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Verb-noun compounds versus synthetic compounds in English, German and Italian

Abstract: This study compares Verb-Noun compounds (V-NCs) with synthetic compounds (SCs) in three languages: English (e.g., *killjoy* vs. *joy-killer*), German (e.g., *Wendehals*, *Spielverderber*), and Italian, which exclusively displays the former construction (e.g., *guastafeste*). We adopt a theoretical framework grounded in naturalness to examine various features of these compound types. From a synchronic perspective, we analyze: (a) their agentive versus instrumental meanings, (b) their preference for endocentricity versus exocentricity, (c) their degrees of productivity and morphosemantic transparency, (d) the iconicity between morphosemantic and morphotactic heads, (e) their uniqueness versus ambiguity, and (f) the influence of typological properties on their formation in each language. From a diachronic perspective, we explore the genesis and development of these compound patterns, as well as the role of analogy in their formation, frequency, and productivity. Typological differences among the three languages reflect either a preference for one pattern or the coexistence of both, albeit with varying degrees of productivity. Through the lens of analogy, we identify compound families in all three languages, demonstrating the extension of patterns and the potential to predict new formations accordingly.

Keywords: verb-noun compound; synthetic compound; naturalness theory; inter-linguistic variation

1 Introduction

Verb-Noun compounds (henceforth, V-NCs), such as Italian *ruba* + *cuori* 'steal + heart + PL.' and *volta* + *gabbana* 'turn + coat', are very common in Romance languages and productive in terms of type and token frequency (Ricca 2015). In contrast, deverbal synthetic compounds (SCs) ending in *-er*, such as English

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heart + *breaker* and its German equivalent *Herze-ns* + *brecher*, are highly productive in Germanic languages (see Mattiello and Dressler 2021, 2022 for English; see Gaeta and Zeldes 2017 for German), but are virtually absent in Italian and other Romance languages (Grossmann and Rainer 2004; Melloni 2020). According to Marchand (1969: 380–382), exocentric "argumental compounds" of the type *pickpocket* were likely formed in English based on the pattern of French agentive and instrumental compounds, which are still productive in some Romance languages. However, in contemporary English, many V-NCs have become obsolete and their pattern unproductive (Bauer et al. 2013: 473–474), often replaced by the pattern of SCs, although the two forms sometimes still coexist.

An example of variation is *kill* + *joy* (V-NC) versus *joy* + *kill* + *er* (SC), both attested in English, but corresponding only to an SC in German (*Spiel* + *verderb* + *er*, lit. 'game + spoil + er') and to a V-NC in Italian (*guasta* + *fest-e*, lit. 'spoil + feast + s'). Sometimes, compounding may correspond to derivation, as in English *turn* + *key* [1622]/*key* + *turn* + *er* [1606] (with the former term *jailer* [1300]), which is rendered in Italian only as a derived word (*second* + *ino*, lit. 'second-AGENT'). On the one hand, figurative interpretation obstructs access to meaning, increasing the opacity of both patterns. On the other hand, the absence of an agent suffix in V-NCs reduces morphosemantic transparency. Additionally, diachronic change can decrease transparency, as seen in *break* + *fast* (where *fast* originally referred to 'a religiously determined period without food').

This study investigates the diachronic and synchronic distribution and type/token frequency of V-NCs versus SCs in English, German and Italian. For the quantitative data, we used three comparable corpora available on *Sketch Engine* (Kilgarriff et al. 2014) – namely, *English Web 2020*, *German Web 2018*, and *Italian Web 2016* – as well as corpora available for each specific language: i.e. the *Corpus of Contemporary American English* (henceforth COCA) for English, the *Austrian Academy Corpus* (ARCHE), the *Austrian Media Corpus* (AMC), and the *Deutsches Textarchiv* (DTA-Kernkorpus) for (Austrian) German, and the *PAISÀ Corpus of Italian Web Texts* (PAISA) for Italian. The *Oxford English Dictionary* (OED) was also used for the diachronic development and analysis of the two English patterns.

The aim of our contrastive analysis is to demonstrate that the three languages differ in the diachronic evolution and productivity of these two types of compounds. Our investigation also explores the morphosemantic transparency versus opacity of V-NCs and SCs, as well as their analogical nature. More broadly, our study seeks to highlight the applicability of natural linguistic theories in explaining the productivity and patterns of compound versus derivational morphology, as well as the transition or overlap between them across the three languages, based on their typological characteristics.

Our framework is Natural Morphology (henceforth NM), based on the updated version presented in Dressler and Kilani-Schoch (2016) and further developed in Dressler (forth.). The following research questions are addressed in this study:

(1) Are the two patterns of Verb-Noun compounds and synthetic compounds equally relevant in English, German, and Italian?
(2) Is the prevalence of one pattern over the other consistent with naturalness principles, and, if not, with the typological characteristics of the three languages? Within the framework of NM, the second subtheory – typological adequacy – can take precedence over the first subtheory of universal preferences.
(3) Can we predict the development of compound families from analogical examples or even series?

Studies on each individual language demonstrate the existence and use of both patterns. However, a cross-linguistic study can reveal divergences and discrepancies (or similarities) that should be considered when translating between languages. The choice of a more natural form versus a more marked one should also be considered when comparing and contrasting the languages, as less natural choices can only be justified by adherence to typological adequacy in each language and language-specific system adequacy.

2 Theoretical background

The theoretical background for this study comprises the latest stage of NM, as recently updated by Dressler and Kilani-Schoch (2016, 2023) and Dressler (forth.), notably regarding the iconicity between morphosemantic and morphotactic heads. Following the iconicity principle elaborated within NM, we hypothesize that, of the two patterns investigated: (1) endocentric SCs are preferred over exocentric V-NCs, (2) the word-final head of SCs ending in the agentive suffix *-er* shows positional salience (due to the psycholinguistic bathtub effect and in line with the language-specific properties of English and German, both being right-headed languages), and (3) uniqueness is preferred over ambiguity, which renders the variation between synonymous variants such as *killjoy* and *joy-killer* dispreferred. Hence, we expect constructions that align with language-specific typology to prevail over those that follow universal preferences.

Further theoretical bases for our study include Ransmayr et al.'s (2016) gradation model of morphosemantic transparency/opacity (simplified in Mattiello and Dressler 2018), according to which SCs are more transparent because they can be analyzed into three morphemes, each conveying meaning (e.g. *water + break + er* 'anything that breaks water'), whereas the corresponding V-NCs (e.g. *break + water*) are more

opaque, because the agent/instrument remains covert. This gradation model accounts for the preference of SCs over V-NCs in English and German, two languages that explicitly express agentive and instrumental meaning through the *-er* suffix. In Italian, the principle of binarity (Dressler and Kilani-Schoch 2016: 366) has led to a preference for the pattern *guasta* + *feste* (cf. § 4.5), an example of conflicting motivations (Dressler et al. 2014). Conflicting motivations within the same theoretical framework may result in competition and rivalry. However, if these motivations are mutually exclusive, one is expected to prevail over the other. In our case, this would suggest that one pattern should dominate, leading either to the predominance of one rival or to the exclusion of both coexisting.

Another notion that is relevant to our study is the concept of analogy. Previous work on analogy in word-formation (Mattiello 2017; Mattiello and Dressler 2018) predicts similar formations created by analogy with existing words, either SCs or V-NCs, functioning as models. For instance, *promise-breaker* may be analogically coined after the precise pattern of *lawbreaker*, with which it shares the second derivative constituent, or after the family of *X-breaker* compounds. In Mattiello (2017) the former is called surface analogy, a local mechanism of word-formation based on proportion and similarity (i.e. *law*: *law-breaker* = *promise*: X, X = *promise-breaker*), the latter is called analogy via schema, with a series or family of words as model. Analogy differs from rules in that it is based on concrete models, such as a single word or a compound family sharing the first or second constituent. This allows for the prediction of novel formations within the same compound pattern.

In this study, we also incorporate Mattiello and Dressler's (2021, 2022) adaptation of the differences between dualism and superposition for the analysis of SCs drawn from quantum physics. Mattiello and Dressler (2022) claim that the basic ambiguity between a derivational and compositional analysis of *-er* SCs can be resolved by assuming dualism and superposition of suffixing and compounding, similar to Albert Einstein's assumption of duality and superposition of waves and particles (photons) for light. Thus, in the analysis of SCs, it is shown that, based on a diachronic study conducted using the *Middle English Dictionary* (1891), some compound families can be analyzed as instances of derivation (e.g. [[*path break*]*-er*], e.g., *Their predecessors who have broke a path upon this field* [1835]), while others can be interpreted as instances of compounding (e.g. [*idol* [*break-er*]], e.g., *Breaker of Idols* [1841]) (Mattiello and Dressler 2022: 20–21). This highly depends on the use of the second complex element as an independent word (cf. *breaker* in *law-breaker* 'a breaker of the law' vs. *goer* in *church-goer* 'one who goes to church', not 'a *goer to church'). In some cases, however, it is argued for superposition, where both analyses are acceptable: e.g., *painkiller* being analyzable as both [[*pain kill*]*-er*] and [*pain* [*kill-er*]] (cf. *how many shifts are made to kill time* [a1774] vs. *She is the most desperate killer of time* [1819], Mattiello and Dressler 2022: 34). Dualism and superposition offer a new perspective

on the representation of SCs, which can be seen either as a derivation from a phrase or as the compounding of a noun and a deverbal noun in *-er*, or as both simultaneously (superposition). Superposition is a concept from quantum physics: the best example is light, which is traditionally viewed as either waves or particles (dualism), versus being both at the same time and under the same conditions. Mattiello and Dressler (2021, 2022) have adapted this concept to the highly debated topic of SCs, in order to solve their ambiguity.

Additionally, in this study, Dressler et al.'s (2017) model of productivity in word-formation (used for the analysis of compounds in the acquisition field) is compared with poetic occasionalisms, which are often analogically created based on a precise model. These occasionalisms may either align with rule-based productivity or result in creativity (Dressler and Tumfart 2017; Dressler et al. forth; Kolb et al. 2023; Ronneberger-Sibold and Dressler forth.). The use of either compound pattern in the creation of poetic occasionalisms – typically once-only attestations in corpora or the work of an individual author – is indicative of their profitability.

Finally, differences between exocentric V-NCs and endocentric SCs (Gast 2008) are considered, with a clear preference for the endocentric pattern in NM. We envisage that the most natural choice, in terms of transparency and iconicity, will result in the most productive and widely distributed pattern cross-linguistically.

3 Data and methodology

The data used for the study have been collected in various steps and updated for the analysis conducted in this paper. English data on SCs are drawn from previous collections selecting examples from the *English Lexicon Project database* (Mattiello and Dressler 2021) and the literature on the topic (e.g., Marchand 1969). The English, German and Italian examples of V-NCs have been collected drawing from various studies: Bauer et al. (2013) for English, Gaeta and Zeldes (2017) for German, Grossmann and Rainer (2004), Ricca (2010, 2015), and Melloni (2020) for Italian. The resulting datasets have been cross-checked in dictionaries (e.g., *WordReference* 2025) and corpora. Our knowledge as native speakers of Austrian German and Italian has also contributed to adding examples to existing datasets.

For the quantitative data, we utilized three comparable corpora accessible on *Sketch Engine* (Kilgarriff et al. 2014): *English Web 2020*, *German Web 2018*, and *Italian Web 2016*. Additionally, we used language-specific corpora, including the *Corpus of Contemporary American English* (COCA) for English, the *Austrian Academy Corpus* (ARCHE), the *Austrian Media Corpus* (AMC), and the *Deutsches Textarchiv* (DTA-Kernkorpus) for (Austrian) German, and the *PAISÀ Corpus of Italian Web Texts* (PAISA) for Italian. These corpora allowed as to integrate manual search with

automatic findings, especially for the identification of analogical sets displaying the same first or second compound constituent.

The first attestations of English SCs and V-NCs in the *Oxford English Dictionary* (henceforth OED) and their occurrences in COCA were used for the diachronic analysis and for the investigation of the productivity of both patterns. The results of our synchronic and diachronic analyses are discussed in the next section.

4 Results of the analysis

4.1 English V-NCs and synonymous SCs in *-er*

The comparison between English V-NCs and SCs ending in *-er* reveals that instances where V-NCs and SCs share homophonous verbs and nouns, thus lacking lexical blocking, are extremely rare, as is to be expected within the NM framework. This rarity is evident in both historical and contemporary sources, as shown by data from the OED and the COCA. The examples in (1a) display agentive meaning:[1]

(1)　a.　*cut+purse* (OED 1362, COCA 27) vs. *purse+cutt+er* (OED 1600, COCA 0);
　　　　cut+throat (OED 1535, COCA 128) vs. *throat+cutt+er* (OED 1567, COCA 0);
　　　　kill+joy (OED 1776, COCA 153) vs. *joy+kill+er* (OED n.d., COCA 0);
　　　　pick+pocket (OED 1591, COCA 255) vs. *pocket+pick+er* (OED 1622, COCA 0);
　　　　pick+purse (OED 1385, COCA 3) vs. *purse+pick+er* (OED 1549, COCA 0);
　　　　tell+tale (OED 1548, COCA 1,727) vs. *tale+tell+er* (OED 1377, COCA 6);
　　　　turn+key (OED 1622, COCA 179) vs. *key+turn+er* (OED 1606, COCA 1).

These examples illustrate the predominance of V-NCs over SCs in both historical and modern usage. The significant disparity in frequency between the forms is clear from the COCA tokens, where V-NCs appear far more frequently than their SC counterparts. By contrast, in the last two examples, the SC precedes the corresponding V-NC.

Alongside these standard English examples, we also find two comparable modern coarse slang instances with agentive meaning in (1b), where the SC precedes the V-NC:

　　　　b.　*cock+tease* (OED 1966, COCA 7) vs. *cock+tease+er* (OED 1891, COCA 5);
　　　　prick+tease (OED 1974, COCA 1) vs. *prick+tease+er* (OED 1939, COCA 1).

In both cases, frequency is limited.

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1 Each V-NC and SC is followed by the first attestation in the OED and the token frequency in COCA.

The analysis of instrumental V-NCs against their SC counterparts in English reveals notable patterns:

  c. *break+fast* (OED 1463, COCA 33,615) vs. *fast+break+er* (OED 1625, COCA 1); *break+water* (OED 1721, COCA 284) vs. *water+break+er* (OED 1689, COCA 0); *stop+gap* (OED 1533, COCA 509) vs. *gap+stop-p+er* (OED 1758, COCA 1).

These examples show that instrumental V-NCs are far more prevalent than their SC counterparts, although they are rarer than V-NCs with agentive meaning.

 In contrast, some V-NCs exist solely as V-NCs without SC equivalents, but still distinguished into agentive (2a) and instrumental (2b):

(2) a. *dare+devil* (OED 1794, COCA 925);
    tattle+tale (OED 1889, COCA 117);
    scoff+law (OED 1924, COCA 71);
    spoil+sport (OED 1801, COCA 71);
    turn+coat (OED 1566, COCA 260).
  b. *pass+port* (OED 1498, COCA 7,107);
    rot+gut (OED 1632, COCA 68);
    scare+crow (OED 1553, COCA 1,499).

These V-NCs do not have corresponding SC forms in either the OED or COCA, highlighting their unique status in the English lexicon. From the perspective of NM, the ambiguity of SCs and V-NCs is dispreferred because two forms correspond to a single meaning. Uniqueness, and especially biuniqueness, are preferred instead (Dressler and Kilani-Schoch 2016: 366), which suggests that either SCs or V-NCs would be developed in English. Indeed, English is the only language among the three investigated that has diachronically developed both patterns for the same meaning, yet with a clear synchronic prevalence of one over the other.

4.2 Predominance of English SCs over V-NCs

A quantitative analysis of the two patterns highlights a greater number of English SCs ending in *-er* compared to V-NCs. Of the overall 93 examples of English SCs collected in Mattiello and Dressler (2021, 2022), 68 display an agentive meaning, as in (3a):

(3) a. *ball+play+er, beef+eat+er, book+bind+er | book+sell+er | book+keep+er, gate+keep+er | goal+keep+er | inn+keep+er | door+keep+er, play+go+er,* etc.

Whereas 22 are instruments:

  b. *back+scratch+er, eye+line+er, fire+extinguish+er,* etc.

and only 3 are both agentive and instrumental:

> c. *fly+catch+er* 'insect-eating bird' and 'device for trapping insects',
> *ice+break+er*, *life+sav+er*.

English V-NCs total 45 examples, with a prevalence of instrumental (33, as in 4a) over agentive (12, as in 4b):

(4) a. *pass+port*, *rot+gut*, *scare+crow*, etc.
     b. *dare+devil*, *scoff+law*, *spoil+sport*, etc.

These data underscore the prevalence of SCs in the English language, particularly those with the agentive or instrumental *-er* ending. In NM, this dominance is explained by the iconicity between form and meaning (Dressler and Kilani-Schoch 2016). We found a predominance of agentive over instrumental meaning in SCs, but the opposite trend in V-NCs. This may be rather explained through the notion of analogy (see Section 4.9), as we often find compound families whose members share a verb base (e.g. *washcloth*, *washday*, *washhouse*) or, more rarely, a noun base (e.g. *washday*, *workday*). In the latter examples, the first constituent may be a verb or a converted noun (see Section 4.11), partially increasing ambiguity.

4.3 Competition and productivity

According to Gast (2008), when the noun in a compound is the semantic object of the verb (as seen in the previous examples),[2] there exists competition between V-NCs and SCs ending in *-er*, though without the expected lexical blocking of one of the two patterns (see "conflicting motivations" in Dressler et al. 2014). However, the formation of V-NCs has been unproductive for some time, making the coexistence of synonymous V-NCs and SCs ending in *-er* rare. By contrast, there is no rivalry when the noun is the subject of the verb, as in the case of *chatter + box* ('a very talkative person').

Regarding the productivity of both patterns, Gast (2008: 270) claims that V-NCs are "particularly productive" in German (e.g., *Schleifstein*, *Schlafzimmer*, *Esszimmer*, *Zahltag*, *Denkweise*, *Waschmaschine*, *Bauart*, *Parkverbot*, *Nährwert*), while they occupy a "marginal position" in the lexico-grammatical system of English (e.g., *cutthroat*, *carry cot*, *whetstone*, *scatterbrain*, *blowlamp*, *bumble-bee*, *checklist*, *drawbridge*, *drift ice*, *flick knife*). He also notes that in some V-NCs, the first constituent can also function as a noun through conversion, as in *call + girl* (*call* as both verb and noun) and *love + bird* (*love* as both verb and noun). However, it is worth noting that in English

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2 Cf. examples of SCs where the noun is not the direct object of the verb, such as *church-goer*, *cinema-goer*, *theatre-goer* 'one who habitually goes to church, to the cinema, to the theatre'.

V-NCs, the first constituent tends to refer to someone or something that performs the action (agent) or is used to perform it (instrument). By contrast, in German V-NCs, this is not the case. Among the German examples mentioned above, only *Schleif + stein* 'whetstone' and *Wasch + maschine* 'washing machine' are instrumental, with none being agentive, while the rest have other meanings – e.g., *Ess + zimmer* 'dining room'.

Unlike Russian toponyms, such as *Vladi + vostok* and *Vladi + kavkaz* (lit. 'dominate the East/Caucasus'), neither English nor German V-NCs include imperative forms. A comparable phenomenon, however, can be found in Austrian jokes, where phrasal place names that are homophonous with imperatives are humorously reinterpreted as commands. For instance, *Melk/Spitz an der Donau* are reimagined as "Milk/Sharpen on the Danube!".

However, Marchand (1969) notes that such compounds often carry a pejorative connotation. For instance, *killjoy* was first attested in the OED in 1976 with the sense 'one who or that which destroys joy or pleasure; one who throws a gloom over social enjoyment'. While the pattern as a synthetic compound (i.e., *joy-killer*) is not explicitly dated in the OED, its inclusion as a compound of *joy* suggests that its negative connotation may be less relevant, as the emphasis lies in its membership in the *joy-X* family. Structurally comparable German agentive V-NCs are also often pejorative, e.g., *Wende + hals* 'turncoat, lit. turn + neck'.

In general, lexical blocking occurs between conceivable synonymous words. For example, the English word *ghost + ly* blocks the conceivably competing derivations *ghost + y* and *ghost + ish*. Alternatively, competition may lead to a difference in connotational meaning, as in *woman + ish* versus *woman + ly*, or in denotational meaning, as at least partially seen in *court + eous* versus *court + ly* (e.g., when combined with love or elegance).

The opacity of V-NCs obstructs their formation in English and German, where the transparency of SCs in *-er* is instead favoured. Their morphosemantic transparency accounts for their productivity. This aligns with the predictions of NM, which posits a universal preference for morphosemantic transparency over opacity.

4.4 German V-NCs and SCs in *-e(r)*

In German, V-NCs are very rare and generally unproductive: e.g.,

(5) a. *Wende+hals* 'turncoat', lit. 'turn (the) neck';
         Wage+hals 'daredevil', lit. 'dare (the) neck);
         Stör-en+fried 'troublemaker', lit. 'disturb (the) peace';

The personal name *Fürchte + gott* 'fear God', comparable to Ancient Greek *Tim.ó+theos* 'venerate God'.

In German, there are no synonymous V-NCs and SCs ending in *-er* (see Section 4.1). Moreover, the formation of SCs ending in *-er* is productive, while SCs ending in *-e* are not productive (Gaeta and Zeldes 2017), an example being in (5b):

    b.   *Vogel+scheuch+e* 'scarecrow', lit. 'bird scarer'.

German instances of productive SCs in *-er* include both agentive (6a) and instrumental meaning (6b):

(6) a.   *Hals+ab+schneid+er* 'cutthroat', lit. 'neck away cutter';
     b.   *Welle-n+brech+er* 'breakwater', where the dependent noun *Wellen* 'waves' is in the plural form.

Both meanings are present in *Eis + brech + er*, as in its English translation *ice + break + er*. According to NM, N+ V + *er* compounds are more productive because they are morphosemantically more transparent than V-N compounds.

4.5 Italian V-NCs

Italian V-NCs are highly productive, as in other Romance languages, and can even be recursive. For example, *porta + stuzzica + denti* 'toothpick container', lit. 'hold + pick + teeth' is a common formation (Grossmann and Rainer 2004; Ricca 2015). These compounds cover a wide semantic spectrum, including, in order of frequency:
- Instrument N: *apri+scatol-e* 'can-opener', lit. 'open+can+s';
- Agent N: *porta+letter-e* 'postman', lit. 'carry+letter+s';
- Event N: *bacia+mano* 'hand-kissing', lit. 'kiss+hand';
- Location N: *sparti+acqu-e* 'water divide', lit. 'separate+water+s' (examples from Ricca 2010: 238).

Additionally, there are adjectival V-NCs, such as Qualifying A (*mozza + fiato,* 'breathtaking', lit. 'cut + breath') and Relational A (*spara + neve*, 'snow cannon', lit. 'shoot + snow'). However, for the present research, only nominal compounds are of interest (see also Ricca 2005 for adjectival V-NCs).

    Our data show that the dependent noun often appears in plural form, with no inflectional change in the compound plural (e.g., *un attaccapanni* 'a coat rack' → *due attaccapanni* 'two coat racks'). In our sample, 50 % of compounds include a plural noun as the second constituent:

(7) a. *attacca+pann-i* 'coat rack', lit. 'hang+cloth+es';
         lava+piatt-i 'dishwasher', lit. 'wash+dish+es';
         spremi+agrum-i 'lemon squeezer', lit. 'squeeze+citrus+fruit+s'.

The noun may even be stimulated and therefore translated from English, as in:

     b. *porta+container* 'containership', lit. 'carry+container';
         porta+CD 'CD holder', lit. 'carry+CD'.

This demonstrates the productivity of this pattern in Italian.

Instrumental V-NCs are the most common type in Italian, comprising 84 % of examples, including:

(8) *passa+porto* 'passport', lit. 'pass+port';
     copri+letto 'bed cover', lit. 'cover+bed';
     frangi+flutt-i 'breakwater', lit. 'break+wave+s';
     lancia+fiamm-e 'flamethrower' (comparable to German *Flamme-n+werfer*, with the plural noun in both languages).[3]

Additionally, agentive V-NCs make up 15 % of the dataset, most of which feature a plural second constituent:

(9) a. *taglia+gol-e* 'cutthroats', lit. 'cut+throat+s';
         cambia+valut-e 'moneychanger', lit. 'change+currenc+ies';
         taglia+legn-a 'woodcutter', lit. 'cut+wood'.

These compounds are rarely pejorative, with a few exceptions:

     b. *volta+gabbana* 'turncoat';
         attacca+brigh-e 'troublemaker', lit. 'start+quarrel+s';
         guasta+fest-e 'killjoy', lit. 'spoil+party'.[4]

The morphosemantic opacity of Italian V-NCs such as *guastafeste* explains their rarity from a NM viewpoint (Dressler and Kilani-Schoch 2016: 363), because transparency is favoured and preferred over partial or total opacity.

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3 In *Welle-n + brecher* (lit. 'wave breaker') and *Flamme-n + werfer* (lit. 'flame thrower'), the first constituent is not marked for plural, but an obligatory interfix (a semantically empty linking morpheme) is added after noun-final unstressed *-e*. For example, consider *Garage-n + besitzer* ('garage owner'), where the owner typically owns just one garage. However, if the interfix is homophonous with the plural suffix, it is more readily accepted in offline experiments (Korecky-Kröll et al. 2014).
4 The verb *guastare* 'to ruin, spoil, damage' is generally used with concrete objects like cars, machinery, and in its reflexive form *guastarsi* it means 'to break down'. Hence, *guastafeste* 'one who ruins parties' can be interpreted metaphorically rather than literally.

The productivity of the Italian pattern of V-NCs has been extensively demonstrated by Ricca (2010), who, through corpus data analysis, compared the weight of this process against competing derivational strategies (e.g. *batti* + *panni* 'carpet beater', lit. 'beat + cloth + es', vs. *batti* + *mento* 'beat + ing'). Interestingly, Ricca (2010) also found a large number of hapaxes in a corpus of *La Repubblica*, further illustrating the pattern's profitability in forming novel words.

Ricca (2010: 244) also notes that "VN compounds show a massive preference for bisyllabic verb bases". This is confirmed by our data, with 86 % of examples containing a disyllabic verb base. However, this preference does not hold for English and German, whose verbs typically do not end in thematic vowels, as most Italian verbs do (e.g. Italian *pel-a+patate* vs. English *potato* + *peeler* and German *Kartoffel* + *schäler*).

4.6 Morphosemantic transparency/opacity of English and German V-NCs

English and German V-NCs tend to be less morphosemantically transparent – or more opaque – than SCs. Several factors contribute to this opacity:
- Pejorative Connotation: The negative connotation of many V-NCs (especially in English) contributes to their metaphorical interpretation and morphosemantic opacity.
- Cultural Shift: Over time, cultural changes can increase the opacity of V-NCs, as seen in examples like *break* + *fast* (meaning 'end abstinence from food') and *dare* + *devil.* Similarly, the German *Wage* + *hals* ('foolhardy', lit. 'risk (the) neck') lost its morphosemantic transparency after the practice of beheading ceased.
- Metaphorical Opacity: Many V-NCs exhibit metaphorical opacity, such as *turn* + *coat* (equivalent to German *Wende* + *hals*, lit. 'turn + neck', and Italian *volta* + *gabbana*), *spoil* + *sport*, *tell* + *tale*, and German *Wage* + *hals.* In contrast, some V-NCs remain relatively transparent, like *kill* + *joy* and *pick* + *pocket.* The German compounds discussed in Section § 4.4 are morphosemantically opaque due to metaphor, with the exception of proper names such as *Fürchte* + *gott* lit. 'fear + God' (cf. *Gott* + *lieb* 'dear to God' and its quasi-synonyms *Gott* + *hold*, *Gott* + *fried*, lit. 'God peaceful', and the family name *Got* + *helf*, lit. 'God helps').
- Language Contact: Borrowings from other languages can also affect transparency. For instance, French *passe* + *temps*, lit. 'pass time', became English

pastime, and French *coupe + gorge* was translated into English *cut + throat.* In some cases, complete opacification occurs, as with French *couvre + feu* (lit. 'cover + fire'), which became English *curfew*, resulting in the loss of morphological boundaries.[5]

These factors highlight the varying degrees of transparency and opacity in V-NCs across English and German. Needless to say, opacity is dispreferred in NM as compared to transparency. Thus, the morphosemantic opacity of *breakfast* and the actual loss of the morphological boundary in *curfew* make them dispreferred and marked choices within naturalness theory.

4.7 Morphosemantic transparency/opacity of English SCs

In general, English SCs ending in *-er* tend to be more transparent than V-NCs. This aligns with the discrepancy between the presence of agentive meaning and the absence of agentive form, which results in anti-iconic subtraction in V-NCs – a factor contributing to their dispreferred status in NM.

SCs can function as either agentive (e.g., *ball + player*) or instrumental nouns (e.g., *back + scratcher*). Sometimes the same compound formation can be both agentive (referring to a person) and instrumental (referring to an object). For example, *beachcomber* metaphorically means either 'a drifter or vagrant who lives on or spends a lot of time at the seashore, often scavenging for items to sell or looking for casual work' or 'a long wave that rolls onto the shore'. Among a total of 93 SCs in *-er*, only a small subset demonstrates morphosemantic opacity:

(10) a. Agentive examples (22 total): e.g., *beef+eater*, *black+mailer*, *blood+sucker*, etc.
      b. Instrumental examples (9 total): e.g., *cow+catcher*, *bone+shaker*, etc.

Overall, SCs are less opaque than V-NCs. For example, *taleteller* is relatively transparent, as it functions exclusively as an agentive noun meaning 'a person who tells false stories or gossips' (cf. the German translation *Geschichten + erzähl + er* 'story teller, someone who tells stories that are not true'). By contrast, *telltale* exhibits greater opacity because it serves both agentive and instrumental functions. It can refer to 'a person who idly or maliciously discloses information about another's

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5 According to the OED, English *curfew* comes from Anglo-Norman *coeverfu*, = Old French *cuevre-fu*, from *couvre*, imperative of *couvrir* 'to cover' + *feu* 'fire'. The corrupt forms in *-four*, *-fur*, etc. appear to be of phonetic origin, though in some cases associated with fire.

private affairs or behaviour' or to 'a thing which reveals or discloses something, esp. something not intended to be made known; a revealing gesture, symptom, etc.'. This ambiguity, where one form conveys two distinct meanings, as seen in *telltale*, is generally disfavored within NM.

Another factor which determines opacity is pejorative usage. Pejorative meanings appear in only a few English SCs:

(11) a. Agentive examples (8 total): *beach+comb+er, blood+suck+er, carpet+bagg+er, clod+hop-p+er, free+load+er, home+wreck+er, house+break+er, law+break+er, sky+jack+er;*[6]

   b. Instrumental example (1): *bone+shak+er*.

The relative scarcity of SCs in *-er* displaying a pejorative sense can be explained within NM by their morphosemantic opacity, which is generally dispreferred. Similarly, the German compound *Blutsauger* 'bloodsucker' carries metaphorical and pejorative meaning. However, the general trend indicates that English SCs in *-er* – even when pejorative – are typically clearer and more straightforward than their V-NC counterparts, which tend to exhibit greater morphosemantic opacity.

4.8 Transparency/opacity of Italian V-NCs

Italian V-NCs exhibit varying degrees of transparency and opacity, often influenced by metaphor and metonymy. Morphosemantic opacity via metaphor is illustrated in both agentive examples (12a) and instrumental examples (12b). Of the Italian agentive V-NCs illustrated in (12a), 9 (out of 18 examples) display metaphorical meaning:

(12) a. *mangia+preti* 'anticlericalist', lit. 'eat+priest+s', similar to G. *Pfaffen+fresser;*
         ruba+cuori 'heart+breaker', lit. 'steal+heart+s', comparable to G. *Herz-ens+brecher.*

Italian metaphorical V-NCs with an instrumental meaning correspond to 10 (out of 100 examples):

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6 The pejorative meaning of *sky-jacker* is clearly connected to similar words like *hijacker* and *carjacker*, which function as models in the analogy. As such, *sky-jacker* has been formed more via analogy than just formally by compounding.

b.   *batti+becco* 'quarrel', lit. 'beat+beak';
scaccia+pensier-i 'pastime', lit. 'drive away+thought+s';
spacca+dent-i 'tongue-twister', lit. 'break+teeth', akin to G. *Zung-en+brech+er* lit. 'tongue+break+er'.

Morphosemantic opacity via metonymy is finally illustrated by the example in (12c), referring to 'a document issued by competent civil authority granting permission to the person named in it to travel in or out of a country or authenticating his right to protection while abroad', with an absent head:

c.   *passa+porto* 'passport', lit. 'pass+port'.

The word originates from French *passe-porte* [1500], meaning 'authorization to travel through a country', derived from Old French *passeport*, 'authorization to pass through a port, to enter or leave a country' (15th century) (*Online Etymology Dictionary*). In German, by contrast, the compound noun has been shortened to its first morphological constituent (*der Pass*), thereby obstructing access to its intended meaning due to homophony with *der Pass* 'mountain pass; gait of a horse'.

4.9 The role of analogy in the formation of V-NCs and SCs

The role played by analogy in the formation of both Italian V-NCs and English SCs is evident from the similarity among analogical sets sharing either the first or the second constituent (Mattiello 2017; Mattiello and Dressler 2018). When the same morphological element appears in the same position with the same semantic meaning, the combination of analogy and a productive compounding rule can significantly increase the frequency of such constituents. This often leads to higher type frequency in corpora and greater morphosemantic transparency.

As for pattern restrictions, Ricca (2015: 696) highlights a cross-Romance tendency for compounds to favour "short" verb bases, with what counts as "short" varying by language due to phonotactic differences: bisyllabic in Italian and Spanish, and monosyllabic in French. Supporting this, Rainer (1993) and Ricca (2010) find that around 75–80 % of Italian compounds use bisyllabic verb bases, while Villoing (2009) reports a similar 80 % preference for monosyllabic bases in French. Ricca (2015: 697) further notes that verbal bases like It. *porta-* 'carry', *reggi-* 'hold', *copri-* 'cover' are among the most productive, giving rise to a wide range of compound names for containers, holders, and covers.

Examples of Italian analogical V-NCs displaying the same verbal constituent are:

(13) a. *copri+capo* 'hatt, lit. cover the head', *copri+costume* 'cover for a costume', *copri+divano* 'sofa cover', *copri+letto* 'bed cover', *copri+materasso* 'mattress cover', *copri+piumino* 'duvet cover', *copri+fuoco* 'curfew', lit. 'cover+fire', the last one being historically opaque;[7]
porta + cellulare 'cell phone holder', *porta + cenere* 'ashtray', *porta + chiav-i* 'key holder', *porta + foglio* 'wallet', lit. 'carry + sheet of bank-notes', *porta + fortuna* 'good luck charm', *porta + letter-e* 'letter holder', *porta + voce* 'spokesperson', lit. 'carry + voice'.

Examples of English analogical SCs displaying the same nominal constituent (*book*, *house*) are reported in (13b):

b. *book+binder*, *book+keeper*, *book+seller*;
house+breaker, *house+holder*, *house+keeper*;

whereas examples in (13c) display the same deverbal head *breaker*:

c. *heart+breaker*, *ice+breaker*, *law+breaker*, *record+breaker*.

Analogy can also produce compounds after a unique model. When the same morphological element is used in the same position with the same meaning, but the compounding rule is either unproductive or fossilized, the examples often reflect only local or surface analogy (Mattiello 2017), leading to fewer and more morpho-semantically opaque instances. Examples include German V-NCs:

d. *Wende+hals* 'turncoat', lit. 'turn+neck', *Wage+hals* 'adventurer', lit. 'dare+neck';

as well as English V-NCs:

e. *pick+pocket*, *pick+purse*;
break+water, *break+fast*;
turn+coat, *turn+key*.

In literature, unproductive rules can be creatively employed to produce analogical occasionalistic compounds. Examples include James Joyce's compounds in *Finnegans Wake*:

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7 Earlier, in the case of approaching enemies, fires had to be covered. Later, the change in this practice obscured the morphosemantics of the compound *coprifuoco*. The same occurred with French *couvre-feu*, which contributed to the folk-etymological development of English *curfew*.

f.   *run+a+little, do+a+little, pour+a+little, wipe+a+little, sever+a+little, eat+a+little, whine+a+little, ken+a+little* (Dressler et al. forth);

a few occasionalistic V-NCs coined by Gerard M. Hopkins in poetry:

g.   *dare+say, dare+gale, dare+deaths*;

and an example of creative V-NC from James Thurber:

h.   *kiss+granny*.

Austrian writers, including the renowned comedy author Johann N. Nestroy, created numerous occasionalistic SCs with *-er*. Examples from Nestroy include: *Liebes + mathematiker* 'love + mathematician', *Souper + zerstör + erin* 'a woman destroying the supper', *Mathilde-n + schnipf + er* 'robber of Mathilde', and *Tod + geb + er+in* 'death + giver + FEM'. Compare also *Der Heros + zupfer zupft den Heroen an den Hosen* 'the hero-tugger tugs heroes on their trousers' (referring to statues of heroes), created by the Bulgarian-Austrian-British Nobel Prize winner Elias Canetti.

Occasional poetic creations are motivated by poetic license, which is relatively minor when the occasionalisms merely violate the lexical norm that only existing words should be used (in order to facilitate processing by the receiver). However, poetic license can be considerably greater when an occasionalism is semantically incongruent, as in Nestroy's *Liebesmathematiker* 'love mathematician', which lacks any analogy to compounds beginning with *Liebes-* or ending with *-mathematiker*. It is even more pronounced in the case of ungrammatical occasionalisms, such as those found in Joyce's work (see example 13f above).

4.10 Iconicity between morphosemantic and morphotactic heads

The principle of iconicity between morphosemantic and morphotactic heads can be observed in English and German suffixed compounds (SCs) with the suffix *-er*. In both languages, *-er* can denote an agentive or instrumental role, thus functioning both as morphotactic and as morphosemantic head. For example, the English *ball + play + er* 'someone who plays ball' corresponds to German *Ball + spiel + er*. The metaphorical *ice + break + er* 'something or someone that breaks the ice' is likewise rendered as

Eis + brech + er in German. In its literal, instrumental sense, *ice + break + er* also remains *Eis + brech + er*.

By contrast, both morphosemantic and morphotactic heads are absent in V-NCs in both English and German. In Italian V-NCs, however, both types of heads may be present. For instance, in *passa + porto* 'passport', *passa* appears morphologically identical to the 3rd person singular present form of the verb *passare*. However, as discussed in the literature (cf. Rainer 2021: § 4.2), there is considerable debate about whether the verb component in such compounds should truly be analyzed as a finite verb form. We acknowledge that many scholars argue against such an interpretation, suggesting instead that the verbal element represents a non-finite or theme form rather than a syntactically licensed verb. Accordingly, the reference to pro-drop in this context does not imply that these compounds involve syntactic pro-drop constructions, which are indeed licensed by phi-feature-bearing syntactic heads and not by word-level morphology. Rather, it serves to highlight the surface morphological similarity between *passa* and the finite verb form in a pro-drop language. The morphotactic head is absent, in contrast, if *passa* is analyzed as a verbal theme, as illustrated in *fini + mondo* 'end of the world', lit. 'finish the world', where the form differs from the finite *finisce* '(it) finishes' (3rd singular present).

4.11 Endocentric versus exocentric compounds

English uniquely features both V-NCs and SCs, unlike German, Italian, and most other languages. V-NCs in English may be either exocentric or endocentric. Exocentric compounds are those whose overall meaning is not a subtype of either constituent – the semantic head lies outside the compound – making their interpretation non-compositional and thus less preferred in NM. Examples include *cut + purse* 'a thief who cuts purses', *cut + throat*, *dare + devil*, *kill + joy*, and *scatter + brain*, all of which function idiomatically and are typically lexically stored rather than productively generated (cf. Bauer 2001; Rainer 2021).

Endocentric V-NCs, by contrast, are semantically transparent and refer to a subtype of the head noun. Examples such as *blow + lamp*, *check + list*, *draw + bridge*, *flick + knife*, and *wash + day* illustrate this pattern, each denoting a type of lamp, list, bridge, knife, or day, respectively. Due to NM's preference for maximal morphosemantic transparency, these compounds are more productive than their exocentric counterparts.

German also exhibits both exocentric and endocentric V-NCs. However, endo-centric patterns dominate in terms of productivity, frequency, and openness to new formations, showing broader structural regularity. This reflects a cross-linguistic tendency for endocentricity to be favoured in compounding (Scalise and Bisetto 2009).

Italian, by contrast, predominantly features exocentric V-NCs, often derived from historical verb-object constructions with the verb preceding the noun. Examples include *asciuga* + *capelli* 'hairdryer' and *girasole* 'sunflower', lit. 'turns sun'. However, given Italian's pro-drop nature, compounds like *asciugacapelli* remain fully compositional. Typically, only one of the possible agentive or instrumental readings is realized in use.

4.12 Typological properties of the three languages

The typological properties of English, German, and Italian demonstrate notable differences in their use of verb-noun compounds (V-NCs) and synthetic compounds (SCs). English uniquely features both V-NC and SC pairs, often resulting in ambiguity. Typically, the V-NC forms are attested earlier than the SC forms and synchronically prevail, in spite of their lower degree of naturalness. In Italian, V-NCs are very common due to the productivity of the pattern, whereas SCs are either non-existent or rare. An example of this rarity is *protezione testimoni* (lit. 'protect + ion wit-ness + es') as noted by Melloni (2020). Conversely, in English, SCs are more prevalent than V-NCs.

Similar to English, German shows a preference for SCs over V-NCs. Additionally, within German V-NCs, endocentric compounds are favoured over exocentric ones. English SCs ending in *-er* that refer to agents are more transparent than V-NCs because the agent is explicitly indicated by the suffix *-er*. In contrast, Italian V-NCs are exocentric and thus more opaque, even though the phrases they derive from are transparent.

5 Conclusions: key findings and broader implications

This study has addressed the relevance and distribution of Verb-Noun compounds (V-NCs) and synthetic compounds (SCs) across English, German, and Italian, guided by three key research questions:

1. Are the two patterns of Verb-Noun compounds and synthetic compounds equally relevant in English, German, and Italian?
2. Is the prevalence of one pattern over the other consistent with naturalness principles, and, if not, with the typological characteristics of the three languages?
3. Can we predict the development of compound families from analogical examples or even series?

Our analysis has demonstrated that both V-NCs and SCs are present in English and German, but Italian lacks SCs. Moreover, the distribution and relevance of the two patterns vary significantly due to typological differences and language-specific preferences. Cross-linguistic comparison has highlighted key divergences and similarities that shape the use and evolution of these compound patterns:

1. Relevance of patterns in the three languages:
    – Only English shows a coexistence of isosemantic V-NCs and SCs, with SCs being more prevalent due to their association with agentive and instrumental meanings.
    – English and German favour SCs, particularly those in *-er*, which frequently carry both agentive and metaphorical meanings, reflecting its rich compounding tradition.
    – Italian strongly favours V-NCs, which are often used to express instrumental meanings, reflecting its typological preference for more transparent and functional compounds. There are no genuinely Italian agentive or instrumental N-V compounds that end in an agentive or instrumental suffix.
2. Prevalence and Naturalness Principles:
    The prevalence of one pattern over the other is generally consistent with the principles of naturalness. However, deviations arise due to typological constraints and system-specific adequacy in each language, aligning with the NM postulate that such factors can override universal preferences. For instance, the preference for SCs in German aligns with its compounding-heavy morphology, while Italian's favouring of V-NCs reflects its tendency towards this pattern with transparent underlying phrases. English and German show a huge discrepancy in the productivity of the two constructions, with an evident predominance of SCs over V-NCs. The similarity between the constructions in the two languages could even be interpreted as the result of calquing – for example, *Grashüpfer* and *grasshopper*.

3. Prediction of compound development through analogy:

    Analogy plays a crucial role in the development of compound families, especially in Italian V-NCs and English SCs. In Italian, the analogical force is particularly strong, often restricting V-NCs to specific semantic types (e.g., instruments or devices). English and German SCs also exhibit analogical extensions – often agentive or metaphorical in nature – but the analogical constraint is less limiting, allowing for broader semantic diversity. This difference suggests that while analogy underlies compound formation across languages, its strength and scope vary significantly depending on morpho-syntactic and typological context.

These findings contribute to the second level of evidence in Dressler's forthcoming work, "The power of Natural Linguistics: Four levels of increasingly persuasive evidence for its superiority over other linguistic theories", to be published in the *Yearbook of the Poznań Linguistic Meeting*. Our results reinforce Dressler's argument by illustrating how natural linguistic theories effectively explain the productivity and patterns of compound formation across diverse typological systems.

Additionally, Natural Morphology (NM) has offered more in-depth and comprehensive analyses of areas such as iconicity, transparency, biuniqueness/ uniqueness/ambiguity, and motivational conflicts. By adapting the concept of superposition from quantum physics to linguistics, NM offers a novel framework for understanding the complex interplay of naturalness principles in morphological processes. Furthermore, differences have been identified between (German) nominal compounding and onomastic compounding, the latter being a representative of marginal morphology (cf. Ronneberger-Sibold and Dressler forthcoming). English synthetic compounds, by contrast, have been confirmed to be transitional between compounding and derivation, and thus belong to transitional morphology (Mattiello 2022).

In sum, this study emphasizes the importance of considering typological characteristics and naturalness principles in cross-linguistic analyses of compound patterns. It also underscores the predictive power of analogy in understanding the evolution and formation of compound families, providing a robust basis for further research in both theoretical and applied linguistics.

Appendix

English data

Synthetic Compounds in *-er*

1. backscratcher
2. ballplayer
3. barnstormer
4. beachcomber
5. beefeater
6. bestseller
7. blackmailer
8. bloodsucker
9. bodybuilder
10. bondholder
11. bonesetter
12. boneshaker
13. bookbinder
14. bookkeeper
15. bookseller
16. breadwinner
17. bricklayer
18. broadcaster
19. bullfighter
20. bystander
21. cabdriver
22. carpetbagger
23. caseworker
24. cheerleader
25. churchgoer
26. cliffhanger
27. clodhopper
28. cockteaser
29. copywriter
30. cowcatcher
31. daydreamer
32. deerstalker
33. doorkeeper
34. doorknocker
35. doubleheader
36. dressmaker
37. dumbwaiter
38. eyeliner
39. fire extinguisher
40. firecracker
41. flamethrower
42. flycatcher
43. freeholder
44. freeloader
45. freethinker
46. gamekeeper
47. gatekeeper
48. glassblower
49. globetrotter
50. goalkeeper
51. grasshopper
52. gunfighter
53. gunrunner
54. hairdresser
55. headhunter
56. heartbreaker
57. hitchhiker
58. homemaker
59. homewrecker
60. housebreaker
61. householder
62. housekeeper
63. house-owner
64. icebreaker
65. idle-breaker
66. innkeeper
67. ladykiller
68. lamplighter
69. landholder
70. landowner
71. lawbreaker
72. leaseholder
73. lifesaver
74. loudspeaker
75. merrymaker
76. minesweeper
77. moneychanger
78. moneylender
79. moneymaker
80. office manager
81. officeholder
82. outfitter
83. painkiller
84. pathbreaker
85. peacemaker
86. playgoer
87. prick-teaser
88. record breaker
89. roadmender
90. service provider
91. skyjacker
92. tiebreaker
93. timekiller
94. time-saver
95. timeserver
96. vapor condenser
97. watchmaker

Verb-Noun Compounds

1. bakeshop	24. pickpocket
2. blowlamp, blowtorch	25. pickpurse
3. breakbones	26. rotgut
4. breakfast	27. rush hour
5. breakwater	28. scarecrow
6. bumblebee	29. scatterbrain
7. catchpenny	30. scofflaw
8. carrycot	31. slapstick
9. checklist	32. spoilsport
10. cutpurse	33. stopgap
11. cut-throat	34. stopwatch
12. daredevil	35. switchblade
13. draggle-tail	36. tattletale
14. drawbridge	37. telltale
15. drift ice	38. thinktank
16. driveway	39. turncoat
17. flick knife	40. turnpenny
18. grindstone	41. turnkey
19. killjoy	42. washcloth
20. leap year	43. washday
21. passport	44. washhouse
22. pay phone	45. whetstone (end.)
23. pay station	46. workday

Italian data

Verb-Noun Compounds

1. accendifuoco	20. battibecco
2. accendigas	21. batticuore
3. affilacoltelli	22. battipanni
4. alzabandiera	23. battiscopa
5. ammazzadraghi	24. battistrada
6. ammazzasette	25. bloccaporta
7. appendiabiti	26. calzascarpe
8. appuntalapis	27. catturaimmagini
9. appuntaspilli	28. cavatappi
10. apribottiglie	29. copricapo
11. apricancello	30. copricostume
12. apriscatole	31. copricuscino
13. asciugacapelli	32. copridivano
14. asciugamani	33. coprifuoco
15. asciugamano	34. copriletto
16. asciugapiatti	35. coprimaterasso
17. attaccabottoni	36. copripiumino
18. attaccabrighe	37. fermacarte
19. attaccapanni	38. fermacravatta

(continued)

39. fermapolsi	79. rompifila
40. fermaporta	80. rompigetto
41. fermatenda	81. rompighiaccio
42. fermatovaglia	82. rompiscatole
43. girasole	83. rubacuori
44. guastafeste	84. salvagente
45. lavapavimenti	85. scacciafumo
46. lavapiatti	86. scacciapensieri
47. lavastoviglie	87. scaldabagno
48. lucidalabbra	88. scaldacollo
49. mangiadischi	89. scaldaletto
50. mangiafumo	90. scaldamani
51. mangiafuoco	91. scaldavivande
52. mangiapreti	92. scansafatiche
53. paradenti	93. schiaccianoci
54. parafanghi	94. schiacciapatate
55. paragengive	95. spaccadenti
56. paraocchi	96. spaccalegna
57. parastinchi	97. spaccapietre
58. passaverdure	98. spaccatutto
59. pelapatate	99. spargisale
60. portabicchieri	100. spargisale
61. portaborse	101. spazzacamino
62. portacellulare	102. spazzaneve
63. portacenere	103. spezzafame
64. portachiavi	104. spremiagrumi
65. portafoglio	105. spremilimoni
66. portafortuna	106. tagliaboschi
67. portalettere	107. tagliacarte
68. portaoggetti	108. tagliaerba
69. portaombrelli	109. taglialegna
70. portapane	110. tagliaunghie
71. portasalviette	111. tappabuchi
72. portaspezie	112. toglismalto
73. portavoce	113. tornaconto
74. prendisole	114. tostapane
75. reggilibri	115. tritacarne
76. reggiseno	116. tritapolvere
77. rompicapo	117. tritarifiuti
78. rompicollo	118. tritacarta

German data

Synthetic Compounds in *-e(r)*

1. Ballspieler	8. Herzensbrecher
2. Blutsauger	9. Kartoffelschäler
3. Eisbrecher	10. Spielverderber
4. Flammenwerfer	11. Vogelscheuche
5. Geschichtenerzähler	12. Wellenbrecher
6. Grashüpfer	13. Zungenbrecher
7. Halsabschneider	

Verb-Noun Compounds

1. Fürchtegott	3. Wagehals
2. Störenfried	4. Wendehals

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