculine and feminine gender. This seems to be corroborated by a number of frequency effects in the data, which all link high frequency to resilience to change, as expected in entrenchment accounts. However, the nouns in the investigation yield relatively unsystematic and weak effects, which may be due to the fact that they only cover a limited frequency range.

In general, the overall faster RTs in L1 German may be interpreted as an indication that an agreement system with a strong propensity towards syntactic agreement allows for faster processing of agreement relations than systems in which semantic agreement plays a larger role. This would be consistent with the alleged function of grammatical gender as a device helping to keep track of reference across discourse (see Contini-Morava/Kilarski 2013 for discussion). It is unclear, however, to what extent such a generalisation would extend beyond the Germanic varieties included in the present investigation and hold for other languages where syntactic and semantic agreement potentially conflict, which is, typologically speaking, common in gender systems (cf. Corbett 2013). In the varieties of Dutch discussed here, processes of deflection and the covert nature of gender assignment have rendered grammatical gender vulnerable, but have not obliterated it. It remains an open question what would be the impact if semantic agreement assumed an even more prominent status than it presently has in Dutch. A language such as English, for instance, has by and large lost its grammatical gender in favour of semantically driven pronominal reference. Mills (1986: 91f.) shows that children acquire such a semantic system of pronominalisation more slowly than a German-style syntactic agreement. This may indicate that semantic agreement can indeed be cognitively challenging. It remains to be tested, however, whether this slow acquisition corresponds to higher RTs in experiments like the ones carried out in this study.

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# Subtle differences, rigorous implications: German and Dutch representation of tense-aspect features in SLA research of Spanish

**Abstract:** This article presents original evidence for an L1-effect in SLA by comparing empirical studies on German and Dutch learners of L2 Spanish (written production). In Spanish, grammatical aspect plays a far more prominent role (perfectivity is grammaticalized) and thus both learner groups are faced with new linguistic features. In both cases, L1-like performance is not achieved. However, the ways learners deal with this aspectual phenomenon in their written production is completely different: German learners base their decision on temporal markers and trigger words, whereas Dutch learners consider inherent verbal aspect. We explain this contrast by analysing small differences between the involved L1 systems: only Dutch learners depart from a system with basic aspectual notions.

**Zusammenfassung:** Dieser Artikel präsentiert neuartige Evidenzen für einen L1-Effekt im Zweitspracherwerb, indem empirische Studien zu deutschen und niederländischen Lernenden des Spanischen als L2 verglichen werden (schriftliche Produktionsdaten). Im Spanischen spielt grammatischer Aspekt eine prominentere Rolle (Perfektivität ist grammatikalisiert), wodurch beide Lerner-Gruppen mit neuen Merkmalen konfrontiert werden. In beiden Fällen wird keine muttersprachliche Performanz beobachtet. Jedoch unterscheiden sich die Weisen, in denen mit aspektuellen Phänomenen umgegangen wird: Deutsche Lernende gründen ihre Entscheidungen auf Signalwörter, während niederländische Lernende den inhärenten Verbalaspekt berücksichtigen. Wir erklären diesen Kontrast durch eine Analyse von kleinen Unterschieden in den L1-Systemen: Nur niederländische Lerner starten von einem System mit grundlegenden aspektuellen Konzepten.

## 1 Introduction

Probably the most distinguishing property of adult L2 learners, besides their age of onset, is the fact that they already have a fully developed language system,

acquired during their first language (L1) acquisition. One obvious question is to what extent, if at all, the L1 system influences the L2 acquisition process (see e.g. White 2003 for an overview). In the research literature, the notion of L1-effects is controversial. Whereas some researchers consider the L1 as main source for learning difficulties, others claim that it is the complexity of the linguistic property to be acquired which decisively affects the process.<sup>1</sup>

In this chapter, we want to contribute to that discussion by synthesizing the work of several previous studies which, when contrasted, reveal intriguing differences between several groups of learners. For this purpose, we will focus on Dutch and German-speaking learners of Spanish as L2. The testing ground consists of the tense-aspect-systems of these languages.

The conclusion drawn from this comparison affects the description of the languages itself. Although an immediate comparison of the verb systems of Dutch and German only reveals minor differences and leaves substantial uncertainties in several respects, these differences have a great effect on how interlanguages look. This supports two claims made in this chapter: firstly, there is a clear L1-effect which is manifested even if the L1s in question do not seem to rigorously differ from each other. Secondly, the differences between the tense systems in German and Dutch are indeed present and sharply distinguish the verb systems from each other.

Generally, the mastery of any Romance tense-aspect system is known to be highly challenging for Germanic speakers. However, although all Germanic learners show difficulties when producing the targeted Romance forms, there is a significant difference in how they try to compensate for them, i.e. which type of learning strategies are (consciously or implicitly) applied to overcome a possible lack of knowledge (see e.g. Cadierno 2000). As results from previous studies show, Dutch learners use aspectual distinctions in the L2 but commit errors when selecting the aspectual level (inherent instead of grammatical). German learners, in contrast, do not consider inherent aspectual properties when selecting a form, but rely on elements of the linguistic surface such as adverbs or other lexical elements.

Based on a review of these results, we aim to derive an important implication for linguistic analysis and description, as the comparison between the interlanguages of L2 learners will give us insight into the differences between the L1 characteristics.

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<sup>1</sup> We owe many thanks to Henk Verkuyl and Geert Booij for their valuable comments on earlier versions, and also to Jill Jeffery for the last revisions. We profited very much from anonymous reviews and editor comments.

The organization of our chapter follows the outlined argumentation: in section 2, we describe the tense-aspect systems of German, Dutch and Spanish, focussing in detail on the (partially subtle) differences between the two Germanic languages and the challenges presented in the Romance language. In the next paragraph, we will summarize existing studies on different learner groups, according to their L1 (section 3). New in this context is the cross-linguistic contrast of these studies, leading to a meta-comparison of the results that are significantly different from each other. The chapter closes with a general discussion and conclusion.

The main point consists of the observation that the manifested differences between the learners prove that the German and the Dutch grammar clearly have their own intrinsic temporal system. Although these differences seem subtle from a perspective of grammatical description, they lead to very different outcomes in SLA.

## 2 Aspectual systems

### 2.1 Inherent Aspect

When talking about aspectual information, two levels can be distinguished: the inherent level and the grammatical one. However, both levels share certain properties and may even interact with each other, which has led to different proposals regarding how to categorize the phenomena.<sup>2,3</sup> The most relevant argument for the present chapter is that the expression of aspect as a grammatical contrast is subject to cross-linguistic variation. Here, inherent aspect is clearly different from grammatical aspect, as it refers to a universal property of language which allows to categorize verb predicates into different classes according to their semantic

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<sup>2</sup> We choose the term inherent because the notion of lexical aspect is misleading: we want to talk about the predication rather than the verb itself. We thus approach the topic at phrase level to experience an inherent boundedness interpretation (compare the tenseless predicates *She read a book* vs. *She read books* vs. *No one read a book*, which, although featuring the same verb, differ in their inherent aspect, as will be shown later in this chapter).

<sup>3</sup> Within the generativist framework, some researchers highlight the fact of similarity and propose that inherent and grammatical aspectual levels are coded together within one aspectual phrase (Tsimplici/Papadopoulou 2009). Others hypothesize that those two levels are completely separated from each other (e.g. Diaubalick/Guijarro-Fuentes 2016; Rothman 2008).

content. Crucially, this is possible without a concrete grammatical context (Comrie 1976)<sup>4</sup>.

Although most researchers agree on the theoretical possibility of categorizing inherent aspect into various disjoint classes, they disagree as to how to define such classes. The initiator of this type of semantic differentiation is Vendler (1957). Thanks to his four-way partition, other researchers have been able to refine the division and simplify it into three- or two-way partitions. A short description of some of these approaches follows.

Vendler (1957) classified verbs into states, activities, accomplishments and achievements. State verbs are characterized by the lack of dynamicity and are thus stable over a longer time period (*be, love, hate*). Activity verbs, in contrast, are dynamic and require the addition of energy (*read, walk, swim*). In contrast to accomplishments and achievements, they carry no inherent point of termination and can be extended or shortened. Finally, the distinction between accomplishment (*read a book, walk a mile*) and achievement verbs (*find, arrive, die*) lies in the fact that the latter are perceived as punctual<sup>5</sup>.

Building upon these concepts, Comrie (1976: 41–51) shows that three features underlie this classification: stativity, telicity and punctuality. Whereas the definitions of stative (contrasting with dynamic) and punctual verbs (contrasting with durative ones) are merely formal reflections of the corresponding intuitions, the notion of telicity needs further clarification: this concept refers to the culmination of actions and is to be understood as carrying an inherent end-point. Oppositely, the end-point of atelic events is arbitrary. Accomplishment and achievement verbs are considered telic whereas states and activity verbs are understood as atelic. As this notion is a priori little intuitive, several tests have been developed to determine the (a)telicity of a predicate. For instance, Giorgi/Pianesi (1997) state that only telic verbs allow the combination with *in*-adverbials (e.g. ‘*to read a book in one hour*’), atelic verbs combine with *for*-adverbials (e.g. ‘*to read for hours*’).

Such tests are not unproblematic, as there are contexts that allow both types but with different readings (see Salaberry 2008; Shirai 2013, among others). This problem can be understood as symptom of an unclear definition: inherent aspect

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<sup>4</sup> This does not mean that inherent and grammatical aspect are completely independent. Once there is a concrete grammatical context, both aspectual levels can interact with each other. Examples of coercion are given in the section treating the Spanish verb system below.

<sup>5</sup> It is unclear what is meant with verb classes. It may be that four types of predications are distinguished, but a focus on aspectual properties of the verb itself could also be meant, when discussing the case of accomplishments like ‘*buy*’ or achievements like ‘*reach*’. In the latter case, there are some inconsistencies in the use of the notion of verb, because *reach* cannot occur without a complement (see Verkuyl 1993 for a discussion).

is to be determined locally, nevertheless in most languages accomplishment verbs consist of a verb and an object. When applying the definition to verbs only, punctuality and telicity turn out to coincide. It remains unclear how many elements within a sentence must be considered. Another problem lies in the terminology itself, as the use of the term *telic* presupposes (via Vendler's appeal to Aristotle) that each motion has an inherent goal (*telos*). This Aristotelian notion is quite dubious because it is too closely connected with the idea of intentionality. Expressions like '*lose a wallet*', '*resume her seat*', or '*she came back from the window*' are quite hard to connect with the Aristotelian idea of an inherent goal on its way to completion (Verkuyl 1993). In fact, Dowty (1979) showed very early on that this conceptualization of events leads to philosophical paradoxes. If we say, for instance, that "*John was drawing a circle*" (ibid.: 133), and construct a context in which the action was started but not completed, how can we then judge if the sentence is true? Such deliberations are the reason why a more neutral term is to be preferred, and more simplified classifications have been proposed.

One such classification is found in the proposal by Moens/Steedman (1988), who argue that predicates (verb+internal argument) are partitioned between those pertaining to events and those pertaining to states. Both classes are further divided in subclasses, but in general terms the ontology can be summarised as a distinction between dynamic and non-dynamic predicates. Whereas events are defined as "happenings with defined beginnings and ends" (Moens/Steedman 1988: 17), states do not have these properties. For instance, '*climbing*' as well as '*climbing to the top*' are events, whereas '*being at the top*' is a state. As this example shows, events and states can be interrelated (in this case, the state is a consequence of the event). Nonetheless, since the property of telicity is being avoided, a problem arises with the properties of beginning and end: there is no clear distinction between arbitrary and determined points.

Due to limitations of previous frameworks, we will work with the bipartition proposed by Verkuyl (1993) who defines the concepts of terminativity and durativity. These terms unite two advantages, because, although they maintain the idea that events are characterised by termination points, they make clear that they apply to whole phrases or verbal predicates, not only to verbs, thus rendering the telic-atelic distinction unnecessary.

According to Verkuyl (1993, 1999)<sup>6</sup>, and as summarised for L2 research purposes in González (2003, 2008), the terminativity of a verb phrase is a compositional function of the properties of the verb and its arguments. The lexical semantic information given by the verb combines with structural and lexical information

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<sup>6</sup> And many others, see Shirai (2013) for a discussion.

given by the arguments to express whether the situation has, or lacks, a natural inherent endpoint (terminative versus durative<sup>7</sup> clauses). This is why this combination is called predicational aspect, as it not only depends on the semantics of the verb, but also on the semantics of the verbs and its arguments (Verkuyl 1999). The following examples show the clear difference between terminative and durative predications. This bi-partition occurs before any temporal information is given to the sentence as in the predications below, where inflection is not expressed yet.

- (1) read a book (terminative)
- (2) read newspapers (durative)
- (3) love that book (durative)

For the purposes of this chapter, two claims shared by the competing classifications are relevant: firstly, verb predicates have diverse aspectual properties and thus behave differently regarding boundedness and termination. Secondly, it is not the grammatical structure that determines these inherent aspectual properties, but the lexical features of the elements contained in the verb phrase and in a full (tenseless) predication. The grammar (i.e., tense morphology) is applied to the tenseless verb phrase in a further step and contributes additional information to the aspectual interpretation. This leads us to the concept of grammatical aspect, which is presented in the next section.

## 2.2 Grammatical Aspect

### 2.2.1 Generalities

Broadly speaking, grammatical aspect concerns the temporal boundedness of a given context, and thus can only be determined when a clear speech context is known. Different from tense, grammatical aspect is not a deictic category, and can be determined without referring to the moment of speech (Comrie 1976). Traditionally, one finds a division between perfective and imperfective aspect within grammatical aspect, which is coded in Romance languages in their past tense forms (where tense and aspect are expressed simultaneously). According to

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<sup>7</sup> It is important to note that the term *durative* used here carries a different meaning than the same term applied by Comrie (1976) as stated above. In the context here, durativity is not defined as a contrast to punctuality, but indicates an event without inherently defined termination point.

Domínguez/Arche/Myles (2017), four basic notions can be distinguished: progressivity, perfectivity, continuity and habituality. Progressivity, continuity and habituality have been understood as readings of the imperfective realm. There are new theoretical developments pointing to a new understanding of the progressive, standing outside the grammatical aspect spectrum (González/Verkuyl 2017). González/Verkuyl propose that the progressive use should be formally eliminated from the traditional readings of the imperfective (*ibid.*: 133). What is important to reiterate for the argumentation of this chapter is that not all languages mark grammatical aspect by the same means.

### 2.2.2 Spanish TA (Tense/Aspect) System

As a Romance language, Spanish requires the marking of grammatical aspect in its past tenses (Zagona 2007; González 2003, 2013). In the following description we will focus on three main past tense forms: Pretérito Perfecto Compuesto (Present Perfect), Pretérito Perfecto Simple (Preterit) and Pretérito Imperfecto (Imperfect). The opposition between Preterit and Imperfect represents the mentioned perfectivity/imperfectivity-contrast. However, the Present Perfect also plays a role in aspectual distinctions.<sup>8</sup>

Present Perfect:

- (4) He leído un libro.  
 I-have read.PARTICIPLE one book  
 ‘I have read a book.’

Preterit:

- (5) Leí un libro.  
 I-read.PRET one book  
 ‘I read a book.’

Imperfect:

- (6) Leía un libro.  
 I-read.IMP one book.  
 ‘I was reading/read/used to read a book.’

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<sup>8</sup> This section is an adaptation of a similar section at González/Verkuyl (2017); González/Quintana Hernández (2018).

The Present Perfect is mostly used in hodiernal contexts, where it expresses anteriority with respect to the present, and focuses on the result of the event (see (4)). This form is more common in Peninsular Spanish than in American Spanish (see González/Verkuyl (2017) for a description of this variation). However, other studies (Schwenter/Torres Cacoulios 2008) show that the Present Perfect has been extended for perfective uses in prehodiernal contexts in European Spanish, as in *He comido ayer* (I have eaten yesterday). Because of this variation, it is important to consider the Present Perfect when defining past tenses in Spanish.

The Preterit in sentence example (5) presents the event as anterior to some anchoring point provided by the discourse and completely dissociated from it. It presents an event as a discrete whole at some specific moment in the past (perfective aspect) and is not used in perfect contexts such as *\*Comí hoy* (I ate today) in European Spanish.<sup>9</sup>

Finally, Spanish counts on a morphologically marked imperfective past tense (example (6)). The Imperfect is often taken as presenting an event in process, i.e. as not delimited, which implies that the difference is aspectual, not temporal (García Fernández 1999; Leonetti 2004). It leaves the event unspecified as to its completion. There are several readings related to imperfective aspect: the progressive, the habitual and the continuous aspect (González 2003; Domínguez/Arche/Myles 2017). These related meanings all allow the Imperfect morphology<sup>10</sup>.

- (7) Laura leía el periódico en aquel instante.  
 Laura read.IMP the newspaper in that instant  
 ‘Laura was reading the newspaper at that moment.’ (progressive)
- (8) Laura leía el periódico todos los domingos.  
 Laura read.IMP the newspaper all the Sundays.  
 ‘Laura read the newspaper every Sunday.’ (habitual)
- (9) Laura leía el periódico aquel domingo (y todavía  
 Laura read.IMP the newspaper that Sunday (and still  
 lo lee).  
 it read.PRES)  
 ‘Laura read the newspaper that Sunday (and is still reading it).’  
 (continuous)

<sup>9</sup> However, this use is fully accepted in Latin American Spanish (Rojo/Veiga 1999).

<sup>10</sup> González/Verkuyl (2017) defend the idea that the progressive is not a reading of the imperfective. Yet, for the purposes of this chapter we adhere with the more traditional understanding of imperfective readings.

The Imperfect encompasses all three readings and thus can be said to under-specify which reading is the most appropriate. The concrete interpretation in a given situation does thus not only depend on the verb form, but also on the sentence context.

### 2.2.3 Germanic systems

All Germanic languages share inherent aspectual values.<sup>11</sup> In contrast to Romance languages, they contain fewer or no instances of grammatical aspect marking. Before describing the aspectual differences between Dutch and German, there are some interesting generalizations to be made: First, throughout the scientific literature on aspect, the most studied Germanic language is English (Comajoan 2014), and second, although all Germanic languages differ significantly from Romance languages, they do not present a homogeneous group.

At first sight, Dutch and German tense-aspect systems seem rather similar (Borik/González/Verkuyl 2004; ten Cate 2004). In Table 1, four temporal-aspectual operators are used: PRES for marking of the present tense, PAST for marking of a past event. POST stands for an event posterior to a reference time, PERF stands for a completion of the event. As we can see German and Dutch have formal equivalences for all relevant tense forms.

**Table 1:** Tense operators for Dutch and German (adapted from Borik/González/Verkuyl 2004)

Present	Past
PRES D: Ik schrijf een brief. G: Ich schreibe einen Brief. 'I write a letter'	PAST D: Ik schreef een brief. G: Ich schrieb einen Brief. 'I wrote a letter'
PRES(POST) D: Ik zal een brief schrijven. G: Ich werde einen Brief schreiben. 'I will write a letter'	PAST(POST) D: Ik zou een brief schrijven. G: <i>Ich würde einen Brief schreiben.</i> <sup>12</sup> 'I would write a letter'

<sup>11</sup> However, these features can be organised in different language-specific ways within the lexicon.

<sup>12</sup> The German versions are presented in italics, as this form usually conveys a conditional reading. Only in some specific context (e.g. indirect speech) it can denote a future in the past. This difference does not have any relevance for the argumentation here.

Present	Past
PRES(PERF) D: Ik heb een brief geschreven. G: Ich habe einen Brief geschrieben. 'I have written a letter'	PAST(PERF) D: Ik had een brief geschreven. G: Ich hatte einen Brief geschrieben. 'I had written a letter'
PRES(POST)(PERF) D: Ik zal een brief geschreven hebben. G: Ich werde einen Brief geschrieben haben. 'I will have written a letter'	PAST(POST)(PERF) D: Ik zou een brief geschreven hebben. G: <i>Ich würde einen Brief geschrieben haben.</i> 'I will have written a letter'

Although on the formal side, the verb systems appear almost entirely alike, some of these similarities are only superficial and do not correspond to the use of the forms.

### 2.2.3.1 Dutch<sup>13</sup>

As a Germanic language, Dutch is strongly “tense-oriented” (Broekhuis/Corver/Vos 2015). However, it has a few aspectual phenomena. The distinction between the Simple Past form and the Present Perfect form could be understood as aspectual (Borik/González/Verkuyl 2004), as the simple past is imperfective in nature and the present perfect acts as both perfect and perfective, depending on the context. In (10) there is a simple past with an habitual (hence imperfective) reading and in (11) the perfect form is used with a perfective meaning (Van Hout 2005):

- (10) Ik las altijd veel boeken. (Simple Past)  
 I read.PAST always many books  
 'I always read many books.'
- (11) Ik heb gisteren honderd emails gelezen. (Present Perfect)  
 I have yesterday hundred emails read.PARTICIPLE  
 'Yesterday I read a hundred emails.'
- (12) Ik heb vandaag drie kilometer gelopen. (Present Perfect)  
 I have today three kilometres run.PARTICIPLE  
 'Today I have run three kilometres.'

<sup>13</sup> This section is an adaptation of a similar section at González/Verkuyl (2017).

As shown in (11) and (12), the Present Perfect can have, both a perfect and a perfective reading, depending on the context. In (11) the Perfect is used in a pre-diurnal context (yesterday), where traditionally one would expect only a perfective form.<sup>14</sup> In (12) we find the more traditional and default use of the perfect, in a past situation where the temporal domain is still valid at the moment of speech (today).

Moreover, Dutch has a progressive construction, as shown in (13). It is “used to refer to some eventuality during speech time” (Broekhuis/Corver/Vos 2015: 151). This description is based on the progressive construction with a present tense auxiliary but can also be applied to its past tense counterpart.

(13) Ik was koffie aan het drinken.  
 I was coffee at the drink.INF  
 ‘I was drinking coffee.’

(14) Ik zat koffie te drinken  
 I sat koffie to drink.INF  
 ‘I was drinking coffee’

Sentence (14) with the verb ‘sit’ in auxiliary position, is actually more accepted with the reading of progressive, or even with a habitual sense.

### 2.2.3.2 German

In German, the most important past tenses in terms of usage frequency are the Present Perfect and the Simple Past. Although, given their morphology, they seem similar to the corresponding tenses in Dutch (and even in Spanish), there are some clear differences in their use. In the research literature there is a debate as to whether these tense forms carry different aspectual features. In fact, it is disputed in the literature whether there is any grammatical aspect at all in German (see e.g. Schwenk 2012).

Recent investigations indicate that the verb forms do not express aspectual contrasts but carry rather stylistic features (Heinold 2015). Generally, the Perfect is regarded as more colloquial and is preferred in the spoken language, whereas the Simple Past – sometimes also referred to as Imperfect or Preterit (see Vater 2010 for terminological questions) – occurs in more formal contexts and is

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<sup>14</sup> It is noteworthy that, as in other European languages such as French, Italian (Romance) or German (Germanic), adverbial phrases such like *gisteren* ‘yesterday’, referring to temporal intervals preceding speech time, are used in Present Perfect constructions.

reserved for written texts. What is essential for the purpose of this chapter is that, at least in colloquial language, an interchange of the forms does not lead to a change of meaning, but simply reflects another style.

To give an example, the sentence '*She was watching TV when she received the call*' can be translated in four different ways:

- |      |     |                  |      |     |           |               |
|------|-----|------------------|------|-----|-----------|---------------|
| (15) | Sie | sah fern,        | als  | sie | den Anruf | bekam.        |
|      | She | watch TV-PRET    | when | she | the call  | get-PRET      |
| (16) | Sie | hat ferngesehen, | als  | sie | den Anruf | bekommen hat. |
|      | She | watch TV-PERF,   | when | she | the call  | get-PERF      |
| (17) | Sie | hat ferngesehen, | als  | sie | den Anruf | bekam.        |
|      | She | watch TV-PERF,   | when | she | the call  | get-PRET      |
| (18) | Sie | sah fern,        | als  | sie | den Anruf | bekommen hat. |
|      | She | watch TV-PRET    | when | she | the call  | get-PERF      |

Whereas (15) is a common sentence in colloquial language, (16) sounds rather formal. The other two sentences can be classified as somewhere in between formal and informal use. Although there are some dialectal differences regarding which alternative is the most preferred one, what is crucial for our analysis is that there are no semantic distinctions whatsoever (Heinold 2015). Contrasts such as perfectivity must be expressed through lexical means if the context requires to do so. These means can consist of the use of another verb with a different lexical aspect, or of adding temporal adverbs, particles or non-standardized periphrases. Such a periphrasis, for instance, is found in the progressive form *Ich bin am Lesen* 'I am reading'. However, this form is not comparable to the Dutch Progressive in (13) (Andersson 1989; Krause 1997) as it is regionally restricted and highly stigmatized from a normative point of view (Thiel 2008).

In sum, it is reasonable to conclude that German verb forms have no morphological means to express aspect. This renders the German grammar, in that matter, significantly different from other Germanic languages, such as English and Dutch where a basic aspectual contrast is still available. The concurring past forms are only marked for tense and, although they may differ in style, are generally interchangeable. Interestingly, this observation extends even to auxiliary verbs, such that the pluperfect *Ich hatte angerufen* can be expressed as *Ich habe angerufen gehabt* 'I have had telephoned', a form which, despite its exceptional status, in the German tense system is frequently used in the spoken language (see Duden 2009).

**Table 2:** Summary of interlinguistic differences regarding grammatical aspect

Spanish	Consequent marking of grammatical aspect within the past tense
Dutch	Some aspectual contrasts (habituality, progressivity)
German	Grammatical aspect is not marked morphologically

### 2.2.4 Comparison

This chapter pursues the idea that theoretically motivated discussions about the properties of the tense-aspect system have an immediate relevance when it comes to L2 learning. Although the differences between German and Dutch might seem rather subtle, we sustain that they lead to significantly different patterns when comparing German speaking and Dutch-speaking learners of a language in which grammatical aspect plays a major role, such as Spanish. Our innovative angle is thus to show that by looking at the interlanguage of L2 learners of different L1s, we can gain insight into how the different L1s organize grammatical information.

Undoubtedly, the Romance languages have a richer aspect system than the Germanic languages. If, for instance, a Spanish sentence needs a translation in which no information is being lost, lexical elements (adverbs, particles, etc.) must be used to make the aspectual contrasts explicit. In that regard, Germanic verb forms are underspecified (Sánchez Prieto 2011). Regarding inherent aspect, on the other hand, there are no major differences between the three languages presented here.

Nonetheless, the presentation of the different verb systems in the sections above has shown that the Germanic languages do not represent a homogeneous group either. Whereas Dutch contains a basic aspectual notion in its tense system, we derive that German has no such notion at all (see Table 2). Although in direct translations from one language to the other this difference is in most cases negligible, we argue that, nevertheless, it leads to significantly distinct representations which, in a L2 learning context, turn out to be significant. Whereas a German-speaking learner of Spanish as L2 is faced with a completely new category (i.e. perfectivity), a learner with Dutch as L1 already has a vague idea since in Dutch there are perfect forms with perfective meanings and a progressive construction, i.e. the concept that verbal morphology can carry meaning of grammatical aspect is already familiar.

An appropriate concept to formalize the subtle differences can be derived from micro- and macro-parameters in the generativist framework (see Kayne

2005). The general idea that language acquisition can be accounted for via the concept of parametric differences (Chomsky 1995) has changed over the years, so that nowadays the focus lies rather on the acquisition of features (see e.g. Hwang/Lardiere 2013). For instance, in the case of the Spanish past tense forms, Domínguez/Arche/Myles (2017) define four features as relevant: [ $\pm$ perfective], [ $\pm$ continuous], [ $\pm$ habitual] and [ $\pm$ progressive].

An alternative conceptualization of microparameters is proposed by Roberts (2014) who suggests that parameters are actually organized hierarchically. According to this view, the term macro-parameter is nothing more than a set of several micro-parameters sharing similar properties. In the context of grammatical aspect, this can be understood in terms of the following: on a micro-level, we can ask if a given aspectual feature is reflected by a grammatical marker in the given language. The set of all aspectual markers, then, corresponds to the macro-parameter. Applying this notion to the languages treated in this chapter, German differs from both Spanish and Dutch on a macro-parametrical level, since there is no marking of grammatical aspect at all. Comparing Spanish and Dutch, on the other hand, although both languages have grammatical aspect markers, they differ in terms of micro-parameters. Spanish requires the consequent marking of perfectivity, whereas in Dutch there is only grammaticalized expression of progressivity and a basic aspectual contrast in the different past tenses (see also Salaberry/Ayoun 2005 for similar arguments on English).

In the next section, we will review findings of empirical studies which support the proposed approach.

## 3 Consequences for L2 Learners

### 3.1 Background

In the context of acquiring the aspectual system of Spanish as an L2, the main task for speakers of Germanic languages consists of considering the marking of (im)perfectivity<sup>15</sup> in Spanish and of understanding the consequences of the contrast to German forms. As argued above, Dutch and German-speaking learners have different starting points which may affect their sensitivity to grammatical aspect as a general notion.

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<sup>15</sup> And in a way, also the Perfect, although it is not part of the main argument presented here.

According to research in several branches of linguistics, great differences between the L1 and the L2 may hinder the acquisition of the latter, whereas similarities can have an accelerating effect. Within the generativist framework, for instance, one important approach assumes the *Feature Reassembly Hypothesis* (Hwang/Lardiere 2013). This hypothesis poses that SLA is broken down into a continuous task of reorganization of features, starting with L1 configuration. The more differences there are in how formal features are mapped to grammatical forms, the more difficulties arise for the learner. Consequently, the learning process is significantly slower in comparison to learners who start from a L1 with fewer differences to the target system. During the reconfiguration process, it is argued that a rule-based competing system can take over which is constructed consciously and deduced directly from pedagogical input (Rothman 2008).

L1-effects are also discussed within the usage-based approach to L2 acquisition where tense-aspect phenomena are a highly investigated research subject (see Bardovi-Harlig 2000 for an overview). In such studies, the focus is more on *how* (i.e. in which steps) a grammatical competence is achieved than on *why* this behaviour occurs.<sup>16</sup>

Nonetheless, the L1 effect is not supported by all researchers. For instance, Ayoun/Salaberry (2008) claim that it is irrelevant for non-complex phenomena, and Gabriele/McClure (2011) even state that only the complexity of a given phenomenon itself, not the difference with the corresponding L1 property, determines the degree of difficulty in acquiring it (see Domínguez/Arche/Myles 2017 for a review). The acquisition of the tense-aspect system in Romance languages represents a promising testing ground for a deeper investigation of these issues, as it is characterized both by a high complexity and by a large cross-linguistic variation, as seen above.

Many researchers (e.g. Housen 2000; Izquierdo/Collins 2008, just to name a few) found that in precisely such cases even the most proficient learners do not follow native-like patterns if their L1 differs significantly from the target language. More concretely, instead of choosing a verb form based on grammatical aspect, they rely on lexical features (more details in section 3.2). A general observation is that the greater the L1-L2 differences are, the more the learners rely on such learning strategies (Izquierdo/Collins 2008: 352).

The dissociation of grammatical and inherent aspect turns out to be the main task for learners of Romance languages as L2 and has often been argued

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<sup>16</sup> According to Rothman (2008), this is a general disadvantage in comparison to more formal approaches. In this chapter, we will combine several approaches without similarly rigorous judgements.

to be the main source of difficulties (Andersen 1986, 1991; Salaberry 2008). Importantly, most of the evidence supporting those arguments is based on English-speaking learners. Other Germanic languages, such as German and Dutch remain rather understudied. This yields opportunities for further research since the English tense-aspect system is not identical to one of the systems described in 2.1.2. McManus (2015) found that English and German-speaking learners of French as L2 behave very differently, proven by an experimental study among 75 participants with a comparable proficiency level of French: whereas in habitual contexts, both groups showed notable difficulties with the past tenses, the English-speaking group outperformed the Germans in progressive contexts. This result is directly relatable to the L1 of the learners, since contrary to German, English has a grammaticalized Progressive. McManus (2015) concludes that such differences between the L1 and the L2 can affect the way in which grammatical contrast are acquired and processed.

In the following sections we take a similar approach. By comparing Dutch and German learners from previous empirical studies, a clear difference between the two groups is posited. We argue that the only possibility to explain the differences in the L2 data is by considering that the Dutch and the German tense-aspect systems are clearly different, in other words, we are faced with a clear L1 effect.

## 3.2 Previous studies

### 3.2.1 Research overview

There are only a few studies tackling the specific combination of German or Dutch as L1 and Spanish as L2. Known exceptions often do not focus on the specific Germanic languages and their properties but compare speakers of different languages with each other to argue in favour of a general L1 effect (Díaz/Bel/Bekiou 2008). Generally, the most studied L1 in research on the acquisition of the Spanish tense-aspect system is undoubtedly English (see Comajoan 2014 for a review). Furthermore, when German speakers are included in studies, the most frequent language which is investigated is also English, then as L2 (e.g. von Stutterheim/Carrol/Klein 2009).

Thorough research on English-speaking learners of grammatical aspect in an L2 has brought about many specific hypotheses. For instance, according to the Lexical Aspect Hypothesis (Andersen 1986, 1991), which uses Vendler's four-way partition, learners establish a relationship between lexical aspect and the grammatical form: state verbs are initially only marked with the Imperfect, whereas achievements appear with the Preterit. During the learning process,

other combinations are sequentially acquired, but the lexical aspect always determines the order. Another proposal is found in the Default Past Tense Hypothesis (Salaberry 2008), which states that beginners use only one past tense (most times, the Preterit) for all past events regardless of their aspectual features. Although both hypotheses were based on data from Anglophone learners, their original formulation does not necessarily suggest a dependence on properties of English. It is hence unclear if a universality is intended, i.e., more research is necessary.

As mentioned above, McManus (2015) showed that English-speaking and German-speaking learners behave significantly differently. We therefore sustain that a comparison between speakers of different Germanic L1s is necessary. Contrary to McManus (2015), however, we will not focus on French<sup>17</sup> as the target language for the following reasons: Although the French tense-aspect-system presents almost the same perfectivity contrast as the Spanish one, research findings are not directly transferable.

The Imperfect is similar in both languages (Amenós-Pons 2015), but in contrast to Spanish, the default past tense form for the perfective aspect in French, especially in spoken language, is the analytical Present Perfect, whereas the synthetic Preterit (*Passé Simple*) is outmoded by a clear reduction in its uses (Labeau 2005). In current French, the perfectivity distinction is thus manifested in a contrast between a compound form and a simple form, namely between the Imperfect and the Present Perfect. In a L2 context, this leads to a higher vulnerability for transfer, because the Dutch or German-speaking learners could easily establish a connection between the morphologically similar tense forms in their mother tongue. In Spanish, this connection is significantly less evident, since here the opposition is between two simple forms: Imperfect and Preterit.<sup>18</sup> A transfer based on morphological similarities thus cannot occur.

Precisely for that reason, we are convinced that the focus on Spanish as L2 is important to see how transfer in the domain of tense and aspect with a Germanic language as L1 works. Since an orientation at the surface level is not possible, the learner is forced to concentrate on meaning. In the next sections we will show that this is indeed what happens, although neither the reported German-speaking learners nor the Dutch ones appear to achieve a native-like competence. In both cases, a compensating learning strategy (i.e., the explicit application of rule-based decisions, see Hawkins/Chan 1997) is developed to handle

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<sup>17</sup> In fact, the combination of German and French has already been researched in more detail (see Rieckborn 2007).

<sup>18</sup> And possibly Perfect in some dialects, as an attentive reviewer pointed out.

the contrast. These strategies partially fulfil their compensating function and produce some target-like patterns. In other contexts, they lead to non-expected behaviour. Since the strategies are noticeably different, we will conclude that this observation is a direct consequence of the differences between the two systems involved.

Given the lack of concrete studies that feature German and Dutch speakers together, we will report on previous L2 findings of where both learner groups were analysed separately. Although some of the following has been reported by us elsewhere, what is new here are the conclusions drawn from the contrast between these studies.

### 3.2.2 Findings on German as L1

In a study embedded in the generativist framework, Diaubalick/Guijarro-Fuentes (2016) tested the interpretation and production of the past tense forms by 71 German learners with different proficiency levels of Spanish as L2 (intermediate to advanced). Using a Grammaticality Judgment Task in combination with a Sentence Completion Task, it has been shown that there was no direct transfer on a morphological level, i.e., the Spanish Present Perfect was not overgeneralized. That is, learners have successfully understood the fact that the most frequent forms are the synthetical ones: Imperfect and Preterit.

However, a comparison with a control group showed that the learners behaved significantly differently from L1 Spanish speakers. Although for standard contexts (i.e. prototypical contexts), a developmental effect was visible, in more complex uses of the past tenses (where inherent and grammatical aspect differ), the data showed persisting difficulties in the learners. In such cases, an explicit learning mechanism became visible which had a clear compensating function: in cases of doubt, learners relied on temporal adverbs when choosing between one or the other verb form. Whereas this effect was directly visible in the production task, it also led to a clear effect on how items of the Grammaticality Judgement Task were evaluated.

Temporal markers are often taught in courses of Spanish as foreign language and appear as a rule-of-thumb in textbooks (Salaberry 2008). The adverbial *la semana pasada* 'last week', for instance, locates a past event in a completed context and hence usually coappears with the Preterit. Diaubalick/Guijarro-Fuentes (2016) showed that in precisely those contexts where such a known marker is to be combined with the non-expected form (e.g. *la semana pasada* and an Imperfect), significant differences between the learners and the control group arise.

To confirm these patterns, a subsequent study was conducted following a usage-based approach (Diaubalick/Guijarro-Fuentes 2017), where German learners are contrasted with speakers of other L1s (French, Italian, Portuguese). A total of 131 non-native speakers participated in the study. The results show that none of the common hypotheses of the usage-based approach presented above (Lexical Aspect Hypothesis, Default Past Tense Hypothesis) could be entirely confirmed. Instead, individual variables such as learning background must be considered among which the most prominent one was the learner's L1.

### 3.2.3 Findings on Dutch as L1

González (2003, 2013) and González/Quintana Hernández (2018) collected data on the acquisition of past tense forms by Dutch learners. In González (2003), 17 Dutch classroom L2 learners of Spanish following a beginner's course took part in an experiment, where data were collected through standardised tests (filling the blanks and multiple choice). In González/Quintana Hernández (2018), 31 Dutch classroom L2 learners of Spanish following a A2 level course took part in another experiment, where data were collected through a written production task.

There are striking differences in the results of both experiments. These can be summarized as follows: in both studies, it is shown that the Spanish Preterit was the preferred form. In those cases where the Imperfective appeared, it was more often with durative predications, whereas the Preterit occurred more often with terminative predications. There was a clear superposition of inherent aspect in Dutch onto the choice of past tense forms in their L2. In other words, when a predication was terminative, as in '*read the letter*', the past L2 production would be with the Preterit (*leyó la carta*); when a predication was durative, as in '*be hungry*', the past L2 production would be with the Imperfect (*tenía hambre*). These types of constructions were found in both standardised tests and in free production data. In both cases the results were significant.

The main conclusion concerning these results is that the use of a past tense form is influenced by the inherent aspect of the predication the learners want to produce in their interlanguage. In the second study (2018), the Present Perfect appears constantly in the informants' interlanguage. The studies on Dutch learners also lead to two important conclusions: first, free production tasks cannot be treated in the same way as standardised tests, where a clear choice is given to the informants. So, as van den Bergh/Rijklaarsdam (1999: 13) state: 'the nature of writing processes is recursive and dynamic: different sub processes can and do

occur at any moment during the process'. Secondly, the overuse of the Perfect can be explained as L1 transfer (see section 3.3.1).

### 3.3 Summary and comparison

What this brief survey of previous studies has shown, is that both Dutch and German-speaking learners of Spanish as L2 show evident target-deviate patterns in the use and interpretation of past tenses. However, the deviations occur in very different ways, as we will show in the next section.

Applying the idea by McManus (2015) that the nature of the aspectual contrast needs to be in the focus of the investigation, it can be observed that the *manner in which* target-deviations occur are strikingly different. That is, although both learner groups fail to acquire the target system completely, they differ significantly in *how* this type of error<sup>19</sup> manifests itself. In Spanish, the selection of an appropriate past tense form requires the consideration of the global context that defines the aspectual properties of the sentence. As the studies have shown, learners do not carry out this process entirely. In both cases, the studies seem to have detected compensating mechanisms based on explicitly learned rules that the learners develop to overcome the difficulties in processing the aspectual features in a target-like fashion. The learning strategies are based on radically simplified patterns, and it is precisely here where the differences are located: whereas German learners base their strategy on lexical elements, such as temporal adverbials, Dutch learners rely on inherent aspect (durativity and terminativity clues).

These differences lead to a diagonally inverse behaviour in some contexts. Comparing the results of Diaubalick/Guijarro-Fuentes (2016, 2017) with González (2003, 2013), German-speaking learners display a target-deviant behaviour when adverbials are misleading, whereas Dutch learners, in those sentences where inherent and grammatical aspect diverge, do not behave target-like even when the adverbials are facilitating.

The finding that temporal markers affect learners' behaviour is not new and has in fact been shown in numerous studies. Rothman (2008) claims that the pedagogical rules taught in class are applied in a stronger way than the learner's own intuitions. Nonetheless, the findings reported here are different in some significant points from previous studies. For instance, the Dutch learners have

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<sup>19</sup> We are aware of the negative connotations carried by this expression (see e.g. Cook 1997). It is our aim to simply attest a difference between the target system and the learners' interlanguage.

shown that a helpful adverbial is not always considered, which is counterevidence for Rothman's (2008) claim that the reliance on trigger words will overwrite the reliance on temporal markers. Furthermore, according to Baker/Quesada (2011), who base their arguments on findings concerning Anglophone learners, the effect exercised by temporal adverbials is generally weaker than the reliance on inherent aspect, which contrasts with the findings among the German learners presented above. Additionally, the effect was visible both in the interpretation and the production tasks. As a conclusion, it is safe to say that German learners base their decision on temporal markers which does not nullify an acquired competence, but rather compensates for the lack of it. For the Dutch group, these patterns were not observed.

The role of the temporal markers is therefore crucial for the following argumentation, and can best be illustrated by sentences, in which inherent aspect and temporal markers do not trigger the same tense; that is, where the elements can be regarded as contradicting evidence.

Consider the following example (taken from the multiple-choice task of González 2003):

- (19) Ayer {pasaba/pasé} un rato en el café donde  
 Yesterday spend.IMP/PRET one while in the cafe where  
 Nuria {tomaba/tomó} el desayuno todos los domingos.  
 Nuria take.IMP/PRET the breakfast all the Sundays.  
 'Yesterday I spent some time at the coffee house where Nuria had her  
 breakfast every Sunday.'

In this case, *ayer* 'yesterday' is a known marker of the Preterit, whereas *todos los domingos* 'every Sunday' occurs mostly with the Imperfect. Considering this, the tense forms to be chosen should be first *pasé* (Preterit) and then *tomaba* (Imperfect). Given the context of the two events, this would be the expected answer. Conversely, the inherent lexical aspect of the two given predications in (18) hint in the opposite direction. Whereas *pasar un rato* 'to spend some time' is a durative predicate, *tomar el desayuno* 'have breakfast' is a terminative one. If the learning strategy is based on the correlation durativity-Imperfect, terminativity-Preterit, the learner would choose *pasaba* and *tomó*, that is, the opposite from what we would first expect.

In (19), thus, the use of the temporal markers gives a helpful cue, whereas the reliance on inherent aspect leads to target-deviant answers. This explanation does not always apply, because in Spanish inherent aspect, lexical marker and the actual grammatical context (i.e., the (im)perfectivity of the verb phrase) are entirely independent. As shown in the studies above, a temporal marker is not

always helpful, but can be misleading. This is the case, when an adverbial indicating completeness appears in an imperfective context, or if an adverbial of durativity appears with a bounded event. Likewise, the inherent aspect can coincide with the grammatical one, but does not necessarily have to.

Only the grammatical context determines the verb form, so by maintaining the terminology of *helpful* vs. *misleading*<sup>20</sup>, we can categorize the possible combinations into four types:

- i. Helpful marker and helpful inherent aspect
  - a. In a perfective context: Preterit marker and terminative predicate
  - b. In an imperfective context: Imperfect marker and durative predicate
- ii. Helpful marker and misleading inherent aspect
  - a. In a perfective context: Preterit marker, but durative predicate
  - b. In an imperfective context: Imperfect marker, but terminative predicate
- iii. Misleading marker and helpful inherent aspect
  - a. In a perfective context: Imperfect marker, though terminative predicate
  - b. In an imperfective context: Preterit marker, though durative predicate
- iv. Misleading marker and misleading inherent aspect
  - a. In a perfective context: Imperfect marker and durative predicate
  - b. In an imperfective context: Preterit marker and terminative predicate

The following examples for a perfective context (analogous arguments hold for the imperfective context), where the adverbials are marked in bold, illustrate the four types:

- i. **Ayer**            llegué            a    Londres.  
    Yesterday    I-arrive.PRET    at    London.  
    ‘Yesterday I arrived in London’ (Preterit marker, terminative predicate)

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<sup>20</sup> As pointed out by an anonymous reviewer, another possible terminology here would be prototypical/non-prototypical. Given that these terms, however, are also tightly connected to the Lexical Aspect Hypothesis (see e.g. Bardovi-Harlig 2000: 218; Salaberry 2008: 14), we opted for the use of less prejudiced terms which, at the same time, reflect the deviations between explicit rule-based learning and the acquisition of the underlying aspectual contrasts.

- ii. **Ayer** caminé por el parque.  
 Yesterday I-walk.PRET through the park.  
 ‘Yesterday I walked in the park’ (Preterit marker, durative predicate)
- iii. **En mi infancia** abandoné mi patria.  
 In my childhood I-leave.PRET my fatherland.  
 ‘I left my homeland during my childhood’ (Imperfect marker, terminative predicate)
- iv. **Siempre** tuve buenos amigos.  
 Always I-have.PRET good friends.  
 ‘I always had good friends’ (Imperfect marker, durative predicate)

Importantly, observing various combinations of items of the four types offer a methodological advantage, since they can reveal different learning strategies without having to contrast the learners’ production to that of L1 speakers. Thus, the risk of a high subjectivity (which plays a major role in grammatical aspect; see Salaberry 2008) can be avoided.

This consideration is the key to the comparison of the studies mentioned earlier. Precisely in those cases where only one element is helpful and the other element is misleading, German-speaking and Dutch-speaking learners behave diagonally differently. That is, Dutch learners seem to adhere to inherent aspect (González 2003, 2013), whereas German speakers focus their attention on adverbs (Diaubalick/Guijarro-Fuentes 2017; Diaubalick forthcoming).

The striking differences derived from the studies are summarized in the following table, revealing the distinct learning mechanisms:

**Table 3:** Summary of previous results on SLA of L2 Spanish aspect by Dutch and German learners

Results according to the relation between temporal adverbial, inherent aspect and target form.	‘helpful marker’	‘misleading marker’
‘helpful inherent aspect’	Advanced learners of both L1 groups perform on a native-like level	German speakers diverge from native group
‘misleading inherent aspect’	Dutch speakers diverge from native group	Both learner groups diverge from native speakers

### 3.4 Discussion and conclusion

The comparison of the studies above suggests that the interlanguages of Dutch and German-speaking learners of Spanish differ considerably from each other. While it is true that the participants of the different studies were not on the same level of Spanish, in no study it was found that an augmenting proficiency would lead to crucially different learning patterns. The most probable reason for the observed differences between the groups thus lies in the L1-effect. Although this is an attempt to explain the differences between groups, we believe that the empirical data supports our argument. Future studies could address the question of why this effect manifests itself as it does. That is, we need to clarify two issues:

- (I) Why do Dutch-speaking learners base their selection on inherent aspect, ignoring occasionally even helpful lexical triggers?
- (II) Why do German-speaking learners behave in the opposite way, (i.e., why do misleading markers lead to target-deviant structures), and why don't they follow inherent aspect clues, even if in some cases this would lead to a target-like behaviour?

In both constellations, learners seem to have developed learning strategies which arguably serve to compensate difficulties with the acquisition of contrasting aspectual clues. Of course, it is likely that pedagogical input has led to the use of such strategies (see Cadierno 2000; Rothman 2008 for a defence of that position). Many text books of Spanish offer long lists of temporal markers (known as *Signalwörter* 'signal word' in Germany) based on which instructors deliberately try to simplify the complex selection task a learner must face.

However, it is important to note that didactic traditions cannot be the main reason for the peculiarity of the German group, as similar instruction methods are also present in the Netherlands (and other countries world-wide), whereas the concept of inherent aspect, in contrast, is rarely mentioned (González 2008). Thus, the mere assumption that learners behave as they do as a result of pedagogical methods cannot explain why Dutch-speaking learners base their learning strategy on a non-taught element, and even ignore markers in helpful contexts. A possible explanation for this fact is that Dutch learners of Spanish rely on their own aspectual clues (in this case inherent aspect) and apply them to the Spanish grammatical aspect contrast.

In sum, pedagogical input cannot be the only explanation for the observed results. Since the learners in the studies presented here are generally comparable as to their age and education level (all participants are university students aged (insert average age)), the L1 seems to be an important factor that clearly distin-

guishes the groups. We hence argue that the different learning patterns are likely to be due to subtle differences in the grammars of German and Dutch. But, how can the different L1-effects be explained by pure linguistic data?

It is here where the concept of micro- and macroparameters based on Roberts (2014) comes into play (recall section 2.1.4). As we have argued, the differences between German and Spanish on the one hand (macroparametric) and between Dutch and Spanish on the other hand (microparametric), are inherently diverse which logically amounts to saying that Dutch and German cannot be equivalent in their tense-aspect systems. This explains the behaviour of the learners investigated in the studies. Due to the basic aspectual encoding in their native language, Dutch learners are aware of the concept of grammatical aspect and so they know that it can be relevant for expressing a perspective or viewpoint. This seems to have a positive outcome for their sensitivity for aspectual markers in general. Although they do not achieve native-like competence for the organization of aspect in L2 Spanish (as their selection is not based on the notion of perfectivity), their learning strategy is indisputably based on aspect. The only “error”<sup>21</sup>, then, is that they choose inherent aspect instead of the grammatical one. This provides insight into issue (I) discussed at the beginning of this section.

German learners, in contrast, do not consider any aspectual notion, i.e., their choice is neither based on grammatical nor on inherent features. Instead, the developed learning strategy is based on surface structure elements such as temporal adverbials. This is explainable by the lack of grammatical aspect in German which hinders the consideration of aspectual information at all, which is why the learners behave as stated in (II).

This explanation, in turn, allows to confirm the assumed properties of the German and the Dutch tense and aspect system and thus shows how the investigation of SLA can contribute to linguistic theory. The assumptions adopted here are compatible with our data: whereas the Dutch grammar features an aspectual contrast that simply does not coincide with the Spanish one, German<sup>22</sup> does not possess grammatical aspect features at all. That is, an interchange of the competing tense forms in German does not change the aspectual content of a sentence but is merely related to stylistic factors. In contrast to Dutch, a progressive form is neither grammaticalized nor consistently used (Krause 1997). The subtle differences, which

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**21** The reason for our use of quotation marks in this context relates to the comment above. We do not want to deny a systematicity to the learners’ interlanguage, but simply attest a deviation from the native-like system.

**22** This affirmation concerns of course the spoken language from where a learner could possibly start with a transfer.

in direct translation between German and Dutch have little consequences, cause major inconsistencies in SLA of Spanish.

Different from what Housen (2000) and Izquierdo/Collins (2008) state as a general conclusion, we have not found clear evidence that a greater L1-L2 differences leads to a higher reliance on inherent aspect features. On the contrary, the German learners presented in the studies above did not seem to rely on aspectual features at all, although the L1-L2 difference is the largest one in this case. We can therefore conclude that the reliance can only take place if the learners are aware of the concept of (grammatical) aspect at all. This is only the case when the L1 contains at least basic contrast, as in the grammars of English or Dutch.

The comparison of different SLA studies has shown how empirical data in an applied field can be used to contribute important evidence for linguistic analysis. Future research should validate these arguments with the support from more experimental data on the subject both from a theoretical and from an applied point of view. The main conclusion drawn from the results presented above is that the Dutch and the German verb system differ in the grammaticalization of aspect and that this claim can explain the differences in behaviour of learners of L2 Spanish.

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# Food for psycholinguistic thought on gender in Dutch and German: a literature review on L1 and L2 production and processing

**Abstract:** The aim of this paper is to explore how variation in the expression of gender has been and can be exploited to study gender perception in speakers of Dutch and German. We provide an up-to-date literature review on descriptive and psycholinguistic research on gender for these languages, considering empirical studies on both native (L1) and second language (L2) acquisition. This paper contributes to placing existing literature on gender in Dutch and German in a comparative mode and to offering a concrete rationale (e.g., three lines of enquiry) to move the psycholinguistic study of language, cognition and gender forward.

**Zusammenfassung:** Das Ziel dieses Papers ist es herauszufinden, wie sich Unterschiede von Gender im Ausdruck von Sprache erfassen lassen und wie die Ergebnisse genutzt werden können, um die Perzeption von Gender bei niederländischen und deutschen Sprechern zu untersuchen. Vorgestellt wird eine aktuelle Übersicht der deskriptiven und psycholinguistischen Forschungsliteratur zum Thema Gender in diesen beiden Sprachen, wobei der Fokus auf empirischen Studien nach Erst- (L1) und Zweitspracherwerb (L2) liegt. Dieser Beitrag ermöglicht somit den Vergleich der vorhandenen deutschen und niederländischen Genderliteratur und liefert im Ergebnis konkrete Ansätze (z.B. drei Forschungsgebiete), um die psycholinguistische Forschung von Sprache, Kognition und Gender weiter voranzubringen.

## 1 Introduction

An increasing number of studies investigates effects of gender language(s) on cognition (Garnham et al. 2016). Speakers of all languages are familiar with semantic gender, as in the words father and daughter, where the referent's biological sex is encoded in the word's meaning.<sup>1</sup> The WALs sample suggests that 127 languages (43.6%) also have a lexical gender system that divides all

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<sup>1</sup> We thank two anonymous reviewers for constructive criticism and comments.

nouns in the language into categories such as feminine, masculine, and neuter (Dryer/Haspelmath 2013 (eds.)).<sup>2</sup> These systems are often referred to as grammatical gender systems since the genders of nouns are reflected in other words related to these nouns (henceforth, we employ the term lexical gender). Anyone who has ever learned a foreign language with lexical gender will be familiar with the seemingly arbitrary division of (especially inanimate) nouns across these categories. For example, why is the word for sun feminine in German (*die Sonne*) and the word for moon masculine (*der Mond*)? And why do the French refer to that same sun as masculine (*le soleil*), but to the moon as feminine (*la lune*)? Interestingly, even for animate nouns, there is not always an overlap between semantic and lexical gender. A telling example is the two-way Dutch gender system that used to consist of masculine, feminine, and neuter nouns, but now only contains common *de*-words and neuter *het*-words (De Vogelaer 2012). There is thus no longer a lexical gender marker distinguishing the woman (*de vrouw*) from the man (*de man*). While such a distinction is still present in the three-way German gender system (*die Frau* [the woman] and *der Mann* [the man]), it is not always consistent with semantic gender. Men, for example, mostly belong to the masculine gender category (e.g., *der Herr* [sir]), but women – both in German and in Dutch – are also assigned to the neuter lexical gender category: *das Mädchen*; *het meisje* [the girl] and *das Weib*; *het wijf* [the woman].

Psycholinguistic research thus far suggests that both semantic and lexical gender have profound effects on how we perceive gender of animate and inanimate entities. For example, Boroditsky/Schmidt/Philipps (2003) found that lexical gender affects whether German and Spanish speakers perceive objects as masculine or feminine, even without producing language. Yet, due to limitations and failures to replicate (Everett 2013), it is unclear whether such effects hold across languages and contexts. Semantic gender marked for professional titles affects whether women are perceived as relevant candidates for leadership positions. Horvath/Szcesny (2016) for example, found that a hiring committee perceived female applicants as less fit to fill high-status leadership positions, when a male noun was used generically with or without (m/f) (e.g., *Geschäftsführer* (m/w) [CEO]) in German job advertisements (also see Vermeulen 2018). Women and men were perceived as equally fit when pair forms were

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<sup>2</sup> Most languages contain some nouns that can be placed into more than one category, such as German *die/das Cola* [the coke] and *die/das Email* [the email], and Dutch *de/het marsepein* [the marzipan] and *de/het matras* [the mattress]. In most of these cases the preference for one gender or the other seems to be determined by geography or style (also see Semplicini 2012).

employed (e.g., *Geschäftsführerin/Geschäftsführer* [CEO-fem/male]). On the other hand, it has been shown that the use of German and Italian female professional titles decreases the value that participants ascribe to typically feminine professions (Horvath et al. 2015). Whether and how feminizing or neutralizing practices benefits gender fairness in different languages thus remains to be determined. Though German semantic gender has been investigated quite extensively from a psycholinguistic perspective, research into Dutch gender, in comparison, is less exhaustive. Many studies have focused on gender perception in adult, native (L1) speakers of a language, whereas only in more recent years, research on gender perception in younger and bilingual speakers has started to increase.

The aim of the present paper is to provide an up-to-date literature review on descriptive and psycholinguistic gender research in Dutch and German. The overarching goal is moving the study of perception of gendered language in both L1 and second language (L2) speakers forward (as argued for in Pavlenko 2014). We first focus on descriptive linguistic studies to identify similarities and differences in gender marking in grammar and for personal nouns. An important reason for focusing on personal nouns is that they constitute a basic and culturally significant lexical field in almost any language (Hellinger/Bußmann 2001). Second, we focus on psycholinguistic work that has investigated the acquisition, processing and perception of gender in Dutch and/or German. We consider both studies that take offline measures (e.g., questionnaires, categorization tasks etcetera) as well as online measures (e.g., eye tracking and event-related brain potentials (ERPs)). We consider both research on gender perception with child and adult L1 speakers as well as studies with L2 learners of Dutch and/or German. Studies into child L1 acquisition are of interest, as they show at what ages gender categories are formed and used during production and perception. This is both of theoretical as well as descriptive value, as observed norms may be employed in educational and clinical practice. In line with Pavlenko (2014) we argue that L2 learners too constitute a favorable ground for testing psycholinguistic theory: “two languages in one mind” provide a unique test case for questions into, for example, changes in perception when shifting between languages. Perceptive shifts have been well-documented for, for example, motion perception across languages (Athanasopoulos et al. 2015), but for gender perception, bi- or multilingual studies have started to emerge only within the last decades.

## 2 The expression of gender in Dutch and German

Hellinger/Bußmann (eds.) (2001, 2002, 2003) and Hellinger/Motschenbacher (eds.) (2015) have provided a systematic description of similarities and differences in the expression of gender for over 40 languages. Drawing on Hellinger/Bußmann (2001: 7), we define semantic gender as the specification of nouns “as carrying the semantic property [female] or [male]”, which may relate to the referent’s sex. Lexical gender, on the other hand, can be defined as a noun classification system, which “is reflected beyond the nouns themselves in modification required of ‘associated words’” (Corbett 1991: 4). The latter part of this definition refers to grammatical gender, the agreement system which, as argued by Corbett, is the most defining attribute of gender. Though Dutch and German are both West Germanic languages, we find differences in the expression of semantic and lexical gender. Before discussing the semantic gender systems, the next section reviews lexical gender in the two languages. The theoretical distinction between semantic and lexical gender will not always be upheld in the following due to studies that incorporate both concepts. We use the term grammatical gender in case authors have employed this term themselves.

### 2.1 Lexical gender in Dutch and German

All nouns in Dutch and German, as in any language with a lexical gender system, belong to one of the gender categories of the language. There is sometimes a correspondence between the “feminine” and the “masculine” gender class and the specification of a noun as female-specific or male-specific (the German lexically masculine noun *Mann* [man] is preceded by the masculine article *der* [the]). For inanimate nouns, however, the gender category of a word often seems completely arbitrary and can differ between languages, showing that lexical gender differs from biological gender. Gender comes from the Latin word *la genus*, which means “sort” or “class”. Languages with lexical gender are thus languages that have a small number of gender classes that nouns are assigned to, typically two or three: masculine, feminine and neuter. In addition to the assignment system, i.e., the classification of nouns belonging to a gender category, there is an agreement system. In languages such as German and Dutch, nouns do not necessarily carry markers of gender class membership, but there is obligatory agreement with other word classes, such as articles, adjectives, pronouns, verbs, numerals or prepositions.

### 2.1.1 Lexical gender in Dutch

Dutch currently employs a two-way gender system but used to have a three-way lexical gender system with masculine, feminine, and neuter nouns.<sup>3</sup> The original masculine and feminine genders have evolved and collapsed into one common gender category and, consequently, this category is relatively large making up at least 75% of all nouns (van Berkum 1996: 23). Current Netherlandic Dutch thus employs a single definite determiner (e.g., *de* [the]) with nouns, that does not mark masculine or feminine gender (Gerritsen 2002; De Vogelaer 2012). Traces of masculine and feminine gender are still visible in references using personal (*hij/hem* [he/him] and *zij/haar* [she/her]) and possessive pronouns (*zijn* [his] and *haar* [her] (also for inanimates, see Audring 2006)). Furthermore, many substandard Belgian Dutch varieties still mark masculine, feminine and neuter gender. There is some evidence that in certain contexts, gender is transferred to German inanimate cognates when Belgian Dutch speakers are asked to assign German articles to given nouns (Vanhove 2017).

Gender agreement in Dutch occurs with determiners, adjectives, and pronouns. In singular noun phrases (NPs), agreement is marked either on the determiner (in definite NPs) or on the adjective (in indefinite NPs), but never on both. As can be seen in Table 1, the attributive adjective always receives a schwa ending (-*e*), except in indefinite neuter NPs or NPs that are not preceded by determiners. Distinct gender marking disappears, i.e. is neutralized, when Dutch nouns are used in the plural or in their diminutive form. All plural nouns receive the common determiner '*de*' and the schwa ending on adjectives (e.g., *de blauwe auto's* [the cars] and *de blauwe boeken* [the books]), and all diminutives receive neuter gender marking (e.g., *het autootje* [the car-little] and *het boekje* [the book-little] (Haeseryn et al. 1997).

### 2.1.2 Lexical gender in German

In German, nouns are marked as masculine, feminine, or neuter with the articles *der* (masculine), *die* (feminine) and *das* (neuter) (Bußmann/Hellinger 2003). While Dutch has a more frequent common category, German masculine seems to be slightly larger a category (38%) than feminine (35%) and neuter (26%) according to the CELEX corpus (Schiller/Caramazza 2003). German articles are not only declined for gender,

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<sup>3</sup> As the examples of Oriya and English show, a gender system can erode (Oriya) and eventually be lost (English) (Hellinger/Bußmann (eds.) 2003). It has been argued that the present Dutch gender system is in state of erosion (De Vogelaer 2012; Loerts 2012).

but also for number and case. For example, *der* is not only employed as masculine nominative, but also as feminine dative and genitive as well as plural genitive. Moreover, *die* is not only employed as feminine nominative, but also as feminine accusative and plural nominative. Gender is thus neutralized in plural forms (Bußmann/Hellinger 2003). Unlike case or number, however, lexical gender is an inherent property of the noun that controls agreement between that noun and syntactically related words. As can be seen in Table 1, in the singular nominative case, definite NPs and many pronouns, such as demonstrative pronouns, only show gender marking on the determiner. For indefinite NPs, gender marking is present on the adjective, but the indefinite determiner also receives the *-e* suffix when modifying feminine nouns.

While the German system is rather straightforward in the definite singular nominative case, the system becomes less transparent for plurals and/or indefinite NPs. Like in Dutch, the plural definite determiner is not gender marked. Similarly, like Dutch, although more complex, German definite determiners are always declined in the definite NPs and for pronouns, while adjectives in indefinite NPs or NPs without determiners are not declined. For examples including the different cases, the reader is referred to Duden (2006) or Bergmann (2017: chapter 6).

**Table 1:** Overview of the main agreement targets in Dutch and in the German singular nominative case (English equivalents in italic)

Language	Gender	Definite Noun Phrase	Indefinite Noun Phrase	Pronouns
Dutch	Common	de mooie auto	een mooie auto	die/deze mooie auto
		<i>the beautiful car</i>	<i>a beautiful car</i>	<i>that beautiful car</i>
	Neuter	het mooie boek	een mooi boek	dat/dit mooie boek
		<i>the beautiful book</i>	<i>a beautiful book</i>	<i>that beautiful book</i>
German	Masculine	der schöne Garten	ein schöner Garten	dieser schöne Garten
		<i>the beautiful garden</i>	<i>a beautiful garden</i>	<i>that beautiful garden</i>
	Feminine	die schöne Schule	eine schöne Schule	diese schöne Schule
		<i>the beautiful school</i>	<i>a beautiful school</i>	<i>that beautiful school</i>
	Neuter	das schöne Buch	ein schönes Buch	dieses schöne Buch
		<i>the beautiful book</i>	<i>a beautiful book</i>	<i>that beautiful book</i>

### 2.1.3 Dutch versus German: differences in transparency and systematicity

A clear difference between the Dutch and German gender systems concerns the different number and size of categories, but there are also differences in gender assignment. Three ways of assigning inanimate nouns to a gender category have been proposed in the literature: semantic, phonological and morphological (Corbett 1991; Mills 1986; van Berkum 1996). Examples of each of the three can be found in German, but in Dutch, mostly morphological rules are found (Booij 2002). Regarding semantics, for example, German nouns denoting birds are generally masculine while nouns denoting trees or flowers are generally feminine (Szagun et al. 2007). Although not as prominent as the rules in Romance languages, German also has some phonological cues. For example, words ending in nasal consonants are mostly masculine while words ending in *-e* and *-ie* are mostly feminine (Mills 1986). Morphological cues in German nouns are, for example, the suffix *-ling* which can generally be associated with masculine gender and the suffix *-keit* generally predicting feminine gender (Corbett 1991; Köpcke/Zubin 2009). The Dutch gender assignment system also has a (small) number of suffixes that can be used to assign genders, in line with the original three-way distinction, such as *-je* for neuter gender (diminutives), *-aard* for masculine words and *-heid* for feminine words. These morphological rules, however, tend to include many exceptions (Booij 2002; Haeseryn et al. 1997). Furthermore, in both Dutch and German, in a small number of cases, lexical gender does not match with the biological gender of the referent (see Introduction).

While pronouns in German still mostly agree with the lexical gender of the noun they refer to (albeit with some exceptions), the erosion of the Dutch system, i.e., the loss of the distinction between masculine and feminine nouns, seems to lead to the use of a more semantically based pronominal system. This shift is mostly in favor of the masculine category: many originally feminine nouns, e.g., *zon* [sun], are nowadays referred to with the masculine pronoun *hij* [he] in Netherlandic Dutch (Haeseryn et al. 1997). This is also the case for non-diminutive neuter nouns, e.g., *het kind* [the child]; *het masker* [the mask] (see Audring 2009). It should be noted, however, that Audring also found some degree of semantic agreement in the consistent German system, which is, like in Dutch, based on lexical gender (for animate nouns) or degrees of individuation of the referent (for inanimate nouns). Compared to German, however, where there is generally a one-to-one correspondence between articles and their related pronouns, Dutch is rather instable and variable: nouns do have a fixed gender, but they are not consistently used with the agreement pattern that corresponds with that gender category. In fact, all possible article-pronouns combinations seem to occur in

Netherlandic Dutch (Audring/Booij 2009). Because of the relatively scarce amount of gender cues on the noun itself, Dutch and, to a lesser degree, German, are both considered covert gender systems, i.e., systems in which the category to which a noun belongs can hardly be predicted based on phonological or morphological characteristics of that noun (e.g., Booij 2002; Corbett 1991; Haeseryn et al. 1997). The categories that nouns belong to thus largely must be acquired based on cues on agreement targets, but this agreement system is, especially in Dutch, not consistent, nor straightforward. Whether this has any consequences for L1 and/or L2 learners will be discussed in section 3.

## 2.2 Semantic gender for personal nouns in Dutch and German

Semantic gender relates to the property of non-linguistic maleness or femaleness as encoded in a noun's lexical meaning. Personal nouns may thus be marked as female-specific (e.g., *dochter*; *Tochter* [daughter]), male-specific (e.g., *meneer*; *Herr* [sir]) or gender-neutral (e.g., *persoon*; *Person* [person] (Hellinger/Bußmann 2001).

### 2.2.1 Gender confusion in Dutch

Gerritsen (2002) writes that Dutch has two types of role nouns: terms that indicate the gender of the person who practices the role (male or female) and terms that do not. Not all personal masculines have a feminine counterpart. In this respect, Dutch differs substantially from German where almost all personal nouns referring to men can be transformed into feminine equivalents by adding the suffix *-in* (Bußmann/Hellinger 2003). Furthermore, the number of suffixes that can be used to feminize personal nouns denoting men is larger in Dutch than in German (see Table 2). The most productive female-specific suffix in Dutch is *-e*, which especially occurs with loans (*assistent-assistente* [assistant]); nouns ending in *-ing* (*leerling-leerlinge* [pupil]); and some other nouns (*echtgenoot-echtgenote* [spouse]). Other productive suffixes are: *-ster* (e.g., *voorzitter, voorzitster* [chairperson]); *-euse* and *-trice* (e.g., *presentator, presentatrice* [presenter]) *-a* (e.g., *historicus, historica* [historian]); *-es* and *-esse* (e.g., *baron, barones/se* [baron/baroness]) *-in* (e.g., *boer, boerin* [farmer]). Apart from male and female nouns, Gerritsen (2002) distinguishes a category with gender-neutral terms (with a masculine history) such as *dokter* [physician]; *professor* [professor]; *psychiater* [psychiatrist]. Note that many of these terms end in *-er*. Like German, Dutch allows for nominalization

of adjectives (*de zieke* [the sick person]) and verbs (*de reiziger* [the traveler]) that supposedly are gender-neutral as well.

Gendered professional titles became subject of debate in the Netherlands in the 1970s (Kool-Smit 1967; Romein-Verschoor 1975), which has currently resurfaced (Peters 2016; Bolle 2017). In 1980, the law prescribed that in personnel advertisements, men and women should be equally visible. However, it has been found that different types of professional names were and are used unsystematically (Gerritsen 2002). At the time, The Ministry of Social Affairs recommended (new) neutral terms (cf. Werkgroep 1982), but the media as well as linguistic circles responded negatively. Formations such as *timmer* to refer to a carpenter (instead of *timmerman* or *timmervrouw*, which mark gender) were considered ridiculous and some linguists argued that the terms were not neutral at all, but only referred to men (e.g., *dominee*, *minister*, *notaris* [vicar, minister, notary]). Van Alphen (1983) and Huisman (1985) therefore advocated gender-specific names for professions. In the end, no official guidelines were determined, but the Dutch Language Union published a volume that presents social and linguistic information about the issue and possibilities to avoid linguistic sexism (de Caluwe/van Santen 2001). Recently, calls for gender-neutral language resurfaced in the Dutch media (Peters 2016; Bolle 2017; Meindertsma/de Bruijn 2017)<sup>4</sup>, although for many professional titles it is still far from clear whether they are (perceived as) gender-neutral. In terms of gender fairness, ample research suggests that female visibility in fe/male pair forms yields more gender fair perceptions in Dutch than neutralizing terms (see section 2.2.3 below), but more research is needed to disentangle these effects.

### 2.2.2 Female visibility in German

Almost all German masculine personal nouns can be made feminine with the feminine suffix *-in*, as in *Student* (base, [student]) and *Student-in* [student-female] (Bußmann/Hellinger 2003). The suffix *-in* is well established, has no negative connotations and does not indicate lower status. Other feminizing strategies, that are more contested, are coordinated pair forms (*Lehrerinnen und Lehrer* [teachers-female and teachers-male]) or various forms of abbreviated splitting, sometimes with capital-I (*Lehrer/Innen*). Nouns ending in *-er* are

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<sup>4</sup> In July 2016, the Dutch LGBTQ organization announced that the pronoun *hen* [s/he] won the contest of gender-neutral alternative for *hij* [he] and *zij* [she] (Peters 2016). It is unknown whether and how this pronoun is used in current Dutch.

taken to be masculine, as in *fahr-* (base, [drive]), *Fahr-er* [driver-male] (Bußmann/Hellinger 2003). The suffixes *-ler* and *-ner* are male-specific as well, but may, in addition, be used in generic contexts (i.e., to refer to women as well). There are hardly exceptions to the rule that a noun's gender is invariant. Only a few nouns can be described as genuinely gender-indefinite, such as *Person*, *Kraft*, *Mensch* [person, -force, human]. Such nouns can become gendered though, through adjectival modification (e.g., *eine weibliche/männliche Person* [a fe-/male person]). Further, there are some occupational terms which are compounds containing *-mann* or *-frau* as a second element (e.g., *Kaufmann/Kauffrau* [salesman/-woman]). Nominalized adjectives and participles may be assigned either of the three genders by the choice of dependent categories. For example, the adjective *krank* [sick] can be nominalized into *der Kranke* [the sick person-male]) and *die Kranke* [the sick person-female] (Bußmann/Hellinger 2003). In contrast with Dutch, the definite article will mark gender after all for these German forms.

Though English guidelines (UNESCO 1999, 2017) emphasize neutralization, German guidelines prioritize female visibility. Bußmann/Hellinger (2003) argue this is a consequence of several factors: the existence of lexical gender; the tendency towards its agreement with semantic gender; and the fact that derivation of feminine personal nouns is embedded in the German word-formation system. Female visibility is mandatory in gender-specific contexts but is also recommended in all contexts that include female referents. Alternative options are usage of gender-indefinite nouns as in *Lehrpersonen*, *Lehrkräfte* [teachers] or nominalized plural forms, which do not differentiate lexical and hence referential gender in German, as in *Auszubildende* [trainees], *Drogensüchtige* [drug addicts]). In the singular, female visibility must be achieved. However, masculine forms that are part of inanimate compounds are not subject to change: *Benutzerhandbuch* [user manual]), *Führerschein* [driving license] (Bußmann/Hellinger 2003).

**Table 2:** Noun endings that have been reported to mark gender for Dutch and German singular role nouns

Language	Feminine ending(s)	Masculine ending(s)	Gender-neutral ending(s)
Dutch	-e-, -ing, -ster, -euse, -trice, -a, -es, -esse	-er	-e; -er
German	-in	-er, -ler, -ner (e.g., generic in plural)	-e

### 2.2.3 Male generics in Dutch and German

As noted above, male generics have been an important topic of public debate for both Dutch and German. Male generics are (historically) masculine personal nouns (e.g., doctor, professor, psychiatrist) that are used either generically, i.e., referring to both women and men, or specifically, i.e. referring to only men. German research, that started in the 90s, has convincingly shown that generic use of masculine personal nouns is strongly male-biased (see Horvath et al. 2015 for an overview). These studies arrive at convergent conclusions using different techniques such as sentence completion tasks, reaction time measurements, reading tasks and questionnaires. For Dutch, it is claimed that masculine terms (e.g., *medewerker* [employee]) and neutralizing terms (e.g., nouns that have no feminine counterparts, *arts* [doctor], or are inherently gender-neutral (e.g., *hoofd* [head]), are increasingly used to refer to both women and men (Gerritsen 2002). This claim was supported by De Backer and De Cuypere (2012), who used survey experiments to investigate how German and Belgian Dutch speakers interpret masculine personal nouns used in a referential context. Results suggest that German masculine nouns are more restrictive in potential reference than Dutch nouns. This effect is more pronounced in the singular than in the plural. Not only number, but also lexical type played a role as non-occupational nouns tended to be more gender-neutral as compared with occupational nouns.

Male- and female-specific forms versus male generics may have a severe impact on visibility and perception of (successful) women (Lassonde/O'Brien 2013). Stahlberg/Szczesny/Braun (2001) for example, asked German participants to write down names of their favorite musicians or athletes. Participants read identical instructions with either a masculine only form (*Sportler* [male or generic athlete]) or a pair form (*Sportlerin/Sportler* [female/male athlete]). Results showed that more female personalities were listed in the pair form condition than in the masculine only condition. Similar results have been reported with German and Dutch speaking Belgian 6-year old school children. Vervecken/Hannover/Wolter (2013) examined these children's perceptions of females' and males' success (i.e., who can succeed?) in traditionally male occupations (e.g., lawyer). Results showed that children who read pair forms perceived females' and males' success more equally than children who read the masculine form only. Male generics instead of pair forms may even have an impact on behavior in professional contexts. In a hiring-simulation study in German, for example, decision makers preferred male over female applicants for a high-status leadership position when the position was advertised in the masculine (*Geschäftsführer*, [CEO-male]) (Horvath/Szczesny 2016).

In sum, we can distinguish some important (a)symmetries in the expression of semantic gender in Dutch and German. First, where Dutch has about eight suffixes to mark whether a personal noun refers to females or not, German employs only one. German does have a few masculine markers for German singular nouns (*-er*, *-ler* and *-ner*), while the ending *-er* in Dutch marks masculinity or gender neutrality. These differences are likely bound to the erosion of the Dutch gender system and the lack of official Dutch guidelines for professional terms in contrast with clearer rules and priority of female visibility in German. Perception of male generics has been well-investigated for German, but should be examined in more detail for Dutch.

### 3 Gender acquisition and processing in Dutch and German

Differences in the expression of gender in Dutch and German and the instability of the Dutch gender may well lead to differences in both the processing and the acquisition of gender in the two languages, which may in turn explain observed patterns of language variation and change. Gender is also an intriguing phenomenon when related to bilingualism as it is realized differently in German and Dutch. Potential changes in perception when shifting language system can shed light on the question of whether it is possible to learn a completely new or different lexical gender system in later stages of life and what the influence of the L1 might be in this process. So far, we have discussed the Dutch and German systems and have addressed some studies that employed offline research techniques (questionnaires, categorization tasks etcetera). Here we will also address studies that have employed online research techniques: eye tracking and ERPs. The advantage of the latter techniques over the former is that they measure online processes, i.e., processing of language as speech unfolds, instead of an answer or decision that cannot reveal the processes that led to the product.

#### 3.1 L1 Acquisition and the processing of gender

When do Dutch and German children acquire their lexical gender system? While learners of German can rely on semantic, morphological, and phonological cues on the noun, learners of Dutch can only rely on morphosyntactic cues, i.e., the gender agreement system, to track down a noun's gender category. As explained in section 2.1, however, these morphosyntactic cues are not consistently nor reliably

present in the Dutch input. Dutch common gender marking, for example, is used to conjugate words related to any noun used in the plural (as feminine *die* can precede plurals in German), while neuter gender marking can be used with both common and neuter nouns when they are used in diminutive form. The absence of cues and the absence of a one-on-one relationship between gender marking and gender in Dutch likely forces children to acquire Dutch gender word by word (Unsworth 2008). This section will investigate whether this is indeed the case by comparing studies looking at production, comprehension and online processing of lexical gender in Dutch and German.

### 3.1.1 L1 acquisition of gender in Dutch versus German: production studies

In line with the above reasoning, Dutch L1 speakers have indeed been shown to have difficulty acquiring Dutch gender and have been shown to overgeneralize the more frequent common determiner *de* until, and sometimes even beyond, the age of 6 (Blom/Polišenkà/Weerman 2008; Cornips/van der Hoek/Verwer 2006; Hulk/Cornips 2006a, b; De Houwer/Gillis 1998; van der Velde 2004). This acquisition pattern is in stark contrast with the pattern observed in German native children, who have been shown to use the correct articles in their L1 at the age of 3 to 4 (Mills 1986; Szagun et al. 2007). In contrast with Dutch children, German children make relatively few mistakes when producing gender marking and, when they do not know the gender of the noun, they tend to omit the articles more often than overgeneralize one of the available determiners (Mills 1986). The feminine definite singular and plural determiner *die* is, however, sometimes overgeneralized (Bewer 2004; Mills 1986), but the degree of overgeneralization is not comparable to the over-occurrence of common gender marking in Dutch. Moreover, systematic overgeneralization is generally not reported for monolingual speakers of other gendered languages, such as French and Spanish (Franceschina 2005).

In both Dutch and German, but also in many other gendered languages, agreement between the definite article and the noun is acquired before agreement between the adjective and the noun. Before being able to accurately and consistently use the agreement rules, learners thus seem to put knowledge of a noun's gender in place first. The first phonetic rule for inanimate nouns that is represented in the German child's vocabulary is the association of the *-e* ending with feminine gender (e.g., *die Erde* [the earth]), which appears to be the most frequent rule with the fewest exceptions. In line with the order of acquisition in Dutch, i.e. common before neuter and definite articles before adjectival inflection, Mills (1986: 85) concludes that the order of acquisition in German is related to the

scope of the rule and the number of exceptions. The asymmetry and the relatively scarce availability of rules and relatively frequent occurrence of exceptions to those rules in the Dutch gender assignment system is likely to partly explain the relatively late acquisition of Dutch gender as compared to German that is seen in production studies.

### 3.1.2 L1 acquisition of gender in Dutch versus German: comprehension and processing

In comparison with production studies, the relatively scarce amount of studies incorporating comprehension tasks have only partly added evidence to the relatively late acquisition of Dutch grammatical gender. Using a grammaticality judgement task with determiner noun combinations, Unsworth/Hulk (2010a, b) showed a mean accuracy of 70% for 4- to 6-year old Dutch children and, in line with production data, these children accepted ungrammatical neuter determiner noun combinations more often than ungrammatical common NPs. While there is not a lot of data from children between 6- and 11-years of age, Dutch children's judgement of gender marked NPs has been shown to reach adult L1-like ceiling level around the age of 11 (Cornips/Hulk 2008). Interestingly, when metalinguistic knowledge is not tested, as is the case with a preferential looking paradigm, 2-year old Dutch children have been found to use the common determiner *de* to more quickly locate a target object (Johnson 2005), which corroborates later findings using eye tracking with a visual world paradigm that common gender marking is used by adults to facilitate comprehension (Loerts/Wieling/Schmid 2013). Although only found for common nouns in Dutch, such a gender effect is in line with studies showing that Spanish 2- to 4-year olds, like adults, can use informative gender marking to identify a target referent (Lew-Williams/Fernald 2007, 2010).

To further investigate the acquisition process during the apparent transition from non-targetlike to targetlike use of, particularly, neuter gender in Dutch, Brouwer/Sprenger/Unsworth (2017) recently tested 4- to 7-year olds using a visual world paradigm. They showed that children who correctly used neuter gender in production behaved like Dutch adults and used gender marking to anticipate, i.e., to predict, the upcoming noun. The children who still made a lot of neuter gender mistakes in production could use gender marking to facilitate comprehension (i.e., to speed up comprehension after hearing the determiner), but not to anticipate upcoming targets. Contrary to the findings by Johnson (2005) and Loerts/Stowe/Schmid (2013) that only common gender might have such an effect, which has been explained by the fact that *het* is less informative as it can precede

any noun in its diminutive form, Brouwer and colleagues found the anticipatory effect only for neuter gender marking. While this difference might be affected by the visual world paradigm with 4 instead of 2 pictures used by Loerts/Stowe/Schmid (2013), the combined results additionally reveal information about the potential developmental pattern of gender acquisition in Dutch. Brouwer/Sprenger/Unsworth (2017) found that 2-year olds may first only use *de* (Johnson 2005; Unsworth 2008) after which they acquire and temporarily only use *het* in a facilitative fashion before being able to also use gender marking anticipatorily (Brouwer/Sprenger/Unsworth 2017). The predictive power of gender in Dutch has not only been found to be asymmetrical when compared to other languages, but the effect also seems a lot smaller than the predictive anticipatory effects of all three gender marked articles that has been reported for German in adults (Hopp 2016). To the authors' knowledge, the use of German gender marking to predict upcoming nouns has only been tested and established for 8- and 9-year olds (Lemmerth/Hopp 2019), but not for younger children.

## 3.2 Gender in L2 acquisition and processing

### 3.2.1 L2 acquisition of gender in Dutch versus German: production studies

For L2 Dutch, like L1 Dutch as discussed in section 3.1, speech production studies found that L2 learners overproduce *de* instead of *het*, as shown for Moroccan children and Moroccan, Turkish, English, Polish and deaf adults learning Dutch (Blom/Polišenkà/Weerman 2008; van Emmerik et al. 2009; Loerts 2012; Unsworth 2008). An overview by Cornips/Hulk (2008) revealed that the overextension of *de* in Dutch also holds for children simultaneously acquiring Dutch with French, Akan, Ewe and Surinamese. They point towards a prominent role for “lengthy and intensive input” in explaining acquisition differences between less and more successful bilingual children.<sup>5</sup> Lemhöfer/Spalek/Schriefers (2008) report that the L1 affected assignment of gender in the L2 for adult German learners of L2 Dutch. This remained the case even after receiving training on gender assignment (Lemhöfer/Schriefers/Hanique 2010).

For L2 German, production difficulties have been reported for English, Afrikaans and Italian adult speakers (Bianchi 2013; Bobb/Kroll/Jackson 2015; Bordag/

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<sup>5</sup> Cornips (2008) also points out that young immigrants in the Netherlands are consciously over-extending Dutch *de* [the] as an identity marker.

Opitz/Pechmann 2006; Ellis/Conradie/Huddleston 2012). Ellis/Conradie/Huddleston (2012) found that Italian learners outperformed English and Afrikaans speakers, which they attribute to “deep” L1 transfer of grammatical gender (since Italian and German both know lexical gender, but the systems are not congruent). Bianchi (2013) also points to language-internal factors, as well as amount of input, to explain deviations from target gender assignment for Italian-German bilinguals. Eichler/Jansen/Müller (2012) report on bilingual child acquisition of German with French, Italian and Spanish and showed that bilingual children can acquire gender systems in both languages without any delays. Yet children’s accuracy can be predicted based on language dominance and German is the most problematic system to acquire. The authors found that accuracy on neuter gender is lower in bilingual than monolingual German, suggesting that simultaneous acquisition of a two- and three-gender system has delaying effects for target-like neuter marking. Salamoura/Williams (2007) also found L1 effects for adult Greek learners in L2 German gender assignment. Nouns that had the same gender in both languages were translated faster than nouns with different genders, and gender-incongruent cognates yielded more errors. To our knowledge, few studies have focused on L2 production of gendered personal nouns (but see Urbanek et al. 2017; De Vogelaer et al. (this volume), both showing transfer effects in German L2 Dutch learners’ pronoun use).

### **3.2.2 L2 acquisition of gender in Dutch versus German: comprehension and processing**

Hopp (2013) examined how English L2 German learners assign gendered determiners to inanimate nouns and how these are comprehended in real-time. Results showed contingencies between accuracy in lexical assignment in production and target-like processing in comprehension (as measured using eye tracking). According to Hopp, this argues against a representational and processing deficit in late L2 learners. Eye tracking studies using a visual world paradigm, like Hopp (2013), have examined whether L2 learners, like native adults (see section 3.1.2), use grammatical gender to facilitate L2 comprehension. Results suggest that both L2 Dutch as well as L2 German learners experience challenges in this respect. Loerts (2012) for example, found that Polish (a language with no articles) late learners of L2 Dutch cannot pre-activate L2 grammatical gender information (in articles) to facilitate comprehension of inanimate (object) nouns nor do they (in)accurately use L1 gender categories (as previously found by e.g., Weber/Paris 2004). For L2 German, using a similar paradigm, Hopp (2016) investigated whether English L2 German learners use grammatical gender for predictive processing and found that knowledge of gender assignment is a prerequisite for using gender

marking predictively. Non-target gender assignment led to erroneous gender prediction and was therefore abandoned. This effect was replicated with L1 German speakers when they hear input with gender mistakes: the low reliability in target-like gender assignment leads them to abandon the use of grammatical gender as predictive cue (Hopp 2016). Sabourin/Stowe/de Haan (2006) examined gender assignment for advanced German, English and Romance learners of L2 Dutch. They concluded that L2 acquisition of lexical gender was mostly affected by morphological similarity of gender marking in the L1, with high accuracy for German speakers as there is relatively more overlap between German and Dutch.

The online processing of gender has more recently increasingly been assessed using event-related potentials (ERPs), which are changes in brain activity that show *when* specific aspects of language are processed. This technique has repeatedly shown that semantic violations or unexpectancies are generally evoking an N400, a negative going wave around 400 ms, while morphological and syntactic violations and difficulties generally elicit a positive deflection around 600 ms, known as the P600. Grammatical gender violations have consistently been found to elicit a P600 reflecting syntactic re-analysis or repair in various languages including Dutch (e.g., Loerts/Stowe/Schmid 2013) and German (Gunter/Friederici/Schriefers 2000; Davidson/Indefrey 2009). Late L2 learners' processing of L2 gender violations has been shown to be affected by L1, with both the presence as well as the similarity of gender systems being a prerequisite for native-like processing (Sabourin/Stowe 2008). Interestingly, highly proficient L2 learners with a completely different gender system (i.e., Polish) have been found to show a reduced and delayed P600, but only in response to violations of common gender (Loerts 2012). This latter result is in line with many of the other studies discussed above showing difficulty especially in the acquisition of Dutch neuter gender.

An understudied group of learners, especially with the use of online measures, are early bilinguals. The general idea is that simultaneous bilinguals will eventually catch up with their monolinguals peers, but an ERP study on Dutch gender showed that simultaneous bilinguals with Turkish (which has no gender) and Dutch as L1s only show a reduced P600 when compared to their "monolingual" peers with over half of them performing at chance level when judging grammatical gender violations offline (Seton 2011). Similarly, while 8-year old simultaneous Russian-German bilinguals have been shown to be able to use German gender to predict upcoming words, their early successive bilingual peers could only use German gender cues to predict nouns if they shared gender in German and Russian (Lemmerth/Hopp 2019). These combined results suggest an important role for the L1 that requires more attention in future research.

Another line of research focused on pronominal gender for nouns (e.g., Lamers et al. 2008). Ellert (2011) studied relative pronoun resolution (e.g., *hij/*

*er* [he]; *die/der* [he]) in L1 and L2 Dutch and German discourse for both animate (e.g., Peter) and inanimate nouns, using ERPs. She found that pronoun resolution was affected by order of mention and information structure of the antecedent clause, but animacy had no effect in L1 Dutch. This indicates that personal and demonstrative pronouns exhibit the same level of (non)ambiguity in Dutch, which contrasts with German, where personal pronouns were resolved earlier after animate antecedents. Proficiency level was an important predictor for native-like processing, but both Dutch L2 German as well as German L2 Dutch learners showed both timing as well as resolution differences for animate entities when compared with L1 speakers. Urbanek et al. (2017) investigated production and perception of pronominal gender in German L2 Dutch learners for concrete mass nouns (e.g., sugar, grass etc.). In current Netherlandic Dutch, the dominant type of pronoun in reference for *de*-words is *hij* [he] (Haeseryn et al. 1997). One result showed that in contrast with L1 Dutch speakers, German L2 Dutch learners used *zij/ze* [she] to describe *de*-words with feminine German counterparts in 64.9 percent of the cases, which can be explained by L1 transfer. Yet, acceptability data showed that, in contrast with female preference in the production data, variation in pronoun use was deemed acceptable by L2 learners. De Vogelaer et al. (this volume) present new data of Austrian and German learners of L2 Dutch on the same topic.

Comprehension of animate nouns seems less well-investigated in L2 acquisition. For example, we know of no studies investigating L2 acquisition of gender marking on personal noun endings (as outlined Table 2). Though these words appear frequently in the input (Gerritsen 2002; Hellinger/Motschenbacher (eds.) 2015) and adult L2 learners will encounter them, for example, in L2 textbook chapters. Some work on German has focused on the interaction of lexical gender and names for role nouns or nouns for stereotypical *fe*/male professions. Sato/Gabriel/Gygax (2016), using a sentence evaluation task, examined how nominalized adjectives (e.g., *die Konsumierenden* [those that consume]) with grammatically masculine nouns (e.g., *die Käufer* [the buyers]) induce male representations in French-German bilinguals. They showed that a masculine bias persisted when participants read masculine plural forms, but that nominalized forms can attenuate this male bias, even for nonnative speakers. In another study, Sato/Gygax/Gabriel (2016) investigated French-German bilingual speakers with a visual world eye tracking task. They presented speakers with stereotypical, plural role nouns and plural determiners that have a generic meaning in French and a feminine connotation in German (e.g., *les techniciens*, *die Techniker* [the technicians]). Participants judged whether a pair of faces showing two men or a man and a woman could represent the presented language. Results showed no effects of the determiner, but an interaction of face pairs and stereotypes, where the

preference for male face pairs that followed stereotypical male nouns was the most pronounced. This aligns with claims that L2 learners rely primarily on non-structural lexical semantic and pragmatic cues when comprehending their L2 (Clahsen/Felser 2006).

In sum, grammatical gender production difficulties seem to occur both in L1 and L2 Dutch and L2 German, and these difficulties seem to be related to proficiency, input and the presence and degree of similarity of an L1 gender system. L2 learners can use grammatical gender to facilitate comprehension, but only when they are highly proficient and hardly make mistakes. While late learners have been studied relatively extensively in this field of research, little is still known about comprehension and processing of gender in early bilinguals. For personal (pro)nouns, production results show that German L2 Dutch learners use female pronouns to refer to nouns with common gender, while L1 Dutch speakers use male pronouns, which can be explained by L1 transfer. Research has also shown that for resolution of pronouns, animacy affects how (fast) L1 and L2 Dutch and German speakers resolve comprehension. When interpreting professional names, stereotypical knowledge affects speakers' representations to a much larger degree than grammatical knowledge. It has also been shown that gender-neutral nominalized forms, can attenuate male bias, suggesting that human gender categories in language can be (un)learned.

## 4 Gaps in psycholinguistic, Dutch-German gender research

The previous sections have outlined descriptive and psycholinguistic research into gender in Dutch and German. When it comes to research into bilingualism, language and gender in general, Pavlenko (2014: xiii) described that “the research on (grammatical) gender [...] is limited to a handful of psycholinguistic studies documenting effects (or lack thereof) in artificial tasks and it is not clear what, if any, implications these findings have for habitual thought”. The special issue by Garnham et al. (2016), which addresses effects of semantic gender in German, but not in Dutch speaker cognition, and themes such as gender-neutral language and its effects on reducing stereotyping and discrimination (Szczesny/Formanowicz/Moser 2016), shows that in this area, many questions concerning both L1 and L2 speakers remain unanswered as well. In addition, recent public debates on gender-neutral language in German and Dutch (Vermeulen 2018) indicate the necessity of further research. The present section therefore presents impulses regarding content and methodology for future studies.

## 4.1 Interpretation of personal nouns in L1 and L2 Dutch

With respect to semantic gender, we find that, in contrast to gendered definite articles (e.g., German *der/die/das* (the)) and inanimate nouns, gender for animate (role) nouns (e.g., nurse, technician) has been less frequently researched, especially for (Netherlandic) Dutch. In addition, there are few Dutch studies into so-called male generics (e.g., Dutch *burgemeester* [mayor]), which contrasts with the substantial German body of research on the topic. For the Dutch public to determine what is “gender-neutral” language, we need more studies. We need, for example, studies like the one by De Backer/De Cuypere (2012), that identify non-/occupational terms and whether they are perceived as fe/male or gender-neutral, covering a large number and range of terms (De Backer/De Cuypere investigated only sixteen Belgian-Dutch terms). This can be done by survey experiments, like De Backer/De Cuypere (2012) did, or sentence completion paradigms, reading tasks and reaction time measurements (e.g., see German studies like Horvath et al. 2016). However, online measures, for example eye tracking, provide an excellent means too to discover whether individuals look towards fe/male persons upon hearing a given role noun (see Sato/Gygax/Gabriel 2016). Further, studies that reveal effects of male generics versus gender-neutral alternatives on decision making processes are needed for Dutch. The hiring simulation study for German by Horvath/Szcesny (2016) for example, could be replicated for Dutch; or the study into effects of language on perception of fe-/male success by Vervecken/Hannover/Wolter (2013) could be replicated with Dutch children. Focusing on L2 learners, we need to identify whether and what forms are presented to them in what manner in L2 Dutch and German text books (see Koster/Iding 2019); whether fe-/male noun endings are comprehended as such (with/out instruction) and whether target-like comprehension is more easily established when L1 categories are similar to L2 categories (e.g., male *-er* noun ending in Dutch vs. German) as compared with different L2 categories (e.g., Dutch female noun endings *-e*, *-ing*, *-ster*, *-euse*, *-trice*, *-a*, *-es*, *-esse* vs. German female ending *-in*).

## 4.2 Acquisition of gender in Dutch vs. German

The acquisition of Dutch lexical gender seems, when compared to German, relatively difficult for both L1 speakers and L2 learners. Most studies have, however, looked at production data only, and there is evidence suggesting that comprehension and production of gender may not always go hand in hand. Ideally,

future studies should combine both production and comprehension measures, but also incorporate more longitudinal designs with emphasis on the age range from 4 to 11 in which Dutch gender acquisition appears to move to a target-like system. Comprehension studies should ideally resemble real life, thus covering larger pieces of text instead of words and single sentences. Simultaneous and early successive bilinguals are an understudied group and their processing of language has long been thought to (eventually) match those of monolinguals. Recent studies investigating brain activity in response to gender violations suggest that this is not always the case (Seton 2011) and the L1 of these early bilinguals seems to have an impact (Lemmerth/Hopp 2019). Although many studies focusing on late L2 learners have already pointed towards the crucial role of the L1 (e.g., Sabourin/Stowe 2008), these studies often suffer from high interindividual heterogeneity (e.g., age of acquisition, L2 proficiency, aptitude, etc.). More studies with successive, but especially with simultaneous bilinguals are needed as these can provide important evidence concerning the impact of one language on another language during different stages of acquisition. The role of stereotypical knowledge about fe/male roles is another important topic to be explored further, with potential for online measures. As ERPs can reveal the activation of stereotypical information (e.g., Misersky 2017), they could be exploited to reveal whether certain non-/stereotypical nouns trigger certain brain patterns in Dutch and German as well. Furthermore, such measures might eventually be used to examine potential transfer effects of cultural and linguistic stereotypical information in L2 learners of Dutch and German.

### 4.3 L2 Acquisition of gender using online measures

Research on L2 acquisition with online processing measures has not emerged until recently for both languages. It is recommendable that more different language combinations are examined, as the lack of or nature of a gender system in the L1 is an important candidate for positive or negative transfer. Direct comparisons of Dutch and German and potential lexical activation of L1 categories during the processing of L2 in different stages are needed. An interesting candidate for this is the interlingual homophone *die*, combined with gender-neutral personal nouns, that functions as grammatically female definite article in German (e.g., *die Blinde* [the blind person]) and as gender-neutral demonstrative in Dutch (e.g., *die blinde* [that blind person]; see Table 1). In case German L2 Dutch learners adhere to L1 German grammatical gender when comprehending L2 Dutch *die blinde*, an eye tracking visual world study could reveal whether a female person is the preferred candidate to fixate (Koster et al. 2019).

In addition, it could be further explored whether and to what degree L2 learners use their L1 gender system to predict upcoming nouns and what the influence is of similarities between the gender systems. Some visual world paradigm studies with other languages than Dutch and German have shown that L1 gender categories are transferred to anticipate upcoming nouns in the L2 (Weber/Paris 2004), but similar transfer effects were not found for late Polish L2 Dutch learners (Loerts 2012). Whether it is the typological difference related to the absence of determiners in Polish or lack of overlap in gender categories that has caused the absence of L1 transfer could be studied in more detail in the future. For example, future studies could determine whether L2 Dutch learners with L1s that do mark gender on articles, but that differ in terms of their similarity to Dutch (e.g. Italian, Spanish, French, German) face fewer difficulties with Dutch gender than Polish learners as shown by online measures revealing the processing of language as the input unfolds. Finally, we need more real-time studies on the processing of morphosyntactic cues in different types of bilingual children, especially for simultaneous and successive bilinguals.

## 5 Conclusions

The aim of the present paper was to provide an up-to-date literature review on linguistic gender in Dutch and German and provide impulses for further psycholinguistic work. We have discussed feminine suns and masculine moons; German women that are perceived as less fit job candidates because of male “generic” language; German and Dutch speaking children that face difficulties when they must describe objects with gendered articles; and gender similarities and differences across German and Dutch, that may benefit, but also confuse adult foreign or second language learners. Gaining a better understanding of the mechanisms and processes that underlie these outcomes can help, for example, in the design of L2 curricula or governmental or newspaper language policies concerning inclusive language. But most of all, present and future psycholinguistic studies into gendered language, can provide us with insight into our own language behaviors and that of people around us. In this way, we can deal with everyone’s linguistic and cognitive challenges in a knowledgeable manner.

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