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Blends vis-à-vis compounds in English

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This paper analyses blending and compounding from the viewpoint of their regularity, predictability, and grammaticalness. Like mixtures and compounds in chemistry, these two word-formation processes are dissimilar in terms of morphotactic mechanisms employed and morphosemantic patterns involved. While novel compounds are created according to productive word-formation rules, new blends only exhibit regularities and (mutually exclusive) constraints. Yet, unlike other extra-grammatical abbreviatory mechanisms, such as acronyms or clippings (including clipped compounds), blending creates new words for novel objects or concepts. Hence, it deserves attention and needs to be included in a morphological description of the English language. The aims of this study are: (a) to distinguish blends from compounds in formal and semantic terms and (b) to identify degrees of predictability and grammaticalness for blend formation. Results show that the AD (i.e. initial part of Source $Word_1$ + final part of Source $Word_2$) overlapping type of blends is preferred over the AC (i.e. initial part of both Source $Word_1$ and Source $Word_2$) type: in AD-forms, D can also become a frequent splinter and form productive series. This is a further confirmation of the differentiation between blends and clipped compounds, which, in spite of their AC form, are not productive. By contrast, semantically, blends are as compositional as coordinate or attributive compounds, but often display a lower degree of opacity. Finally, blend names are commonly used to designate hybrid mixtures, whereas compound names are given to chemical compounds according to the chemical nomenclature set of rules developed by the International Union of Pure and Applied Chemistry (IUPAC). This suggests that names are often purposefully chosen to reflect – iconically – the structure or chemistry of the mixture or compound they refer to.

KEYWORDS: blends, compounds, English, predictability, grammaticalness, extra-grammatical morphology.

1. Introduction

Main studies on lexical blending nowadays focus on the phenomenon *per se*, and only marginally on the distinction between blends and other regular phenomena, such as compounding. Some scholars have highlighted the regularities that English blends display at various levels, but not observing how these regularities make them similar to, or depart from English compounds. This represents a theoretical lacuna which this study intends to fill, especially showing that blends are a heterogeneous

group of words, some of which share characteristics with compounds, whereas others completely deviate from predictable word-formation rules. This may be explained in terms of a scale of grammaticalness, where different degrees of regularity arrange blends on a continuum and show their conformity to *vs* gradual departure from compounds.

The word 'blend', currently used by linguists to refer to lexical blends, was originally, in 1883, used for 'a mixture formed by blending various sorts or qualities (e.g. of spirits, wines, tea, tobacco, etc.)', and only later, in 1909, it was used by philologists for a blend-word, 'a word or phrase formed by blending'.[1] By contrast, the word 'compound' is attested earlier in the OED, in 1530, first in the meaning 'a compound word, a verbal compound', and only later, in 1616, as 'a substance composed chemically of two or more elements in definite proportions', as opposed to a mixture. This shows that, while for the general term *blend* linguists have borrowed from chemistry, for compounds chemists have used a word (*compound*) already widespread in linguistics, hence the necessary addition (i.e. *chemical compound*) to extend its use.

In chemistry, a compound is a substance created by combining two (or more) substances chemically in a certain ratio by weight. In a compound, the ingredients are present in a definite proportion and form a pure homogeneous unit, like *carbon monoxide* consisting of one *carbon* atom and one *oxygen* atom, connected by a triple bond (*CO*), or *carbon dioxide* consisting of a *carbon* atom covalently double bonded to two *oxygen* atoms (CO_2). Chemical compounds are also regularly separable into substances called elements, such as carbon, hydrogen, oxygen, sulphur, etc.

By contrast, a mixture is a substance formed as a result of intermingling two or more substances into one, physically. In a mixture, the constituents are present in a variable proportion and can form an impure substance which is often heterogeneous, like *sugar and salt*, or *sand and water*. Thus, while a chemical compound results in the making of a new substance, a mixture does not lead to the creation of any new substance. Indeed, if we observe a mixture of *sand and water*, we find that its composition is irregular and non-uniform.

Homogeneous (uniform) mixtures also exist, as when one or more substances are dispersed in solvent such as water, acetone, or milk. Instances of homogeneous mixtures are *tap water* (containing dissolved minerals and gases), *laundry detergent* (a mixture of various soaps and chemicals), *air* (a mixture of oxygen, nitrogen, argon, and carbon dioxide, along with other elements in smaller amounts), and *blood plasma*. However, also homogeneous mixtures are irregular and may vary. Human plasma, for instance, consists of water (about 90%) and various

solutes (proteins, sugar, urea, and salts) in different percentages.

In English word-formation, compounds and blends exhibit the same distinctive features as chemical compounds and mixtures, except that they may both result in new words. What distinguishes compounds from blends is their regular process of composition, according to abstract formulae and consistent patterns which are not in blends. In other words, compounds are grammatical, i.e. formed according to word-formation rules, and therefore highly productive and predictable, with a limited number of exceptions. By contrast, blends are regarded as an irregular and unpredictable mechanism in word-formation (Marchand 1969; Aronoff 1976; Bauer 1983: 225; Cannon 1986: 744). Hence, they are denied a place in regular morphology (e.g. Dressler 2000), and are rather relegated to extra-grammatical word-creation (Ronneberger-Sibold 2010; Mattiello 2013). However, Bauer *et al.* (2013: 462) argue that, according to several scholars (e.g. Kubozono 1990; Bat-El 2006; Gries 2006; Arndt-Lappe & Plag 2013 among others), "blends are a productive word-formation process in English which, in spite of the considerable variability, conforms to a number of general principles and tendencies that highly restrict the structure of possible formations".

This study investigates a collection of new English blends drawn from the OED (e.g. *listicle* ← *list* + *article*, *jeggings* ← *jeans* + *leggings*, *burkini* ← *burka* + *bikini*) vis-à-vis new English compounds (e.g. *blue state*, *flash mob*, *live blog*) and discriminates between the two morphological categories from morphotactic and morphosemantic perspectives. New compound names will not be taken into account in this study – except for some names occurring in chemistry – because the morphology of names and common nouns may differ greatly, and the two categories of names and nouns radically differ in semantics. Thus, the attention will be especially focused on distinguishing blend nouns from compound nouns.

The study shows that, whereas new compounds are formed according to exact rules, comparable to the rules of hard sciences such as physics, mathematics, or chemistry, new blends are only created according to tendencies and strategies. As a result, novel blends are less predictable than novel compounds, and their source words are less easily recognisable (Connolly 2013). For instance, it is not foreseeable how much of the first or second source word will be preserved (cf. Gries 2004), nor is it predictable what is the semantic weight of each source word in determining the meaning of the blend.

Given the growing number of blends observed in English (Lehrer 2007; Connolly 2013), several attempts have been made by linguists to find out regularities in English blends (Bat-El 2006; Bat-El & Cohen

2012; Bauer 2012; Arndt-Lappe & Plag 2013; Beliaeva 2014). However, blending still poses problems of fuzzy boundaries and lack of transparency, especially when compared to productive compounds. This study aims at:

(i) distinguishing blends from compounds in terms of recognisability and semantic weight of their source words;
(ii) offering different degrees of regularity for new English blends. In particular, formal and semantic regularities and/or tendencies will be categorised in order to discriminate between the core (i.e. more grammatical categories) and the periphery (i.e. less regular and unpredictable categories) in blend formation.

For blends, therefore, we could envisage a scalar notion of grammaticalness distinguishing morphotactically and morphosemantically transparent types from irregular and opaque ones. Finally, we will compare some names of chemical compounds with mixtures' names. The comparison will stress the importance of the Iconicity Principle for hybrid blends and confirm the difference between them and compounds. In particular, we will show that names for blends (e.g. *Chromel*, *napalm*) seem to reflect their unpredictability and only partial regularity, while names for chemical compounds (e.g. *lithium bromide*, *barium oxide*) are more regular and predictable.

2. Theoretical background

In early studies on English word-formation, the phenomenon of blending was largely neglected or dismissed, because of its irregularity and lack of transparency. Blends have been regarded as "oddities" in morphology (Aronoff 1976: 20), especially because they are unpredictable and cannot be analysed into morphemes (Bauer 1983: 234; Cannon 1987: 144). Marchand (1969: 451) even claimed that "[b]lending can be considered relevant to word-formation only insofar as it is an intentional process of word-coining", defining it as "compounding by means of curtailed words". A lexical blend is here defined as a lexical item intentionally formed by merging word parts (called "splinters", Lehrer 1996, 2007) usually from two source lexical units (e.g. *frenemy* ← *friend* + *enemy*), sometimes more (e.g. *turducken* ← *turkey* + *duck* + *chicken*), generally known as 'source words' (henceforth, SWs). Sometimes, one of the SWs may remain intact (e.g. *enemy*, *duck* above). Often, the SWs merge where they overlap (*duck* + (chi)*cken*).

In more recent morphological accounts, blends have been included in that part of morphology called "extra-grammatical" (Dressler 2000;

Fradin 2000; Ronneberger-Sibold 2006; Mattiello 2013), because their output is not as fully predictable from their input as in word-formation rules. Like other extra-grammatical operations, such as acronyms or clippings, blends are varied and their patterns are heterogeneous. Ronneberger-Sibold (2015: 485) specifically claims that blending belongs to "word-creation", including all "linguistic operations […] which are deliberately performed on the basis of existing words or phrases, but outside the productive models or rules of word-formation".

Some scholars have found grounds for including blending into general morphological descriptions. The mechanisms of blending have been investigated within main theories, such as Naturalness Theory (Thornton 1993), or within constraint-based theoretical frameworks, such as Schema Theory (Kemmer 2003) and Optimality Theory (Bat-El & Cohen 2012; Tomaszewicz 2012; Arndt-Lappe & Plag 2013). The cognitive mechanisms that are responsible for blend formation and processing have been experimentally examined by Lehrer (1996), Kelly (1998), and Gries (2004, 2012). In particular, recent studies on English lexical blends have shown that they display regularities in their prototypical features (Bauer 2012; Mattiello 2013), prosodic structure (Bat-El & Cohen 2012; Arndt-Lappe & Plag 2013), and formal properties (Beliaeva 2014).

However, in the literature there is no agreed definition of the phenomenon of blending and scholars often disagree about their classification. Currently, there is no unified set of defining criteria for blends, only defeasible constraints, distinguishing prototypical from non-canonical forms (the core *vs* the periphery in Bauer 2012). Different prototypical features might be chosen depending on whether blending is considered an instance of compounding (Marchand 1969; Kubozono 1990; Renner 2006; Bauer *et al.* 2013), an instance of shortening (Cannon 1986; Kelly 1998; López Rúa 2002), or a mixture of both processes (Gries 2004, 2006; Beliaeva 2014).

Bauer *et al.* (2013: 458-462; 483-485) have recently discussed the formal and semantic properties of blends in two chapters devoted to compounds, arguing that:

> Blends are compounds where at least one constituent lacks some of its phonological material. Semantically, they behave like other compounds […], but stress-wise they behave like a single word, normally adopting the stress pattern of one of the two source words. (Bauer *et al.* 2013: 458)

This definition stresses that there are formal and prosodic differ-

ences between blends and compounds. Apropos, Fradin (2015) adds:

> Blending shares with compounding the fact that it takes two lexemes as bases (rarely more). To that extent, both processes contrast with derivation, which involves one base lexeme only. This proximity makes it worthwhile to undertake a systematic comparison of blending with compounding in order to bring to light the properties that uniquely characterize blending. (Fradin 2015: 387)

Thus, on the one hand, like regular compounds, blending obtains novel words by combining two lexemes which act as bases. On the other, it involves some type of clipping which is not in regular compounds, with partial loss of at least one of its source words. Beliaeva (2014) provides a definition of blends that somewhat conciliates the two processes of compounding and shortening:

> A BLEND is a lexical item formed by merging together two (or more) source forms, so that: (1) only part of their orthographical and/or phonological material is preserved, and (2) they have not been formed by concatenation of morphs. (Beliaeva 2014: 31, emphasis in the original)

This definition, however, does not rule out clipped compounds, as Beliaeva (2014) herself admits, which is another morphological category whose boundaries are fuzzy and uncertain for most linguists.

The two categories of blends and clipped compounds ("clipping compounds" in Beliaeva 2014 and others) are generally distinguished depending on formal properties: while blends involve the loss of medial segmental material (e.g. *smaze* ← *sm*(oke) + (h)*aze*), clipped compounds involve the loss of final material of both bases (e.g. *sitcom* ← *sit*(uation) *com*(edy)). Bauer *et al.* (2013: 458) have formalised the two patterns of blends and clipped compounds in the two formulae in (1), where AB stands for the left base and CD for the right base:

(1) a AB + CD → AD
b. AB + CD → AC

AD-forms prototypically correspond to blends, while AC-forms to clipped compounds, but this is not a rule, as disconfirmed by *modem*, which is a blend from *mo*(dulator) + *dem*(odulator), unattested in the OED as full compound form. Moreover, there are blends which do not conform to the AD pattern, such as the intercalative *ambisextrous*, where *sex* is inserted within the word *ambi*(dex)*trous*, with partial overlap and discontinuity of a base. A still different pattern is for overlapping blends

(e.g. *guess* + *estimate* → *guestimate*), where B or C are null, with variable percentages of overlapping phonemes/graphemes depending on the SWs' similarity (see §4.1). These preliminary remarks envisage that a clearer distinction between the patterns forming blends and those forming compounds is needed.

By contrast, from a semantic perspective, blends are comparable to compounds because both "attributive" and "coordinative" types of blends are amply attested (Bauer *et al.* 2013: 483). For instance, in attributive *daycation* (← *day* + *vacation*), the blend as a whole is a hyponym of the second element, i.e. 'a one-day vacation'. For blends that have a coordinative interpretation, we find both 'appositive' and 'compromise' subtypes, where the appositives denote the intersection of two types of entity or action (e.g. *actorvist* ← *actor* + *activist*) and the compromise coordinative blends denote hybrid entities or concepts (e.g. *chofa* ← *chair* + *sofa*). Hence, while the appositive subtype is comparable to compounds of the type *singer-songwriter* or *scholar-athlete*, an *actorvist* being both an actor and an activist, the compromise subtype is comparable to compounds of the type *northeast* and *blue-green*, in that a *chofa* is a piece of furniture somewhere between a chair and a sofa, i.e. a hybrid entity.

According to Renner (2006) and Bauer (2012), however, the coordinative category of blends can be further distinguished into finer-grained subtypes, depending on the semantic weight of the two SWs, i.e. how much they contribute to the overall meaning of the blend. In their classification, "polyvalence" blends such as *spork* (← *spoon* + *fork*) are equivalent to compound forms like *singer-songwriter*, displaying features of both elements. By contrast, "hybrid" blends (e.g. *tigon* ← *tiger* + *lion*) are to be kept apart from "addition" blends, adding two parts (e.g. *semantax* ← *semantics* + *syntax*), as well as from "tautologous" ones, coordinating synonymous words, such as *posilutely* (← *positively* + *absolutely*) (all examples are from Bauer 2012). The various semantic relationships between blend components and the SWs' contribution to the whole meaning deserve further attention from morphologists. In general, this area remains under-researched and blends still pose problems of fuzzy boundaries from both formal and semantic viewpoints.

In this study, a collection of 245 novel blends dated 1950-today will be classified according to different degrees of grammaticalness. The description of blends in terms of a scalar notion of grammaticalness offers a novel approach to the blending phenomenon, rather than placing it outside regular grammar or excluding it from English word-formation theory.

3. Data collection and method

The data collected for this study was selected from the online edition of the OED by using the advanced search tool available on the platform. For the selection, two combined filters were initially used in the etymology slot, i.e. 'blend' and the coordinator 'and'. This search gave us 633 results, whose distribution is reported in Figure 1.

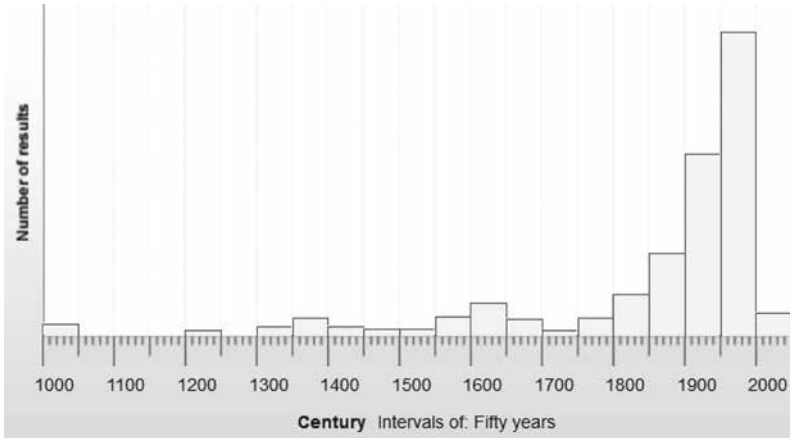

Figure 1. Advanced search results for 'blend' in the OED.

Figure 1 shows that the number of new OED entries created by blending is increasing. New English blends have on average doubled in intervals of fifty years, namely, 33 instances in 1800-1850, 65 in 1850-1900, 147 in 1900-1950, and 246 in 1950-2000. Thus, a substantial distribution of English blends especially occurred after 1950, which was the third additional filter adopted for the selection.

The temporal filter '1950-today' restricted the set of blends to 264 results, which appeared to be a representative collection of novel English blends for our goals. The collection was finally cleaned via close reading of each entry, after which the following cases were excluded:

(i) Abbreviations from phrases: e.g. *Amex* ← *American Express* or *American Stock Exchange*;
(ii) Forms displaying affixes or combining forms: e.g. *poofteroo* ← *poofter* + suffix *-eroo*, *Neorican* ← *neo-* + *Rican*;
(iii) Word parts: e.g. *-rific* ← *terrific*. Although some blends are obtained from these splinters (e.g. *yogarific* ← *yoga* + *terrific* is in a quote under *-rific*), the blends which were not attested as separate entries in the OED were not included in the dataset, because they could not be retrieved systematically;
(iv) Words whose origin is only analogical, but are not blends: e.g. *outro* is analogically coined

after the reanalysis of *intro* as **in* + *tro*, but it is not a blend of *out* and *intro*;

(v) Words whose origin is uncertain: e.g. *scuzz* may be either an abbreviation from *disgusting* or a blend from *scum* and *fuzz*.

The final dataset consists of 245 English blends, including 209 nouns (85%), 32 adjectives (13%), and 4 (1.6%) verbs. Among the nouns, 48 are spelt with initial capital letters. In other words, 23% of the nouns are proprietary or proper names.[2] This dataset is not expected to be exhaustive, though, since the OED is not very consistent in the way it annotates blends. Yet, it provides usable data for our analysis of recent blends in English.

In Section 4, this dataset will be classified in terms of formal and semantic features, distinguishing blends from regular compounds. In Section 5, the case of hybrid blends especially used in chemistry will be dealt with and discussed in terms of their iconic character, reproducing a mixture of substances by means of blended words. We will conclude by offering a scalar notion of grammaticalness, which can be applied to the heterogeneous types of blends, from the most prototypical, regular and predictable types, to the least predictable and productive ones.

4. Blends: Identifying features

In this section, we present the most prominent formal and semantic features of blends and cope with their grammaticalness. A final subsection will be devoted to the usage of blends in text.

4.1. Formal features

From the formal viewpoint, blends are obtained from a fusion of two or more source words (SWs). The following features can be used to define a blend formally (and prosodically):

(vi) BASES: the SWs which act as bases for blending involve some graphic and/or phonological loss: e.g. *jeggings* ← ***j***eans + ***l******eggings***, where the first letter/phoneme of *leggings* is substituted by the initial letter/phoneme of *jeans*.

(vii) ORIGIN: the SWs do not constitute an established compound: e.g. *webisode* ← ***web*** + ***episode*** (*web episode* is not an attested compound, cf. clipped compounds).

(viii) PATTERN:

- Given Plag's (2003: 123) blending rule (AB + CD → AD), the prototypical pattern for a blend is AD (*glam-ma* ← ***glam***our + grand***ma***). However, WD (*freemium* ← ***free*** + ***premium***) or AW (*flexecutive* ← ***flex***ible + ***executive***) can occur in partial blends, which preserve either SW_1 or SW_2 (W = full Word).

- In overlapping blends, B and C may be null (*hip-hopera* ← ***hip-hop*** + ***opera***, *Japanimation* ← ***Japan*** + ***animation***, *sexploit* ← ***sex*** + ***exploit***).
- The pattern AC is rare: e.g. *zedonk* ← ***ze**bra* + ***donk**ey*, *cyborg* ← ***cyb**ernetic* + ***org**anism* (cf. clipped compounds in Mattiello *forthcoming*).
- The intercalative pattern is likewise rare: e.g. *squoggy*, where the beginning of ***qu**aggy* is inserted within ***soggy***.
- B cannot be the first part of a blend (Lehrer 1996): e.g. **ticsteel* ← *plas**tic*** + ***steel***.

(ix) ORDERING: relevant factors in preferentially determining the order of the SWs are (from Kelly 1998 and Bauer 2012):
- Length (shorter first): e.g. *rapso* ← ***rap*** + *calyp**so***;
- Frequency (more frequent first): e.g. *smaze* ← ***sm**oke* + *h**aze***;
- Prototypicality (more prototypical first): e.g. *beefalo* ← ***beef*** + *buf**falo***;[3]
- Temporal (chronological) order: e.g. *brinner* ← ***br**eakfast* + *d**inner***.[4]

(x) RECOGNISABILITY: as many segments as possible from the SWs are preserved (Cannon 1986; Gries 2004; Bat-El 2006; Bauer 2012): e.g. in *boxercise* (← ***box*** + ***exercise***), SW_1 is entirely recognisable and SW_2 nearly entirely, in *bromance* (← ***bro*** + ***romance***), both SWs are entirely recognisable, because of overlapping segments ‹ro›.

(xi) OVERLAP (or identity) at the juncture: the boundary between the SWs often involves identical graphemes and/or phonemes (Kelly 1998; Cannon 2000; Bertinetto 2001; Kemmer 2003). The number of shared graphemes/phonemes varies.
- The following have progressive numbers of overlapping graphemes: *boatel* ← *boat* + *hotel*, *advertique* ← *advertisement* + *antique*, *Mummerset* ← *mummer* + *Somerset*, *legalitarian* ← *legal* + *egalitarian*, *expunctuation* ← *expunction* + *punctuation*, *dielectrophoresis* ← *dielectric* + *electrophoresis*, etc.
- The following have progressive numbers of overlapping phonemes: /k/ (*volcaniclastic* ← *volcanic* + *clastic*), /uːn/ (*moondoggle* ← *moon* + *boondoggle*), /mɔːf/ (*zoomorphosed* ← *zoomorph* + *metamorphosed*), /ɪntə/ (*winterim* ← *winter* + *interim*), /delɪk/ (*psychedelicatessen* ← *psychedelic* + *delicatessen*), /ɪlektə/ (*selectorate* ← *selector* + *electorate*), etc.
- A non-central overlap occurs when the SWs have one or more coinciding letters/phonemes either at the beginning (*snarfle* ← *snarf* + *snaffle*) or at the end (e.g. *hoolivan* ← *hooligan* + *van*) (Beliaeva 2014: 59).

(xii) LENGTH: blend length conforms to the length of the longer SW. More specifically:
- The blend has the same number of syllables as, or one syllable more or less than the longer SW (Cannon 1986; Hong 2004; Arnd-Lappe & Plag 2013): *shim* [1] ← *she* [1] + *him* [1], *fug.ly* [2] ← *fuck.ing* [2] + *ug.ly* [2]; *net.i.zen* [3] ← *net* [1] + *cit.i.zen* [3], *chem.i.ga.tion* [4] ← *chem.i.cal* [3] + *irr.i.ga.tion* [4], etc.
- The blend may not be longer than SW_2 (Kobozono 1990; Plag 2003; Bauer 2012): *vog* [1] ← *vol.ca.nic* [3] + *fog* [1], *cy.brid* [2] ← *cy.to.plas.mic* [4] + *hy.brid* [2];
- There is a preference for blends to have no more than three syllables (Arnd-Lappe & Plag 2013): e.g. *kid.e.o* [3] ← *kid* [1] + *vid.e.o* [3], *oc.to.push* [3] ← *oc.to.pus* [3] + *push* [1]. Cf. *embourgeoisification* [7] ← Fr. *embourgeoisement* [5] + *bourgeoisification* [6].

(xiii) STRESS: primary stress in blends is determined by the position of stress in the SWs (Cannon 1986; Bat-El 2006; Bat-El & Cohen 2012). Since there is inter-word variation, stress assignment may depend on two parameters:
- Size: blend stress corresponds to the stress of the longer SW, either SW_1 (*hòolivan* ← *hòoligan* + *vàn*) or SW_2 (*webliògraphy* ← *wèb* + *bibliògraphy*);

- Position: blend stress corresponds to the stress of the rightmost word, generally the head: e.g. *flexitàrian* ← *flèxible* + *vegetàrian*.

(xiv) SWITCH POINT: the switch point between the SWs is at major joints (Kubozono 1990; Kelly 1998; Hong 2004):

- Phonological: the switch point falls primarily at phonological joints, such as syllable boundaries (*bur.ki.ni* ← ***bur***.*ka* + *bi*.***ki.ni***) (Bertinetto 2001);
- Morphological: the switch point may fall at morphological joints, such as derivational affix boundaries: e.g. *inform-ance* ← *informative* + *perform-**ance***, *arco-logy* ← *architecture* + *eco-**logy***.

These features are not given in order of importance, nor have they to be treated as defining criteria, but as constraints, as those developed within Optimality Theory models.[5] As such, one constraint can co-exist with another or they may exclude one another. For instance, in *bromance* (← ***bro*** + ***romance***), both recognisability and overlap are met, whereas in *advertique* [3] (← ***advertisement*** [4] + ***antique*** [2]), the overlap constraint prevails over the ordering (length) one. In the latter case, the motivation is exclusively formal, in that the meaning of *advertique* ('an antique advertisement') would rather favour a reversed order of the SWs. The most prototypical pattern is normally AD for blends, often with overlapping elements (e.g. *rapso* ← ***rap*** + *cal**ypso***), but order and pattern constraints may be infringed in order to avoid lexical blocking: e.g. *soca* (← ***so***ul + ***ca***lypso) is AC, because AD would have been ambiguous with the adjective denoting something 'of middling quality' (*so-so*).

4.2. Semantic features

From the semantic viewpoint, blends are divided into coordinate (or portmanteau) (e.g. *smog* ← *smoke* + *fog*) and attributive (e.g. *motel* ← *motor* + *hotel*). For these types, Dressler (2000: 5) respectively uses the labels "paradigmatic" and "syntagmatic", although he includes only the former under the heading of 'blend'. Similarly, Plag (2003: 123) considers "proper blends" only those which semantically "resemble copulative compounds", i.e. that are in a semantically coordinate relation. The different distribution of the coordinate and attributive types is a preliminary distinction between blends and compounds: namely, while the coordinate type is considered to be the prototypical semantic one for blends, compounds more frequently belong to the attributive type.

4.2.1. Coordinate blends

Coordinate blends may not be headed semantically, hence, they are sometimes termed "exocentric" (Bat-El 2006). However, like coordinate compounds, blends of the coordinate type generally display two (rarely

three) semantic heads and are neither morphosemantically nor morphotactically exocentric, their meaning often combining the meaning of the two SWs. However, coordinative compounds include adjectives (e.g. *deaf-mute*) and verbs (e.g. *stir-fry*), while blends very rarely do, *Spanglish* (either noun or adjective) and *Californicate* (verb from *California* + *fornicate*) being exceptions (Bauer 2017: 160).

According to Renner (2006), there are four main semantic relationships between the SWs in coordinate blends, in order of frequency:

(i) HYBRIDITY: the blend is a fusion, mixture, or synthesis of SW_1 and SW_2. In hybrid or compromise blends, the meanings (*signata*) of the blends are blends themselves. Examples from our dataset include:
- Synthetic chemicals: *artemisinin* ← *artemisia* + *quinine*, *cephaloridine* ← *cephalosporin* + *pyridine*, *nitrofurantoin* ← *nitrofuran* + *hydantoin*;
- Mixed garments: *burkini* ← *burka* + *bikini*, *tankini* ← *tank top* + *bikini*, *jeggings*, *skort* ← *skirt* + *short*(s), *vestock* ← *vest* + *stock*;
- Synthetic textiles: *pleather* ← *plastic* + *leather*;
- Mixtures, amalgams, alloys: *gasohol* ← *gasoline* + *alcohol*, *plasteel* ← *plastic* + *steel*, *smaze* ← *smoke* + *haze*;
- Hybrid species, crossbreeds: *beefalo* ← *beef* + *buffalo*, *labradoodle* ← *Labrador* + *poodle*, *zonkey* ← *zebra* + *donkey*;
- Varieties of English: *Chinglish* ← *Chinese* + *English*, *Hinglish* ← *Hindi* + *English*, *Singlish* ← *Singaporean* or *Sinhalese* + *English*;
- Hybrid music styles: *hip-hopera* ← *hip-hop* + *opera*, *rapso* ← *rap* + *calypso*, *soca* ← *soul* + *calypso*;
- Hybrid forms of entertainment: *eatertainment* ← *eat* + *entertainment*, *shoppertainment* ← *shopper* + *entertainment*, *informance* ← *information* + *performance*, *informercial* ← *information* + *commercial*, *magalogue* ← *magazine* + *catalogue*, *Muppet* ← *marionette* + *puppet*;
- Sexual ambiguity: *shim* ← *she* + *him*.

As Bauer (2012: 17-18) observes, in some of these categories, such as crossbreeds or language varieties, one of the SWs (commonly SW_2) may semantically prevail on the other. The prevalence of *English*, for instance, has produced the series *Spanglish*, *Japlish*, *Chinglish*, *Hinglish*, *Singlish*, etc. more generally denoting informal varieties of English incorporating elements of Spanish, Japanese, Chinese, and so on (see §4.3.3; also Bauer 2017: 161-162). Similarly, the prevalence of *bikini* over SW_1 originates the series having *-kini* as second element (*burkini*, *tankini*, but see also *monokini*, *trikini*, etc.) (see §4.3.3). Bauer (2017: 160) has remarked that "cross-breeds seem to have blends as their preferred realization", while compounds denoting cross-breeds "tend to be preferred as attributive elements: *a lion-tiger cross*".

(ii) ADDITION: the blend is SW_1 in addition to SW_2. In these appositional blends, the SWs may

contribute equally to the total meaning. Examples include:
- Combined qualities: *animatic* ← *animated* + *schematic*, *glocal* ← *global* + *local*, *scuzzy* ← *scummy* + *fuzzy*;
- Combined activities: *boxercise* ← *box* + *exercise*, *dancercise* ← *dance* + *exercise*;
- Complex food or beverage: *turducken* ← *turkey* + *duck* + *chicken*, *Clamato* ← *clam* + *tomato*;
- Complex economic states: *stagflation* ← *stagnation* + *inflation*, *slumpflation* ← *slump* + *inflation*;
- Complex political characters/issues: *militician* ← *military* + *politician*, *dissensus* ← *dissent* + *consensus*;
- Composite methods/systems: *fertigation* ← *fertilizer* + *irrigation*, *chemigation* ← *chemical* + *irrigation*.

Like the previous category, also these blends may display a higher semantic weight on the rightmost element: e.g. a *militician* is 'a politician who is actively supported by a military establishment', *fertigation* is 'a method of plant fertilisation in which liquid fertiliser is added to water', etc. Again, this importance of SW_2 can produce series (e.g. *-ercise* in *boxercise*, *dancercise*).

(iii) POLYVALENCE: the blend displays some characteristics of SW_1 and SW_2. Examples are:
- Atypical accommodation: *boatel* ← *boat* + *hotel*, *floatel* ← *float* + *hotel*, *Dormobile* ← *dormitory* + *automobile*;
- Ambiguous behaviour: *frenemy* ← *friend* + *enemy*, *crunk* ← *crazy* + *drunk*, *voluntourism* ← *volunteer* + *tourism*, *voluntourist* ← *volunteer* + *tourist*.

As Bauer (2012: 18) admits, this category is close to the hybrid type, so that the two could be merged. A *frenemy*, for instance, is 'a person who combines the characteristics of a friend and an enemy', and a *boatel* is 'a boat which functions as a hotel', thus displaying characteristics both of a boat, such as being located on water, providing facilities for mooring, and of a hotel, such as providing overnight accommodation, meals, and other services. Sometimes the characteristics of one of the SWs can prevail, as in *voluntourism*, mainly involving travel, as in traditional tourism, but also unpaid charity work, as in volunteer.

(iv) TAUTOLOGY: the blend is both SW_1 and SW_2, the SWs being synonyms. Examples are:
- Excessive qualities or characteristics: *fantabulous* ← *fantastic* + *fabulous*, *melded* ← *melt* + *welded*, *squoggy* ← *quaggy* + *soggy*;
- Character types: *wuss* ← *wimp* + *puss*, *nerk* ← *nerd* + *berk / jerk*.

Expectedly, this is the least common meaning relation. As tautology in general, tautological blends are repetitive, reiterative of a quality or characteristic possessed by somebody. Those referring to qualities combine similar or synonymous adjectives, whereas those denoting types of

people stress, by repeating derogatory words, their ineffectual or weak character. This category can also be confused with speech errors (slips of the tongue), in which two similar words unintentionally merge into one (cf. unintentional "contaminations" in Ronneberger-Sibold 2006: 158; Cannon 1986: 727; and "speech-error blends" in Cannon 2000: 953).

4.2.2. Attributive blends

Attributive or determinative blends are headed and, therefore, they are said to be "endocentric" (Bat-El 2006). Like endocentric compounds, endocentric blends modify one element by another. This modifier-head structure is illustrated by:

(i) WITH A NOUN MODIFIER: *adhocracy* ← *ad hoc* + *bureaucracy*, *kideo* ← *kid* + *video*, *mockney* ← *mock* + *cockney*, *mockumentary* ← *mock* + *documentary*, *netizen* ← *net* + *citizen*, *screenager* ← *screen* + *teenager*, *skyjack* ← *sky* + *hijack*;
(ii) WITH AN ADJECTIVE MODIFIER: *buppie* ← *black* + *yuppie*, *cremains* ← *cremated* + *remains*, *rectenna* ← *rectifying* + *antenna*, *slimnastics* ← *slimming* + *gymnastics*, *swingle* ← *swinging* + *single*, *vog* ← *volcanic* + *fog*.

Thus, a *kideo* is 'video made for children (kids)' (see also *kidvid*, with a different pattern) and *cremains* are 'the ashes (remains) of a cremated person'.

4.3. Blending and grammatical word-formation

According to Fradin (2015: 389), "blending does not comply with the most basic principles of grammatical word-formation", especially because blends are not embodied in a fixed phonological pattern, nor do they exhibit a stable sound-meaning association. He sums up blends salient properties as follows:

(2) a. No preservation of lexical integrity
b. No fixed pattern of compositionality
c. Blends are type hapaxes (Fradin 2015: 389-390)

These properties will be discussed in the next three subsections (4.3.1-4.3.3) in relation to the grammaticalness of blends (4.3.4).

4.3.1. Lexical integrity

In contrast to derivational morphology and compounding, the integrity of the stems corresponding to each of the SWs is rarely maintained in blending (2a above) and the shortening of the SWs highly depends on the interaction between the two stems. However, there are some patterns which preserve at least one of the SWs intact (the first SW in *beefalo*, *eatertainment*,

or the second SW in *pleather*, *voluntourist*), and, thanks to overlapping segments, the two SWs are entirely recognisable in *hip-hopera*, or *replicar*.

Many scholars (Thornton 1993: 148; Kelly 1998; Gries 2004; Ronneberger-Sibold 2006) have observed that blending has to accommodate two contradictory requirements, namely: (a) the shortening of the SWs in order to make the blend resemble a single lexeme, and (b) the preservation of as many segments/relevant phonological properties as possible from the SWs (Bat-El 2006: 66-67; Ronneberger-Sibold 2006; Fradin 2015: 393) in order to maximise the semantic transparency of the blend. Therefore, unlike compounds, whose source lexemes are not shortened (or nearly, see *sitcom* above, §2) and therefore morphotactically transparent, blends have to find a balance between two opposite tendencies, namely, diminution of phonological material *vs* maximisation of transparency/SWs recognisability (cf. Cacchiani 2011: 109). These opposite forces result in three operations: (a) truncation, (b) linearisation, and (c) overlap, which can be used as parameters to classify blends (Gries 2004). Of these three parameters, only (b) pertains to compounds, whose components are always arranged in a linear order, but in which neither truncation nor overlap occur, with the exception of clipped compounds, where truncation is also relevant.

As for the formal pattern of blends, Plag (2003: 123) claims that the blending rule (AB + CD → AD) accounts for the most frequent types of blends, although there may be exceptions. All blending patterns found in our dataset, ordered by frequency, are reported in Table 1 (W = full Word).

PATTERN	EXAMPLE	TRUNC.	LINEAR.	OVERLAP
AD with overlap	*irritainment* < irrita(ting) + (enter)tainment	both SWs	yes	yes
WD with overlap	*kideo* < kid + (vi)deo	SW_2	yes	yes
AW with overlap	*plasteel* < plast(ic) + steel	SW_1	yes	yes
WW with overlap	*replicar* < replica + car	SW_1 or SW_2	yes	yes
AD without overlap	*flexitarian* < flexi(ble) + (vege)tarian	both SWs	yes	no
WD without overlap	*knowbot* < know + (ro)bot	SW_2	yes	no
Intercalative with overlap	*algeny* < al(chem)y + gen(e)	both SWs	no	yes
AC without overlap	*cyborg* < cyb(ernetic) + org(anism)	both SWs	yes	no
AC with overlap	*modem* < mod(ulator) + dem(odulator)	both SWs	yes	yes

Table 1. Blending formal patterns in our dataset.

The table shows the interaction between truncation, linearisation, and overlap in the blends of our dataset. Truncation (a above) occurs in all blends, which indicates that this is a prototypical characteristic of the blending process. In 42.5% of cases, both SWs are truncated, in 24.6% SW_2 is truncated, in 19.3% SW_1 is truncated, whereas in the remaining cases (13.6%), the WW pattern with a central overlap does not allow us to establish with certainty whether truncation occurs in SW_1 or SW_2.

Linearisation (b above) is also prototypical of blends. As Table 1 shows, there are rare cases of non-linearisation, only with some intercalated blends where the similarity between the two SWs has facilitated the insertion of some letters/sounds of one within the other. In *algeny*, the overlap between *alchemy* /ˈæl.kə.mi/ and *gene* /dʒiːn/ is only graphical.

An overlap (c above) is present in 86.3% of the blends in our dataset, which means that it is another prototypical characteristic of blends (*vs* compounds). Sometimes, the overlap is purely graphic, as in *sharrow* ← *share* + *arrow*, where the two underlined graphemes are respectively pronounced /eə/ and /ær/. Most of the times, however, it is both phonological and graphic. Needless to say, in the WW pattern, both SWs are recognisable (maximum recognisability and transparency), but there must be overlapping segments in order to distinguish the blends from regular compounds, with full lexemes.

Figure 2 shows a bar chart presentation of the distribution by blend elements, including the frequencies of all the patterns considered in Table 1.

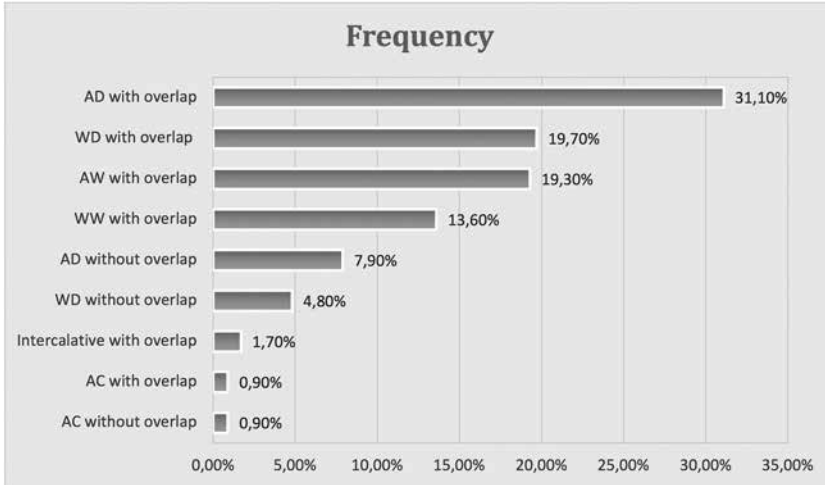

Figure 2. Frequency by blend elements.

The bar chart confirms that the AD pattern is the most frequent one, especially when there is an overlap between the SWs (31.1%), and increased to 39% if we include blends with no overlap (7.9%). A comparable frequency is for the patterns which keep either the first or the second SW intact: i.e. WD (19.7% with overlap; 4.8% without overlap) and AW (19.3% with overlap), while the WW pattern is slightly less frequent (13.6%).

The results confirm that "the beginning of a blend cannot be the end of a word" (Lehrer 1996: 364; 2007: 117-120), in that B is not found within the possible patterns (e.g. **ibletarian* or, still worse, **iblevegeet* ← *flexible* + *vegetarian*). The end of a word is indeed positionally less salient than the word beginning (Mattiello 2013: 24-25, except for very young children, due to recency effect). In *netizen* and *netiquette* (in our dataset), from *net* + *citizen/etiquette*, the first SW is a word end (from *Internet*), but attested in isolation. Hence, the pattern is respectively WD with overlap and WW with overlap. By contrast, blends can be formed from the beginning of two words (e.g. *cyborg* ← *cybernetic* + *organism*), although the pattern AC is infrequent (0.9% with overlap and 0.9% without overlap), despite the combination of the two positionally salient parts of both SWs (see pattern in §4.1). This feature distinguishes blends not only from clipped compounds, generally displaying an AC form, but also from acronyms and initialisms, where initials are retained.

These results also help differentiate blends from clipped compounds. In clipped compounds, the most common pattern is AC (e.g. *pop-cult* ← *popular culture*, *des res* ← *desirable residence*, *fro-yo* ← *frozen yogurt*) (Mattiello *forthcoming*), whereas in our dataset only four instances of blending display the AC pattern (see "fragment blends" in Cacchiani 2011: 114). The pattern AD is possible in clipped compounds as well, as illustrated by *molectronics* (← *molecular electronics*), with a central overlap, but it is not the most frequent one. Moreover, in clipped compounds, the pattern BW is rare, but not impossible (e.g. *blog* ← *weblog*). By contrast, the intercalative type is only in blends, although infrequent (1.7%).

4.3.2. Compositionality

As for compositionality, we do not agree that blends are not compositional (2b above), nor that their pattern of compositionality is variable or unpredictable, in that their meaning generally results from the combination of the meaning of their parts. For instance, a *boatel* is 'a boat which functions as a hotel', *jeggings* are 'leggings for women,

styled to resemble a pair of denim jeans', and *kideo* is 'a video made for kids'. Therefore, blends are as compositional as regular endocentric compounds such as *motor boat* 'a motor-driven boat', *blue jeans* 'trousers made of blue jean cloth', or *kid stuff* 'something suitable for children'. Needless to say, compositionality is not the same as transparency but results from the meaning of the parts making the blend. Moreover, in the interpretation of both blends and compounds the relationship between the SWs or components has to be deduced by the listener on the basis of the linguistic and non-linguistic context in which the blend/compound arises.

However, for blends, as well as for compounds, there seem to be different degrees of transparency / compositionality, and often blends are less morphosemantically opaque than compounds and generally display a lower degree of opacity. For instance, the compound *bus-girl* is more transparent in the British meaning 'a female bus conductor' [1916], but less so in the American meaning 'a girl employed to clear tables in a restaurant' [1914]. The now historical compounds *comfort woman* and *comfort girl* [1949] 'a woman/girl who was forced to engage in sexual activity with Japanese soldiers during the second Sino-Japanese War' have a transparent head, but a metaphorical modifier. Other more recent attributive compounds, such as *blue state* [2000] 'a state won by the Democratic candidate in a presidential election' and *flash mob* [2003] 'a large group of people organised by means of the internet, who assemble in public to perform a prearranged action together and then quickly disperse' have opaque modifiers, whereas *live blog* [2003] 'a blog providing commentary on an event while it is taking place' is more transparent. A fully transparent compound is instead *line dance* [1961] 'any of various dances in which multiple participants are arranged in one or more lines'.

By contrast, blends are often transparent, especially when the SWs are recognisable, as in *dancercise* [1967] 'dancing performed as an exercise' and *voluntourism* [1991] 'tourism in which travellers spend time doing voluntary work'. They are less transparent when one of the SWs is difficult to recognise, as in recent *glamping* [2005] 'a form of glamorous camping that involves luxurious accommodation and facilities', and even less in *racino* [1995] 'a building complex having a racetrack and gambling facilities traditionally associated with casinos', where both SWs are difficult to identify.

Furthermore, the semantic relationships between the SWs of blends are not unpredictable, as the classification offered in Section 4.2.1 confirms. Table 2 summarises the blending semantic patterns in our dataset.

FREQUENCY	PATTERN	EXAMPLE
Coordinate 41%	The blend is a fusion/ mixture of SW_1 and SW_2	*magalogue* 'a catalogue designed to resemble a magazine' *labradoodle* 'a dog cross-bred from a Labrador retriever and a poodle'
	The blend is SW_1 in addition to SW_2	*glocal* 'both global and local' *dancercise* 'dancing performed as an exercise'
	The blend displays some characteristics of SW_1 and SW_2	*boatel* 'boat which functions as a hotel' *frenemy* 'a person who combines the characteristics of a friend and an enemy'
	The blend is both SW_1 and SW_2, the SWs being synonyms	*fantabulous* 'fantastic and fabulous, of almost incredible excellence' *nerk* 'a foolish person, both nerd and jerk'
Attributive 59%	SW_1 modifies SW_2, i.e. the head of the blend	*webisode* 'an episode which is made available on the web' *flexitarian* 'a flexible vegetarian'

Table 2. Blending semantic patterns in our dataset.

As Table 2 illustrates, blends show as much compositionality as coordinative and attributive compounds do, the coordinative type displaying two heads combined together (cf. Bat-El 2006, who considers them to be "exocentric") – and the attributive type displaying a regular modifier-head structure. However, some semantic relations have been observed to be typical of blends, especially the hybridity relationship, which is iconically represented by the blended structure of the blending pattern (see §5).

4.3.3. Productivity

The property in (2c) above is connected with the productivity of blends. Fradin (2015: 390) claims that, "[u]nlike derived or compound units, [blends] cannot form series. Each one is a (lexeme) type which is the only one to instantiate the morphological pattern it belongs to". Yet, some blends can be accommodated within the model of analogy in word-formation elaborated in Mattiello (2017). In particular, some share formal (morphotactic) and semantic similarity with a single model blend word (surface analogy), whereas others are created after a series of words which act as schema model (analogy via schema).

Instances of surface analogy include the blends *smaze* (← *smoke* + *haze*) and *vog* (← *volcanic* + *fog*), which have been coined after the exact model word *smog* (← *smoke* + *fog*), lexicalised in English. The similarity relation between model (*smog*) and targets (*smaze*, *vog*) can be analysed as a paradigmatic substitution in the equations in (3a) and

(3b):

(3) a. smoke ^ fog : smog = smoke ^ haze : X (X = smaze)
b. smoke ^ fog : smog = volcanic ^ fog : X (X = vog)

In these analogical proportions, the paradigmatic substitution of *fog* with *haze* gives the blend *smaze*, while the replacement of *smoke* with *volcanic* gives *vog*. Both new blends share with their model: (a) a formal resemblance, merging a word beginning with a word end, (b) a phonological resemblance (onset *sm-* /sm/ in the first blend and rhyme *-og* /ɒg/ in the second blend), and a semantic similarity, in that, like *smog*, which iconically refers to '*fog* intensified by *smoke*', *smaze* is 'a mixture of *smoke* and *haze*' and *vog* is '*fog* containing *volcanic* dust'. However, while *smaze* is, like *smog*, a coordinate blend combining two nouns, *vog* is an attributive blend, with an adjective (*volcanic*) modifying the head *fog*. From the diachronic viewpoint, the targets *smaze* [1953] and *vog* [1969] follow the model *smog* [1905].

Other novel blends in our dataset which are coined by surface analogy include:

(i) *blaxploitation* [1972] 'the exploitation of black people' ← *black* + *exploitation*, after *sexploitation* [1924] 'sexual exploitation' ← *sex* + *exploitation*;
(ii) *Britcom* [1977] 'a comedy film produced or set in the United Kingdom' ← *sitcom* [1964] 'situation comedy', here the model is a clipped compound (cf. the analysis of *Britcom* as a blend from *British* and *sitcom*; see also *romcom* [1971] 'romantic comedy');
(iii) *Motopia* [1959] 'an urban environment designed to meet the needs of a pedestrian society by strict limitation of the use of the motor car' ← *motor* + *utopia*, after *Subtopia* [1955] 'Suburbia regarded as an undesirable or unattractive place to live' ← *suburb* + *utopia*;
(iv) *politicide* [1967] 'the killing of a particular group because of its political or ideological beliefs' ← *political* + *homicide*, after *genocide* [1944] 'the deliberate and systematic extermination of an ethnic or national group' ← *genus* + *homicide*;
(v) *ragazine* [1987] 'a magazine of inferior quality' ← colloquial *rag* + *magazine*, after *fanzine* [1949] 'a magazine for fans' ← *fanatic* + *magazine*;
(vi) *slumpflation* [1974] ← *slump* + *inflation*, after *stagflation* [1965] ← *stagnation* + *inflation* (see §3.2.2);
(vii) *threequel* [1983] 'the third of a sequence of films' ← *three* + *sequel*, after *prequel* [1958] 'a book, film, etc., narrating events which precede those of an already existing work' ← *pre-* + *sequel* (with a substitution of the prefix *pre-* with the rhyming numeral *three*).

These examples show how analogy increases regularity and helps predictability and grammaticalness in blend formation. The type of blend obtained after a schema model is even more regular and productive, in that it creates novel splinters.

Instances of blends obtained by analogy via schema are those displaying splinters and producing series (see Bauer *et al.* 2019: 58-69 and

Beliaeva 2019 for a detailed account of splinters in blends). While Bauer (1983: 96) claims that analogical formation does not give rise to productive series and Plag (1999: 210) argues that "analogical formations should be distinguished from instantiations of productive word formation rules", analogy via schema can originate series, i.e. formations which share the same process. In particular, analogy can produce novel "splinters", defined by Bauer *et al.* (2013: 525) as "non-morphemic portions of a word that have been split off and used in the formation of new words with a specific new meaning". Splinters can be obtained by mere abbreviation of a word, as in *-ware* (← *software*), used in the creation of *freeware*, *shareware* 'software which is available free of charge', *vapourware* 'piece of software which, despite being marketed, does not exist', etc., in which the meaning conveyed is that of the full form 'software' (see Fradin 2000: 47, 2015: 406 for "concealed compounding"). Another way to obtain splinters is by secretion (see Fradin 2015: 406 for "blending and secreted affixation"), i.e. reinterpretation of a word part. For instance, the splinter *-gram* (← *telegram*) has extended from the meaning 'a message sent by telegraph' to 'a message delivered by a representative of a commercial greetings company, especially one outrageously dressed to amuse or embarrass the recipient', as in *kissogram* 'a greetings message delivered with a kiss' or *strippergram* 'message delivered by a performer of strip-tease'. Both *ware* and *gram* happen to coincide with free-standing morphs, but, as splinters, they acquire a novel meaning coming from the full word that they shorten.

Productive splinters in our dataset include:

(i) *-bot* (← *robot*) 'automated program which searches out information', as in *infobot* [1986] 'any of various automated systems for obtaining information', *knowbot* [1988] 'program designed to search and retrieve information from the Internet', *cancelbot* [1993] 'a program that searches for and deletes specified postings from Internet newsgroups', and the nonce words *searchbot*, *googlebot*, etc. found in the OED.

(ii) *-ercise* (← *exercise*) 'physical or non-physical but strenuous activity', as in *sexercise* [1942] 'sexual activity regarded as exercise', *dancercise* [1967] 'dancing performed as an exercise', followed by *jazzercise* [1976] 'a programme of physical exercises designed to be carried out in a class to the accompaniment of jazz music' ← *jazz* + *-ercise* and *boxercise* [1985] 'a form of aerobic fitness routine incorporating moves and exercises from boxing training' ← *box* + *-ercise*.

(iii) *-kini* (← the atoll of *Bikini*, reanalysed as having a prefix *bi-*) 'type of swimsuit or beach garment for women', as in *monokini* [1964] 'a one-piece beach garment or swimming costume worn usually by women', *trikini* [1967] 'any of various designs of ladies' swimsuit which consist of three main areas of fabric', and analogical *tankini* [1985] ← *tank top* + *-kini* (see §3.2.2) and *burkini* [2002] 'a type of swimsuit for women which covers the head and body' ← *burka* + *-kini*.

(iv) *-lish* (← *English*) 'variety of English displaying features of other languages', as in *Spanglish* [1933] 'a mixture of Spanish and English', originating *Chinglish* [1957] 'a mixture of Chinese and English' ← *Chinese* + *-lish*, *Japlish* [1960] 'English language spoken in an

unidiomatic way by a Japanese speaker' ← *Japanese* + *-lish*, *Hinglish* [1967] 'a mixture of Hindi and English' ← *Hindi* + *-lish*, *Singlish* [1984] 'an informal variety of English spoken in Sri Lanka, incorporating elements of Sinhala' ← *Sinhalese* + *-lish*, or 'an informal variety of English spoken in Singapore' ← *Singaporean* + *-lish*.

(v) *-(o)nomics* (← *economics*) 'the economic policies of a President or head of state', as in *Nixonomics* [1969] 'the economic policies of Richard Nixon', and analogical *Reaganomics* [1970] 'the economic policies of Reagan' ← (Ronald) *Reagan* + *-nomics*, *Clintonomics* [1992] 'the economic policies of President Clinton' ← *Clinton* + *-nomics*, *Rogernomics* ← *Roger* (Owen Douglas, New Zealand Minister of Finance) + *-nomics*. This splinter is often blended with words that end in *n* (*Nixon*, *Reagan*, *Clinton*), thus creating overlap blends.

(vi) *-tainment* (← *entertainment*) 'genre of broadcasting in which entertainment is combined with another genre', as in *docutainment* [1978] 'a film or other presentation which includes documentary materials, and seeks both to inform and to entertain', *infotainment* [1980] 'broadcast material which seeks to inform and entertain simultaneously', *edutainment* [1983] 'informative entertainment', and analogical *eatertainment* [1992] 'an experience which combines eating with entertainment' ← *eat* + *-(er)tainment*, *irritainment* [1993] 'broadcast material which is irritating yet still entertaining' ← *irritating* + *-tainment*, and *shoppertainment* [1993] 'the provision of entertainment facilities within a shopping centre' ← *shopper* + *-tainment*.

(vii) *-tarian* (← *vegetarian*) 'someone with a diet restriction', as in *dietarian* [1880] 'one who lives in accordance with prescribed rules for diet', *fruitarian* [1893] 'one who lives on fruit', *nutarian* [1909] 'vegetarian whose diet is based on nut products', and more recent *breatharian* [1979] 'a person who consumes no nutrients other than those absorbed from the air' ← *breath* + *-tarian* and *flexitarian* [1998] 'a person who follows a primarily but not strictly vegetarian diet' ← *flexible* + *-tarian*.

(viii) *-tel* (← *hotel*) 'accommodation which functions as a hotel', as in *motel* [1925] 'a roadside hotel catering primarily for motorists' and *boatel* [1950] 'boat which functions as a hotel', acting as models for *floatel* [1959] 'a floating hotel' ← *float* + *-tel* and *apartotel* [1965] 'a type of hotel which offers private suites for self-catering' ← *apartment* + *-tel*.

(ix) *-umentary* (← *documentary*) 'programme which has the characteristics of a documentary but also of another genre/subject', as in *mockumentary* [1965] 'a programme which adopts the form of a documentary in order to satirise its subject', and later *rockumentary* [1969] 'a documentary film on the subject of rock music' ← *rock* + *-umentary* and *shockumentary* [1970] 'a documentary film with shocking subject' ← *shock* + *-umentary*.

Some of these splinters are so regular that they are labelled "combining forms" in the OED (*-bot*, *-tainment*) (cf. Bauer *et al.* 2013). The splinter *-ercise* has also become productive in English, so much so that Baldi & Dawar (2000: 968) have assigned it the label of "unconventional suffix". Moreover, Adams (1973: 170) describes *-tarian* as a "suffix" that occurs in a subgroup of words "inspired by *vegetarian* [1842] and having to do with 'beliefs about diet'". She also cites *meatarian* [n.d.] and *seafoodetarian* [n.d.] (Adams 1973: 170) among additional examples, which cannot be considered mere blends, because their meaning involves reinterpretation of *vegetarian* not including 'vegetables'.

4.3.4. Grammaticalness

On account of (a) the type frequency observed in lexicographic work (§3, Figure 1), where it is shown how blending is increasing as a word-formation mechanism, (b) the formal and semantic regularities and tendencies identified in 4.1 and 4.2, and (c) the regularity that analogy confers on blends (§4.3.3), we can consider blends as productive and regular. At least, different degrees of grammaticalness can be envisaged for blends, distinguishing the core from the periphery:

(i) Higher grammaticalness is shown by those blends that are undergoing a process of (at least partial) grammaticalisation, and therefore lying in-between blends and prototypical compounds. Although prototypical blends generally display an AD pattern, blends with a higher degree of grammaticalness are those which display morphotactic transparency, semantic compositionality, and similarity with other model blends, thus belonging to a series and potentially becoming the model for other blends. The second splinter can become so frequently used to acquire the status of a secreted suffix (*-tarian*), thus being very close to derivation. When the second splinter is not secreted but abbreviated (*-ware*), the similarity with compounds is increased. Maximum transparency is in the WW type, where an overlap is necessary not to be considered a regular compound.
(ii) Less central (but still partly grammatical) cases consist of WD or AW blends, where at least one of the source words is kept intact. Although these do no conform to Plag's (2003) blending rule, they are closer to compounds, in that one of the SWs is transparent.
(iii) Peripheral cases consist of AC-forms (or fragment blends), which are often confused or conflated with clipped compounds (see Renner 2006; cf. Cacchiani 2011). However, unlike clipped compounds (e.g. *sitcom*), fragment blends (e.g. *cyborg*) are not attested as compounds before being shortened. Hence, while clipped compounds are merely shorter forms of existing compounds (*situation comedy*), blends are new words whose meaning is derived from the meaning of its source words, compositionally.
(iv) Lower grammaticalness is in the intercalative type, where lack of linearisation makes the blends diverge completely from the pattern of regular compounds.

Different degrees of grammaticalness can be assigned to each of these types, from blends which are closer to prototypical compounds to those which greatly depart from them.

4.4. Usage in text

From a textual viewpoint, blends are very close to compounds. As demonstrated by Dressler & Mörth (2012), compounds may have either a cataphoric textual usage, especially in titles, when they introduce a topic to be expanded in the following text, or an anaphoric usage, when they refer back to a formerly introduced topic or combine two topics within the same text.

Similarly, the blends in example (4) illustrate the cataphoric usage:

(4) *Maybe you were in a Boxing Day lineup that circled the block, despite minus 30C degree temperatures. Or in a* Queu-bec *supermarket queue, or Starbucks latte line. […]*

> *In* Queuetopia *– Britain – people are practically crazy for queuing. Ask almost any Brit and they'll tell you how proud they are to "queue up." It shows how fair Britain is, because everyone is equal in line, regardless of their background.* (NOW, 2017)

In (4), *Queu-bec* (← *queue* + *Quebec*) and *Queuetopia* (← *queue* + *utopia*) are used to introduce the topic of queues. These are nonce words (or nearly so) used for textual reasons, especially to create humorous or amusing effects. The former is chosen for its phonological similarity with one of the provinces of Canada (*Quebec*) and the latter is humorously created to allude to Great Britain's queuing habits. In the text, the nouns *queue* and *queuing* and the verb *queue up*, as well as the synonym *line*, echo the two blends, which have the function of attracting readers' attention and focusing it on the importance of – for some becoming an obsession for – waiting in line.

The blend *Clintonomics* in (5) rather illustrates the anaphoric use:

(5) *These economists' enthusiasm for Clinton nearly rivals their disdain for Ronald Reagan. That is to say, they like Bill Clinton a whole lot. Unfortunately, this avalanche of scholarly support says far more about the partisan leanings of professional economists these days that it does about the wisdom of* Clintonomics. (COCA, 1993)

by referring back to the former president Bill Clinton, mentioned twice in the extract. This blend, referring to Clinton's economic policy, not only contributes to textual coherence, but also shows how the attributive first part (*Clinton*) is much more important than the head (*economics*) for textual coherence. First, it creates a coherent link with the name of another U.S. ex-president (*Reagan*). Second, it stresses that the text is focusing on the American presidents' programmes, and on the consequent positive or negative reactions of the economists.

Although this twofold textual function of blends would deserve more in-depth (quantitative) study, this may be another point linking blends to compounds. Dressler & Mörth (2012: 232-234) have indeed shown that, in attributive compounds, the first constituent (non-head) is more important than the second constituent (head), in contrast to the greater grammatical importance of the head. Similarly, both in *Queuetopia* and in *Clintonomics*, the first SW (*queue*, *Clinton*) plays a much more significant role in constructing textual cohesion and coherence, in spite of the positionally more important role of the head (*utopia*, *economics*).

5. Mixtures vs *chemical compounds*

Going back to the distinction between mixtures and chemical com-

pounds, we can observe that this reflects the difference between the related names for new blends and chemical compounds.

As previously observed (Mattiello 2019; *forthcoming*), one of the functions of blends is the naming, labelling or denomination function. In other words, blends are used either to fill a conceptual and/or lexical gap, the new name being often iconic of the referent's meaning, or to label novel products, trademarks, mixtures, alloys, and similar hybrid substances. However, the nomenclature for mixtures, e.g., in chemistry or pharmacology, is not specifically regulated by an international federation or organisation. By contrast, for chemical compounds, the nomenclature used worldwide is the one created and developed by the International Union of Pure and Applied Chemistry (IUPAC).

Chemical nomenclature consists of a set of rules that are used to generate systematic names for chemical compounds (Favre & Powell 2013). The primary function of chemical nomenclature is to ensure that a spoken or written chemical name leaves no ambiguity concerning which chemical compound the name refers to: i.e., each chemical name should refer to a single substance (biuniqueness). Preferably, the name also conveys some information about the structure or chemistry of a compound. Thus, for Type-I ionic binary compounds, the cation (a metal) is named first, and the anion (usually, a nonmetal) is named second. For example, the compound *LiBr* is made of Li+ cations and Br− anions; thus, it is called *lithium bromide*. Similarly, the compound *BaO*, which is composed of Ba2+ cations and O2− anions, is referred to as *barium oxide*. In Type-II ionic binary compounds, in which the cation does not have just one oxidation state, one must determine the charge of the cation before writing out the name. For instance, the formula *Na2SO3* denotes that the cation is sodium, or Na+, and that the anion is the sulphite ion (SO2−3). Therefore, this compound is named *sodium sulphite*. In other words, we use compound names to refer, iconically, to chemical compound substances.

Unlike chemical nomenclature, which is highly regulated and predictable, the names for mixtures and alloys are generally less predictable and irregular, but often iconically represented by a lexical blend. For example, *gasohol* (← *gasoline* + *alcohol*) is 'a mixture of petrol and either ethanol or methanol', and *smaze* (← *smoke* + *haze*), like *smog*, is 'a mixture of smoke and haze', the latter being typically distinguished from fog in being caused by solid particles rather than droplets of water. Alloys, i.e. metals made by intimately combining two or more metals or metals and non-metallic elements, similarly display a blended form pattern representing their meaning. For instance, *Chromel* (← *chrome* + *nickel*) and *Alumel* (← *aluminium* + *nickel*) respectively refer to 'a nickel

alloy containing approximately 10-20% nickel and up to 25% iron' and 'a nickel alloy, typically containing approximately 2% aluminium, 2.5% manganese, and 1% silicon'. The composition of *alnico* 'any of a group of iron alloys containing nickel, aluminium, and cobalt, used to make permanent magnets' is even more complex, as demonstrated by the three-member blend from *al*(uminium) + *ni*(ckel) + *co*(balt). Unlike the previous blends displaying a prototypical AD form (§4.1), the latter exhibits an ACE form, retaining the beginning of each source word, and therefore being close to acronyms, such as *AIDS* or *ELISA* (← *Enzyme-Linked ImmunoSorbent Assay*).

Other blends from the OED used in chemistry are: *carbolineum* 'an oily liquid for preserving wood based on coal tar distillates', from *carbo*(n) + (o)*leum*, with apparently arbitrary insertion of *-in-*, and *napalm* 'a thickening agent consisting of aluminium salts of naphthenic acids and of the fatty acids of coconut oil', from *na*(phthenate) + *palm*(itate). The pattern of *carbolineoum* is AD, but the insertion of the infix *-in-* makes it less prototypical, whereas the pattern of *napalm* (AC) is closer to that of clipped compounds, and more peripheral for blends (§4.3.4).

A very recent name for a mixture is *Cannabutter* [1994] 'butter infused with cannabis, used as an ingredient in cannabis edibles such as cookies and brownies'. Its origin is from *canna*(bis) + *butter*. The resulting blend displays an AW structure, and could then be classified as a less central (but still highly predictable) case of blend, with an overlap helping the first SW recognisability (§4.3.4).

The variability of blends in terms of formal patterns, SWs' recognisability and degree of grammaticalness fits the varied structures of mixtures, whose inhomogeneous nature and different combinations of elements – often in unpredictable ways – is iconically represented by a lexical blend. By contrast, compound names are generally used for names of chemical compounds, whose structure is highly predictable and fixed, and, as a consequence, iconically reproduced by means of a regular word-formation process.

6. Conclusions

This study has investigated the morphological category of blends with the aims of, on the one hand, distinguishing them from the category of regular compounds, and, on the other, finding regularities that allow us to predict, at least partially, their structure and meaning. The study shows that, whereas compounds are formed according to exact word-formation rules, comparable to the rules of hard sciences such as

physics, mathematics, or chemistry, blends are only created according to tendencies and strategies. Unlike compounds, whose linearisation and lexical integrity favour maximisation of recognisability and transparency of the constituent words, blends typically lack lexical integrity – especially in prototypical AD-forms – and, on some occasions, linearisation of the SWs as well (e.g. in the intercalative type).

Recognisability of the SWs and morphotactic transparency may be increased in some patterns which preserve one of SWs intact – e.g. in the AW or WD patterns – and favoured by the overlap, especially in the WW pattern. The latter pattern is the closest to that of compound words, but not to that of clipped compounds, which rather exhibit an AC pattern. Truncation is a property that blends share with other extra-grammatical formations (e.g. clippings, acronyms), while the overlap is typical of blends, and inexistent in compounds, as well as in clippings.

By contrast, morphosemantically, blends behave very similarly to regular – i.e. compositional – compounds. The coordinate type is close to copulative compounds, although there are some specific semantic relationships in blends, which can be summarised as hybridity/fusion, addition, polyvalence, and tautology. The semantic weight of the SWs is the same as in transparent (endocentric) compounds. The coordinate type may be viewed as displaying two semantic heads, the attributive type is instead characterised by a typical modifier-head structure. However, there are different distributions of the two types between blends and compounds. By contrast, from the textual viewpoint, the anaphoric and cataphoric functions of compounds seem to be similarly served by blends, where the first (modifier) SW generally plays a more important role than the second (head) SW for textual coherence.

In the study, different degrees of grammaticalness have also been envisaged to classify blends. The most productive and regular type is that which is analogical with a series or which exhibits a recurrent splinter: e.g. *flexitarian*, with a splinter *-tarian* often used, after secretion, to refer to 'someone with a diet restriction'. This type represents the first step towards the establishment of combining forms. Formally, this type also conforms to the general AD blending rule, and, semantically, it is compositional and regularly displays an attributive relation ('a flexible vegetarian'). Grammaticalness is also in those blends whose recognisability and access is favoured by the overlap and the preservation of SWs: namely, SW_1 (*freegan* ← *free* + *vegan*), SW_2 (*fugly* ← *fucking* + *ugly*), or both (*replicar*), the latter being a compound where haplology has applied. Lower grammaticalness is in AC-forms, whose structure is close to that of clipped compounds (e.g. *soca* ← *soul* + *calypso*), with no overlapping elements, yet, unlike clipped compounds, they represent novel

words which contribute to lexical innovation. Indeed, while in clipped compounds the bases are attested as a full compound, in blends they are not. The lowest degree of grammaticalness is in the intercalative type, where lack of linearisation makes the blends diverge completely from the pattern of regular compounds and derived words.

Unlike other extra-grammatical operations which merely produce new variants to existing word forms, but no new meaning, blends are coined to fill lexical or conceptual gaps, often with a naming function. From the formal and semantic viewpoints, blends suit new names for mixtures, because they represent, iconically, the fusion of hybrid heterogeneous amalgams, alloys, etc. By contrast, compound names are given to chemical compounds according to the chemical nomenclature set of rules developed by the International Union of Pure and Applied Chemistry (IUPAC). This confirms the naming function of blends and suggests that names are often purposefully chosen to reflect the structure or chemistry of the mixture or compound they refer to.

Abbreviations

AB = initial part of Source Word$_1$ + final part of Source Word$_1$
AC = initial part of Source Word$_1$ + initial part of Source Word$_2$
AD = initial part of Source Word$_1$ + final part of Source Word$_2$
AW = initial part of Source Word$_1$ + full Word
B = final part of Source Word$_1$
C = initial part of Source Word$_2$
CD = initial part of Source Word$_2$ + final part of Source Word$_2$
SW(s) = Source Word(s)
SW$_1$ = first Source Word (of a blend)
SW$_2$ = second Source Word (of a blend)
W = full Word
WD = full Word + final part of Source Word$_2$
WW = full Word + full Word

Bibliographical References

Notes

[1] The noun is actually a conversion from the verb *to blend* (1300, OE *blandan*), meaning 'to mix in such a way as to become inextinguishable, mingle, stir up a liquid' (*Online Etymology Dictionary*).

[2] Corpus investigation has shown that 10% of the blends included in the OED are nonce words recorded only in the dictionary, whereas all the others occur in the *Corpus of Contemporary American English* (COCA) and/or in the *News on the Web* corpus (NOW), yet with different raw frequencies (Mattiello 2019).

[3] A *beefalo* is 'a cross-bred livestock animal that is three-eighths bison and five-eighths domestic cow'. Of the two SWs, *beef* is a much more widespread word used to refer to 'any animal of the ox kind', while *buffalo* typically applies to 'the American bison', especially in popular use.

[4] From *Urban Dictionary*. This example is not attested in the OED.

[5] Optimality Theory also weights constraints, which is not the case with preferences in the Naturalness model.

Adams, Valerie 1973. *An Introduction to Modern English Word-formation*. London: Longman.

Arndt-Lappe, Sabine & Plag, Ingo 2013. The role of prosodic structure in the formation of English blends. *English Language and Linguistics* 17. 537-563.

Aronoff, Mark 1976. *Word Formation in Generative Grammar*. Cambridge, MA: MIT Press.

Baldi, Philip & Dawar, Chantal 2000. Creative processes. In Booij, Geert E.; Lehmann, Christian; Mugdan, Joachim; Kesselheim, Wolfgang & Stavros, Skopeteas (eds.), *Morphologie-Morphology: An International Handbook of Inflection and Word-formation. Vol. I*. Berlin / New York: De Gruyter. 963-972.

Bat-El, Outi 2006. Blends. In Brown, Keith (ed.), *Encyclopedia of Language and Linguistics*. Oxford: Elsevier. 66-70.

Bat-El, Outi & Cohen, Evan-Gary 2012. Stress in English blends: A constraint-based analysis. In Renner, Vincent; Maniez, François & Arnaud, Pierre J.L. (eds.), *Cross-Disciplinary Perspectives on Lexical Blending*. Berlin / Boston: De Gruyter. 193-211.

Bauer, Laurie 1983. *English Word-formation*. Cambridge: Cambridge University Press.

Bauer, Laurie 2012. Blends: Core and periphery. In Renner, Vincent; Maniez, François & Arnaud, Pierre J.L. (eds.), *Cross-Disciplinary Perspectives on Lexical Blending*. Berlin / Boston: De Gruyter. 11-22.

Bauer, Laurie; Beliaeva, Natalia & Tarasova, Elizaveta 2019. Recalibrating productivity: Factors involved. *Zeitschrift für Wortbildung / Journal of Word Formation* 1. 44-80.

Bauer, Laurie; Lieber, Rochelle & Plag, Ingo 2013. *The Oxford Reference Guide to English Morphology*. Oxford: Oxford University Press.

Bauer, Laurie 2017. *Compounds and Compounding*. Cambridge: Cambridge University Press.

Beliaeva, Natalia 2014. A study of English blends: From structure to meaning and back again. *Word Structure* 7. 29-54.

Beliaeva, Natalia 2019. Blending creativity and productivity: On the issue of delimiting the boundaries of blends as a type of word formation. *Lexis* 14. <journals.openedition.org/lexis/4004>, <doi.org/10.4000/lexis.4004>.

Bertinetto, Pier Marco 2001. Blends and syllable structure: A four-fold comparison. In Lorente, Mercé; Alturo, Núria; Boix, Emili; Lloret, Maria-Rosa & Payrató, Lluís (eds.), *La gramática i la semántica en l'estudi de la variació*. Barcelona: Promociones y Publicaciones Universitarias, S.A. 59-112.

Cacchiani, Silvia 2011. On unfamiliar Italian lexical blends from names and nouns. *Linguistica* 51. 105-120.

Cannon, Garland 1986. Blends in English word formation. *Linguistics* 24,4. 725-753.

Cannon, Garland 1987. *Historical Change and English Word-formation*. New York / Berlin: Peter Lang.

COCA: *Corpus of Contemporary American English* 1990-2017. <corpus.byu.edu/coca>. Last accessed 08/10/2019.

Connolly, Patrick 2013. The innovation and adoption of English lexical blends. *JournaLIPP* 2. 1-14.

Dressler, Wolfgang U. 2000. Extragrammatical vs. marginal morphology. In Doleschal, Ursula & Thornton, Anna M. (eds.), *Extragrammatical and Marginal Morphology*. München: Lincom Europa. 1-10.

Dressler, Wolfgang U. & Mörth, Karlheinz 2012. Produktive und weniger produktive Komposition in ihrer Rolle im Text an Hand der Beziehungen zwischen Titel und Text. In Gaeta, Livio & Schlücker, Barbara (eds.), *Das Deutsche als kompositionsfreudige Sprache*. Berlin: De Gruyter. 219-233.

Favre, Henri A. & Powell, Warren H. (eds.) 2013. *Nomenclature of Organic Chemistry: IUPAC Recommendations and Preferred Names 2013*. IUPAC Chemical Nomenclature and Structure Representation Division. Cambridge: Royal Society of Chemistry.

Fradin, Bernard 2000. Combining forms, blends and related phenomena. In Doleschal, Ursula & Thornton, Anna M. (eds.), *Extragrammatical and Marginal Morphology*. München: Lincom Europa. 11-59.

Fradin, Bernard 2015. Blending. In Müller, Peter O.; Ohnheiser, Ingeborg; Olsen, Susan & Rainer, Franz (eds.), *Word-Formation: An International Handbook of the Languages of Europe. Vol. I*. Berlin / Boston: De Gruyter. 386-413.

Gries, Stefan Th. 2004. Isn't that *fantabulous*? How similarity motivates intentional morphological blends in English. In Achard, Michel & Kemmer, Suzanne (eds.), *Language, Culture, and Mind*. Stanford, CA: CSLI. 415-428.

Gries, Stefan Th. 2006. Cognitive determinants of subtractive word-formation processes: A corpus-based perspective. *Linguistics* 17,4. 535-558.

Gries, Stefan Th. 2012. Quantitative corpus data on blend formation: Psycho- and cognitive-linguistic perspectives. In Renner, Vincent; Maniez, François & Arnaud, Pierre J.L. (eds.), *Cross-Disciplinary Perspectives on Lexical Blending*. Berlin / Boston: De Gruyter. 145-167.

Hong, Sung-Hoon 2004. Properties of English word-blends: Structural description and statistical distribution. *English Language and Linguistics* 18. 117-140.

Kelly, Michael H. 1998. To 'brunch' or to 'brench': Some aspects of blend structure. *Linguistics* 36. 579-590.

Kemmer, Suzanne 2003. Schemas and lexical blends. In Cuyckens, Hubert C.; Berg, Thomas; Dirven, René & Panther, Klaus-Uwe (eds.), *Motivation in Language: From Case Grammar to Cognitive Linguistics. Studies in Honour of Günter Radden*. Amsterdam / Philadelphia: Benjamins. 69-97.

Kubozono, Haruo 1990. Phonological constraints on blending in English as a case for phonology-morphology interface. *Yearbook of Morphology* 3. 1-20.
Lehrer, Adrienne 1996. Identifying and interpreting blends: An experimental approach. *Cognitive Linguistics* 4,7. 359-390.
Lehrer, Adrienne 2007. Blendalicious. In Munat, Judith (ed.), *Lexical Creativity, Texts and Contexts*. Amsterdam / Philadelphia: Benjamins. 115-133.
López Rúa, Paula 2002. On the structure of acronyms and neighbouring categories: A prototype-based account. *English Language and Linguistics* 6,1. 31-60.
Marchand, Hans 1969. *The Categories and Types of Present-day English Word-formation: A Synchronic-Diachronic Approach*. 2nd edition. München: Beck.
Mattiello, Elisa 2013. *Extra-grammatical Morphology in English. Abbreviations, Blends, Reduplicatives, and Related Phenomena*. Berlin / Boston: De Gruyter.
Mattiello, Elisa 2017. *Analogy in Word-formation. A Study of English Neologisms and Occasionalisms*. Berlin / Boston: De Gruyter.
Mattiello, Elisa 2019. A corpus-based analysis of new English blends. *Lexis* 14. <journals.openedition.org/lexis/3660>, <doi.org/10.4000/lexis.3660>.
Mattiello, Elisa *forthcoming*. Formal, semantic and pragmatic motivations for blending in English. Paper presented at the AIA Conference 'Thinking out of the Box in Language, Literature, Cultural and Translation Studies: Questioning Assumptions, Debunking Myths, Trespassing Boundaries', Padua, 5-7 September 2019.
NOW: *News on the Web* 2010-2018. <corpus.byu.edu/now>. Last accessed 08/10/2019.
Online Etymology Dictionary 2001-2020. Douglas Harper. <www.etymonline.com>. Last accessed 08/10/2019.
OED: *Oxford English Dictionary Online* 1989-2020. 2nd/3rd Edition. Oxford: Oxford University Press. <www.oed.com>. Last accessed 08/10/2019.
Plag, Ingo 1999. *Morphological Productivity: Structural Constraints in English Derivation*. Berlin / New York: De Gruyter.
Plag, Ingo 2003. *Word-formation in English*. Cambridge: Cambridge University Press.
Renner, Vincent 2006. *Les composés coordinatifs en anglais contemporain*. Dissertation. Université Lumière Lyon 2, Lyon.
Ronneberger-Sibold, Elke 2006. Lexical blends: Functionally tuning the transparency of complex words. *Folia Linguistica* 40,1-2. 155-181.
Ronneberger-Sibold, Elke 2010. Word creation: Definition – function – typology. In Franz Rainer; Dressler, Wolfgang U.; Kastovsky, Dieter & Luschützky, Hans C. (eds.), *Variation and Change in Morphology*. Amsterdam / Philadelphia: Benjamins. 201-216.
Ronneberger-Sibold, Elke 2015. Word-creation. In Müller, Peter O.; Ohnheiser, Ingeborg; Olsen, Susan & Rainer, Franz (eds.), *Word-Formation: An International Handbook of the Languages of Europe. Vol. I*. Berlin / Boston: De Gruyter. 485-500.
Thornton, Anna M. 1993. Italian blends. In Tonelli, Livia & Dressler, Wolfgang U. (eds.), *Natural Morphology: Perspectives for the Nineties*. Padova: Unipress. 143-155.
Tomaszewicz, Ewa 2012. Output-to-output faithfulness in the phonological structure of English blends. In Renner, Vincent; Maniez, François &

Arnaud, Pierre J.L. (eds.), *Cross-Disciplinary Perspectives on Lexical Blending*. Berlin / Boston: De Gruyter. 213-232.

Urban Dictionary 2020. <www.urbandictionary.com>. Last accessed 08/10/2019.