Beyond lexical semantics: notes on pragmatic frames

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Abstract

FrameNets as an incarnation of frame semantics have been set up to deal with lexicographic issues (cf. Fillmore and Baker 2010, among others). They are thus concerned with lexical units (LUs) and conceptual structures which categorize these together. These lexically-evoked frames, however, generally do not reflect pragmatic properties of constructions (LUs and other types of non-lexical constructions), such as expressing illocutions or establishing relations between speaker and hearer. From the viewpoint of a multilingual annotation effort, the Global FrameNet Shared Annotation Task, we discuss two phenomena, greetings and tag questions, highlighting the necessity both to investigate the role between construction and frame annotation and to develop pragmatic frames (and constructions) related to different facets of social interaction and situation-bound usage restrictions that are not explicitly lexicalized.

1. Introduction

The past two decades have witnessed the development of framenets[1] for several languages (Borin et al. 2010; Burchardt et al. 2006; Ohara et al. 2004; Subirats Rüggeberg and Petruck 2003; Torrent and Ellsworth 2013, and others). Relying more or less on the original Berkeley FrameNet infrastructure and data (Baker and Sato 2003), those initiatives have built independent resources whose alignment is currently being pursued under the Multilingual FrameNet Project (Gilardi and Baker 2018). Because the resulting resources are very diverse in nature, in 2016, during the International FrameNet Workshop held in Juiz de Fora, representatives of various framenet projects involved in the multilingual alignment initiative agreed on engaging in a shared annotation task so as to assess the complexity of the differences found between each language-specific resource.

In the following, we address one of these attested differences, namely linguistically encoded pragmatic information. Just like in constructionist analyses (Cappelle 2017), frame-based approaches to linguistic meaning tend to neglect conventionalized pragmatic properties (as an exception, see Blyth and Koike 2014). However, as we will argue, they are essential to a plethora of frames and constructions.

The starting point of our investigation are results obtained in the Global FrameNet[2] Shared Annotation Task (Torrent et al. 2018) in which an original text and its translations into other languages are all annotated for the frames in Berkeley FrameNet Data Release 1.7. The annotation teams were allowed to create Lexical Units (LUs) for their languages, but not to change, or create new, frames. Hence, mismatches between frames and the LUs associated with them are parameterized in the system for further analysis. Among the relevant questions are the comparability and alignment of frames, annotation standards and applications of FrameNet data. The shared annotation task is devised such that comparable texts or originals with their translations from different genres may be annotated in multiple languages. The comparison between these annotations should highlight various differences such as between the conceptual structures of frames in two languages or the structure of certain parts of a framenet (e. g. the types of relations between a set of frames). Moreover, the resulting data can be used in applications, such as designing machine translation metrics (Czulo et al. 2019) and multilingual annotation projection[3]. Nonetheless, the kinds of analyses and applications that can be derived from the data in the shared annotation task are restricted to the existence of some lexically-specified material evoking a given frame.

In this paper, building on this restriction, we make the case for the oftentimes neglected pragmatic nature of many frames. Particularly, we analyse greetings and tag questions as instances of multi-word expressions evoking a frame. We show that these units do not refer to entity-, state-, attribute-, relation-, or event-related frames, but rather bear pragmatic value. Through the comparison of examples from English, Brazilian Portuguese and German, we illustrate why the annotation of pragmatic properties is informative on a cross-linguistic level: Frames and constructions associated with a conventionalized pragmatic meaning do not need to coincide in form, but may be linked to each other through their pragmatic meaning.

We begin by explaining why pragmatic frames should be addressed and included in any framenet and constructicon approach (Section 2). We do this by example of tag questions in English which highlights that pragmatic frames need not be linked to specific lexemes. In Section 3, we present examples on greetings and tag questions from the Shared Annotation Task in English, Brazilian Portuguese and German, discussing formal differences and how these could be bridged by introducing pragmatic frames in framenet-like annotation efforts. In Section 4, we sketch out basic aspects (potentially) included in the description of pragmatic frames, assuming that these shared aspects (in terms of family resemblances) motivate

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[1] In the following, we use capital letters ("FrameNet") for referring to specific projects like, for example, to Berkeley FrameNet; in contrast, "framenet" is reserved for cases where no reference to a specific project is made.

[2] https://www.globalframenet.org/

[3] See http://www.ufjf.br/framenetbr-eng/summer-of-code/

pragmatic frames as a separate group of frames. We close with some suggestions as to the annotation and further empirical investigations on pragmatic frames.

2. Why pragmatic frames? The case of tag questions in English

The notion of pragmatic frame - including phenomena sometimes also subsumed under the notion of "interactional" or "interactive frame" (Blyth and Koike 2014) - goes back to Goffman's early work on verbal interactions, building on what he has called "interactional frames" (Goffman 1961, 1967, 1974). Moreover, Fillmore's (1977, 1985) early terminological division between scenes and frames - only the latter being evoked by linguistic material - also made room for the existence of frames whose nature is different from that captured by a lexicographic analysis (for a discussion of Fillmore's notion of scene see Ziem 2014a, pp. 188–195).

Therefore, before diving into the kind of phenomena whose analyses motivated the notes in this paper, we must point out that the case for pragmatic frames presented here is restricted in two ways. First, it should not be interpreted as a claim towards the revision of any theory, neither Frame Semantics (Fillmore 1982) nor Frame Analysis (Goffman 1974), since both of them already had room for this type of frames in their frameworks. Second, it should not be taken as embracing every aspect of what falls under the umbrella of pragmatics in linguistics. Most importantly, following the Fillmore tradition, our notion of "pragmatic frames" crucially differs from the one introduced by Rohlfing and colleagues (2016) in that it only relates to pragmatic information conventionally attached to linguistic expressions and *not* to ad hoc inferences or framing activities in individual communicative experiences. Also, we do not intend to address frames as linguistic 'devices' that help explain linguistic phenomena of any kind, such as resolutions of (associative) anaphora (Ziem 2014b). Instead, our main point is that, in a framenet-like annotation setting, such as that provided by the Global FrameNet Shared Annotation Task or the one derived from constructicon-building efforts (Benjamin Lyngfelt et al. 2018), we should also take account of conventionalized pragmatic affordances and requirements that can be associated to the text units being annotated.

One example of such associations can be found in tag questions. Tag questions take the form of short questions mostly attached to a main declarative clause, such as in "You're coming to dinner with us, aren't you?". They do not necessarily require a response; in terms of Searle's speech act theory (1969), their illocutionary force lies elsewhere. Tag questions are said to be multi-functional, depending on the context they may serve as signals for emphasising, hedging, reinsurance, maintenance of intersubjectivity, among others (Columbus 2010; König 2017). Tag questions thus do not denote an entity (of whatever kind), they rather fulfil an interactive function in a communication between at least two parties.

In order to describe the frame-evoking potential of tag questions, single-word LUs cannot function as frame-evoking elements because they alone are not able to account for the meaning of the constructions they occur in (see Torrent et al. 2014 for a discussion of criteria to assign frame meaning to lexical items versus constructions). At first glance, there seems to be a rather simple solution to take account of tag questions within the construction-and-frame approach presented here. The frame-evoking power of the constructions cannot be traced back to single lexical elements but must rather be assigned to the phrase as a whole. In other words, tag questions are multi-word expressions that evoke frames in a holistic rather than a compositional fashion, in that the building blocks of the expressions cannot be considered units carrying frame-semantic information on their own.

Tag questions are multi-word expressions because they do not feature schematic CEs that can be filled in a productive or even semi-productive way (see Clausner and Croft 1997 for different degrees of productivity). Instead, different languages may provide specific inventories of tag questions, very much in parallel to substantive idioms (in the sense of Fillmore et al. 1988, p. 505f.) that take a variety of forms. This inventory must be treated just like LUs, that is, one-word units that evoke a frame. In this view, tag questions are LUs in that they evoke a frame in their own right.

However, it is anything but trivial to specify the frames evoked. In contrast to fully, or partially, schematic constructions, they cannot be said to evoke frames that mirror, at least partially, the valence of a lexical item that might or might not be part of the construct. Rather, it seems that they evoke frames that do not even consist of frame elements (FEs), usually defined as semantic roles that abstract away from the specific semantics of instances. Following Fillmore's proposal (1982, p. 117), it seems as if they do not evoke linguistic but interactional frames. Tag questions, in this regard, are not only substantive idioms but also what Fillmore, Kay and O'Connor (1988, p. 506) call idioms with a pragmatic point. However, the concept of interactional frame is far from being well-explored. From the standpoint of a construction-and-frame analysis, Ohara (2018) points out that a lot of questions still remain unanswered; it is neither clear what interactional frames really are nor, more crucially, how a FrameNet approach may address them; as a matter of fact, so far interactional frames are almost completely missing in FrameNet, the exceptions including the `Attention_getting` frame, as pointed out by Ohara (2018, p. 158). Therefore, our analysis also remains somewhat incomplete. However, aside from Japanese FrameNet, other initiatives, such as the German FrameNet, consider interactional frames highly relevant[4]. Moreover, the Global FrameNet Shared Annotation Task has created an opportunity to the discussion of such frames in a multilingual setting, as we discuss next.

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3. Pragmatic frames in the Shared Annotation Task

The first text to currently be jointly annotated in the Global FrameNet Shared Annotation Task is the most viewed TED talk, given by Sir Ken Robinson with the title "Do schools kill creativity" (2006) which at the time of writing has been viewed more than 64 million times. The close captioning of the 20-minute talk in English contains 267 sentences. These subtitles have been translated to 63 languages by TED community members.

For the annotation, members of the English, Brazilian Portuguese and German annotation teams worked with the 1.7 release of Berkeley FrameNet. While this raises a number of questions as to cross-linguistic applicability of frames and framenets, this decision greatly facilitated the comparison of the annotations. The first thirty annotated and aligned sentences were fed into an evaluation system which is designed to automatically compute a similarity measure between a pair of sentences for machine translation evaluation purposes, based on semantic frames (Czulo et al. 2019).

What stood out in the analysis were a few sentences which, contrary to our intuition, would show a lack of similarity. Most notably this concerned the first two sentences between all three languages, with no frame overlap and no similarity at all. The reason was quickly identified: the first two sentences contained formulae of greetings which had not been annotated at all for English and Brazilian Portuguese, but with lexical frames in German (see Section 3.1). Still, it was clear that the German annotation was not an adequate description of the sentences, as it did not reflect the role of the expression in the sentence of being a greeting formula. Up to now, the FrameNet database does not include a `Greeting` frame, or any other frame that matches the pragmatic value of the unit under consideration.

Similarly, sentences with tag questions lead the evaluation system to calculate larger differences than anticipated, as they had been annotated again in German, but not in the other two languages. Especially with regard to those, however, Section 3.2 explains why annotating pragmatic frames is desirable and informative here: Tag questions vary in form between these languages, even as regards the lexical material used to form them, but in terms of an evaluation, they should be seen as (pragmatically) equivalent expressions. If pragmatic frames existed for tag questions, an automatic evaluation measure would benefit from more precisely assessing the similarity of two sentences in two languages.

3.1 Greetings[5]

The TED talk does not dive right into the topic but begins with some remarks by the speaker the function of which can at this point roughly be characterized as establishing a connection with the audience of the talk. This is spearheaded by a greeting, with the English and Brazilian Portuguese versions as in (1).

[5] For a more detailed analysis see also (Czulo et al. submitted), on which some of the following notes are based.

(1)   a. Good morning.
        b. Bom dia.

In the annotation effort, the English (1a) and Brazilian Portuguese (1b) variants remain unannotated. It is only in the case of the German annotation, that the greeting was annotated with frames, given in (2) :

(2)   [Guten$_{\text{DESIRABILITY}}$] [Morgen$_{\text{CALENDRIC\_UNIT}}$].
        Good   morning

Obviously, however, the frame annotation of the lexemes in itself with the frames `Desirability` and `Calendric_unit` does not point to (2) being a greeting. The annotation in (2) was originally provided with the goal of presenting an analysis of the semantic part of the constructional pattern licensing a greeting, much like proposed in (Fillmore et al. 2012). Note, however, that such an approach to (2) does not take us far either; the greeting formula instantiated in (2) does not allow for substantial internal variation, though premodification is possible in specific registers (e.g., *Schönen guten Morgen!* 'Top of the morning!', lit. "Beautiful good morning). Thus, it seems to be more adequate to treat *Guten Morgen* as multi-word unit (MWU; Ruppenhofer et al. 2016, p. 21), similar to other MWUs already included in Berkeley FrameNet, such as *good idea.n* evoking the `Desirable_event` frame in expressions like *X is a good idea*.

What an adequate semantic-pragmatic representation of the MWUs in (1-2) should include is the meaning of the expressive speech act, that is, the fact that it's a greeting. This situation type includes (a) the involvement of a speaker interacting with an addressee by means of the MWU, (b) time specification of the uttered MWU (roughly: before noon), and (c), by default, the supposition that it is the first encounter of speaker and addressee in a given time span. These specifications come with the frame evoked without materializing themselves as frame elements that are instantiated by parts of the MWU or the other linguistic material surrounding it.

Thus, pragmatic frames substantially differ from semantic frames in that they define situational settings as usage parameters; these settings resemble much more non-linguistic "scenes" (Fillmore 1985) attached to the MWU used than valency-based frames as incorporated in Berkeley FrameNet and the lexicographically oriented initiatives for other languages that derived from it.

Looking at examples (1) and (2), we can state that the internal frame structure for the greeting at hand is the same in all three languages. As a different case, let us look at a construction which is more variable across languages and allows different interpretations in (3):

(3)   a. How are you?
        b. Como   estão?
            How   be.3.PERS
        c. Wie   geht   es   Ihnen?
            How   go   it   you.3.PERS.DAT

While the English and Brazilian Portuguese versions are only superficially different (with a pro-drop in the Brazilian version), the German version uses a different verbal lexeme: *gehen* 'go'[6]. When taken literally, this would evoke a different frame than the verb *be* in English or Brazilian Portuguese, but this annotation of a 'literal default' meaning would not reflect the pragmatics behind the formula. The annotation of an interactional frame would indicate that there is a greeting with the function to open an interaction. Moreover, if interpreted literally in the given situation and answered with something like *Terrible, my dog just died*, in this kind of interactional scenario, (3a-c) would not be successful.

As Bunt and colleagues (2010, p. 2549) point out, though, assigning a singular function to a linguistic item could run "into the problem that the same linguistic form can often be used to express different communicative functions." In the case of greetings like *How are you*, a literal interpretation besides the function of opening an interaction can easily be imagined, such as a doctor greeting a patient, where the patient is actually expected to answer according to the question. Still, primarily pragmatic items such as greetings may be among the easiest to detect in texts for purposes of annotation, notwithstanding other questions of interpretation. Moreover, as it is already the case for polysemous lexemes in any FrameNet, expressions such as *How are you* could be easily associate to different sets of frames - pragmatic or not.

An answer of how such interpretations could be modelled can be found in the framework of Systemic-Functional Linguistics (Halliday 1973; Halliday and Matthiessen 2004). Distinctions such as between the ideational and the interpersonal function could help model which kind of function is in the foreground and should be guiding the interaction, which types of interactions are expected etc.

3.2   Tag questions

In the annotated sample text, we find three instances of tag questions. (4) exemplifies one of them.

(4)   a.   It's been great, hasn't it?
        b.   Tem   sido   ótimo,
               have.PRES.3SG   be.PART   great
               não tem?
               no have.PRES.3SG
        c.   Es   war   großartig,
               It   be.PST.3SG great
               nicht wahr?
               not   true

The tag questions in English and Brazilian Portuguese, illustrated in (4a-b), feature finite forms of the auxiliaries *have* and *ter* ('have'), respectively. In contrast, the German tag question is realized in the form of a negated adjective *nicht wahr* (lit. 'not true'). It is obvious that a frame-based annotation of the respective LUs is insufficient to capture the pragmatic function of the tag

questions. LUs such as *have.v* and *ter.v* cannot be said to evoke a frame that refers to any kind of 'assurance' that the speaker wants to express. Moreover, the Brazilian construction can also feature the ver *ser* ('be') in the tag, instead of repeating the auxiliary used in the main clause. Even though the German LU *wahr.a* ('true') points to this direction, it still fails to trigger a specific frame that provides the pragmatically relevant information required.

Another case in point relates to the tag questions exemplified in (5).

(5)   a.   I mean, Sirena last night was a marvel, wasn't she?
        b.   Sirena   ontem   a   noite foi
               Sirena   yesterday at   night
               be.PST.3SG
               uma maravilha, não foi?
               one wonder   no be.PST.3SG
        c.   Sirena gestern   Abend war
               Sirena   yesterday evening be.PST.3SG
               wunderbar, nichtwahr?
               marvellous not   true

Again, English and Brazilian Portuguese include the auxiliaries *be.v* and *ser.v* ('to be') whereas the German tag question is equivalent to the one introduced in (4). Just like the auxiliaries in (4), the verbs in the English and Brazilian Portuguese instances cannot be said to evoke a frame that point to the pragmatics of tag questions (Columbus 2010). To be successful, we need an integrated frame-and-construction approach that also accounts for both the clausal form (sub-aux inverted clause, where applicable) underlying tag questions and context requirements to be met. The latter includes not only (a) the existence of a pre-established referent to which the personal pronoun anaphorically refers, be it a person ("haven't *you*") or an entity or any kind of propositionally expressed state of affair ("hasn't it"); (b) also, the tense of the verb included in a tag question must be consistent with the context, more precisely with previous uses of tenses. In the next section, we provide a proposal as to how such an approach may be implemented in practical terms.

4.   Suggestions for a basic structure of pragmatic frames

Conventionalized pragmatic frames are viewed here as situation- or genre-bound concepts specified by a set of conditions defining adequate uses at peculiar occasions. These frames, like greetings and tag questions, help organise interaction between two or more parties rather than relating to conceptual structures representing objects, attributes, relations, states or events. These parties can be individuals or groups with members being humans or ascribed human-likeness (real or imagined entities such as AI machines, fairies, aliens etc.).

Presumably, this commonality of pragmatic frames and the conceptual systematicities resulting therefrom groups these frames in terms of family resemblances (for suggestions on operationalisation see Ziem 2014a, pp.

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[6] Brazilian Portuguese also admits a variant of this construction with the verb *ir* 'go'.

297–299). Having at this point looked at only two types of pragmatic frames, especially with regard to the variety of meanings that tag questions can express, we expect that central aspects of pragmatic frames may relate to, but are not limited to,

- circumstances such as time, in-/formal type of the occasion licensing the use of the target expression,
- situational presuppositions, including artefacts, such as materials and objects (e.g. water for baptizing), recipient/audience addressed,
- text- and sociolinguistic affordances specific to the type of communication, including, for example, choice of register and text genre,
- further sociolinguistically relevant factors including diatopic and diastratic variation, roles and statuses of the parties involved and how they may evolve during communication, relations to parties outside of the communication situation at hand, face-saving actions of parties involved.

Importantly, pragmatic information of this kind needs to be integrated in a frame description, regardless of the fact that they are not part of the target valence frame since they do not necessarily instantiate semantic roles (FEs). Thus, pragmatic frames differ substantially from semantic frames in that they relate to conditions of appropriate use in specific situational settings. While we expect that the configuration of pragmatic frames vastly differs between cultures[7], or even between communities within a culture, pragmatic frames should, due to their common core structure, be more comparable between each other even across languages than many object-, state-, attribute, relation- or event-related frames.

We also assume that in one way or another, pragmatic frames are always at work during communication, though not necessarily evoked by linguistic items. Most prominently, Goffman (1974) argued that human interaction is in general framed by its embedding situational setting. Such frames, however, seem to be fundamentally different from current FrameNet frames. In terms of frame semantic theory, this is not problematic in principle, as in the early version, Fillmore already pointed out that frames (or, in the old terminology, 'scenes') are linked and co-activate each other e. g. "by virtue of [...] their contexts of occurrence" (Fillmore 1975, p. 124); i. e. unlike often practiced in annotation, there is no reason to believe that a linguistic expression or any other frame-evoking material or circumstance necessarily evoke one and only one frame. As pointed out above in 3.1, Systemic-Functional Linguistic could provide a framework to model how semantic and pragmatic aspects of interactions are composed and thus interact with each other. Currently, however, we miss an integrative approach, combining FrameNet frames with a more general situation-bound and context-sensitive frame theory that addresses semantic, pragmatic and interactional properties of communication on a par.

The practical question arising from this is when to annotate which frame and what these frames should be. The examples discussed here may leave little room for interpretation, but in cases e. g. in which two variants of an expression exist which reflect different levels of formality, the choice may not be straightforward. Annotation will probably depend on the question whether, and to what extent, the lexical-semantic or pragmatic meaning is in the focus of the current research interest. As for the questions of what types of frames we may need, previous work by Bunt and colleagues (2010) on an ISO standard for annotating interaction types in dialogues may be a good starting point. In their proposed taxonomy of functions, they first distinguish between information-transfer functions and action-discussion functions, then specifying various types of requests, suggestions, denials etc. In combination with systemic-functional aspects, the taxonomy could be extended to include further interactional aspects and be reflected in the pragmatic sub-group of frames in framenets in different languages accordingly.

5. Conclusions: pragmatic frames and constructions in the constructicon

In this paper, we made the case for considering pragmatic frames as important components of any frame-based repository such as FrameNet. One reason for this is that pragmatic aspects - just like semantic roles - may well belong to the conventionalized content of linguistic signs. This forces us to extend the description of frames in such a way that it includes not only a well-defined configuration of semantic roles (FEs) but also conditions for using the frame-evoking elements adequately. It still remains an open issue, however, in which way pragmatic information can, and should, be built into a frame definition. One option is to introduce a new category "pragmatic roles"; yet, it is anything but clear how to consistently define such roles in parallel to the well-established notion of semantic roles. Another option is to specify usage requirements in the prose part of a frame definition. Yet another option is to enrich 'traditional' frame-semantic descriptions by pragmatic templates as introduced by Liedtke (2013, 2018).

Not surprisingly, very similar issues arise with reference to construction entries (Cappelle 2017; Finkbeiner 2019). Beyond the pragmatic frames addressed here, there is assumingly a huge variety of other types of both pragmatic frames and pragmatic constructions peculiar to a language. Even though these units challenge standard frame-semantic and constructionist approaches in several ways, we have no general reservation about the integration of these units into the type of constructicon that we have in mind (Ziem and Flick 2019). Without doubt, however, it is an empirically challenging task to identify and describe pragmatic frames and constructions in a comprehensive way.

As a first guess, we consider the following examples, among others, as good candidates for LU or MWU evoking pragmatic frames or construction: Greeting and leave-taking expressions (*Good morning*, *Dear X*, *Goodbye*, *Kind regards*); performative verbs and

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[7] We use the term with all reservations as to what an 'exact' definition of 'culture' could be.

expressions (*I baptize you*); deictic and multimodal constructions (*so*+ADJ+gesture; Ziem 2017); expressions of preference (*von wegen* 'No way!'); implicatures; text genre-specific constructions (e.g., pro drop in recipes); information structure (*it was the girl who...*). Taking phenomena like this as a benchmark (also for forthcoming efforts in the Global FrameNet Shared Annotation Task), we consider it worthwhile to gradually develop a robust and sophisticated concept of "pragmatic frame" on an empirical basis.

6. Bibliographic References

Blyth, C., & Koike, D. (2014). Interactive frames and grammatical constructions. In S. K. Bourns & L. L. Myers (Eds.), *Perspectives on Linguistic Structure and Context: studies in honor of Knud Lambrecht* (pp. 87–108). Amsterdam ; Philadelphia: John Benjamins Publishing Company.

Bunt, H., Alexandersson, J., Carletta, J., Choe, J.-W., Chengyu Fang, A., Hasida, K., et al. (2010). Towards an ISO standard for dialogue act annotation. In *Seventh conference on International Language Resources and Evaluation (LREC'10)*. La Valette, Malta. https://hal.inria.fr/inria-00544997

Cappelle, B. (2017). What's pragmatics doing outside constructions? In I. Depraetere & R. Salkie (Eds.), *Semantics and Pragmatics: Drawing a Line* (pp. 115–151). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-32247-6_8

Clausner, T. C., & Croft, W. (1997). Productivity and Schematicity in Metaphors. *Cognitive Science*, *21*(3), 247–282.

Columbus, G. (2010). "Ah lovely stuff, eh?" - invariant tag meanings and usage across three varieties of English. In S. Th. Gries, S. Wulff, & M. Davies (Eds.), *Corpus-linguistic applications: current studies, new directions* (Vol. 71, pp. 82–105). Brill | Rodopi. https://doi.org/10.1163/9789042028012_007

Czulo, O., Torrent, T. T., Matos, E., Diniz da Costa, A., & Kar, D. (2019). Designing a Frame-Semantic Machine Translation Evaluation Metric. In *Proceedings of The Second Workshop on Human-Informed Translation and Interpreting Technology (HiT-IT 2019)*. Varna, Bulgaria.

Czulo, O., Torrent, T., Willich, A., Ziem, A., & Laviola, A. (submitted). A multilingual approach to the interaction between frames and constructions: towards a joint framework and methodology.

Fillmore, C. J. (1975). An alternative to checklist theories of meaning. In *Annual Meeting of the Berkeley Linguistics Society* (Vol. 1, pp. 123–131).

Fillmore, C. J. (1977). Scenes-and-frames semantics, Linguistic Structures Processing. In A. Zampolli (Ed.), *Fundamental studies in computer science* (pp. 55–88). North Holland Publishing.

Fillmore, C. J. (1982). Frame Semantics. In The Linguistic Society of Korea (Ed.), *Linguistics in the Morning Calm. Selected Papers of SICOL-1981* (pp. 111–137). Seoul: Hanshin.

Fillmore, C. J. (1985). Frames and the semantics of understanding. *Quaderni di Semantica*, *6*(2), 222–254.

Fillmore, C. J., & Baker, C. F. (2010). A Frames Approach to Semantic Analysis. In B. Heine & H. Narrog (Eds.), *The Oxford Handbook of Linguistic Analysis* (pp. 313–339). Oxford: Oxford University Press.

Fillmore, C. J., Kay, P., & O'Connor, M. C. (1988). Regularity and Idiomaticity in Grammatical Constructions: The Case of "Let Alone." *Language*, *64*(3), 501–538.

Finkbeiner, R. (2019). Reflections on the role of pragmatics in Construction Grammar. *Constructions and Frames*, *11*(2), 171–192. https://doi.org/10.1075/cf.00027.fin

Goffman, E. (1961). *Encounters: Two studies in the sociology of interaction*. Indianapolis: Bobbys-Merrils.

Goffman, E. (1967). *Interaction rituals: Essays on face to face behavior*. New York: Anchor.

Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Cambridge, MA, USA: Harvard University Press.

Halliday, M. A. K. (1973). *Explorations in the functions of language*. London: Arnold.

Halliday, M. A. K., & Matthiessen, C. M. I. M. (2004). *An introduction to functional grammar* (3 (revised by C.M.I.M. Matthiessen)).). London: Arnold.

König, K. (2017). Question tags als Diskursmarker? Ansätze zu einer systematischen Beschreibung von "ne" im gesprochenen Deutsch. In H. Blühdorn, A. Deppermann, H. Helmer, & T. Spranz-Fogasy (Eds.), *Diskursmarker im Deutschen: Reflexionen und Analysen* (pp. 233–258). Göttingen: Verlag für Gesprächsforschung.

Liedtke, F. (2013). Pragmatic templates and free enrichment. In F. Liedtke & C. Schulze (Eds.), *Beyond words: content, context, and inference* (pp. 183–205). Berlin ; Boston: De Gruyter Mouton, Walter De Gruyter GmbH.

Liedtke, F. (2018). Frames, Skripte und pragmatische Templates. In M. Wengeler & A. Ziem (Eds.), *Diskurs, Wissen, Sprache: Linguistische Annäherungen an kulturwissenschaftliche Fragen* (pp. 115–135). Berlin ; Boston: De Gruyter.

Lyngfelt, Benjamin, Borin, L., Ohara, K., & Torrent, T. T. (Eds.). (2018). *Constructicography: Constructicon development across languages*. John Benjamins.

Ohara, K. (2018). The relations between frames and constructions: A proposal from the Japanese

FrameNet constructicon. In Benja Lyngfelt, L. Borin, K. Ohara, & T. T. Torrent (Eds.), *Constructicography: Constructicon development across languages* (pp. 141–163). Amsterdam; Philadelphia: Benjamins.

Rohlfing, K. J., Wrede, B., Vollmer, A.-L., & Oudeyer, P.-Y. (2016). An alternative to mapping a word onto a concept in language acquisition: Pragmatic frames. *Frontiers in Psychology*, *7*, 1–18. https://doi.org/10.3389/fpsyg.2016.00470

Searle, J. R. (1969). *Speech acts : an essay in the philosophy of language*. Cambridge: Univ. Pr.

Torrent, T. T., Lage, L. M., Sampaio, T. F., da Silva Tavares, T., & da Silva Matos, E. E. (2014). Revisiting border conflicts between framenet and construction grammar: Annotation policies for the brazilian portuguese constructicon. *Constructions and Frames*, *6*(1), 34–51. https://doi.org/10.1075/cf.6.1.03tor

Ziem, A. (2014a). *Frames of understanding in text and discourse: Theoretical foundations and descriptive applications*. (C. Schwerin, Trans.). Amsterdam ; Philadelphia: John Benjamins Publishing Company.

Ziem, A. (2014b). Frames and constructions enhance text coherence: The case of DNI resolutions in spoken discourse. *Yearbook of the German Cognitive Linguistics Association*, *2*(1), 3–20.

Ziem, A. (2017). Do we really need a Multimodal Construction Grammar? *Linguistics Vanguard: Special issue "Towards a multimodal construction grammar,"* *3*(1), 1–9. https://doi.org/10.1515/lingvan-2016-0095

7. Language Resource References

Baker, C. F., & Sato, H. (2003). The framenet data and software. In *Proceedings of the 41st Annual Meeting on Association for Computational Linguistics* (Vol. 2, pp. 161–164). Association for Computational Linguistics.

Borin, L., Dannélls, D., Forsberg, M., Gronostaj, M. T., & Kokkinakis, D. (2010). The past meets the present in Swedish FrameNet++. In *14th EURALEX international congress* (pp. 269–281).

Burchardt, A., Erk, K., Frank, A., Kowalski, A., Pado, S., & Pinkal, M. (2006). The SALSA corpus: a German corpus resource for lexical semantics. In *Proceedings of LREC 2006* (pp. 969–974). Genoa, Italy.

Fillmore, C. J., Lee-Goldman, R. R., & Rhomieux, R. (2012). The FrameNet Constructicon. In H. C. Boas & I. A. Sag (Eds.), *Sign-Based Construction Grammar.* (pp. 309–372). Stanford: CSLI Publications.

Gilardi, L., & Baker, C. F. (2018). Learning to align across languages: Toward multilingual framenet. In *Proceedings of the International FrameNet Workshop* (pp. 13–22).

Ohara, K., Fujii, S., Ohori, T., Suzuki, R., Saito, H., & Ishizaki, S. (2004). The Japanese FrameNet project: an introduction. In *Proceedings of the satellite workshop "Building lexical resources from semantically annotated corpora"* (pp. 9–11). Presented at the Fourth international conference on Language Resources and Evaluation, European Language Resources Association.

Robinson, K. (2006). *Do schools kill creativity?* Presented at the TED - ideas worth spreading. https://www.ted.com/talks/sir_ken_robinson_do_schools_kill_creativity. Accessed 20 February 2020

Ruppenhofer, J., Ellsworth, M., Petruck, M. R. L., Johnson, C. R., Baker, C. F., & Scheffczyk, J. (2016). FrameNet II: Extended Theory and Practice. https://framenet2.icsi.berkeley.edu/docs/r1.7/book.pdf

Subirats Rüggeberg, C., & Petruck, M. (2003). Surprise: Spanish FrameNet! In E. Hajičová, A. Kotěšovcová, & J. Mirovský (Eds.), *Proceedings of the workshop on Frame semantics*. Presented at the XVII International Congress of Linguists, Prague: Matfyzpress.

Torrent, T. T., & Ellsworth, M. (2013). Behind the Labels: Criteria for Defining Analytical Categories in FrameNet Brasil. *Veredas*, *17*, 44–65.

Torrent, T. T., Ellsworth, M., Baker, C. F., & Matos, E. (2018). The Multilingual FrameNet Shared Annotation Task: a Preliminary Report. In T. T. Torrent, L. Borin, & C. F. Baker (Eds.), *Proceedings of the International FrameNet Workshop 2018: Multilingual Framenets and Constructicons*. Paris, France: European Language Resources Association (ELRA).

Ziem, A., & Flick, J. (2019). Constructicography at work: implementation and application of the German Constructicon. In *Yearbook of the German Cognitive Linguistics Association*.

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