The Derivational Habitat of *Experiencer* in English and Bulgarian: An Onomasiological Perspective

Alexandra Bagasheva, Sofia University "St. Kliment Ohridski", Bulgaria

Abstract

Psych verbs' special status and their associated properties have loomed large in syntactic analyses, but remain relatively under-researched with regard to word formation. The expression of Experiencer,[1] as the inevitable participant role for such predicates, appears a central analytical and classificatory factor in syntax (e.g., subject-experiencer vs. object-experiencer verbs), whereas the *Experiencer* deverbal derivation remains under-researched. In this work the ecological niche of deverbal *Experiencer* derivation in English and Bulgarian is analyzed from a contrastive cognitive-onomasiological perspective, and the polysemy networks in which *Experiencer* derivation in the ecology of deverbal nominalizations participates are explored. A tentative hypothesis is formulated as to the plausible factors conditioning the lack of a dedicated *Experiencer* pattern in either language, which can be grouped into conceptual, linguistic and metalinguistic ones. The most fundamental factor seems to be the fact that what happens in the mind is non-accessible, and despite its cognitive primacy, it can only be modeled after more familiar types of events and interactions.

Keywords: psych verbs, *Experiencer*, derivation, onomasiology, English-Bulgarian analysis

1 Throughout the text when a semantic label is in italics it names a conceptual-onomasiological category, which is derived from an underlying conceptual schema. When a semantic label is in plain script it is used as a label for syntactically defined thematic/semantic term.

1 Introduction

According to Landau (2010) *Experiencers* are cognitively and linguistically special: "[b]eing the primary species of experiencers ourselves, it is hardly surprising that we assign a privileged status to the category of sentient entities capable of mental life" (Landau 2010, 3). Surprisingly, and to the best of my knowledge, *Experiencers* have not made it into the limelight of focused word formation research, unlike their prime appearances in studies focused on syntax-driven interfaces. Assuming that "cognitive primacy has causal effects" (Landau 2010, 3) on the grammar, the lack of dedicated *Experiencer* derivational pattern in two distantly genealogically related languages (one Slavic, the other Germanic) – both with nominative-accusative syntax with different ergative reflexes, associated with significant differences in their voice systems and verb compounding (on verb compounding in the two languages and the ergative cryptotype see Bagasheva 2012 and 2014) – and hence with distinct word formation ecology, invites at least a reflection, if not an explanation.

Psych verbs have been defined in various ways, but the common core detectable in all definitions can be pre-theoretically summarized as lexical items encoding states or events of internal, affective, desiderative or cognitive experience, through which we encode "our mental contact with the world" (Downing 2015, 171). The focus of extensive attention in relation to this group of verbs in separate languages and cross-linguistically, from diverse standpoints and within different frameworks, have been argument assignment and linking/mapping problems at the semantics-syntax interface (Croft 1986; Dowty 1988, 1991; Jackendoff 1990, 2007; Kiparsky 1987; Levin 1993; Pesetsky 1995; Van Valin 1990, 2005; Van Voorst 1992; Zaenen 1993, to name but a few). Considering the significance of the correlation between syntactic encoding and affixal functions in languages (e.g., Grimshaw 1990; Lees 1960; Härtl 2015; Levi 1978; Marchand 1969; Paducheva 1998; Ryder 1999; Selkirk 1982; Spencer 2005, 2015), the lack of specific research on the participant word formation properties of this group of verbs needs to be addressed, and serves as the motivation for the account provided here.

Affixal (systemic) polysemy[2] has been extensively studied and a cross-linguistic tendency for an *Agent/Instrument*(/*Location*) recurrent polysemy has

2 This term is used as defined by Apresjan (1974) as "regular polysemy" or recurrent patterns of radial networks of correlated possible affix readings across languages.

been repeatedly evidenced (Rainer 2011, 2014; Ryder 1999; Baeskow 2015, to name but a few). A noticeable symmetry between *Agent* and *Patient* marking in English has been discussed (Baeskow 2015), i.e., the correspondence between *-er* vs. *-ee* affixal derivation as in e.g., *dump**er*** – *dump**ee***, with occasional overlaps in marking, e.g., *-ee* in English marking agents as in *escap**ee***, *attend**ee***, etc. or the *-er* marking patients as in *bak**er***, *fry**er*** (Barker 1998; Booij and Lieber 2004; Ryder 1999, etc.).

Despite the cognitive salience of psych verbs, little research has been carried out regarding Experiencer participant nominalization and potential correspondence with Stimulus marking. Assuming that the opposition between *Experiencer* and *Theme* and *Experiencer* and *Stimulus* within the force dynamic structure of mental events (Croft et al. 2018) can be likened to the derivationally expressed *Agent* – *Patient* contrast as in English *employ**er*** vs. *employ**ee***, the objective of the research is to see how participant nominalizations from psych verbs are realized in the language pair English – Bulgarian. Admittedly, a full account should comment on the differentiation between *Experiencer* and *Affectee* and between *Stimulus*, *Theme* and *Affector* and monitor any derivational specialization in view of these semantic differentiations, but as this is an initial, exploratory research, in the remainder of the chapter these are discussed indiscriminately, with a few exceptions, in the relevant context. Affector and Affectee are defined for the special type of agentive-causative psych verbs such as *Mary **frightened** John*, which deviate from typical agentive verbs (Alexiadou 2016) but also from typical psych verbs (Liu 2016). They occupy the middle ground along the notions of affectedness and change and are associated with a special set of roles, which are defined as follows: "[d]ifferent from the non-sentient Stimulus, an Affector volitionally instigates an internal change on an Affectee in a more dynamic and eventive manner" (Liu 2016, 4).

In view of the above, the problem of the word-formation behaviour of psych verbs offers practically unlimited possibilities for analytical treatment and research. I have limited the perspective here to the following interrelated research questions:

Are any of the properties of psych verbs (conceptual and syntactic) reflected in participant nominalizations?

How is *Experiencer* referential participant deverbal nominalization in English and Bulgarian actualized, i.e., are there dedicated affixal patterns or word formation processes for the derivational encoding of *Experiencer* in the two languages?

What are the basic similarities and contrasts in "the population of the semantic niche" of *Experiencer* in the two languages; i.e., are the polysemy chains of participant nominalizations fully coincidental or how do they differ?

In order to answer these questions, the rest of this chapter is structured as follows: part two briefly presents the adopted analytical framework and its theoretical contextualization; in part three the central properties of psych verbs in the two languages are discussed; part four focuses on presenting a contrastive onomasiological account of *Experiencer* nominalization in English and Bulgarian; in part five possible reasons for the findings and some conclusions are provided.

2 Notes on the framework and theoretical background

Within the framework adopted here, a cognitive-functional onomasiological approach to word formation, Langacker (1991) recognizes the theoretical significance of deverbal nominalizations and Heyvaert (2010) emphasizes their centrality in the symbolic inventory of the lexicogrammar. Prominent in this inventory are participant nominalizations. Since language is remarkably anthropo- and egocentric (Dirven and Verspoor 2004), it is expected that participants in psych verb frames will be noticeably significant and will likely be encoded in constructions of various degrees of complexity. The *Experiencer* nominalization ecosystems of English and Bulgarian are examined to explore this issue, but first some background on the encoding of the respective target in syntactic constructions is provided.

The analysis is based on the key tenets of the onomasiological approach to word formation (Štekauer 1998, 2001, 2005, 2015), supplemented with Lieber's (2016) onomasiology informed ecological view of English deverbal nominalizations and embedded in the larger framework of the cognitive-constructionist architecture, where language is assumed to be a dynamic system of symbolic pairings of meaning and form. Among the central tenets of the onomasiological theory is the word-formation type cluster, which is comprised of all lexemes coined for expressing a specific conceptual category, e.g., *Patient*, *Instrument*, *Location*, etc. There are eight onomasiological types, which differ in terms of the expression of the onomasiological categories of the determining constituent of the mark, the determined constituent of the mark, and the onomasiological base. Morphemes are mapped onto these constituents by the Morpheme-to-Seme Assignment Principle, which is premised on the idea that "the semantics of morphemes stored in the lexicon

is matched with the individual semantic categories of the onomasiological structure" (Körtvélyessy, Štekauer and Zimmermann 2015). Thus, the analysis of a word-formation type cluster may focus on the onomasiological types or it can explore the ecology of the morphemes (and processes) involved in the mapping of the requisite semantic constituents. The stored morphemes themselves (including what are traditionally called word formation processes, such as compounding, conversion, affixation, etc.) constitute a complex ecosystem of polyfunctionality and competition. In what follows the second option is adopted.

In keeping with Krzeszowski's recommendation for choosing a meaning component for contrastive word formation analysis,

> [s]ince formal comparisons of individual lexical items do not seem to lend themselves to any significant generalizations, contrastive studies of word formation are better off if they are based on some conceptual framework. [...] As a matter of fact, any aspect of the meaning can serve as a basis for cross-linguistic comparisons (Krzeszowski 1990, 75).

The word-formation type cluster *Experiencer*, one of the prominent participant nominalizations, is chosen as *tertium comparationis*. The terms *Agent*, *Patient*, *Instrument*, *Experiencer*, *Theme* and *Stimulus* are used here not as thematic roles but as comparative semantic categories (for a discussion of the appropriacy and nature of comparative semantic categories in word formation analysis see Bagasheva 2017), akin to the conceptual categories driving a naming process (which for analytical purposes are equated with participant labels in frame analysis as in Fillmore (2006) and FrameNet). Even though some of the terms coincide with thematic roles as defined in syntactic analysis, the terms used as grounds for comparison here are derived from "schemata, i.e., mental representations of the knowledge which human beings share about objects and events in the world" (Ortner and Ortner 2015, 910) and thus are coterminous with the conceptual types used in onomasiological word formation theory. They are labels based on conceptual schemata, not theta-roles, and are tools of formal and theoretical neutrality in relation to any syntactic account of word formation. The schema as operative in word-formation is here understood as defined by Tuggy (2005, 235):

> A schema is a pattern, a rough outline, a coarse-grained, less-fully-specified version of a concept which the elaborations render, each in a different way, in finer, more elaborate detail. All of the schema's specifications are true of its elaborations, but each elaboration of a schema specifies details which the schema does not.

Furthermore, Lehmann (2015, 701; emphasis added) recognizes "categories such as agent noun, place noun, or gender marking, [as] the oldest, most common and most widely used **semantic categories** in word-formation, providing a suitable **onomasiological basis** for cross-linguistic comparison". Such categories are defined for analytical purposes in the study of derivational categories and derivational semantics. After all, semantic labels in both syntax and derivational morphology are just "convenient mnemonics" for prominent structural configurations of conceptual structure (Jackendoff 1990, 47). The categories employed in the subsequent discussion can be presented in an alphabetical order without any claims on primacy as follows:

Agent – the performer of an action with the properties of animacy, volition, intentionality and directedness of the action or causality (which excludes *sneezer*, for example);

Experiencer – a sentient, animate being (prototypically human) capable of experiencing emotions, entertaining thoughts and beliefs, of cogitation, etc. (e.g., *admirer, dreamer, believer*, *hearer*, etc.);

Instrument – an inanimate (including material) that an agent uses to implement an event (*toaster*, *sharpener*);

Patient – a participant in a situation upon whom an action is carried out or who is the carrier of certain attribute (e.g., *dumpee*, *beatee*, *старец* (*starec*, an old man), etc.);

Stimulus[3] – the trigger in a perception or emotional reaction event (e.g., *downer*, *eyesore*);

Theme[4] – the entity (irrespective of animacy) towards which the emotions of an Experiencer are directed (e.g., *admiree*).

The last preliminary note relates to the pervasive non-compositionality of word formation products or lexical constructions, implicit in Baeskow's contention

3 The difference between *Stimulus* and *Theme* is conditioned by the inceptive as opposed to the lasting nature of the emotion, beside the specialization between triggering of an emotion and being the recipient of an emotion, e.g., *The play* (Stimulus) *impressed the viewers* vs. *John loves jazz music* (Theme).

4 *Affector* and *Affectee* (recognized by Liu (2016) as significant both for syntactic constructions and for lexicalization patterns) are not included in the list as they were defined in the previous part. The causative nature of purposeful evocation of emotional reactions collapses the agentive-causative and psych verb properties and maps over the mental event schema/frame over the dynamic (canonical) event schema.

that "word-formation involves aspects of meaning, which are neither predicted by the syntax nor reducible to dictionary entries" (Baeskow 2015, 39). On the basis of this assumption that derivational meaning is different from both lexical meaning and principles of syntactic meaning computation and against the background of extensive affixal polysemy, it is the complexity of the ecosystem of affixes and rival derivational processes within a word-formation type cluster that presents the ideal granularity level and focus in contrastive word formation research and presents a suitable *tertium comparationis*. For this reason, adopting Lieber's (2016) metaphor of the derivational ecosystem, and her understanding of morphological types as either specific affixes or particular word formation processes, e.g., conversion (Lieber 2016, 57), in what follows a discussion is presented of the ecological niche of *Experiencer* marking in the nominalization ecosystems of English and Bulgarian, tracing the polysemy chains therein. The concept of nominalization includes the derivation of nouns from all kinds of bases (adjectival, nominal, verbal, etc.). As the main focus of discussion here falls on *Experiencer* as central participant in the conceptualization of psych verbs, the analysis is restricted to referential participant deverbal nominalizations, excluding all other possible types of nominalizations, be them defined in terms of their bases or in terms of the output (i.e., event, result or state nominalizations). For the proper understanding of the specificity of *Experiencer* as a derivational semantic category, we need to review the special properties of psych verbs, since they project the frames (in the sense of Fillmore 2006) from whose schemata (Tuggy 2005) *Experiencer* is conceptually delineated and word-formationally encoded.

3 The special properties of psych verbs

In Langacker's (1999) opinion the experiencing of emotions may be included as a conceptual archetype and can be used for linking basic grammatical constructs with semantic characterization. Emotions may be viewed as 'forces' and emotion verbs may be treated as 'causal-evaluative events' (Lyons 1980; Lakoff and Kövecses 1987; Talmy 1985, 1988; Radden 1998; Kövecses 1998, 2000, among others), a view which directs lexical-semantic (conceptual) and morpho-syntactic analyses of psych verbs and their role in the architecture of language.

The basic features of the various types of psych verbs that have drawn the attention of syntacticians from various persuasions and analytical backgrounds relate to aspectual classifications (eventive vs. stative; change-of-state properties,

causative, transitivity, control, volition, etc.), correlation between semantic roles and syntactic mapping, lexical semantics and argument structure, causality, agentivity, directedness vs. inherence of the experience, correlation with voice systems, etc. This plethora is not matched within word formation research, but a few questions have been debated, e.g., the thematic hierarchy and affixal selection (Rodrigues 2021); possible correlations between the syntax (basically aspectual characteristic and argument realization rules) of psych verbs and *-able* adjectival derivation in English (Alexiadou 2018) and the polysemy of *-ment* suffixation in relation to psych verb bases (Kawaletz and Plag 2015). Whatever theoretical or analytical position is adopted, argument realization and subject or object-orientation of psych verbs, case marking of the Experiencer (here a thematic role), inchoativity/eventivity vs. stativity and causality seem to be the most controversial analytical questions in encoding participant roles of psych verbs in syntactic constructions within the constructicon (for an overview of conceptions and applications of this notion in the constructionist understanding of the architecture of language see Lyngfelt 2018 and Lyngfelt et al. 2018).

Within formal, syntactically informed treatments of word formation phenomena (e.g., Lees 1960), which are generally syntagmatically oriented and rule-based, argument restrictions on word formation, or the influence of the morpho-syntax-lexicon interface on word formation, have led to the establishment of structural rules holding in the domain, parallel to thematic role mapping in syntax. Most of these are defined as restrictions on word formation, basically compounding and nominalizations (for overviews see Baeskow 2015; Härtl 2015; Lieber 1998, 2016), but none focuses exclusively on *Experiencer* derived from psych verbs, against the discussion of other derivations form psych verbs (see Alexiadou 2018; Kawaletz and Plag 2015; Rodriguez 2021). Syntactic accounts of psych verbs have led to the establishment of implicational hierarchies of subject roles, "Stimulus prominent > Affector prominent > Experiencer prominent, if the leftmost, then all to the right" (Liu 2016, 44) and languages with preferences for one or the other of the possibilities as most frequent have been identified. Numerous other generalizations have been formulated concerning psych verbs, including the establishment of a second pair of basic semantic roles, Affector and Affectee, which emphasize volitional causation of psychological states in the affected party and degree of affectedness (e.g., Beavers 2011, 2013; Kenny 1963; Liu 2016; Tenny 1987, 1992; etc.), such as *John* (Affector) *irritated Peter* (Affectee) *with his constant nagging*. Another pattern that stands out is the *Experiencer* and *Theme* (object of the

emotion) emotion verbs of the *love*, *adore/ обичам*[5] (*običam*, love), *обожавам* (*obožavam*, *adore*) type, e.g., *John* (*Experiencer*) *loves his new car* (*Theme*), where *Theme* is an object of an emotion, which is not necessarily triggered by that object and the eventive ranking is rather low.

Psych verbs, despite the common label, constitute a heterogenous class. Beside the subdivision into the frequently recognized major classes cognition, emotion, desideration and perception (Halliday 1994; Downing 2015), numerous subclasses with distinguishable properties have been identified (Dixon 2005; Liu 2016) and distinct participant roles have been offered: e.g., *Perceiver* and *Impression*; *Cogitator* and *Thought*; *Decision-maker* and *Course*; *Experiencer* and *Stimulus* (Dixon 2005); *Cause* and *Affectee*, *Affector* and *Afectee* (Liu 2016), etc. This multiplicity arises from, on the one hand, the abundant dimensions along which the subtypes are differentiated: e.g., directedness, degree of intentionality, aspectual properties, causality, invited or uninvited emotion and various combinations of these and, on the other hand, from linguists' attempts to capture analytically the schema-based conceptual distinctions within psych verb frames, which far surpass in detail and complexity any syntactic classification of thematic/semantic roles. Depending on the degree of granularity targeted by an analyst, these can be further split or lumped together. The important point to make is that the semantic categories employed for the purposes of word formation analysis are not coterminous with the labels of theta- or semantic roles in syntax (despite the use of homonymous, formally identical labels). Although there is uniformity in the principles of meaning-form mappings within the symbolic constructicon, constructions of different degrees of complexity embody different configurations with variable patterns of parametrization (see Evans 2016 for an elaboration of the postulate of parametrization in the correspondence between the conceptual system and the symbolic inventory within cognitive linguistics) and varying extent of explication of conceptual content. This leads to the differentiation between semantic categories in word formation and thematic/semantic role labels in syntax, despite their conceptual affinities. In more complex constructions more parametric dimensions of cognition are explicitly encoded, which are measured in terms of degree of schematicity, elaboration and abstraction (for the relevant understanding of schematicity and elaboration see Heyvaert 2010 and for abstraction Booij 2010). For analytical purposes this means that basic conceptual features and dependencies within a cognitive schema that is linguistically encoded will

5 All verbs presented in isolation, including in all tables, are given in the 1st person, singular, present tense. Aspectual differences are neither marked nor taken into account.

most likely be present in all constructions mapped with the schema irrespective of their levels of elaboration, schematicity and abstruction. Such is the case with the parallel between the lexical and clausal encoding of affectedness (patienthood, for example) (see the introductory part).

The two languages under study are recognized as nominative-accusative. English is typologically recognized as a highly analytical, isolating language (Štekauer, Valera and Körtvélyessy 2012) with a flexible part of speech system (Vogel 2000), while Bulgarian is described as a fusional-inflectional language with a moderate degree of analyticity and a rigid, overtly marked part of speech system (Nicolova 2009). In terms of *Experiencer* encoding in syntactic constructions, there are a couple of differences between the two languages, despite the overall similarities, i.e., the psych verbs in both languages allow roughly the same clausal constructions. As contrasts are more informative, only the exclusive options in Bulgarian, without parallels in English are mentioned here.

The first option available only in Bulgarian is related to reflexivity: the middle construction with a Stimulus subject with a prepositionally expressed (potentially dative) Experiencer, e.g.:

(1)

Тази	*книга*	*се*	*нрави*	*на*
Tazi	kniga	se	nravi	na
This-DEM.F	book -F.SG	itself ACC.REFL	like-PST-3-SG	to

читател-и	*в*	*по-напреднала*	*възраст*.
čitatel-i	v	po-napred-nal-a	vâzrast.
reader-PL	at	more-advanced-ADJ-F-SG	age-INDF-F

This book appeals to readers of more advanced age.

English: *This book likes itself well/by many

Another construction exclusive to Bulgarian is the impersonal construction with nominal or adverbial predicatives with dative Experiencer, such as *мъчно ми е* (mâčno mi e, [sadly to me is], '*I feel sad*'), (for details see Tisheva and Djonova 2022) with possibility for doubling of the Experiencer, as illustrated below:

(2)

Нервно	му	е	(на Иван)
Nervno	mu	e	(na Ivan)
Nervous-ADV	he-DAT	is	(to Ivan)

Ivan feels nervousness.

English: *It is angrily to John with/about/at his girlfriend's jokes.

In view of the cognitive prominence of *Experiencer* and the significance of this concept for syntactic constructions it may be expected that the same will apply to deverbal nominalizations from psych verbs, although this appears not to be the case. In the next part, the lexical constructions in the word formation type cluster *Experiencer* are discussed within the broader ecosystem of deverbal nominalizations in the languages under investigation.

4 Experiencer derivational marking in English and Bulgarian

Data presented in Štekauer, Valera and Körtvélyessy (2012) indicate that the most productive word formation processes are suffixation (95% of the languages of the world) and compounding (90%) followed by reduplication (80%), prefixation (72%) and conversion (63%). Ivanová and Bednaríková (2020, 27) report that "word-formation is primarily based on affixation in Slavic languages". In keeping with such data, extensive research on the word formation systems in English and Bulgarian has revealed that from a broad ecological perspective the following differences are noticeable: in English compounding and blending are far more productive than in Bulgarian; conversion is far more profitable and active in English than in Bulgarian, the latter associated with the overall problematic nature of conversion in Slavic languages; in contrast, affixation is almost equally viable in both languages. Numerous definitions of conversion exist, more importantly, they diverge not only in terms of essence, but also in terms of language (or language group) for which they are provided. According to Bauer, Lieber and Plag (2013, 27, 545 and 562) conversion in English is a morphological word-formation process, "a change from one word class to another with no concomitant change in form", which implies that thus understood conversion will hardly operate at all in Bulgarian. In the

Slavic analytical tradition, conversion (also known as paradigmatic or affixless derivation) encompasses diverse phenomena, where formal changes are recognized (e.g., thematic markers, inflectional affixes, etc. – for a concise overview of the issues, see Ivanová and Bednaríková 2020). To avoid confusion, for the purposes of the current research conversion is assumed not to involve any formal changes, no matter which language is discussed.

Against the background of these encoding mechanisms, the ecosystems of deverbal nominalizations in the two languages have been characterized to include the following: for Bulgarian (Avramova and Baltova 2016) – action nouns, agent nouns/female agent nouns, names of persons according to a special attribute or predilection,[6] patient nouns, object and result nouns, instrument nouns, and place (location) nouns; for English (Bauer, Liber and Plag 2013), with the restriction to the categories of personal or participant nouns – "agents, patients, themes, instruments, inhabitants, locations, and gendered forms" (Bauer, Liber and Plag 2013, 216). In the Bulgarian overview article *Experiencer* is not mentioned at all, while in the English comprehensive guide to derivational morphology *Agent* and *Experiencer* are always discussed together indiscriminately (despite the lack of *Experiencer* in the list of participant nouns).

In view of this polyfunctionality or systemic polysemy of affixes, what has to be analysed is what other nominalizations are coerced for the expression of *Experiencer* or what polysemy chains *Experiencer* marking participates in. Lieber (2016, 56) claims that

> [t]here are in fact almost no cases in English where we find a one-to-one relationship between form and reading. Looked at from the point of view of interpretations, there are very few readings that are characteristically expressed by a single affix or morphological process; more often than not particular readings can be expressed by a variety of forms.

Beside this indeterminacy of morphological types (separate affixes or processes), we also need to take into account the systematicity of constructional polysemy. That is, different available readings have to be related in a way that can be systematically explained. Booij (2005, 221) utilizes the notion of domain shift to account for the *Agent* – *Instrument* polysemy, "the notion AGENT is transferred to the domain of inanimate material things that are conceived of

6 It could be argued that conceptually the *Experiencer* in *Experiencer-Theme* frames could fall somewhere along this continuum of types – e.g., *cat lover* – someone with a propensity for loving cats.

as agents that perform a particular task". He actually adopts the natural grammaticalization path established by Heine, Claudi and Hünnemeyer (1991, 48) as a cross-linguistically valid directed chain of domain shifts within constructional polysemy networks: "PERSON > OBJECT > ACTIVITY > SPACE > TIME > QUALITY". Though this principle applies unproblematically for *Agent-Instrument*, it cannot account for the *Agent-Experiencer* extension since both remain within the *Person* region.

In view of this and to broaden Lieber's ecological metaphor, the meanings of an affix are fluidly coarticulated not only by all rival affixes populating a niche, but also by the interrelated semantic niches that have emerged in particular languages for the respective affix. Acknowledging that "there is such a great degree of overlap, polysemy, and general malleability of reading in such nouns that we need to consider the ecosystem of nominalizations as a complex, interdependent whole" (Lieber 2016, 117), in what follows an attempt is offered for such an account of the *Experiencer* niche in English and Bulgarian. Whenever there "are readings for which there is no apparent predominant form" (Lieber 2016, 56), we need to look for the coerced constructions for the respective conceptual target. The problem is that a domain-shift explanation will not work in *Agent – Experiencer* polysemy as, on the one hand, both belong to the same domain, and on the other, not all *Agent* affixes can also express *Experiencer*.

Before focusing on the constructional polysemy networks of affixation in the two languages, a broader ecological view shows that among the five most frequent word formation processes neither reduplication nor prefixation are employed for coining *Experiencer* nominalizations in either English or Bulgarian. Conversion, as a word formation process with productivity comparable to that of affixation in English, does not seem to produce *Experiencers* but yields *Patients, Agents*, *Instruments* and *Stimulus* (Lieber 2016). In Bulgarian, conversion is a process of low productivity (Avramova and Baltova 2016) but, surprisingly, it yields *Experiencers* from present active participial forms of verbs (as well as *Agents*) – e.g., *страдащ* (*stradaš*, suffering), *любящ* (*lyubyaš*, loving), *интересуващ се* (*interesuvaš se*, interested), etc. The fact that the source is an inflectional form does not undermine the word formational status of such *Experiencer* nominalizations. These are impersonal verb forms formed with the suffixes *-aš*[7], *-eš* and *-yaš*. They are used to derive all types of *Experiencers*. They correspond most closely to the behaviour of the *-ing* suffix

7 Gender-specific marking in Bulgarian is disregarded here.

in English, but since it is among the most noticeable contrasts between the polysemy networks in the niches of participant derivations in English and Bulgarian it will be further discussed below. Compounding, considered one of the most productive processes in English, yields *Experiencers – cat lover*, *woman hater*, etc. In Bulgarian, compounding (recognized as a central process in the language (Avramova and Baltova 2016)) yields the same type of *Experiencer* in a similar manner to English – *котколюбец* (*kotkolyubec*, cat-lover), *женомразец* (*ženomrazec*, woman hater). In both languages, compounding resulting in *Experiencer* nominalizations is of the verbocentric, synthetic or parasynthetic type (for a more elaborate account of compound human nominalizations in the two languages and the differences between synthetic and parasynthetic verbocentric compounds see Bagasheva (2015). Leaving bracketing paradoxes aside, it can be claimed that in *Experiencer* nominalizations in the two languages compounding goes hand in hand with affixation. Notably, in Bulgarian, *Experiencer* compounds include as the right member a form that is either not a lexeme in isolation or has a different meaning, e.g., neither **любец* (*lyubec*, lover), nor **мразец* (*mrazec*, *hater*) are attested lexemes in Bulgarian, i.e., parasynthesis is the norm in *Experiencer* compound nominalizations. In both languages *Experiencers* associated with (volitional) emotional states directed towards a *Theme* are encoded by compounding, where the first constituent is the *Theme* and the second the deverbal *Experiencer*. In Bulgarian the most frequent affix in Experiencer compounds is *-ец* (*-ec*), followed by *-тел* (*-tel*), while in English the most productive one is *-er*. A summary of the utilization of different word formation processes employed in the two languages for populating the word-formation type cluster (with no reference to the separate onomasiological types identified by Štekauer 1998, 2001, 2005) is presented in Table 1.

Table 1. Word-formation Type Cluster Experiencer by process type.

	English	Bulgarian
Suffixation	√	√
Compounding	√	√
Reduplication		
Prefixation		
Conversion		√

As suffixation is a comparably productive process in both languages, greater attention is devoted to separate suffixal patterns in the remainder of this part.

Table 2 below presents the suffixation part of the habitat of *Experiencer* in English and Bulgarian, with the English data taken from Bauer, Lieber and Plag (2013) and Lieber (2016) and the Bulgarian data harvested from the Bulgarian Reverse Dictionary, Bulgarian Derivational Dictionary, Dictionary of New Words in Bulgarian and a series of relevant scholarly books and articles (referenced below under Data Sources). Table 3 presents the suffixal ecosystems of referential participant nominalizations in the two languages and establishes the polysemy networks in which suffixal *Experiencer* nominalization participates. The suffixes for all deverbal participant nominalizations are presented, where unlike in the English source *Agent* and *Experiencer* are presented separately. *Stimulus* is used as a blanket term encompassing *Theme*, *Affector* and *Stimulus* proper, because *Stimulus* is the most prototypical nominalization and, consequently, apart from the tendency for specialization of (para)synthetic compounding for *Experiencer-Theme* conjoining in a single lexeme (see *woman hater* and *женомразец* (*ženomrazec*, woman hater) above), there are no other discernible specializations (with the exception of *-ач* (*-ač*) suffixation in Bulgarian, commented on below).

Table 2.[8] Word-formation Type Cluster *Experiencer* by suffixal patterns.

	Experiencer
English	*-ant (-ent)*; *-ee, -er, -ist*
Bulgarian	*-ač (-jač); -ec; -lyo; -or; -tel; -yor*

8 Table 2 is actually derived from Table 3 after the exclusion of claimed but not attested affixes for *Experiencer* derivations.

Table 3. Referential participant deverbal nominalizations by suffixal patterns.

	Agent[9]	**Instrument**	**Patient**	**Experiencer**	**Stimulus**
English	*-ant (-ent)*; *-ation*; *-ee*; *-eer; -er*; *-ing; -ist; -meister; -or; -ster*	*-ance*; *-ant*; *-ation*; *-er*; *-ing*; *-ment; -or*	Animate *-ee*; *-er*; Inanimate *-age*; *-al*; *-ance*; *- ation*; *-ee*; *-er*; *-ery; -ing*; *-ity*; *-ment*; *-ure*	*-ant (-ent)*; *-ation*; *-ee*; *-eer; -er*; *-ing; -ist; -meister; -or; -ster*	*-ant (-ent)*; *-er*; *-ist; -ment; -or;*
Bulgarian[10]	*-ar* (*-jar*); *-ač*; *(-jač)*; *-ant/ ent*; *-ator/ itor*; *-ec*; *-(n)ik*; *-or*; *-tel; -yor*	*-ar (-jar)*; *-ač (-jač)*; *-olo/-ilo/-(i) lka*; *-ec*; *-(n) ik*; *-or*; *-tel; -yor*	*-ar (-jar); -ač;(-jač); -ie; -nie; -ivo; -ec; -(n)ik; -or; -tel*	*-ač (-jač); -ec; -lo; -lyo; -or; -tel; -yor*	*-ač (-jač); -ec; -lo; -tel; -yor*

As can be gleaned from Tables 2 and 3, *Experiencer* is not "an unexploited semantic niche" (Lieber 2016, 57) and a number of suffixes populate it. The nature of this semantic niche and its population is, however, never discussed in its own right in the word formation literature. It is always indiscriminately included in the company of *Agent*, *Instrument* and *Stimulus*. The lack of semantically and word-formationally annotated comparable corpora for the two languages makes it impossible to provide quantitative analysis of the frequency of the separate affixes, or to stipulate on the language-internal onomasiological competition between them (which explains their alphabetical

9 The suffixes are arranged alphabetically without any claim for productivity or frequency rating. The English ones, with the exception of *Stimulus*, have been taken from Bauer, Lieber and Plag (2013) and Lieber (2016) with their participant encoding potential preserved as in the original. The analysis reveals that the *Experiencer* ones are not as numerous as this indiscriminate lumping together of Agent and Experiencer in the sources suggest. The Bulgarian ones have been self-compiled on the basis of extensive research.

10 There are affixes to specifically mark Experiencer in the feminine gender in Bulgarian such as *-a*, *-la* and *-k*a, but delving into the peculiarities of gender-distinct affixation is beyond the scope of the current chapter.

ordering in Table 2 and in Table 3). The qualitative discussion offered here focuses on contrasting the polysemy chains of the affixes used for *Experiencer* encoding in the two languages. To substantiate the data in Table 2 a procedure of manually screening the reverse dictionaries of the two languages (English – 2002, Bulgarian – 2011) was accomplished.

As naturally follows from the embodied cognition thesis (see Gibbs 2005 for a discussion of embodiment in cognitive science) in cognitive linguistics, physical events serve as the basis for conceptualizing mental events. Parallels between the conceptualization of physical events and mental events are expected, as well as commonalities in their construal in constructions of different complexity, which suggests that any noted differences will be highly informative. Before focusing on a discussion of the most productive separate affixal patterns, an overview of the polysemy networks of participant deverbal nominalizations in the two languages is presented.

In both English and Bulgarian the word formation cluster types of *Agent*, *Patient* and *Experiencer* are more densely populated by potential realizations than the ones of *Instrument* and *Stimulus*. In both languages there is at least one uninterrupted polysemy chain encompassing all five types (examples follow the ordering of types as in Table 3): e.g., English – *-er*: *baker*, *stapler*, *beater*, *dreamer*, *downer*, Bulgarian – *-ец* (*-ec)*: *крадец* (*kradec*, thief), *четец* (*četec*, reader), *ленивец* (*lenivec*, lazybones), *страдалец* (*stradalec*, sufferer), *живец* (*živec*, stimulator). In other affixal patterns there are conspicuous gaps: while in Bulgarian *Patient* is conspicuously missing with regard to *-tel* suffixation: *писател* (*pisatel*, writer), *излъчвател* (*izlâčvatel*, emitter), *мечтател* (*mečtatel*, dreamer), *дразнител* (*draznitel*, irritator), in the English *-ist* suffixation *Patient*, *Instrument* and *Stimulus* are missing: *pianist*, *agonist*. The reasons for such polysemy constellations are too numerous and complex, and require dedicated research beyond the scope of the current review. In short, there are notable parallels and fewer contrasts between the two languages. The contrasts concern the polysemy of separate suffixal patterns, but do not indicate any more fundamental contrasts that might correlate with the more conspicuous contrasts in the syntactic constructions employed for encoding Experiencer (see part 3 above).

Worthy of comment is the contrast between the two languages in seamlessly employing the inflection-derivation gradient. In both languages an inflectional form via conversion can yield both *Agents* and *Experiencers* – the *-ing* form in English and the active present participle form in *-ащ* (*-aš*),

-ещ (*-eš*) and *-ящ* (*-yaš*) in Bulgarian. The conversion or meaning extension process from the participle in Bulgarian results in adjectives and participant nouns exclusively, while *-ing* in English can produce action noun, event, agent, result, patient, an adjectival reading, an adverb reading, and so on. Probably due to its extensive polysemy chain (far beyond participant nominalizations) and also because it is the most inflectional of all the affixes used for participant nominalizations, it does not yield *Experiencer*. Even though the participles in the two languages may be assumed to be functional equivalents in terms of agentive and adjectival meanings, the similarities stop here. Corresponding to the other readings of *-ing*, in Bulgarian the following dedicated affixes are used: *-(а)не* (*-(a)ne*) – action noun, e.g., *писане* (*pisane*, writing), учене (*učene*, learning/studying); *-ащ* (*-aš*), *-ещ* (*-eš*) and *-ящ* (*-yaš*) – the adjectival reading, e.g., *разбиращ* (*razbiraš*, understanding), *обичащ* (*običaš*, loving), *мечтаещ* (*mečtaeš*, dreaming), *любящ* (*lyubyaš*, loving); *-айки* (*-ayki*), *-ейки* (*-eyki*) – the adverbial reading, e.g., *пеейки* (peeyki, singing), *смеейки се* (*smeeyki se*, laughing); *-ба* (*-ba*), *-еж* (*-ež*), *-ние* (*-(n)ie*), *-иво* (*-ivo*), *-ка* (*-ka*), *-ница* (*-nica*) – result, e.g., *резба* (*rezba*, carving), *строеж* (*stroež*, building), *послание* (*poslanie*, message), *плетиво* (*pletivo*, knitting), *отливка* (*otlivka*, casting), *драскаица* (*draskanica*, scribbling). This plethora of specialized deverbal suffixes accounts for the lack of extensive polysemy between participant encoding means and other nominalizations in Bulgarian. Thus, it seems that *Experiencer* is contrastively marked within the ecology of deverbal nominalizations in both languages: the most polysemous of all nominalizing affixes *-ing* in English does not yield *Experiencer* nominalizations, while one of the least productive processes in Bulgarian (conversion from an inflectional source) produces only *Agents* and *Experiencers* within referential participant deverbal nominalizations. More generally, in English participant nominalizations are part of synonymous chains with other deverbal nominalizations, while in Bulgarian no such overextension in deverbal nominalizations from psych verbs is detectable (where participant nominalization is a subset of deverbal nominalizations including other readings such as action, state, and result).

The polysemy networks indicate that there is a systematic polysemy between *Agent* and *Experiencer* in both languages, which cannot be explained via Booij's (2005) domain extension principle of accounting for affixal polyfunctionality (see above), although the remaining extensions of affixal functions can (across the whole spectrum of deverbal nominalizations). The explanation is more comprehensive, fundamental and conceptually primitive

– mental events are modeled conceptually and linguistically after physical events in a seamless unity grounded in the embodied nature of human cognition and its linguistic encoding. This parallel runs at all levels of patterning of meaning and form in language and is far more fundamental than the metonymic domain extensions.

At the level of lexical constructions, a consistent (although not absolute, e.g., *attendee* (*Agent*) vs. *scratcher* (*Patient*)) tendency for correspondences has been established in the differential and corresponding affixal encoding of *Agent* and *Patient* in physical events – in English *-er* (*writer*) vs. *-ee* (*amputee*), but not in Bulgarian – *съветник* (*sâvetnik*, adviser) vs. *наемник* (*naemnik*, hireling). The removal of animacy from agentivity (the former preserved in *Experiencer* in mental events) and a reversal of the directionality of causality / triggering of an event between *Agent – Patient* in physical events, where the *Agent* is cause/trigger and the *Patient* is the affected entity within the conceptual frame, and *Stimulus – Experiencer* in mental events, where the *Stimulus* is the cause/trigger and the *Experiencer* the affected entity in the frame, may explain why there is no such correlation in lexical encoding of mental events.

It transpires that *-ee* in English is involved in the derivation of psych verb nominalizations, used for the encoding of *Experiencer*, e.g., *amusee, Affectee*, e.g., *offendee,* and *Themes* in emotion *Experiencer-Theme* configurations, e.g., *hatee*, where the conceptual dimensions of causativity and affectedness are to a large extent preserved. This fact is indicative of the dependence of the conceptualization (and theorizing) of *Experiencer* on the idea of agentivity and the dependence of lexical encoding of mental events on established patterns for physical events. In the same vein of reasoning, Baeskow (2015, 251) provides a generalized derivational schema for *-er* derivations of low agentivity, or to be more specific, mental event participants, such as *believer*, noting that they "entail 'introspective sentience'" for their external argument:

[<E<x^{ext}>>, -dynamic]] [<R>, [+common, +concrete, +animate, +human]

→ PROTO-AGENT <introspective sentience, independent existence>

(type *lover*, *thinker*, *believer*)

In short, *-er* is systematically used for encoding both *Experiencer* and *Stimulus/Affector* in English. For example, Bauer, Lieber and Plag (2013, 218) specifically list *Experiencer* nouns but under the heading of *-er* attaching to "verbs

taking sentential complements: *[…], hoper, […], realizer, reckoner, resolver, […] theorizer, thinker, reasoner, wonderer*", i.e., Experiencers in cognitive events, where the agentivity-based semantic dimension of "introspective sentience" is inherently present.

Interestingly a special group of *Stimulus* nouns is identifiable in English, in which compounding and affixation join forces again: "*bringer-downer, cheerer-upper, exciter upper, pepper upper, perker-upper, picker-upper, thinker-upper*" (Bauer, Lieber and Plag 2013, 218). These derivations display an inherent polysemy chain extending from *Agent* and *Affector* to *Stimulus*, operative also from simple bases, e.g., *howler*, *puzzler*, *pleaser*, but does not involve *Experiencer* nominalizations. In Bulgarian this polysemy chain is operative exclusively in suffixation, but does not involve compounding.

Even though in discussing affixes in English Bauer, Lieber and Plag (2013) lump together *Agent*, *Experiencer* and *Instrument*, the productivity of the suffixes *-ant (-ent)*; *-ation*; *-eer; -meister;* and *-ster* as Experiencer affixes seems to be approaching zero, if we are to judge by their measurement of productivity (novel formations in corpora, not attested in OED). None of the examples they provide for these affixes names *Experiencer*. Kawaletz and Plag (2015, 298) establish that "*-ment* almost exclusively attaches to verbs from two clearly defined sub-classes of PSYCH VERBS, i.e., AMUSE VERBS and MARVEL VERBS" (emphasis in the original). The authors further discover that this affix can (via metonymic transpositions or domain extensions) encode *Event*, *State* and *Stimulus*, but never *Experiencer*. The Bulgarian affixes corresponding most closely to *-ment* are *-не* (*-ne*), which names *Action* and *Event* and *-ние* (*-nie*), which encodes *Event*, *State* and *Result*, but neither can encode *Stimulus* or *Experiencer*, e.g., *тресене* (*tresene*, shaking), *назначение* (*naznačenie*, appointment), *лечение* (*lečenie*, treatment).

Among the Bulgarian set of affixes the ones used most frequently to produce *Experiencer* are *-тел* (*-tel*) and *-ец* (*-ec*), *e.g., мечтател* (*mečtatel*, dreamer), *страдалец* (*stradalec*, sufferer), *обожател* (*obožatel*, adorer), etc.). The affix *-tel* can be used for all subtypes of *Experiencer* and is also systematically used to produce *Affector* and *Stimulus* (just as the case with the English *-er,* e.g., *дразнител* (*draznitel*, teaser), *подбудител* (*podbuditel*, instigator, trigger), etc.), but there is no clear process or pattern for nominalizing *Affectee* or *Theme* from a verbal base apart from conversion from a passive past participial form of the verb (e.g., (*обичан* (*običan*, loved), *мразен* (*mrazen*, hated), *разочарован* (*razočarovan*, disappointed), etc., just as in English *loving* vs.

loved). *-Ач* (*-ač*) seems to be specialized for perceptual *Experiencer* and that for cognitive events – e.g., *подслушвач* (*podslušvač*, '*eavesdropper*'), *познавач* (*poznavač*, *connoisseur*) – although *-tel* is also used as frequently for such derivations. The specialization status is rendered by the fact that *-ač* is not used to produce other types of *Experiencers*.

The overview analysis of the extensive polysemy chains in the ecosystem of deverbal nominalizations in English leads Lieber (2016, 8) to the conclusion that "nominalizations do not have fixed meanings, but that they can take on a variety of readings by virtue of their sparse lexical semantics and the filling in of their representations in contexts". Even though this may be true of the ecosystem of English nominalizations, this level of malleability is not characteristic of the ecosystem of nominalizations in Bulgarian. The extensive polysemy chains in English include across-the-board deverbal nominalizations, including event, result, location, etc. readings alongside participant readings. In Bulgarian there is a clear line between participant deverbal nominalizations and other deverbal nominalizations. Systemic polysemy is detectable only within the niche of participant deverbal nominalizations. Whether we are talking about polysemy – in the sense that "the semantic relationship between two patterns is still perceived synchronically" and perceived "as a relationship of motivation" (Rainer 2014, 349) – or of absolute indeterminacy, does not preclude the fact that this property obtains within a narrower semantic niche (participant encoding) in Bulgarian and seems to be an across-the-board feature of the ecosystem of nominalizations in English (with the exception of a few less productive but specialized suffixes such as *-eer*, *-meister*, which seem not to be very active).

5 Concluding remarks on the (conceptual) ecology of Experiencer marking

The exploratory, qualitative review of the onomasiology of *Experiencer* in English and Bulgarian presented above revealed no unique morphological type for *Experiencer* deverbal derivations. Rather this participant nominalization shares almost all of its encodings with *Agent* and less frequently with *Instrument* and *Stimulus*. This seems a discrepancy in the face of the pronounced anthropocentricity of language (Dirven and Verspoor 2004) and the special conceptual status assigned to Experiencers by Landau (2010), but is a natural consequence of the embodied nature of human cognition and the

cognition-language interface, further supported by the human tendency to approach the conceptualizing of unfamiliar domains via modeling them after more easily accessible, tangible and familiar domains, which underlies conceptual metaphor theory (Lakoff and Johnson 1980).

The analysis of the data in both languages suggests that the syntactically relevant special properties of psych verbs do not translate into derivational patterns and processes, with the notable exception of *Theme* being preferably marked with *-ee* as opposed to Stimulus with a marked preference for *-er* encoding, e.g., *hatee*, *adoree* vs. *bringer-upper*, *downer*, etc. There does not seem to be any higher generalization or abstractive schema that could capture special psych verb properties (which admittedly have been formulated within syntax-informed research contexts) and patterns of *Experiencer* derivations simultaneously (despite the admirable attempt for an overarching, whole-system generalized account of nominalizations of Heyvaert (2010)).

Experiencer seems not to be a derivationally individuated category in either English or Bulgarian. There are no dedicated affixal patterns or types for exclusively marking *Experiencer*. In both languages there is full constructional polysemy of *Agent* and *Experiencer* and the constructional polysemy frequently extends over to *Patient*, *Instrument* and *Stimulus*, with a tendency for a reduction in the number of available patterns for *Instrument* and *Stimulus*. Despite the natural metonymy-based polysemy between *Agent* and *Instrument*, there seem to be in both languages exclusive patterns differentiating between *Instrument* on the one hand and *Experiencer* and *Stimulus* on the other, and an overlap between *Instrument* and *Stimulus* marking to the exclusion of *Experiencer*.

Beside the high degree of similarity between the niches of participant nominalizations in the two languages, a few notable contrasts can be noted. Among the significant differences the following should be mentioned: *-ing* is not used for marking *Experiencer* in English, while one of the patterns corresponding to this polysemous element, the noun converted from the present active participle in Bulgarian, systematically and exclusively names *Experiencer* (and *Agent*) and is not contextually coerced to derive any of the other participant roles. "The population of the semantic niche" (Lieber 2016) of *Experiencer* in the two languages displays different networks of intra-niche relations. In English the participant semantic niche extends over to other types of nominalizations as well (event, result, action, quality (i.e., adjectival reading), manner (adverbial reading (e.g., *-ing*), in Bulgarian

participant nominalizations are more sharply delineated from other niches in the ecosystem of nominalizations with a plethora of specialized deverbal suffixes. This coheres with the different types of part of speech system that the two languages are characterized with and the more strongly expressed fusional-inflectional character of Bulgarian.

The reasons for the lack of prominence of *Experiencer* marking in word formation may be of a conceptual nature (i.e., due to the cognition-language interface); language specific (niche structuring of the word formation ecosystem and its place within the ecology of the respective language) or metalinguistic (i.e., associated with the science of language – the lack of adequate tools of analysis, level of delicacy of analysis or diversity in terminology, etc.). Peirce's epiphany that "indeterminacy belongs only to ideas; the existent is determinate in every respect; and this is just what the law of causation consists in" (Peirce, CP 8.330) still rings true.

Probably the most conspicuous and plausible conceptually grounded reason is the fact that "what is happening in the mind is not outwardly apparent to the observer. Hence, the actual mental event – state or process, for example – is a construal by the observer who produces" (Croft et al. 2018, 8) a linguistic expression for describing the mental event. Closely related with this argument is the recognition of the lack of "physical transmission of force between the external situation and the person's mental state. Hence there is no force dynamic relation between participants" (Croft et al. 2018, 8). Ensuing from this is the metalinguistic preoccupation with physical event studies (Croft 2012; Goldberg 1995; Levin and Rappaport Hovav 1995, 2005; Talmy 1976, 1988, etc.), associated with Langacker's (2004) canonical event model, which can be captured by the billiard-ball model or the series of action chain abstractions, which are associated with the archetype roles of *Agent* and *Patient* and the restricted attention paid to (some types of) mental events (Croft et al. 2018).

The most substantial reason stemming from the language-cognition-metalinguistic interface is the impossibility for theorists to devise an abstract schema that can coherently encompass the diversity of mental events which we humans conceptualize as involving an *Experiencer*. The attempts of scholars to design an analytical model have led to the specialized descriptive schema for capturing the nuances of mental event conceptualizations as reflected in language, presented in Table 4 and taken from Croft et al. (2018, 13). In this the scholars offer a minimal model of mental force dynamics.

Table 4. A specialized descriptive schema for capturing the nuances of mental event conceptualizations as reflected in language (see Croft et al. 2018, 13).

Label	**Definition**
Attend	*Experiencer directs attention to Stimulus: dynamic, volitional, no change to Stimulus.*
Affect	*Stimulus causes change of mental state of Experiencer: dynamic, causative. Used also to describe a Beneficiary/Maleficiary subevent in other types of events.*
Experience	*A perceptual, cognitive or emotional relation holds between Experiencer and Stimulus: stative (or inceptive), Experiencer is grammatical subject.*
Experience*	*A perceptual, cognitive or emotional relation holds between Experiencer and Stimulus: stative (or inceptive), Stimulus is grammatical subject.*
Judge	*Experiencer discerns or confers a perceptual, conceptual or evaluative status on an entity or a relation between entities: dynamic, volitional, no change to Stimulus.*
Intend	*Agent intends to act on another participant in some way but action on the participant is not realized: no change (yet) to participant. Used also to describe a Purpose subevent in other types of events.*
Engage	*A relation between an argument denoting a participant and another argument denoting the event/subevent that the participant is involved with. The participant is a core participant in the event.*
Refrain	*A relation between an argument denoting a participant and another argument denoting an event/subevent that the participant ends up not being involved with. The participant is a core participant in the event.*

The impossibility of abstracting a high-level generalizing schema that encompasses the totality of nuanced mental events is associated with the multiple possible constructional configurations, which capture the most central types of relations enumerated in the table above. This detailed representation of cross-linguistically applicable differentiation with validity for syntactic configurations seems of no immediate significance for the word formation encoding of participants in mental events. After the Relational Hypothesis, which holds that "[a]ll rules/schemas can be used relationally, while only a subset of them can be used generatively as well", "the grammar is grounded in the relations among lexical items", and "generativity is the add-on, albeit a very important one" (Jackendoff and Audring 2020, 4). In other words, the relational networks among word formation schemas, i.e., the constructional polysemy networks, encode the essential conceptual distinctions, which may

be abstracted and be used in a more generatively operational manner in constructions of higher constituent complexity.

Another closely related reason from the cognition-language-study of language interface is the recognition of prelinguistic abstract conceptual, universal categories of *Agent* and *Patient*. Rissman and Majid (2019) claim that there is a panhuman cognitive bias for distinguishing *Agents* and *Patients* as abstract prelinguistic conceptual categories and a conspicuous tendency to markedly discriminate between them linguistically (and behaviourally), with a lack of evidence for such a clear tendency for other participant roles (in conceptual schemata). Against Booij's (2005) view of domain extensions within the polysemy chains of an affixal secondary schema accommodating various constructions, it is safe to hypothesize that such extensions within a single event type (e.g., physical event – Langacker's canonical event) are based on the cognitive mechanism of metonymy, the *Agent-Patient-Instrument* polysemy chain for example, where metonymy is understood as "a contiguity-based figure/ground effect between elements of a conceptual frame or between the frame as a whole and one of its elements (or vice versa)" (Koch 1999, 154). The same type of polysemy holds within the chain of mental events between *Experiencer* and *Stimulus*, for example. The *Agent-Experiencer* extension, however, results from the conceptual blending (Fauconnier and Turner 2022) in the overall cross-domain mapping between the canonical event model and the mental event model, in which the newly emergent structures have blended features, without directly inheriting properties from either input.

This coheres with Croft's (1993) claim that psych verbs do not fit with transitivity (and vary substantially in terms of causality and volition), from which we can conclude that despite almost identical lexical encoding of *Experiencer* and *Agent* some mismatches occur. The lack of specific lexicalization of *Experiencer* runs parallel to its co-lexicalization with *Agent*, *Stimulus*, *Affector*, *Affectee*, and *Theme*. Such patterns are assumed to indicate semantic affinity between the co-lexicalized concepts and suggest a degree of conceptual conflation of frequently co-lexicalized roles (Rissman and Majid 2019, 1852). The nature of the semantic affinities of *Experiencer* with the other referential deverbal nominalizations is a tempting avenue for further research.

Although the current review is far from a full account of the ecosystems of participant nominalizations in English and Bulgarian, it is a first step in this direction from a contrastive perspective and the backbone for future research.

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