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Eva van Lier* and Maria Messerschmidt

Lexical restrictions on grammatical relations in voice and valency constructions

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Abstract: This paper introduces the topic and the contributions of this special issue. While lexical restrictions are well-studied for grammatical relations defining argument coding (case marking and indexation), they are also common with voice and valency constructions, be they morphologically coded or not. The paper defines relevant terms and sketches the development of current usage-based approaches to lexical restrictions, in reaction to earlier lexicalist and constructional approaches. It then reviews existing studies of lexical restrictions on valency-preserving and valency-changing constructions, drawing connections with the other papers in this issue. In closing, it recommends further corpus-based cross-linguistic research of lexical restrictions.

Keywords: argument structure; grammatical relations; lexical restrictions; valency; voice

1 Introduction

In many languages grammatical relations are to some extent lexically restricted, in the sense that certain lexical verbs or verb-classes take different argument coding than others. Such lexical restrictions are especially well-studied with respect to so-called “non-canonical” case marking (e.g. Aikhenvald et al. 2001; Bhaskararao and Subbarao 2004; Bickel et al. 2014; Malchukov and Comrie 2015; Tsunoda 1985) and, more recently, also for indexation (e.g. Bickel et al. 2015; Fedden et al. 2014). Yet, lexical restrictions have also been reported on grammatical relations that define constructions other than argument coding. They seem to be particularly common with voice and valency-related constructions. While many such construction types are often characterized as highly productive and regular, “exceptions” have also been identified. In some of these cases, reference is made to

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certain semantically definable subclasses of verbs, but other restrictions appear semantically unmotivated and idiosyncratic.

The present collection offers five studies of lexical restrictions on grammatical relations, in a range of voice and valency constructions, across various languages. The relevant constructions include intransitive/transitive alternations, causatives, and symmetrical voice constructions. There are two papers that focus on a single language (Bril, Daniel); two that compare closely related languages (Bradley et al., Utsumi); and one that takes a broad typological perspective (Messerschmidt).

In this introductory paper, we aim to situate these studies in a wider theoretical and typological perspective. In Section 2, we start out by explaining our use of a set of relevant terms. Subsequently, Section 3 outlines how the current, usage-based view on lexical restrictions developed, in reaction to more traditional approaches. In Section 4, we turn to the discussion of lexical restrictions in valency-preserving voice constructions (see Section 2 for definitions). These include (anti-)passives, symmetrical voice alternations, as well as some uncoded alternations (i.e., alternations that are not signaled by a dedicated morphological marker on the verb). Section 5 is devoted to valency-changing constructions, especially to those increasing the valency of the verb, such as causatives, applicatives, and again some uncoded alternations. Throughout, we draw connections with the contributions in this issue, as well as give examples from other languages. Section 6 provides a short summary and suggests possible directions for further research.

2 Some terminology

In this paper, we largely follow terminological conventions proposed by Zúñiga and Kittilä (2019, chapter 1) and Kulikov (2010).

Firstly, *VALENCY* is understood here in its semantic sense, i.e., a verb's valency is the number of semantic arguments it takes. This means that the distinction between arguments and adjuncts is also purely semantic and independent of formal expression (cf. Witzlack-Makarevich 2019: 6). It also means that the terms *VALENCY-PRESERVING* and *VALENCY-CHANGING* refer to whether or not the number of *semantic* arguments of a verb remains the same, or is altered (either increased or decreased), independently of whether and how these arguments are encoded.

Secondly, *ARGUMENT STRUCTURE* refers to the way in which the semantic participants of the event described by a predicate are morpho-syntactically expressed (Perek 2015: 1). Hence, it takes into account coding properties, but not behavioral properties of arguments. We follow current practice in grammatical relations typology by using generalized semantic role labels: S, A, P, T, and G (Bickel 2011).

DIATHESIS refers to some specific mapping of semantic argument roles onto grammatical relations.

The term GRAMMATICAL VOICE is often restricted to those diatheses that are overtly marked on the verb in any particular language. Nevertheless, in this chapter we also include unmarked diathetic operations, which are typically called ALTERNATIONS (Levin 1993, 2015). Notably, Haspelmath (2021: 153) defines an alternation as “a situation where two different coding patterns can be used alongside each other, with roughly the same meaning”. Here, however, we also include valency-changing alternations, which by definition do not have the same meaning.

Finally, we would like to add a word on the term LEXICAL RESTRICTION (OR LEXICALLY RESTRICTED). As mentioned in the previous section, we mean by this that certain constructions only admit some verbs (or even just a single one). However, the same term is sometimes used to refer to lexicalized, i.e., not fully predictable semantic interpretations of verb-construction pairings. While these two phenomena are likely to co-occur in some instances, they are in principle mutually independent: A construction that is lexically restricted in the first sense, may still be interpreted fully regularly. Conversely, a fully productive construction that combines with any verb may still include some cases of non-compositional semantics. We expect the latter combination to be less common than the former, but whether this is indeed the case remains an empirical question.

3 Lexical restrictions in usage-based grammatical theory

In this section we outline the treatment of lexical restrictions in usage-based grammar. For more encompassing overviews of this framework and its development, the reader is referred to Bybee (2010), Perek (2015), and Diessel (2019), among many others. This section draws mainly on the two books by Perek and Diessel, and references therein.

The current usage-based understanding of lexical restrictions on grammatical relations has recently developed out of earlier types of construction-based and cognitively oriented theories. These, in turn, can be seen as reactions to the more traditional lexicalist approach. According to the latter, a verb’s “lexical entry” includes information about its argument structure. This information “projects” onto morpho-syntactic structure via abstract, general “linking rules”, which go beyond the level of individual verb semantics (Levin and Rappaport-Hovav 2005; Pinker 1989). The lexicalist approach thus views lexicon and grammar as distinct

modules, which are connected by a limited set of principles mapping semantic features onto formal argument structure.

By contrast, Construction Grammar and Cognitive Grammar, developed in the 1980's and 1990's by e.g., Goldberg (1995, 2006) and Langacker (1987, 2000), see lexical items and morpho-syntactic constructions as equivalent, in the sense that both have independent meaning. Very broadly speaking, the supporting evidence for this view is captured by Goldberg's SEMANTIC COHERENCE PRINCIPLE (Goldberg 1995: 50, 2006: 40): a particular verb can be used in a certain argument structure construction if the former is semantically compatible with the latter.

However, such broad generalizations based on semantic compatibility do not account for all (im)possible pairings of verbs and constructions. Detailed corpus-based investigations display numerous cases of “idiosyncratic” or “exceptional” behavior. In particular, verbs that show very similar meanings may show marked differences in terms of their morpho-syntactic behavior. An oft-cited example (see e.g., Diessel 2020: 5) concerns the difference between English *give* and *donate*: while the former participates in the so-called double object construction (*Mary gives Martha the money*), the latter only allows the G argument to be marked with a preposition (*Mary donates the money to the Red Cross*). Moreover, as we will see below, such verb-specific differences can be both absolute and statistical in nature.

In response to such “exceptions”, scholars such as Boas (2003, 2008), Iwata (2008), and Herbst (2011, 2014, 2018) propose that argument structure is to a large extent dependent on “mini-constructions” (Boas 2003: 22), defined at a verb-specific level. For example, Iwata (2008, chapter 5) shows, based on corpus data, that some English verbs that were previously claimed by Pinker (1989) and Levin (1993) to semantically license only one of the two variants in the locative alternation (*Load hay onto the truck* – locatum-as-object vs. *Load the truck with hay* – location-as-object), actually appear in both: *dribble the bread with oil* is attested alongside *dribble oil onto the bread*. While these scholars do not exclude the existence of higher-level generalizations, they highlight the importance of (very) low-level patterns. In a way, they turn the traditional view upside down: general and abstract rules are atypical, while exceptions are the rule.

A second problem associated with the idea that verb-construction combinations are purely a matter of semantic fit, is the fact that many verbs show *statistical* preferences for certain constructions (under certain circumstances). Again, the English dative and locative alternations provide oft-cited and extensively researched examples: *give* can be used in both the double object and the prepositional construction, but has a strong preference for the former. And *dribble*, while attested in both the locatum- and the location-as-object construction, only sporadically appears in the latter. Such cases imply that knowledge about a particular verb's argument structure should involve not only absolute rules (of the

type: “verb X can/cannot occur in construction Y”), but must also contain a record of usage frequency. Moreover, as we will see below, besides the token frequencies of individual verb-argument structure combinations, two additional relevant factors are type frequency, i.e., the number of distinct verbs that occur in a specific construction, and the overall frequency of a construction in comparison to other, related constructions.

This raises the crucial question to what extent there is empirical evidence for the idea that “local generalizations” (Perek 2015, chapter 5), including frequency information, are actually made, stored and used by speakers. First of all, since the early 1990’s usage-based research on language-acquisition has shown that children’s speech is organized around verb-specific patterns (i.e., Tomasello’s 1992 *verb-island-hypothesis*). Moreover, while most scholars in this field hold that child language acquisition involves a gradual development from such verb-specific patterns towards increasingly abstract, lexically independent representations (see e.g. Abbot-Smith and Tomasello 2006: 276; Rowland et al. 2012: 51), very recently it has been claimed that neither children nor adults store any generalizations at all. Rather, speakers exclusively store individual exemplars (see Ambridge 2020 for discussion and evidence in support of this view).

In addition, there is a large body of experimental studies on adult language behavior that supports the relevance of different types of frequency information. Broadly, these studies are either based on the extendibility of constructions to novel items, or on constructional priming (i.e., the increased probability of re-using recently processed constructions; see Bock 1986 for an early study; Pickering and Ferreira 2008 for a more recent overview). Extendibility depends crucially on a combination of type frequency – the more verbs combine with a particular construction, the easier it extends – and token frequency – frequent verbs are not easily used in novel constructions, since they are more strongly entrenched (see e.g., Bybee 1995; Barðdal 2008; Wonnacott et al. 2008; Perek 2015). Priming studies show that the strength of constructional priming is dependent on both the statistical preference of individual verbs, and on the overall prevalence of constructional alternants in a particular language (e.g., Bernolet and Hartsuiker 2010; Jaeger and Snider 2013; Segaert et al. 2014).

Interestingly, there is also evidence that speakers draw connections *between* constructions.¹ Such inter-constructional relations are important, because they show how semantically equivalent constructions may compete under certain pragmatic circumstances. More specifically, lexically-specified preferences can

¹ Perek (2015, chapter 6) explains that Construction Grammarians were slow to recognize inter-constructional connections, as they reminded them of analyses in transformational grammar, in which argument structure alternations are purely derivational.

override pragmatic factors in determining a speaker's choice for one or the other construction (see e.g. Bresnan and Ford 2010). To account for this, Perek (2015, chapter 6), building on Cappelle (2006), proposes that distinct constructional alternants, called "allostructions", are connected to a shared, formally neutral event schema. Such allostructions are furthermore specified with particular verbs' strength of association with each of them. These associations determine how heavily other factors can weigh in on construction choice.

To sum up, current usage-based research emphasizes the importance of low-level patterns, down to individual lexical items. As such, it departs not only from traditional lexicalist approaches, but also from mainstream Construction Grammar. Building on corpus-based and experimental research it takes seriously the large number of "exceptions" that cannot be explained purely on the basis of the semantic fit between verbs and constructions. Moreover, usage-based research capitalizes on speakers' knowledge of usage frequency of verbs and constructions, on relations between constructions, and on the interplay between verb-specific constructional preferences and other factors influencing speakers' construction choice.

Finally, it is important to notice that the theoretical developments sketched in this section are almost exclusively based on data from English (and a few other Germanic languages, like German and Dutch). Moreover, they look at a very restricted range of constructions, such as the dative and locative alternation. However, especially with the increasing availability of corpora for a large number of non-Indo-European languages, very similar phenomena can be observed in these generally understudied linguistic systems. To give just one example, a recent, comparative corpus-based study of verb-based lexical restrictions on noun-incorporation shows that in Baure (an Arawak language of Bolivia, see Danielsen 2007), the verbs *so* and *aparoch*, which both mean 'to break', show opposite behavior: one always occurs with an incorporated object in the corpus, while the other never does (Olthof et al. 2020). Similarly, Mithun (2010: 52) notes that in Mohawk, noun incorporation is lexically restricted, in that "some stems occur exclusively in such constructions, some often, some occasionally, some rarely, and some never". And for Ket, it is known that "[o]nly two transitive bases allow incorporation of their patient-role noun object with any productivity" (Vajda 2017: 911). These examples suggest that, as in English, lexical restrictions on argument structure alternations are far from uncommon, and that they involve absolute as well as statistical patterns. In the next sections, we will draw on the existing (and steadily growing) body of literature on languages and constructions that are generally underrepresented in usage-based research.

4 Lexical restrictions on valency-preserving constructions

This section focuses on constructions that do not change the valency, i.e., the number of semantic arguments, of the verb involved in it. In principle, they include both coded and uncoded alternations. Two of the most extensively studied uncoded alternations – in particular the dative and locative alternation – have been discussed in the previous section. Therefore, this section will mostly focus on alternations like active-passives, active-antipassive and symmetrical voice alternations, as described in previous literature. These construction types are often, but not exclusively overtly coded.²

The present review serves to illustrate the two most basic claims that emerged from usage-based research, namely that (i) semantic fit is often not the whole story, and (ii) speakers' experience, stored in the form of frequency information about individual verbs and constructions, also plays an important role.

To start with passives, it is well-known that “languages vary considerably with regard to the productivity of their passives” (Keenan and Dryer 2007: 360). While some languages essentially allow all verbs to passivize, in other languages passivization is impossible for certain verbs, especially those bivalent verbs in which the patient is “not portrayed as being affected”, e.g. in English *lack* and *have* (Keenan and Dryer 2007: 332).³ As can be seen in example (1), however, the Bantu language Kinywanda does allow ‘have’ in a passive construction:

- (1) Inyarwanda (Bantu) [Kimenyi 1980]
Ibifungo bibiri bi-fit-w-e n-îshaâti
 buttons two they-have-PASS-ASP by-shirt
 ‘The shirt has two buttons.’ (lit.: Two buttons are had
 by the shirt)

Conversely, while the German verbs *kennen* (‘to know’) and *wissen* (also ‘to know’) *cannot* occur in a passive construction, this *is* allowed in English, and “there is no obvious semantic reason why” (Diessel 2020: 5). In addition to these absolute restrictions, corpus research also reveals clear proportional differences in the appearance of specific alternating verbs in the passive, as opposed to the active construction (Gries and Stefanowitch 2004). This suggest, once again, that verb-

² Zúñiga and Kittilä (2019: 194) remark that “uncoded symmetrical voice alternations seem to be extremely rare”.

³ A notable exception to this exception is the lexicalized construction ‘You’ve been had’, meaning ‘You’ve been tricked’.

specific constructional possibilities and statistical preferences are stored, and are at least to some extent independent of the semantic and pragmatic factors that may motivate these patterns.

For antipassives, recent literature has emphasized the fact that in many languages this construction is available to only “a certain subset of transitive predicates” (Polinsky 2013a). While in many cases semantic generalizations can be made regarding the accessibility of verb types to the antipassive construction (in and across languages; see Vigus 2018; Say 2021), there are also cases of more severe and less semantically motivated restrictions (for more examples than the ones discussed below, see Zúñiga and Kittilä 2019: 107–108).

For example, in Basque (Zúñiga and Fernández 2021), the antipassive construction, illustrated in (2) below is lexically conditioned and unproductive: most verbs do not allow it. Also, the verbs that can occur in it are semantically heterogeneous (although not completely random).

(2) Basque (unclassified)

[Zúñiga and Fernández 2021, cited in Zúñiga and Kittilä 2019: 107]

- a. *Ni-k hura gogoratu dut*
 1SG-ERG 3SG.ABS remember.PFV have.1SG.3SG
- b. *Ni gogoratu naiz hartaz*
 1SG[ABS] remember.PFV be.1SG 3SG.INS
- Both: ‘I remember him/her.’

Interestingly, Zúñiga and Fernández report that most of the 13 verbs that have been previously identified as participating in the alternation are actually found in both constructions in their corpus (and with a tendency towards one of them), but some are attested in only one construction; e.g. the verb *burlatu* ‘to mock’ appears exclusively in the antipassive. These findings are again in line with partially functionally unmotivated restrictions, be they absolute or not.

Likewise, uncoded constructions that are semantically equivalent to antipassives, such as the conative alternation and object incorporation, are known to show lexical restrictions, which are only partially motivated by semantic fit. In the conative alternation, a default transitive clause alternates with a construction expressing lower transitivity. Zúñiga and Kittilä (2019: 189) write that the semantics of English verbs allowing this alternation “seem to include features like contact and motion, but several [other] verbs also participate in [it]”. For example, ingestion verbs like *nibble* and *sip* have a statistical preference for the conative construction with the preposition *at* (Perek 2015: 126), while *eat* and *drink* do not allow it. Recall from Section 3 that incorporation is very similar in this respect (Olthof et al. 2020). Finally, verb-specific constructional biases involved in

uncoded dative and locative alternations are well-documented in at least a few languages and they have been shown to play a crucial role in language processing.

We now turn to languages with symmetrical voice systems. Recently, various in-depth investigations have been carried out regarding the factor(s) influencing the choice of voice construction in such languages. While these studies all observe that at least some verbs in specific languages are biased towards one voice, they come to different conclusions as to the cause and role of such verb-specific preferences.

In particular, some argue that voice choice is ultimately determined by semantic compatibility. For instance, Latrouite (2014: 114) argues for Tagalog that voice preferences can be predicted from verbal semantics: Inherently actor-oriented verbs include activities and motion verbs, while inherently patient-oriented verbs denote telic actions (such as ‘kill’) and furthermore include stative, cognitive and perception verbs. There are also verbs that are not attracted to any of the two voices, such as verbs of punctual contact (e.g., ‘hit’) and transfer.

Interestingly, Latrouite (2014) shows that the inherent orientation of a verb may override referential factors that otherwise are known to influence voice choice, such as specificity (see chapter 4 and references therein). This means that, with an inherently actor-oriented verb, agent-voice may be chosen (and consequently the agent may be construed as most prominent) even if the patient is specific; a condition that would result in undergoer-voice choice under default circumstances. This is clearly reminiscent of findings in studies on the English dative alternation, where verb-specific preferences and referential factors interact too, and the former may override the latter (cf. the proposal for ‘weighed’ allostructions discussed in Section 3).

By contrast, McDonnell (2016: 236) concludes for Besemah (Malayic, Sumatra) that while verb-specific voice orientation is a statistically significant factor in construction choice, it is not always clear why certain verbs have certain preferences. For instance, he observes that there is a tendency for verbs oriented towards the patientive voice to occur with an animate P-argument, while agent-voice-oriented verbs rather tend to take inanimate Ps. However, animacy of P as such is found not to be a statistically significant factor in voice choice, and in fact not all relevant verbs fit the described tendency. Thus, McDonnell’s analysis suggests that semantic motivations cannot account for each verb-specific pattern.

Riesberg et al. (2021) also report statistical preferences for some (but not all) verbs in Totoli, another symmetrical voice language of Indonesia. Unlike McDonnell, these authors argue that such verb-specific patterns are in need of functional explanations; they do not accept them as an “idiosyncratic” factor that plays an independent role alongside other referential and discourse-related factors

involved in voice choice. More generally, Riesberg and colleagues show that the key factor, or the conglomerate of factors, that (co-)determines voice choice in Totoli is essentially not yet well understood. This echoes Zuñiga and Kittilä's (2019: 134) conclusion that the exact conditions determining diathesis alternation in symmetrical voice languages needs more systematic research.

The present collection of papers includes two studies of (partly) symmetrical voice systems. Brill's study of Northern Amis argues that voice choice in this language is constrained by a combination of the lexical semantics of the verb, Aktionsart features and referential factors, including definiteness, animacy, and volitionality. Utsumi shows for the Indonesian languages Bantik and Talaud that their voice systems are halfway between fully productive and regular, and completely derivational. The remaining three papers are on valency-increasing voices, which will be the focus of the next section.

5 Lexical restrictions on valency-changing constructions

Constructions that change the valency of verbs either add a new argument (causatives and applicatives) or remove an argument (anticausatives). As in the previous section, they include both coded and uncoded alternations.

Anticausatives, like passives, target the A-argument of a bivalent verb. However, unlike passives, anticausatives remove the agent from the argument structure altogether and are usually "subject to severe lexical restrictions" (Haspelmath and Müller-Bardey 2004: 1133). The construction is only attested with bivalent verbs (Zuñiga and Kittilä 2019: 51). Semantically, the verbs that can be anticausativized are mostly change-of-state verbs denoting situations that can be conceptualized as occurring spontaneously, and they must have no "agent-oriented meaning components" (Haspelmath 1993: 94). This excludes any verbs that cannot or are unlikely to occur without an external agent from participating in this alternation.

In Evenki, the anticausative construction, which is illustrated in (3), is available to about 50 bivalent verbs (Nedjalkov 1997). All the verbs that participate in this construction in Evenki are bivalent and fit the semantic criteria described above, but the construction is not available to all semantically relevant verbs, e.g. *d'egde*- 'burn (intransitive)' and *ila*- 'burn (transitive)' form a suppletive pair, and are not derived using this construction.

- (3) Evenki (Tungusic) [Nedjalkov 1997: 228]
- a. *Bejetken purta-va-v sukcha-ra-n.*
 boy knife-ACC.DEF-1SG.POSS break-NFUT-3SG
 ‘The boy broke my knife.’
- b. *Minngi purta-v sukcha-rga-ra-n.*
 my knife-1SG.POSS break-ANTICAUS-NFUT-3SG
 ‘My knife broke.’

The same class of verbs that in some languages may participate in the anti-causative construction take part in an uncoded alternation in other languages, e.g. in English (cf. *The knife broke* vs. *He broke the knife*). Verbs that participate in this alternation can be either bivalent or monovalent with no overt marking. They are often referred to as labile verbs (Letuchiy 2009), and since the sole argument in the monovalent construction is the P-argument in the bivalent construction, this can be called P-preserving lability.

Causative is the most frequent type of morphologically marked voice alternation (e.g., Bybee 1985: 29), attested in more than 80% of the languages included in the WALS chapter on non-periphrastic causative constructions (Song 2013).

In some ways, causatives can be thought of as a mirror image of anti-causatives. In causative constructions, an additional A-argument is added, and the verb’s valency is increased (e.g., Haspelmath and Müller-Bardey 2004). However, in some languages, causatives may be far less lexically restricted than anti-causatives. For example In Ute, illustrated in (4), the construction is very productive and applies to a wide range of monovalent and bivalent verbs (Givón 2011: 220–222) while in Culina, illustrated in (5), it is severely restricted and applies to only a few monovalent verbs, such as ‘be pregnant’, ‘break’ and ‘suckle’ and a single bivalent verb ‘learn’ (Dienst 2014: 127–128).

- (4) Ute (Uto-Aztecan) [Givón 2011: 203]
- a. *tuka'napu-a-tu yáqhi-kya*
 table-GEN-S break-ANT
 ‘part of the table broke’
- b. *tuka'napu-a-tu yáqhi-ti-kya*
 table-GEN-NOM/O break-CAUS-ANT
 ‘(s/he) broke part of the table’
- (5) Culina (Arawan) [Dienst 2014: 127]
- a. *amonehe Ø-hia-ni*
 woman 3-be.pregnant-DECL.F
 ‘The woman is pregnant.’

- b. *o-kha amonehe o-na-hia-haro*
 1SG-ASS woman 1SG-CAUS-be.pregnant-NAR.F
 ‘I’ve made my wife pregnant.’

The most lexically restricted causatives usually apply to just some patientive monovalent verbs (Nedyalkov and Silnitsky 1973). This restriction is semantically motivated: It makes sense that causatives are almost always accessible to patientive verbs, since (inanimate) patients can be more easily manipulated than agents. When agentive verbs are causativized, the manipulation may be less direct and the causatives can display various semantic nuances of causation such as sociative, directive or permissive (Shibatani and Pardeshi 2002). However, semantics cannot account for the whole picture since there are usually idiosyncratic restrictions too as in the case of *Culina* described above.

Whether anticausativization or causativization is used for verbs like ‘break’ as in (3) and (4) respectively, to some extent depends on the availability of the two voices in a language. In *Ute*, there is no anticausative construction, so this option is not available to any verbs (Givón 2011: 248). However, in *Evenki*, both constructions are available to different verbs.

There is a substantial semantic difference between conceptualizing a situation as being caused by an agent or occurring spontaneously. The inclusion of an agent is always more conceptually complex, and based on the principle of iconicity we would expect the bivalent construction which includes the agent to be the marked one (Haspelmath 2016). As we have seen though, this is not always the case. Haspelmath (2008, 2016) appeals instead to the principle of economy to explain why the anticausative is sometimes the marked voice. Some patientive monovalent verbs represent situations that are more likely to occur without an agent (Haspelmath’s “automatic” type, e.g. ‘freeze’ and ‘melt’) while others represent situations that are less likely to occur spontaneously (Haspelmath’s “costly” type, e.g. ‘open’ and ‘break’). The less frequent situation is generally the coded one (Haspelmath 2008) which means the coding to some extent reflects usage frequency.

Two of the papers in this collection deal with causative constructions. Bradley and colleagues analyze several causative and causative-like constructions in five Turkic and Uralic languages spoken in the Volga-Kama region and look at how the productivity of certain causatives is restricted by transitivity and other semantic features. Daniel’s paper also explores double causatives, this time in the Caucasian language *Mehweb*. The double causative in *Mehweb* is restricted to a small set of verbs, and Daniel explains this restriction in terms of the different functions of the two causatives and “elusive” agents.

The next valency-changing construction we will look at is applicative. Applicatives add a new P-argument (Peterson 2007: 1). Applicative constructions can be

semantically generic, allowing a number of different semantic roles to be added to the argument structure of a verb, or they can add just one specific role. The most frequent semantic role that can be added is a benefactive (Polinsky 2013b), and it is rare to find applicatives that add a patient or a theme role (Zúñiga and Kittilä 2019: 53). Applicatives that are semantically generic may be less lexically restricted than applicatives that can only add a single role since the latter require the verb to be semantically compatible with that role.

Hokkaido Ainu, for example, has three productive applicative markers which can all add a range of semantic roles (Bugaeva 2010). In (6a) the marker *ko-* adds a malefactive source to the verb ‘steal’, and in (6b) the same marker adds a locational goal to the verb ‘climb’. This marker can also add comitatives and recipients with other verbs (Bugaeva 2010).

- (6) Hokkaido Ainu (Ainu) [Bugaeva 2010: 778–779]
- a. *a=en=ko-ikka yak-un oka-ke ta*
 IND.A=1SG.O=from.APPL-steal if-COP after-POSS at
k=Ø=e p ka isam pe ne kusu
 1SG.A=3.O=eat NMLZ even not.exist NMLZ COP because
 ‘If they steal from me, I will have nothing to eat afterwards.’
- b. *tan Nupuri atcas ne e=Ø=ko-hemesu wa*
 this mountain one.try as 2SG.A=3.O=to.APPL-climb and
 ‘You climbed this mountain on one try.’

Some applicative constructions alternate with constructions where the same participant role is expressed as an adjunct, and others form the sole way of including a participant of that type in the clause (Peterson 2007: 51). In Hokkaido Ainu, this is the case for some of the applicative constructions found in the language, while for others, the applicative construction is the only way to include a certain type of participant (Bugaeva 2010). When an alternative construction exists, a key function of the applicative is often to show that the added P-argument has greater topicality than would normally be expected. In two corpus studies of Hakka Lai and Wolof, Peterson (2007, chapter 4) shows that the average referential distance, topic persistence and topic worthiness of applied P-arguments were higher than both base P-arguments and adjuncts. This shows that the choice of construction in these cases is mainly pragmatically determined.

Lehmann (2015) distinguishes two types of applicative-like constructions. His “extraversives” add a new P-argument and correspond to what we have called applicatives in this paper, whereas Lehmann reserves the label “applicative” for those constructions where a (peripheral) semantic argument is promoted to object. Peterson (2007) considers both these two types as applicatives. Under this latter,

broader definition, uncoded alternations such as the locative alternation described in Section 3 could also be considered applicatives.

In this paper, we have defined voice constructions based on semantic valency, so it is necessary to distinguish between applicatives that add a new argument (valency-changing) and those that promote an argument (valency-preserving). However, since both types are commonly referred to as applicatives, and since grammars do not always present alternative constructions, distinguishing them is not always simple. Also, since pragmatic considerations often determine the preference for using a particular construction, the difference may be statistical rather than absolute.

A similar issue is seen with what we could call “anti-applicatives” where the P-argument is removed, and the valency decreased. Complete removal of the P-argument is rarely obligatory though, and such constructions are usually included under the label of antipassive (Zúñiga and Kittilä 2019: 72). However, even when removal is not obligatory, some verbs may still show (strong) statistical preference for removing the P-argument in the antipassive voice.

We know of a few other valency-changing constructions, but these are not often mentioned in the typological literature. Adversative is probably the most well-known of these (Kroeger 2005: 279), and Zúñiga and Kittilä (2019) include these under the term “subjective undergoer nucleatives” along with some constructions which add instruments, benefactives and other arguments as subjects. An additional valency-changing construction, the portative, is introduced by Messerschmidt’s paper in this collection. In a cross-linguistic study, she argues that this construction, which is lexically restricted to motion verbs, should be considered a distinct valency-increasing construction.

6 Summary and outlook on further research

In this introductory article, we provided the background to the five studies collected in this special issue, which are all concerned with lexical restrictions on grammatical relations as defined by a variety of valency and voice-constructions, across a variety of languages.

We started off with a theoretical sketch about the treatment of such lexical restrictions in current usage-based linguistics. This approach departs not only from traditional lexicalist theories, but also from earlier Construction Grammar accounts, both of which focus on high-level semantic generalizations, although of course in different ways. Based on corpus data as well as experimental evidence, however, recent usage-based research strongly supports the idea that low-level patterns are essential to explain cases that were previously considered mere

“exceptions”. These low-level patterns crucially include frequency-based information about specific verb-argument structure combinations.

We noted, however, that these recent usage-based insights are mainly based on a very limited set of languages and constructions. Therefore, in the two subsequent sections, we aimed to show that very similar effects obtain in less well-studied languages and constructions; the latter including valency-preserving as well as valency-changing operations, and morphologically coded as well as un-coded alternations.

It is obvious from our review that the recent application of corpus linguistic methods to naturalistic data from under-studied, non-Indo-European languages is the key to understand in more detail the role of lexical restrictions in valency and voice alternations. This type of research allows not only the measurement of association strength between particular verbs and constructions, but also crucially the interplay between these collocations and other factors, including referential and discourse-related properties of arguments, as well as event properties such as telicity. A key objective is also to find out to what extent language-specific lexical restrictions can be explained in terms of semantic features of individual verbs, verb classes and/or constructions, and how these can be meaningfully compared across languages. Ultimately, corpus-based studies will yield models of speakers' choice of verb-argument structure combinations, which can then be further tested in experimental settings, in labs and/or at field sites. Such future developments, we hope, will give a much-needed diversity boost to the empirical underpinnings of the usage-based approach to lexical restrictions.

Abbreviations

A	agent
ABS	absolutive
ANT	anterior
ANTICAUS	anticausative
APPL	applicative
ASP	aspect marker
ASS	associative
CAUS	causative
COP	copula
DECL	declarative
DEF	definite
ERG	ergative
F	feminine
GEN	genitive
IND	indicative

INS	instrumental
NAR	narrative
NFUT	non-future
NMLZ	nominalization
O	object
PASS	passive
PFV	perfective
POSS	possessive
SG	singular
S	subject

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