The semantics of personal name blends in German and English

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This paper deals with the semantics of 'personal name blends' (PN blends for short), as in *Brangelina*. PN blends are under-researched, and the nature of their constituents, i.e. names, poses a particular challenge for any account of their semantics. In this paper, we show - pace claims in the literature - that English and German PN blends are not a marginal word-formation pattern, that their semantics is underspecified but by no means unsystematic, and that they are in fact similar to certain, putatively better understood coordinative compounds. These findings have implications for how we understand blending within a wider perspective of word-formation systems, both within and across languages.

Based on corpus data, we provide a semantic typology of PN blends and formalize the major types in frames. For the polysemous majority type, we argue for a central meaning component in the form of ascribed social statuses (such as a rivalries, friendships, or being a couple). Making use of Barsalou frames and a Searlian social ontology, we model these social statuses as central frame nodes that are connected via attribute-value chains to the, ontologically more basic, personal names that serve as constituents in PN blends.

Keywords: Word-formation semantics, blending, frame semantics, personal names

1. Introduction

This paper sets out to propose an account of the semantics of blends consisting of two personal names (henceforth 'PN blends') in English and German. Individual examples of PN blends are well-known in

the literature. The form *Brangelina*, for instance, is a classic textbook[2] example, comprised of two personal names, *Brad* and *Angelina*. On the phonological level, the combination follows the general building pattern of lexical blends in English, involving some shortening of the base words in order to fit them into a single phonological word template (e.g. Gries 2004, Arndt-Lappe & Plag 2013, Beliaeva 2014). Very little is known, however, about the meaning of PN blends. Renner (2015) mentions that forms like *Brangelina* "denote a group of individuals" (p. 127), while Mattiello (2013) refers to *Brangelina* as a "nickname" (p. 57). In most accounts, however, PN blends are considered to be no different from non-name blends, which are traditionally assumed to be 'marginal', 'extragrammatical' (Dressler & Merlini Barbaresi 1994, Dressler 2000), 'creative', 'playful', or 'extravagant' (Haspelmath 1999: 1056f.) types of word-formation, and thus clearly outside the realm of canonical morphology. The general expectation, then, is that their meanings are unsystematic or irregular.

Indeed, the English examples in (1) (all taken from the iWeb corpus; see Davies 2018) show that the meanings of PN blends are not compositional in a straightforward way. We will argue in this paper, however, that this does not mean that PN blend meanings are unsystematic or irregular.

(1) (a) **Brangelina** have broken up.

(b) Aniston- also confirmed what felt obvious "that **Brangelina** happened behind her back."

(c) do you think Barcelona FC would have won the champions league without the 100 000 fans who pay over 100 Euros to see them play every weekend, you really think that they can

just get goons from the streets [...] to shout **MESSIDONA** for[3] them and Messi would just score many goals...

The meaning of *Brangelina* in (1-a) comes close to Renner's (2015) definition of "a group of individuals" (p. 127), which corresponds to a coordinative semantic structure with an additive reading (cf. Bauer 2010, Bauer et al. 2013: 479ff. on compounding). The example in (1-b), however, shows that this is only one of several conceivable readings of the blend. As is clear from the predicate *happened*, the referent of the blend is not a combination of the referents of the two constituent names, but Brad and Angelina's romantic relationship, conceived of as an abstract event with a temporal dimension and - crucially, as we will argue - a social significance. Taking (1-b) into account, we see that social significance also plays a role in (1-a), where reference is not so much to two individuals as to the two people in their social role as a couple.

The example *Messidona* in (1-c) illustrates a different type of PN blend meaning. Unlike examples (1-a) and (1-b), one of the constituents functions as the semantic head of the blend: the referent of *Messidona* is (Lionel) Messi. The second blend part, *-dona* (from *Maradona*), functions as a modifier. The relation between the head and the non-head is similative (i.e. 'Messi is like Maradona in some way'), i.e. the modifier determines the meaning of the head.

The examples in (1) also show that there are obvious parallels between PN blend and compound meanings. Bauer et al. (2013: ch. 20) list so-called 'additive' compounds as a "highly productive" (p. 480) subclass of coordinative compounds in English. Interestingly, they explain that this subclass seems especially productive with proper name constituents, which derives names of territories (*Austro-Hungary*,

Alsace Lorraine), of businesses (*Hewlett-Packard*, *AOL Time Warner*)[4], and hyphenated surnames (e.g. "Koslosky-Pappafilovich that the couple might adopt when Ms Koslosky marries Mr Pappafilovich", p. 480). 'Additive' compounds bear obvious resemblance to PN blends like *Brangelina* in (1-a); however, little is known to date about the detailed semantics of such 'additive' compounds (Olsen 2001, Bauer 2008). Interestingly, a compound like *Alsace Lorraine* refers to a political entity (or historically significant region), and its referent thus seems to be complex in a similar way to the one of the PN blend *Brangelina* in (1-a). Reference in both cases is not to a mere sum of two individual entities, but to a more complex underlying concept. We will return to this issue in the discussion section of this paper, showing that our analysis of the semantics of PN blends provides an interesting new perspective also on so-called 'additive' compounds. In this paper, we will reserve the term 'additive' for usages in which the blend refers to two people as a mere plural entity. We will use the term ASCRIPTIVE BLEND as a convenient cover term to refer to PN blends of the semantic type illustrated by the *Brangelina* examples in (1-a) and (1-b). As we will see, ascription of a social status is a core feature of such PN blends and the vast majority of PN blends in German and English are ascriptive.

Blends with semantic structures like those in *Messidona* will be referred to as DETERMINATIVE BLENDS. Similative meanings like that of *Messidona* in (1-c) also have obvious parallels among compounds, where determinative meanings are common (cf. Olsen 2019 for a recent summary of the literature). What seems to make PN blends unusual when compared to determinative compounds is that both the head and the modifier are personal names, yielding a meaning in which the referent of a name (e.g. *Messi* in *Messidona*) is in some way characterised by

means of another name (e.g. *Maradona* in *Messidona*). It is unclear if this[5] configuration exists among compounds as well, as the literature mainly documents the usage of names as modifiers in determinative compounds (cf. e.g. Schlücker 2018, Breban 2018).

The fact that the constituents of PN blends are personal names introduces a very general complication for their semantic analysis. Personal names are commonly assumed to be inherently definite and monoreferential. They are also usually not considered to possess any (lexical) meaning in actual/synchronic language use, their function being restricted to denoting and identifying a single person, without any elements of characterization, description or evaluation (Kalverkämper 1995, Schweickard 1995, Van Langendonck 2007, Anderson 2007, Debus 2012, Nübling et al. 2015; but cf. Motschenbacher 2020 for discussion). The examples in (1) show that, even though the blends are comprised of proper names, their own status as a proper name is not clear. Whereas they are clearly monoreferential ((1-a) refers to a unique couple, (1-b) refers to a unique event, and (1-c) refers to an individual), the blends do involve lexical meanings that either characterize the referent ((1-c)) or characterize social aspects of the collection of individuals referred to by the bases ((1-a,b)).

What happens, then, seems to be parallel to what has been described in numerous studies of the pragmatics of proper names. Formal modification of names leads to their loss of prototypical name status (cf. e.g. Debus 2012, Ewald 2005, 2019, Balnat 2015, Filatkina & Moulin 2018, Ainiala & Östman 2017-06-15, Filatkina 2019). As we will show in this paper, the fact that both constituents are proper names also bears an important analytical advantage. Given that names themselves are devoid of lexical meaning, the core meanings of PN blends necessarily have to

be evoked by the word-formation pattern itself, which are then enriched by contextual information. While introducing intricacies of their own, the study of PN blends arguably provides us with a perspective on word-formation semantics that is largely unclouded by the intricacies of the semantics of the base words.

On the basis of a systematic analysis of 579 authentic German and English attestations of PN blends in context, sampled from social media texts and standard reference corpora, we will argue in this paper that the semantics of PN blends is neither unsystematic nor irregular. As we have already seen in (1), PN blends may have different meanings, and in nearly all cases, their semantics is clearly more than the sum of the referential meanings of their constituent names. We will, therefore, in a first step, provide an empirically founded survey of the basic attested meaning types by systematically classifying our data in terms of their referential properties. This will enable us to see, in a second step, how these meanings are related. We will show that the key to understanding the polysemy of PN blends lies in understanding the more complex semantic structure that underlies these meanings. The model that we will use to formalise this semantic structure is a Frame Semantic approach (see Barsalou 1992, Löbner 2014, Petersen 2007). Specifically, we will argue that the meaning of non-determinative PN blends, which comprises the clear majority of blends in our corpus, involves an additional ascriptive component, which is not overtly expressed by the blend constituents and is best analyzed as part of the meaning of the word-formation pattern itself. These ascriptions are context-dependent and frequently (but not necessarily) eventive. The polysemy can then be captured in terms of different readings that arise from referencing different nodes in the semantic frame instantiated by the word-formation

pattern (Kawaletz & Plag 2015, Plag et al. 2018).

Based on our analysis, we will argue that there is no reason to consider the semantics of PN blends to be irregular, marginal, or extragrammatical. Their apparent idosyncrasy has clear parallels among semantic structures found in compounds in various languages. Pertinent issues, which provide a challenge for the analysis of both compounds and blends alike, become particularly apparent, however, in constructs like PN blends. The reason is that they are composed of names, which are themselves devoid of denotational meanings and, hence, most clearly reveal the semantic processes involved in compositional meanings. The idea that PN blends are not marginal is further supported by the fact that the 579 attestations analysed here comprise only a subset of a far larger corpus (280 types and 2.907 tokens) of different PN blends. The sheer number of different blends alone bears witness to the fact that PN blending is highly productive in English and German, which is unexpected under the marginality assumption.

The paper is structured as follows. We will first introduce our methodology (section 2). Section 3 will provide an overview of the semantic patterns of PN blends and section 4 will present our formal analysis of these patterns. The theoretical implications will be discussed in section 5, which will also conclude.

2. Methodology

2.1. Data

The semantic analysis in this paper makes a basic distinction between determinative (headed) and ascriptive (non-headed) PN blends (see section 1). Among non-headed blends, we find a substantial amount

of polysemy; among headed PN blends, however, we do not. In order to capture the polysemy of non-headed PN blends, we systematically annotated 579 tokens representing 46 different types in their respective corpus contexts. The PN blends analysed in this paper are a subset of an even larger corpus of PN blends, which includes a total of 280 types and 2,907 tokens.

The corpus was created as follows. Starting from an initial subset of well-known celebrity blends, the list of PN blend types was extended through surveys and searches in online discussion forums, fandom spaces, and Twitter. We then searched for usage contexts of the blend types collected in various text corpora. For German, we used the newspaper corpus DeReKo,[1] for English we used iWeb (Davies 2018). However, since standard text corpora generally yielded only a small number of attestations, other searches were performed using Google and the 'Advanced Search Mode' on Twitter.[2] The corpus search was followed by manual inspection of the attestations retrieved. Pertinent occurrences were then extracted together with their sentence contexts. Note that our data do not allow for any type of quantitative analysis or language comparison between German and English as they have been extracted from different textual domains.

The German data contain PN blends that are based on the names of real people and celebrities from politics, show business and sports.

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[1] DeReKo = Deutsches Referenzkorpus (The Mannheim German Reference Corpus; https://www1.ids-mannheim.de/s/corpus-linguistics/projects/corpus-development.html?L=1; 14.12.2020).

[2] For German, for instance, roughly 1/3 of the total collected data are from DeReKo. Furthermore, the newspaper corpora contain contexts in which the PN blends are often used metalinguistically, i.e. they are discussed as name creations by language users, their constituents and meanings are often explained directly in the text, cf. example (2) below. Their novel or even ad hoc-character is often signalled by quotation marks.

The English data has been mostly extracted from fandom spaces and contains many so-called 'ship names', i.e. fictional pairings of figures from book, TV, or movie series; they are fictional in that the referents of constituent names may be fictional characters and/or in that the relationship implicated is not real but imagined (cf. e.g. the definition of the headword 'ship' in the Oxford English Dictionary for further explanation). For the analysis of non-headed PN blends, we only considered contexts in which PN blends are arguments of predicate terms, mostly verbs. Blends used without a context (e.g. as hashtags) or in a context in which the blend functions as a modifier do not allow for any conclusions with regard to the semantics of PN blends and were therefore excluded from the analysis.

2.2. Semantic classification

As already laid out above, the first step in our semantic analysis comprised drawing a basic distinction between DETERMINATIVE (headed) and ASCRIPTIVE (non-headed) PN blends. Determinative blends, in this sense, are blends whose referents are identical to the referent of one of their constituents. This constituent can be the first constituent (as in *Messidona*, 'Messi, who is like Maradona') or the second constituent (as in *Napozy*, 'Sarkozy, who is like Napoleon'). Whereas determinative blends are all similative in meaning, ascriptive PN blends are semantically less homogeneous. We, therefore, used an inductive strategy to determine their readings on the basis of a systematic annotation of the 579 corpus observations with their contexts in our sample. Expressions that predicate about the PN blends in our sample were first identified and then summarised into larger categories, which correspond to a very basic

semantic ontology (partially adapted from Masolo et al. 2003, Metzger et al. 2019). This ontology was thus based on the referential categories of our blends.

Our ontology makes a first basic distinction between the categories of EVENT and OBJECT, where EVENTS are distinguished from OBJECTS by having a temporal dimension. OBJECTS, in turn, were sub-classified into HUMAN and INANIMATE objects. Below this very abstract ontological level, further distinctions were necessary. For example, most but not all of the HUMAN blend referents in our database denote the two people referred to by the constituent names (e.g. *Brangelina* referring to Brad and Angelina), showing that our category HUMAN has in fact at least two subcategories, which we called HUMAN COUPLE and HUMAN THIRDPERSON, respectively. Like HUMAN, also the category EVENT turned out to have further subclasses: CONCRETE SINGLE EVENT and ABSTRACT EVENT.

Let us consider an example to understand how classification worked. The PN blend *Kimye* (Kim (Kardashian) + Kanye (West)) occurs with verbal predicates like *break up*, *date*, *marry*, *spend* (*Christmas*), among others, in our database. The fact that all these verbs subcategorise for human AGENT arguments justified our classification of pertinent readings as HUMAN. However, *Kimye* also occurs with predicates like *last*, *happen*, and *die* (in the sense of 'be over'), on the basis of which pertinent readings were classified as EVENTIVE.

In the following section, we will introduce our typology of the most frequent PN blend meanings in our data. By discussing a range of examples, we will carve out the differences between these types of meaning.

3. The semantics of PN blends

3.1. Type I: Determinative blends

As mentioned in sections 1 and 2, a relatively small group of PN blends has a modifier-head structure. These blends are determinative in nature and show a similative meaning, as illustrated in examples (2)-(4):

(2) Wer immer seinem Gegner eins überbraten möchte, vergleicht ihn - oder sie - mit Hitler. [...] Hillary firmiert schon mal als "**Hitlery**"... (DeReKo)
'Anyone who wants to clobber his opponent compares him - or her - with Hitler [...] Hillary sometimes goes under the name of Hittlery...'

(3) Der jetzige Drei-Käse-hoch-Präsident Frankreichs **Napozy/Sarkoleon** kam mit dem Versprechen an die Macht, den bürgerkriegsähnlichen Verhältnissen in manchen französischen Großstädten ein Ende zu machen.[3]
'France's current pint-sized president Napozy/Sarkoleon came to power with the promise to put an end to the civil unrest in several French cities.'

(4) Out there, they hailed each other. "I always call him '**Maradonny**'," Nouri said. "At first I didn't know he was that technically skilled. But he is also always there during transition when we lose the ball, even when he is tired."[4]

[3] http://ansorde.blogspot.com/2008/10/
[4] https://www.theguardian.com/football/2020/sep/04/talent-and-tragedy-mark-maradonny-van-de-beek-road-to-manchester-united-nouri

The referent and therefore the semantic head of *Hitlery* in (2) is Hillary[12] Clinton; the first base name, *Hitler*, functions as a modifier of the head. As is explained in the extract cited, a typical attestation of a PN blend in a German newspaper commentary text, the relation between the head and the non-head is similative. The meaning of the blend can be paraphrased as 'Hillary (Clinton) is like Hitler'. Importantly, however, a blend as such does not specify the basis of comparison, and it is either contextual or world knowledge that we draw on for specification in this regard. In the above context, a comparison with Hitler appears to be a particularly effective tool for defaming Hillary Clinton, without spelling out in which respect she is likened to Hitler.

A derogatory connotation is also attested for the PN blends *Napozy/Sarkoleon* in (3). The blends are based on the comparison of the former French president Nicolas Sarkozy with Napoleon Bonaparte, who are/were both rather short in size and known for their big ambitions and promises. The metaphorical noun phrase preceding the blend *Der jetzige Drei-Käse-hoch-Präsident Frankreichs* makes the point of comparison more explicit. *Napozy* and *Sarkoleon* both clearly refer to Nicolas Sarkozy and mean 'Sarkozy is like Napoleon'. Unlike lexical non-name compounds, headed PN blends are thus not always right-headed but show flexibility with regard to the position of the head. The ordering of the two constituents seems to be conditioned by other factors, most likely phonological ones (see Arndt-Lappe & Plag 2013 on the relevance of phonology in the formation of lexical blends).

Maradonny in example (4) is further proof of the flexibility of determinative PN blends. The head *-donny* refers to the football player Donny van de Beek and the modifier *Mara-* to the former football player Diego Maradona. The blend is right-headed and roughly means

'Donny van de Beek is like Maradona, his technical skills are as good as Maradona's'. The comparison to Maradona as a great footballer is not restricted to the combination with the name Donny van de Beek. In our corpus, the blend *Messidona* also has a similative meaning (see example (1-c)), with the left constituent *Messi-* as the semantic head and the righthand constituent *-dona* as a modifier. In this case, the comparison is based on the fact that Messi (potentially) scores the same amount of goals as Maradona.

Finally, *Maradonny* and *Messidona* allow for another interesting observation. It has been pointed out in the literature (e.g. Beliaeva & Knoblock 2020; Filatkina 2019) that name modifications are particularly productive when it comes to the denotation of negative concepts and/or the semantization of negative features of name bearers. However, our data suggest that PN blends are not restricted to negative contexts only. We will return to this point in section 3.2.

3.2. Type II: Ascriptive blends

The vast majority of the PN blends in our data does not have a modifier-head structure. Similarly to what has been proposed for coordinative compounds, both blend constituents are equally important semantically in such cases. Unlike in compounds, however, the meaning of the blend is usually not a combination of the meanings of its constituent parts. We have already touched upon this point with the help of the example (1-b) above. In what follows, we will argue that the meaning of such PN blends contains additional components which are not overtly expressed by the individual blend constituents and evolve only through their combination. The bearers of the constituent names, the discourse they are involved

in, and the language users' knowledge about this discourse are of key importance for the creation and decoding of meaning. As will be shown below, some of our PN blends cease to be names as they do not refer to any person/name holder but rather denote abstract concepts.

HUMAN readings

The probably most expected meaning of PN blends is a form of group reading as illustrated in (5):

(5) (a) Neuer trägt Thrombosestrümpfe, Jogi schnüffelt noch mal und **Schweinski** ist wieder vereint: Das sind die Social-Media-Highlights zu Deutschland gegen die Slowakei.[5]
'Neuer wears elastic stockings, Jogi is sniffing again and Schweinski are back together. These are the social media highlights of Germany against Slovakia.'

(b) ...it still Amazing [sic] that **Bellarke** have yet to have any kissing/sex scene or even say I love you and still you feel their love so strong...[6]

In (5-a), the last names of the German football players Bastian Schweinsteiger and Lukas Podolski are the constitutive parts of the PN blend *Schweinski*. The blend is based on the knowledge that Schweinsteiger and Podolski used to be (conceived of as) inseparable friends in the German national team. In (5-b), *Bellarke* goes back to Bellamy (Blake) and Clarke (Griffin), two fictional characters in various TV series and books, who are engaged. In examples of this type, the meaning is

[5] https://www.spiegel.de/sport/fussball/em-achtelfinale-best-of-social-media-a-1099891.html
[6] https://twitter.com/Brie_lle_/status/1188992257854234629

additive in a sense, but what seems more crucial for language users is to underline the unity of the two respective name holders. Therefore, the meaning is not just a combination of the two constituent parts; it is more complex and can be paraphrased as 'X and Y as a couple'.

The coordinative types of readings just described are the most frequent but not the only readings that fall into our ontological category of HUMAN referent readings. Consider the examples in (6).

(6) (a) I hope Kanye makes Kim his princess one day and they have lots of cute little **Kimye**'s [sic] running around.[7]

(b) i'm just so tired of being a **bellarke** where's the quit button[8]

The meaning of *Kimye* in (6-a) is not additive (i.e., not 'Kanye West + Kim Kardashian') but clearly refers to an external referent, namely their children. Similarly, *Bellarke* in (6-b) does not refer to the pair 'Bellamy (Blake) + Clarke (Griffin)' but to the first-person writer of the tweet as a fan of this couple.

EVENT readings (SINGLE OR ABSTRACT)

The non-headed PN blends in this group do not refer to people or name bearers but are used in order to refer to concepts with an event-type character. The event can be a single event or and abstract event. Consider the examples in (7), in which the (type of) event reading is contextually explicated via the underlined linguistic material:

(7) (a) **Jelena** has to happen again it makes my heart hurt[9]

[7] https://twitter.com/LovingKhloeKO/status/284047349976813568
[8] https://twitter.com/morlevs/status/1262099524815896583
[9] https://twitter.com/mendesmuggles/status/682325626724966401

(b) Frankreichs neuer Präsident setzt auf **Mercron**, die deutsch-[16]
französische Freundschaft als Motor für die EU und die Welt.
(DeReKo)
'France's new president is relying on "Mercron", the German-French friendship as the motor of the EU and the world.'

(c) The article argues that with Angela Merkel and Matteo Renzi emerging as the big winners from the European elections, cooperation between the German and Italian leaders ('**Merkenzi**') stands the best chance of bringing about real reform at the European level.[10]

All attestations in (7) are of the abstract eventive type. In (7-a), *Jelena* is based on the singers Justin Bieber and Selena Gomez, who had a very public on-off romantic relationship in the 2010s. The attestation refers to this relationship and the tweet wishes for both celebrities to start dating again, i.e. for the relationship to 'happen again'. The predicate *happen* indicates that reference is made to an event. *Mercron* in (7-b) is based on the last names of Angela Merkel and Emmanuel Macron. Similarly, *Merkenzi* in (7-c) combines the last names of Merkel and Italian Prime Minister Matteo Renzi. Reference is to the friendship in (7-b) (cf. underlined *Freundschaft*) and to the cooperation in (7-c) between the countries and their leaders, respectively. Just like romantic relationships, friendships and cooperations are classified as abstract event types in our typology. For example, friendships and cooperations have a temporal dimension (e.g. they can have a start/end as in *the cooperation began three years ago*) and have dynamic features (e.g. proceed in certain ways

[10] https://blogs.lse.ac.uk/europpblog/2014/06/06/brussels-blog-round-up-31-may-6-june-juncker-negotiations-spanish-monarchy-and-is-merkenzi-the-new-merkozy

as in *the friendship went well*).

PN blends of this type comprise the largest semantic group in our corpus. They are peculiar not only because of their loss of name status but also because of their pragmatics. As mentioned above, the literature regards name modifications as particularly productive in the domain of the verbalization of negative concepts (Beliaeva & Knoblock 2020, Filatkina 2019). Our data suggest that in both English and German, PN blends of the type ABSTRACT EVENT do not support this observation. Positively connotated concepts like LOVE, FRIENDSHIP, PARTNERSHIP, COOPERATION, ROMANCE and alike are used for the creation of PN blends in the same way as negative domains.

Far less frequently, more concrete, single events form the basis for PN blends. Consider the example in (8):

(8) Das Duell der beiden Oldboys Roger Federer und Rafael Nadal, von Bresnik auch gerne **Fedal** genannt, hatte schon etwas Magisches und war beste Werbung für den Tennissport. (DeReKo)
'The duel between the two veterans Roger Federer and Rafael Nadal, which Bresnik likes to call Fedal, had something magical about it and was an excellent advertisement for the game of tennis.'

Fedal in (8) is based on the personal names of the tennis players Roger Federer and Rafael Nadal. As is clear from the context, *Fedal* refers to a concrete event, namely, an important match they played in 2017 (cf. underlined *Das Duell*). As in the abstract event attestations discussed above, *Fedal* refers to an event, not a person. It thus no longer has personal name status, despite the fact that it is used metalinguistically in a naming context.

OBJECT-ARTEFACT readings

Blends in this group refer to neither events nor to humans, but to artefacts. They are rare, particularly in the German data. Consider the example in (9):

(9) i drew a **kamisero** somewhere i gotta find[11]

In this tweet, *kamisero* refers to a drawing of Denki Kaminari and Hanta Sero from the anime show *My Hero Academia*. Although the fanart at hand is probably set in a romantic context, the blend does not refer to the characters or to the romance as such.

METAPHOR readings

Our final group of examples illustrates a semantic shift of another kind. As illustrated in (10), we are dealing neither with additive nor with different types of coordinative meanings but rather with a metaphorical usage of the PN blends:

(10) (a) Ist **Cronuthida** das neue **Brangelina**? Auf Instagram postete das Model bereits vergangenes Jahr um die Weihnachtszeit Bilder der beiden [...][12]
'Is Cronuthida the new Brangelina? Already around Christmas last year the model posted pictures of the two of them on Instagram [...]'

(b) okay jason time to pull a big **stydia** and make **bellarke** endgame in the last season[13]

[11] https://twitter.com/eichibuny/status/791450045413519361
[12] https://www.instyle.de/stars/cro-gntm-anuthida
[13] https://twitter.com/b99bellamy/status/1158088416078303233

Example (10-a) contains two PN blends. First, *Cronuthida* refers to the possibility (of) a romantic relationship between Germany's Next Top Model candidate Anuthida Ploypetch and the Rapper Cro. Unlike in the examples in (1), *Brangelina* in (10-a) does not (solely) refer to Brad Pitt and Angelina Jolie as a couple or the abstract concept of their relationship. Rather, their relationship is projected metaphorically onto the relationship between Anuthida Ploypetch and Rapper Cro. In other words, the romantic relationship between the latter is compared and considered similar to the romantic relationship between Brad Pitt and Angelina Jolie. This similarity is crucial for the metaphorical extension.[14]

Example (10-b) is also based on the similarity between two romantic relationships. The first is Stiles Stilinski and Lydia Martin's relationship (referred to as *stydia* here) from the TV show Teen Wolf, or, more precisely, the relationship that fans hoped they would have by the end of the show. The second, *bellarke*, refers to a similar relationship (with the characters Bellamy Blake and Clarke Griffin from the tv show *The 100* as bases), which fans have hoped would become romantic since the start of the show. In (10-b), the writer hopes that, similar to *stydia*, *bellarke* will end up in a romantic relationship at least by the end of the show, where 'endgame' that two characters will start dating and remain in a relationship until the end of the show.

[14] Cf. e.g. Thurmair 2002 for a detailed study of metaphorization processes in constructional phenomena involving personal names.

4. Formal analysis: decomposing PN blends in frames

As shown in the preceding section, PN blends come with a clearly construction-specific semantics, allow for a variety of related readings, and heavily rely on extra-linguistic knowledge. A decompositional, formal framework is needed to make transparent how these different domains of meaning are concretely related to each other. This framework should allow for explicitness regarding the division of labor between word-formation process and extra-linguistic knowledge sources, for flexibility regarding underspecified meaning components, and for a mechanism that traces the connection between different readings.

In this section, we propose formalizations for the semantics of the major interpretational patterns described above. We will model both individual attestations, including contextually spelled out information, and generalizations over such attestations in the form of lexeme formation rules (see Bonami & Crysmann 2016 for an overview). The framework used for modeling are Barsalou frames (see Barsalou 1992) and their adaptation to linguistic semantics (see Kallmeyer & Osswald 2013, Löbner 2014, Petersen 2007). Barsalou frames are recursive typed-feature structures that offer a general format of knowledge representation, including linguistic knowledge. As will be shown in the following, frames in this sense are particularly well-suited for modelling the phenomenomen at hand: they allow for specifying embedded restrictions on lexical classes, i.e. decompositional semantics, and for representing constraints derived from contextual information or world knowledge in a unified format. Frames provide a further advantage for the formalization of, in particular, the class of ascriptive PN blends. The ascription of

$$\mathrm{e}\left[\begin{array}{l} \textit{eating\_activity} \\ \textsc{agent}\ \boxed{1}\left[\begin{array}{l} \textit{man} \\ \textsc{hair\_color}\ \textit{blond} \end{array}\right] \\ \textsc{theme}\ \boxed{2}\ \textit{pasta} \end{array}\right]$$

Figure 1: Frame representation as AVM for *The blonde-haired man is eating pasta*.

social meaning components that go beyond names is central to understanding this class, and we will illustrate that the main semantic types described in section 3.2 build on each other, cover indispensable subparts of one complex frame, and thus cannot be understood independently of each other.

Let us very briefly introduce the framework before we proceed to modeling PN blends. We will represent frames as attribute-value-matrices (AVMs) as used in other frameworks (such as HPSG or Sign-based Construction Grammar; see Pollard & Sag 1994, Sag 2012). Figure 1 depicts an AVM for the frame semantic structure of *The blonde-haired man is eating pasta*. Feature structures include a finite set of types represented in italics (e.g., *eating_activity*, *man* etc.) and a finite set of attributes represented in small caps (e.g., AGENT, THEME etc.). Attributes are partial functions from type node to type node, i.e. they return unique values for attributes unique to their possessor.

Figure 1 represents an eventuality 'e' of type *eating_activity*, with the typical participants of such an event as its attributes, here AGENT and THEME. The frame is recursive, as values are types themselves that can have attributes. This can be seen in the functional chain [*eating_activity* $\longrightarrow$ AGENT : *man* $\longrightarrow$ HAIR COLOR : blonde]. Frames allow for structure sharing, and type nodes can be accessed via more than one attribute or relation. Structure sharing in AVMs is indicated by coindexation via

boxed numerals. The configuration of admissible type-attribute clusters gives rise to a type signature, a taxonomy formally constraining frames. In particular, the signature restricts the set of admissible frames, orders types hierarchically, and states appropriateness conditions on possible attributes for a type and possible values for a given attribute (see Petersen 2007 for details). Figure 1, for example, instantiates the broader constraints that an *eating_activity* is a subtype of the type *activity* and that it takes (at least) two participants. Similarly, the example reflects that *blond* is an admissible type of the attribute HAIR_COLOR.

Let us now move on to the modelling of the two major classes of PN blends identified in section 3, determinative and ascriptive blends. We will introduce further necessary notions and devices of the formal apparatus, in particular elements needed for capturing morphological phenomena, along the way.

4.1. Determinative PN blends

As shown in section 3.1, determinative PN blends allow for head placement on either the first or the second constituent. Moreover, they are always similative, while the domain of similitude remains underspecified in a given PN blend and thus in need of contextual disambiguation. This is again illustrated with the examples in (11), where *Sarkoléon* establishes similitude between Sarkozy and Napoléon either along the lines of body height and social status in (11-a) or along the lines of a preference for luxury in (11-b) (both from DeReKo):

(11) (a) Seither nennt ihn das Satireblatt «**Sarkoléon**». [...] Beide sind klein gewachsen [...] und beide sind gesellschaftliche Parvenus, Anhänger der «Meritokratie»...

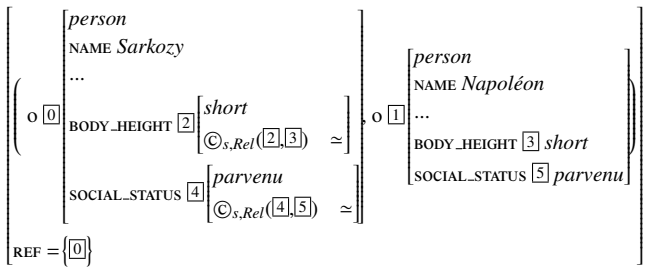

Figure 2: Frame for the similative use of *Sarkoléon* in example (11-a).

'Since then, the satirical magazine has called him "Sarkoléon". Both are short in stature and both are parvenus, adherents of "meritocracy".'

(b) Frankreichs neuer Finanzminister Nicolas Sarkozy [...] bevorzugt den Luxus. [...] Sarkozys hochherrschaftliches Auftreten brachte ihm nun den Spitznamen „**Sarkoleon**" ein.
'France's new finance minister Nicolas Sarkozy has a taste for luxury. Sarkozy's aristocratic demeanor has now earned him the nickname "Sarkoleon".'

In what follows, we systematically capture these core semantic ingredients, i.e. a general similative semantic relation, the domain variability of this relation, and the variability of headedness, in frame formalizations. Figure 2 illustrates the frame representation we assume for the example in (11-a).

The whole of figure 2 can be read as the semantic representation of a similative use of *Sarkoléon*. The large parentheses enclose two connected frames in a multi-AVM, i.e. we represent one complex frame with two source nodes (cf. e.g. Francez & Wintner 2012). These two frame parts represent (presupposed and/or contextually specified)

knowledge about the referents of the two blend constituents, i.e. the two name bearers Sarkozy and Napoléon, respectively. These are the two objects ('o') of type *person* and both are specified via functional attributes for their names. The referential attribute REF below the multi-AVM states which part of the complex structure is referenced in a contextually specified use of a PN blend (cf. Plag et al. 2018). Here, the attribute references $\boxed{0}$, indicating that the frame referent is Sarkozy.

Now, how do we integrate the contextual information on how these two *person*-entities are connected? In short, the connection is established by comparing values for particular attributes in both person frames. To this end, we build on Löbner's (2017) use of 'comparators', introduced as the attributes '©s,Rel($\boxed{2}$,$\boxed{3}$)' and '©s,Rel($\boxed{4}$,$\boxed{5}$)' here. Comparators are two-place attributes that compare different values of a given attribute and output a comparison value out of a range of different possible values. In the notation used here, '©' stands for 'comparator', 'Rel' for 'relation', and 's' for 'sort': thus, a comparator establishes a relation between elements of the same sort, where sorts are exclusive partitions of the universe such as colors, materials, heights, temperatures etc. (see Löbner 2017: 103 for details). The values the comparators take as input are co-indexed here.[15] Reflecting the key ingredient of the similative semantics, the comparison value in this blend construction is always ≃, i.e. similar or equal. In Figure 2, the comparators connect the values of the two attributes BODY_HEIGHT and SOCIAL_STATUS, i.e. *short*[16] and

[15] In principle, '©s,Rel($\boxed{2}$,$\boxed{3}$)' and '©s,Rel($\boxed{4}$,$\boxed{5}$)' could be repeated in the respective attributes in the Napoléon frame. This would be redundant, however, as co-indexation within the comparators themselves declares which values are to be compared.

[16] This value is a shortcut to a more complex semantic representation of a scalar attribute-value pair such as BODY_HEIGHT : *short*. This representation, however, is left

parvenu, respectively, and outputs that they are similar/equal.

Building on the informal discussion in section 3 and the proposed formalization above, let us now abstract away from individual examples and formulate a rule for similative blends. Lexeme formation rules, as made use of by authors in constraint-based formalisms such as HPSG and SBCG (see Bonami & Crysmann 2016, Koenig 1999, Riehemann 1998, Sag 2012), establish relations between some input, e.g. morphological base(s), and some output, e.g. a complex lexeme. They are derived via generalizations over attested examples and, by extension, over the lexicon. For the case at hand, the use of the term 'lexeme' as opposed to, for example, 'name' possibly needs clarification. Although (similative) PN blends are typically still mono-referential, we assume the respective complex words to clearly have lexeme status given their indisputably meaning-bearing nature. In contrast, treating the respective bases, i.e. clear-cut names, as lexemes in figure 3 is possibly controversial; we do not, however, attach any theoretical commitment to this (essentially terminological) choice.

The lexeme formation rule we assume for similative PN blends is provided in figure 3. The rule is modeled as a frame-based attribute value matrix, i.e. it uses the same general format that was introduced for the semantics of the attestation in figure 2 above but goes beyond semantic information (see Andreou 2017, Plag et al. 2018). Thus, it can be thought of as underspecified lexical entry with an attribute for morphological bases.

The lexeme formation rule in figure 3 describes an element of type

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out here as it would not inform the semantics of the word-formation patterns we are interested in in this study.

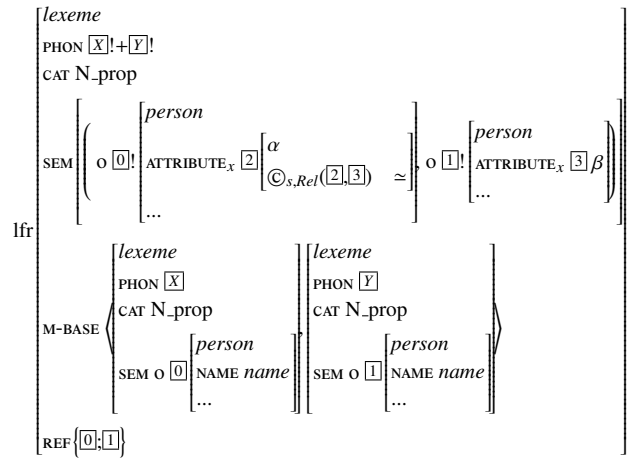

Figure 3: Underspecified lexeme formation rule for similative name-name-blends.

lexeme. It has attributes for its phonology (PHON), its syntactic category information (CAT), and its semantics (SEM). Moreover, by their very nature, such rules depict complex lexemes: the assumptions here are word-based (see e.g. Bauer et al. 2013:ch.29) and the morphological bases are introduced as an attribute M-BASE of the complex lexeme itself. Finally, the lexeme allows for different referents, and the range of possible referents is introduced via the attribute REF.

As PN blends take free forms as bases (i.e. names in the cases at hand), the list of these morphological bases includes lexemes in roughly the same format and largely including the same attributes as the complex form. The notation via angle brackets states that this is not one complex frame, but a list of different, as of now unconnected lexeme frames. With respect to its phonology, our rule states that the complex lexeme takes the values of the bases' PHON-attributes, X and Y, and outputs them as the concatenation of their altered versions X! and Y! (this, obviously, is

a highly simplified shortcut to the phonology). Also, for all attestations in this interpretational pattern, syntactic category information is directly inherited from the bases: all bases, i.e. both head and non-head, are proper names and so are all complex forms.

Let us now comment on the semantic configuration in our lexeme formation rule in figure 3. Regarding the complex lexeme itself, the SEM-attribute and its underspecified value are a generalization over the semantics of the different similative PN blends discussed above (see also figure 2). Semantically, this is a complex frame with two source nodes, both of which are typed as *person* and both take the same ATTRIBUTE$_X$. Being attributes of the same type (for example, HEIGHT or SOCIAL STATUS) allows for comparison, and our rule states that the respective values of these attributes, α and β, are being compared via '©s,Rel(2,3)' and that the comparator outputs ≃. The three dots ('...') in the representations of 0! and 1! indicate that there may be more attribute-value pairs that establish a similative relation between the two name bearers.

The way figure 3 connects this configuration to the semantics of the respective base lexemes is in need of comment. First of all, the semantics of the complex lexeme inherits from the semantics of the morphological bases: the partial co-indexing notations 0-0! and 1-1! indicate that these are the same elements referentially. At the same time, the !-notation (cf. Andreou 2017, Sag 2012) states that the elements in question are the same except for the stated differences. Thus, figure 3 assumes that the person 0! inherits everything from person 0, including the NAME attribute and its value. At the same time we ensure underspecification of how the referents of two morphological base are compared by not including every possible attribute and its respective value in the morphological base. Via partial co-indexing, the

rule thus remains flexible regarding the locus of knowledge about the attributes to be compared; either both attributes and values are introduced contextually, as just sketched, or they are introduced as part of the bases, which may be suitable for certain characteristics of a person that can be taken as general knowledge.

Finally, the REF attribute allows for different specifications of the frame referent, and thus the semantic head of the lexeme, in a given use of the form. As shown in section 3.1 above, similative PN blends can be either semantically left- or right-headed. The rule's REF attribute provides the necessary flexibility via the specification of its referential value space ({ 0 ; 1 }), i.e. the set of possible referents (cf. Kawaletz & Plag 2015, Plag et al. 2018).

In summary, the formalization of determinative blends presented here makes crucial use of the simple yet powerful device of comparators in the sense of Löbner (2017). Capturing the exclusively similative semantics, these comparators are employed as connectors between two person frames, inherited from the morphological bases, that are contextually enriched with certain attributes that serve as the domains of comparison. The proposed lexeme formation rule reflects both these inheritance mechanisms and the necessary underspecification of elements that need spelling out in concrete attestations.

Importantly, a PN blend is not similative by virtue of the nature of its constituent parts, but is assigned a similative semantics by the speaker. This can be shown with the examples in (12).

(12) (a) Hold ur horses there all u repub cowboys (and cowgirls), and think for a moment - Get rid of Obama - Then u get **Obiden**. From Marxist to craziest. (COCA)

(b) Thanks **Obiden** for showing America the true meaning of bromance.[17]

In (12-a)., *Obiden*, i.e. (Barack) Obama and (Joe) Biden, is clearly used with a similative meaning: its referent is Biden who is described as as crazy as Obama is Marxist. In contrast, (12-b) is ascriptive, as the speaker assigns *Obiden* the meaning of an abstract event, i.e. a bromance, with neither Obama nor Biden as the blend referent (see section 3.2). We will now move on to the modeling of such ascriptive cases.

4.2. Ascriptive PN blends

As shown in section 3 above, ascriptive PN blends come in a variety of different semantic guises, but do not exhibit a modifier-head-structure. Unlike the determinative structures just formalized, these blends neither encode their first nor their second constituent as semantic head. Our main claims in this section are that (most of) the semantic types of ascriptive blends described in section 3.2 are best understood as semantically and conceptually depending on each other and that this interdependence can be formalized within one complex frame structure. Underspecified nodes in the frames are systematically related to each other and different readings arise via referencing these different nodes. Building on Searle (1995, 2010), we will argue for an analysis of these PN blends that is grounded in the interplay of a basic ontology and a social ontology (see also Anderson 2018, Anderson & Löbner 2018).

The semantic types we will primarily consider are the HUMAN, the SINGLE EVENT, and the ABSTRACT EVENT types (see section 3.2). These

[17] www.reddit.com/r/ThanksObama/comments/5fmeac/thanks_obiden_for_showing_america_the_true/

types are particularly suited for illustrating the frame skeleton we assume, as they attach to different nodes that are always present in ascriptive PN blends, rely on each other, and thus form a complex frame whose subcomponents cannot be understood independently of each other. We will neglect ship names, i.e. the fictional pairings of characters from novels, movies etc., as well as metaphor and artefact readings here. Although we will not model them, we believe that all of these categories work in essentially the same way as other, arguably more basic ascriptive blend types. However, the imaginative component of ship names and the metaphorical and/or metonymic shifts of metaphor and artefact readings all necessitate additional semantic procedures. The fundamental semantics of ascriptive PN blends is already fairly complex, and we will content ourselves with modeling the basic structure and leave the neglected semantic types to further research.[18]

We will make use of three tokens of the same blend type for both illustration and formalization: *Fedal* with the last names of tennis players Roger Federer and Rafael Nadal as constituents. As shown by the examples in (13), *Fedal* is multiply polysemous and attested in at least three distinct readings corresponding to the semantic types in square brackets (all from iWeb):

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[18] Most likely, ship names require some form of embedding operation of the (lexical) semantic frame under a form of modality operator. As the specification of a referential node is one of the crucial ingredients of our frame representations, a further specification of possible worlds may also be necessary. In contrast, metaphor and artefact readings appear to come with the same semantics as other ascriptive types and then undergo the common meaning shifts of metaphor and metonymy, respectively. For example, *i drew a kamisero* (see example (9)) metonymically refers to an artefact, i.e. a drawing of two anime characters in a romantic context by means of the PN blend. Making use of a frame architecture, the shift appears to be essentially one from a node referring to the ascriptive status (i.e. a romance) to a node referring to the medium depicting the conceptual content of this status (see also Löbner 2013: ch.12).

(13) (a) Novak had serve issues that year and **Fedal** really weren't his[31] problem in slams. [HUMAN type]

(b) No, you're NOT a bad tennis fan if you didn't want **Fedal** to happen. (Many in the media might think you are.) Similarly, the magnitude of Sundays occasion doesn't mean that one cant want a Nadal-Djokovic Roland Garros final just as much. [SINGLE EVENT type]

(c) This is what the Fedal cynics especially the wounded Federer fans miss about each re-enactment of this rivalry. The foremost point to remember about **Fedal** and the two men at the heart of it is that in 2003, mens tennis was not in a very good place. [ABSTRACT EVENT type]

In the following, we will argue that these different uses of *Fedal*, and ascriptive PN blends in general, are connected via a speech community's ascriptive processes. The key to understanding how the readings in (13) are related to each other are found in our assumption of a structured ontology that includes both basic, non-social as well as social entities. Following Searle (1995; 2010), we take different yet connected ontological layers to be ubiquitous. For example, under certain conditions a scrap of paper (basic) is ascribed the status of a banknote (social). Such conditions may include being issued by a certified institute, exhibiting safety features such as watermarks etc. Ascriptive processes are not confined to the domain of artefacts. For example, a man can be ascribed social roles such as father or husband if appropriate conditions are met. Moreover, ascription extends to events: thus, a handing-over event of a scrap of paper may count as a paying event in case the scrap of paper is assigned the status of a banknote. The mapping from more basic objects

to higher order social objects is borrowed from Searle's (1995:ch.2; 2010:ch.5) formula "X counts as Y in C". Thus, returning to the above example, a scrap of paper (X) counts as a banknote (Y) in the context of a certain society and the fulfillment of certain conditions (C) (such as being issued by by a certified institute etc.).

Following the elaboration in Anderson & Löbner (2018) and Anderson (2018), we systematically relate ontological layers via two reverse mapping mechanisms. These mechanisms are schematically illustrated in figure 4-a). First, 'constitution under circumstances' (c-CONST) maps basic, non-social individuals to social individuals and basic, non-social events to social events. The reverse relation we assume is 'implementation' (IMPL): every social entity (be it individuals, events etc.) is implemented by an ontologically more basic entity. Moreover, social individuals are participants of social events, while basic individuals are participants of basic events. This is illustrated via the horizontal arrows that connect events of either ontological level to event participants of the same level via the underspecified thematic roles θ_s (where 's' stands for social) and θ_b (where 'b' stands for basic). Figure 4-b) translates the underspecified schema in 4-a) to the banknote example from above.

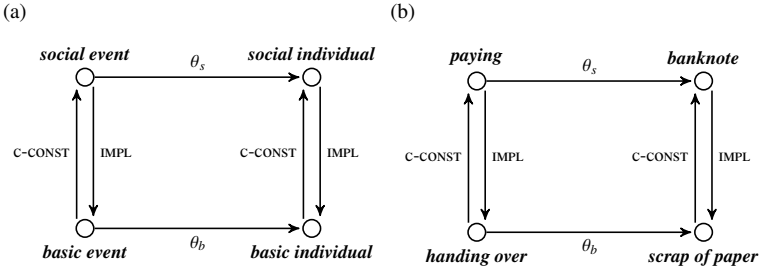

Figure 4: a) The general mapping between basic and social ontological layers. b) Paying with a banknote as a simplified, concrete example of the mapping procedure.

Returning to PN blends, we claim at least three instances of c-CONST (and thus also IMPL) to be at play in the semantics of ascriptive PN blends. Let us illustrate these mappings and how they relate to the three distinct readings of the item *Fedal* by walking through the frame representation provided in figure 5. Crucially, the figure depicts the semantics of all three readings from the examples in (13). Although none of these readings in fact spells out this concrete frame in its entirety, they access different structural parts that are always present in PN blends and, usually, need to be inferred from world or contextual knowledge. In prose, the fundamental parts of the frame in figure 5 can roughly be read as follows. The right-hand side states that there are two people named Federer and Nadal (tags 2 and 3, respectively) who fulfill the social roles of tennis professionals (tags 2! and 3!). These two tennis players form a group or plural object (tag 4), which counts as a rivalry (tag 1). The left frame part depicts the conditions that need to be fulfilled for this count-as-relation to go through, namely that the two need to compete against each other (tag 0) and do so repeatedly (tags 5, 6, and n).

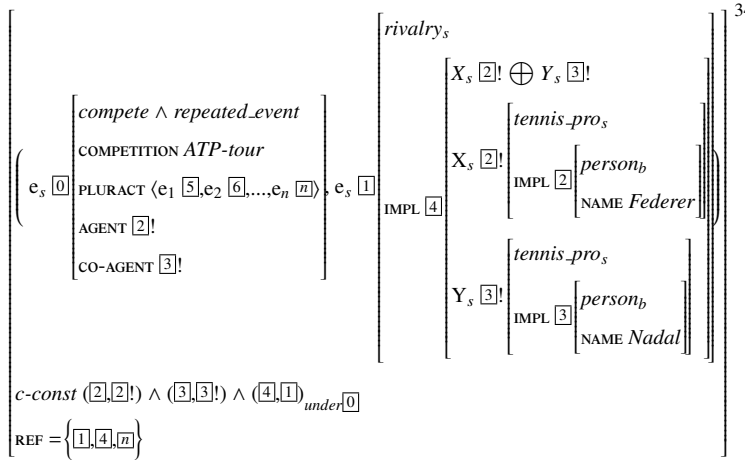

Figure 5: *Fedal*: the *rivalry* frame based on the three readings in the examples in (13).

More technically, the frame at hand is again built up as a multi-AVM. As will become clear in a second, the left frame part depicts the circumstances for the level mapping depicted in the right part. Let us first look at the right frame part and the two deeply embedded IMPL-relations that map the referents of the blend constituents as social level to basic level individuals. The two individuals $\boxed{2}$ and $\boxed{3}$ are of type $person_b$ (the subscript 'b' indicates the basic ontological level) and bear the names Federer and Nadal, respectively. These two basic-level individuals fulfill the social roles of tennis professionals $\boxed{2}$! and $\boxed{3}$!, respectively, where the subscripts 's' of the types $tennis\_pro_s$ indicate their social level status. The use of the !-notation indicates that these are referentially the same entities as $\boxed{2}$ and $\boxed{3}$, while the mapping relations are introduced as constraints at the bottom of the frame (i.e., C-CONST ($\boxed{2}$,$\boxed{2}$!) and ($\boxed{3}$,$\boxed{3}$!)). By nature, c-constitution is not functional, i.e.

an entity can c-constitute more than one social entity, and is therefore not realized as an attribute in frames (cf. Kallmeyer & Osswald 2013, Löbner 2017).[19] In contrast, implementation, the reverse mechanism of grounding a particular social individual in a particular basic individual is functional in the sense described above. Therefore, the IMPL-relations, i.e. roughly [2]!→[2] and [3]!→[3], are realized as attributes.

The HUMAN-type in example (13-a) is close to a purely additive reading, i.e. roughly 'both of the tennis pros Federer and Nadal'. We assume this reading to arise by referencing node [4], typed as the mereological sum ($\bigoplus$) of [2]! and [3]!, i.e. the mere plural object comprising two social individuals. Accordingly, the potential referencing space, i.e. the value {[1],[4],[n]} of the REF-attribute, includes the possibility of referencing node [4]. As described in section 3.2, however, this reading is not the most frequent one and typically relies on a more substantial relationship or background story than mere addition of individuals.

The most important step in the analysis of ascriptive PN blends, which arguably conceptually motivates the construction in the first place, is to be found in a further c-CONST-relation between the mereological sum object and a higher-level ascriptive status. In the case of *Fedal* in example (13-c), this ascribed status is the abstract social-level event [1] of type *rivalry* and the frame instantiates the ascription by stating that the sum node c-constitutes the ascriptive status, i.e. *c-const* ([4],[1])$_{under\ [0]}$.[20]

The constraint *c-const* ([4],[1])$_{under\ [0]}$ is in need of comment. As

[19] For reasons of space, we here leave out the circumstances and appropriate conditions in fact necessary for someone to count as a tennis pro.

[20] Technically, this not a mapping from basic to social level. However, we follow the intuition that the mechanism is essentially the same, i.e. an ascriptive mapping procedure, and therefore realize this step as an instance of c-CONST.

argued above, Searle (as well as Anderson and Löbner) takes all c-CONST-relations to rely on conditions and circumstances in order to be successful ascriptions. Here, the subscript 'under 0 ' refers to the circumstances for this particular relation. We take it as largely down to world (and oftentimes expert) knowledge to determine what concretely constitutes such conditions for the ascriptive processes in PN blends. For example, for Nadal and Federer all kinds of peculiar ways of how they interact on the ATP-tour or what they say about each other at press conferences may be constitutive for their rivalry. In the left frame part of the multi-AVM, figure 5 merely depicts the indispensable condition that they compete against each other as a social level event e_s 0 .

This social level event is of type *compete* ∧ *repeated_event* and thus depicts an iterated event of competing. The COMPETITION-attribute takes the ATP-tour as the domain of competing. Crucially, the event participants are the elements connecting the two sides of the multi-AVM via structure sharing: thus, it is Federer and Nadal as tennis pros 2 ! and 3 !, respectively, acting as (CO-)AGENTS 2 ! and 3 ! of the compete event(s). The event also has subevents e_1-e_n of the same type as the mother event, introduced as a PLURACT-attribute (for pluractionality; see e.g. Lasersohn 1995). These individual, single competition events are introduced to account for the single event reading in (13-b). Structurally, social level events are a necessary ingredient to give rise to c-constitution relations. Their concrete details typically remain underspecified, though, but if PN blend attestations in our data refer to them, they only reference single instances of such events. Therefore, the potential referencing space ({ 1 , 4 , n }) includes the possibility of referencing node n rather than 0 .

Summarizing the discussion of figure 5, the frame depicts a network

of nodes that can be referentially accessed: the potential referencing space, i.e. the value {[1],[4],[n]} of the REF-attribute, maps to three different *Fedal* readings from example (13). The relevant subparts including the different nodes from this referencing space are interconnected via different relations: most importantly, C-CONST-relations connect basic individuals and social individuals as well as the additive type [4] and the abstract event [1]. The social level event, including its single event instances, is connected to both social individuals (via thematic role attributes) and to the abstract event (serving as the circumstantial condition within the *c-const*-relation ([4],[1])$_{under\,[0]}$).

Generalizing over further attestations as described in section 3.2, we argue that a lexeme formation rule for ascriptive PN blends will, mutatis mutandis, always include configurations of the kind just discussed. Two (or more) social individuals form a group of individuals (i.e. their mereological sum), which is ascribed a certain status based on social-level events that take the group members as event participants. For example, in the above example (7-c), the sum individual Merkel and Renzi counts as a team/cooperation (*Merkenzi*) by virtue of working together. Similarly, *Brangelina* (Brad Pitt and Angelina Jolie) is ascribed the status of a romantic relationship in (1-b) by virtue of events such as, presumably, dating. The lexeme formation rule for ascriptive blends is provided in figure 6.

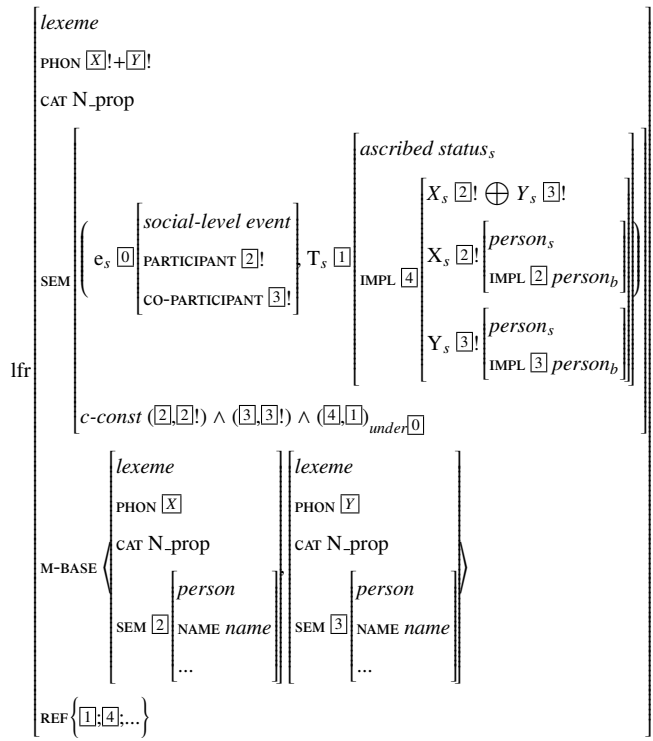

Figure 6: Underspecified lexeme formation rule for ascriptive PN blends.

Most generally, the rule in figure 6 works in analogy to the one for determinative PN blends in figure 3. It describes the make-up of a morphologically complex lexeme, providing, in the form of attributes, the same shortcuts for the lexeme's phonology and syntactic category, respectively. Also, the attribute for the morphological bases, M-BASE, includes the same information on the base lexemes as for similative blends (including the same theoretically non-committed choice to treat names as lexemes). Unsurprisingly, the crucial difference between the rules for determinative and ascriptive PN blends is to be found in the

SEM- and REF-attributes.

Structurally, the blend semantics in figure 6 can be read as an underspecified version of the illustration of the concrete *Fedal*-frame in figure 5. Most deeply embedded in the right part of the multi-AVM we find the basic-level individuals that are inherited from the morphological bases (tags 2 and 3). These c-constitute the referentially unaltered social-level individuals X and Y as indicated by the constraints *c-const* (2,2!) ∧ (3,3!) (again leaving out the necessary conditions here), which together form the mereological sum type tagged as 4. All c-constitution relations are non-functional and therefore defined as constraints below the frame. Node 4 is accessed whenever a blend attestation denotes a mere plural object, i.e. the additive type and the potential for referential access to this node is provided in the referential space defined as the value of the REF-attribute.

The additive node 4 itself c-constitutes what we here call the *ascribed status*. This status is of the social-level supertype 'T_s', tagged 1, which may include eventualities, such as rivalries, cooperations, or friendships, as well as socially significant collections of individuals that are not as straightforwardly eventive, such as couples or committees. In our rule, it is thus node 1 that is referenced whenever an attestation denotes such an ascribed status. Again, the referencing space of the REF-attribute allows referencing this node 1. Building on the Searlian ontological device of c-constitution, the ascriptive process finds its motivation in certain social-level events without which the ascription would not go through. In figure 6, it is the subscript in the c-constitution constraint *c-const*-relation $(4,1)_{under\ 0}$ that defines the social-level event 0 on the left of the multi-AVM as the necessary condition for the step that connects nodes 4 and 1. As far as we can tell,

such social-level events always take the referents of the morphological bases as participants in the same thematic roles, irrespective of the ascribed status. Therefore, the rule includes (co)-PARTICIPANT-attributes that connect these events to the social-level individuals 2 ! and 3 !.

One discrepancy calls for a short elaboration. Unlike in figure 5, the social-level event in the rule in figure 6 is not of type *repeated_event*. While individual event instances, or single events, do occur (see section 3.2 and example (13-b)), such attestations are not very frequent and it is not clear whether all ascriptive statuses easily allow for them. For example, while there are certainly conditions that need to be fulfilled for something to count as a friendship or a couple, such statuses do not easily lend themselves to repeated events of the exact same kind. For this reason, speakers arguably do not reference such single events and we decided to leave out a PLURACTIONALITY-attribute (and thus also the concrete node tag in the possible referencing space defined by the REF-attribute). In turn, '...' in the REF-attribute's value space serves as a shortcut to indicate that there may be further possible referential nodes.

In summary, this section has provided frame-based formalizations for both determinative (i.e. similative) and ascriptive PN blends as well as for both individual attestations and generalizations over such attestations in the form of lexeme formation rules. Our rules state principled ways of how the base semantics is related to the semantics of the complex form, including structurally rigid skeletons as well as flexibility in the form of underspecified attributes and/or values. Modelling ascriptive blends has revealed that they are by far more complex semantically than their similative cousins. In the rule proposed here, the bases of similative blends are merely connected via comparators that return similar values for both base referents for attributes that have to be spelled

out contextually. In contrast, ascriptive blends include relations that connect distinct ontological layers and a large amount of background information that has been shown to be structurally relevant but not always feature in the foreground. At the same time, our formalizations have carved out the most important nodes in a complex frame structure that are accessed by different semantic types, and shown that these cannot be understood independently of each other.

5. Discussion and conclusion

This paper has presented what is to our knowledge the first formal semantic analysis of blends comprised of personal names in German and English. The same two basic structural types, which we referred to as DETERMINATIVE and ASCRIPTIVE blends, respectively, were found in the two languages. In sections 3 and 4 we argued that especially ascriptive PN blends rely on a rather complex frame structure that provides different nodes that can be referenced by different readings. At the same time, it seems clear that not all of these have the same conceptual status.

More concretely, the frames cannot be read solely bottom-up, although such a procedure may seem intuitively reasonable. Rather, they can only be understood as wholes that get their primary motivation by the ascribed status node. Such a status node can, for example, be an abstract event such as a rivalry. In turn, the ascribed status licenses the conceptually more basic additive node, which explains why we do not find any PN blend in our data that only occurs with an additive but not with an ascribed status reading. Consider again *Fedal* and its different readings introduced in section 4.2: formally, the rivalry reading builds on the additive reading (formalized as the mereological sum). However,

it clearly appears to be the case that the speech community would not use *Fedal* in its additive reading (and not in its single event reading, either) if it had not been used earlier to refer to the rivalry.

From this analytical perspective, let us reconsider the question discussed in the introduction of this paper about the alleged marginal status of PN blending as a word-formation process. The key argument against the marginality assumption that has emerged from this paper is that the semantics of PN blending is systematic, with the word-formation pattern evoking a complex semantic structure (a semantic frame). This type of semantic process is very common in word-formation, as is evident from the fact that similar processes have been proposed to account for the semantics of compounding as well (within the brand of Frame Semantics used in this paper cf. esp. Löbner 2013, Schulzek 2019; cf. also Wisniewski 1996, Spalding et al. 2010 for other approaches). The basic idea in most accounts, however, is that pertinent semantic structures (semantic frames or others, depending on the theoretical approach employed) are evoked by the meanings of the compound constituents, whose meanings are then unified into a single structure. Thus, similative interpretations have been shown to be highly systematic among compounds with constituents with similar meanings, which invite a regular interpretation process (see e.g. Wisniewski 1996, who uses the term 'property mapping' to refer to this interpretation process).

Much less is known about ascription processes in compounding. Löbner (2013: chpt. 12) and Schulzek (2019) argue that compounds like *coffee cup* are interpreted by means of unification of the frames for *coffee* and *cup*. In their account, unification is possible because the COFFEE and CUP frames share semantic contents in the form of being (typical) participants in DRINKING activities. What makes ascriptive PN blends

challenging here is that the constituents, being names, do not come with a lexical semantic structure that could be unified, something that is unexpected under Löbner's and Schulzek's accounts. In PN blends, it is clearly the word-formation pattern itself that creates this structure.[21] We have shown in this paper that for the decomposition of this structure, a rich, multi-layered ontology that allows for relating basic and social entities can be fruitfully operationalized.

In fact, the approach may well be transferable to certain kinds of compound after all, as there are other compounding patterns that are similar in meaning to that of ascriptive PN blends. One strikingly parallel type, which we already mentioned in the introduction, is the 'additive' compounding pattern that produces names of territories such as *Alsace Lorraine* (Bauer et al. 2013: chpt. 20; for similar structures (and analyses) in German, such as *Schleswig-Holstein*, see Fleischer et al. 2012: 179ff.). Based on our in-depth analysis of PN blends, we might wonder to what extent the meanings described by Bauer et al. as 'additive' are actually parallel to that of PN blends. Like the meaning of *Fedal*, the meaning of *Austro-Hungary* seems to be more than the combination of the two constituent territories. In particular, the social significance of both the constituents and of their combination seem to play a role in the understanding of semantic type(s) introduced by the word-formation process. If true, this would mean that such name compounds and PN blends both have ascriptive meanings. There is, thus,

[21] Note that a conceivable alternative assumption is that, given the lack of conceptual meanings in the constituency, interpretations of PN blends arise via coercion (We thank Claudia Maienborn, p.c., for suggesting this interpretation). What in our view speaks against this assumption is that meanings are highly systematic (in the case of ascriptive blends, involving always a central ascriptive node; in the case of determinative blends, involving always a similative meaning). More research is needed, however, to clarify this point.

no reason to think that PN blends are somehow more marginal than parallel compounding patterns. This does not preclude, however, that compounds and blends may have functionalized in different domains. For example, it is not inconceivable that ascriptive compounds are used more frequently with territories, while blends have specialized in social relationships. Our research does not allow for any such quantitative claims, though, and we will leave this question to future research.

Another interesting parallel between ascriptive PN blends and compounding patterns is more typological in nature. Thus, despite Bauer's (2017), Bauer et al.'s (2013), and Fleischer et al.'s (2012) observations about types like *Alsace Lorraine*, the type of semantics that we identified for ascriptive PN blends is usually assumed to be rare among compounds in Indo-European languages (cf. Olsen 2001, Wälchli 2005, Arcodia et al. 2010, Olsen 2014). This idea goes back to Arcodia et al. (2010), who argue for the existence of two typological macro-classes of coordinative compounds and that one of these classes, so-called co-compounds, is unproductive in Indo-European languages. A co-compound is defined as a compound whose referent is in a hyponymic relation with its two co-hyponymic constituents. Additive meanings (as in Japanese *fū-fu* 'husband + wife'; see Arcodia et al. 2010: p. 10) are common among co-compounds. Whereas the meanings of PN blends as described in this paper may not exactly match traditional definitions of a hyponymic relation, PN blends share with co-compounds that they express "a natural tie between coordinands" (p. 15; cf. the parallel with Japanese *fū-fu* 'husband + wife'). Also typologically, then, it seems that PN blends have settled in a niche that has been underused in German and English compounding systems.

One final issue that we will address here is the question of how far

PN blend meanings inherit the name status of constituent names from an onomastic point of view. As we have seen, PN blends do possess lexical meaning and fulfil functions that are different from the standard referential function of proper names. Even in contexts like (1-a) or (5-a), in which the blends arguably preserve their name status and are closest to the most expected additive meaning, the communicative benefits of using a PN blend lie not just in a reference to two people with the help of one word, but in stressing the unity of the two name holders. Second, unlike proper names, PN blends are polysemous. Context, thus, is crucial for the understanding and disambiguation of the PN blends. Although they incorporate a vast amount of speakers' extra-linguistic knowledge about the holders of names that constitute the two parts of a PN blend, the context PN blends are used in usually contains clues that facilitate the decoding process. Third, and again unlike prototypical proper names, PN blends do contain elements of characterization, description and/or evaluation. This is especially true for our category of determinative PN blends, in which the modifier constituent contributes a characterization of one name holder in terms of another based on similarities ascribed to them in the speakers' world knowledge. Thus, similative blends will oftentimes already come pre-packed with an evaluative component via the domain of similitude (such as a social status or someone's degree of sanity).

In sum, the analysis of PN blends in English and German in this paper has not only shown that their semantics is systematic and specific to the word-formation pattern. It also has implications for how we view blending within a wider perspective of word-formation systems both within the respective languages and across languages. Within languages, there is clear evidence that PN blending and compounding involve

parallel semantic processes. There is also evidence suggesting that the two types of processes have settled in different functional niches. Across languages and from a typological perspective, we saw that in English and German, PN blending fulfills functions that have been claimed to be unproductive among compounding patterns in Indo-European languages. Thus, the fact that typological accounts have focussed on compounding only and have not considered blending might turn out to be problematic. More research is needed to test these hypotheses.

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