Introduction: Recent developments and open questions in the field of semantic roles

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Abstract

This introduction chapter briefly introduces some milestones in the voluminous previous literature on semantic roles and charts the territory in which the papers of this volume aim at making a contribution. This territory is characterized by fairly disparate conceptualizations of semantic roles and their status in theories of grammar and the lexicon, as well as by diverse and probably complementary ways of deriving or identifying them based on linguistic data. Particular attention is given to the question of how selected roles appear to relate to each other, and we preliminarily address the issue of how roles, subroles, and role complexes are best thought of in general.

1. Preliminaries

"In my view there is no construct as murky in ANY subdivision of linguistic theory as that of 'thematic role'. Literally dozens have been proposed over the years, and nothing approaching a consensus has been achieved in terms of delineating the set that are needed for natural language semantics" (Newmeyer 2010:689, emphasis in the original).

The quote above from Newmeyer can be seen as relevant to the papers of this special issue. The workshop (where all the papers of this volume were presented) organized by the editors of this special issue aimed at making the theory of semantic roles more focused by discussing them from novel perspectives. The talks delivered at the workshop dealt with several different role complexes in which the differences between semantic roles may be rather minimal, but a distinction may be based on other cues, such as semantics of the participants instead of, e.g., their case marking. Not all the talks appear in the present issue, but we nevertheless hope that the ones that are included make a contribution to our understanding of semantic roles, although we do not wish to claim that a kind of consensus referred to by Newmeyer has been achieved.

Semantic roles may be, and have been, defined in numerous ways depending on who has defined them and for what purpose. This is the topic of Section 2 of this introduction, where we present some previous, more or less established views of semantic roles. Moreover, the proposed definitions of semantic roles differ drastically in whether they see semantic roles as properties of nominal phrases, referents, verbs, events, or something else; we focus on these aspects in Section 3. Section 4 aims at shedding some light on whether different 'senses' of the same basic role should be seen as a single role or as a bundle of (closely related) roles. Finally, form and meaning contribute to our interpretation of semantic roles in different ways,

which we discuss in Section 5. Section 6 is a brief summary of the central findings of the paper and a survey of the articles of the volume.

2. Previous studies on semantic roles

The paper 'The case for Case' by Charles Fillmore (1968) marks an important milestone for our current understanding of semantic roles. Case Grammar (henceforth CG) analyzes the surface syntactic structure of English sentences by studying deep cases (i.e. semantic roles in contemporary terminology), such as Agent, Object, Dative, Location or Instrument, which are required by verbs. For instance, the verb *give* requires an Agent and Object (Patient), and a Dative. Verbs select a certain number of semantic roles which form its case frame, and any individual role can occur only once per sentence. Unlike optional roles like Location, obligatory roles like Agent may not be omitted, at the risk of producing ungrammatical sentences (e.g. **gave the apples to Barry*). Fillmore's theory explicitly distinguishes between syntax and semantics, which means, for example, that the semantic roles of active and passive constructions are identical, whereas the formal manifestation of the roles is different in each construction. This idea is crucial in many of today's functional-typological approaches to semantic roles, which attempt to be language-independent and thus render it possible to study semantic roles in radically different languages without supposing any kind of formal correlates of certain semantic roles, like nominative case or preverbal position.[1]

Thematic relations are acknowledged in formalist approaches to grammar since Gruber (1965), but they arguably have a varied status in this body of literature. Even though

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[1] Later work by Fillmore (and others) on Frame Semantics and the FrameNet Project (see https://framenet.icsi.berkeley.edu/fndrupal/) distinguish between SEMANTIC ROLES and FRAME ELEMENTS. While the latter merely correspond to event participants involved in semantic frames evoked by lexical units, semantic roles are their "linguistically motivated abstractions in that they pick out specifically those properties that tend to display the same behavior in morphosyntax" (Fried & Östman 2004: 42).

Chomskyan frameworks distinguish between semantic notions like thematic relations and syntactic notions like theta roles (e.g. Reinhart 2002), which are regarded as bundles of thematic relations associated with particular argument positions (e.g. Carnie 2002), several studies in this tradition have used both terms interchangeably. Relational Grammar (e.g. Perlmutter & Postal 1984), Government and Binding (e.g. Baker 1988), Lexical-Functional Syntax (e.g. Bresnan 2001) and other theories have used hierarchies of primitive thematic relations for particular formulations of mappings between the latter and argument positions, but some studies do without them altogether. Hale & Keyser (1993, 2001), for instance, claim that thematic roles and theta roles are derivative and non-essential. By a similar token, Jackendoff's (1983, 1990) work, as well as, more recently, Culicover & Jackendoff 2005, proposes fairly sophisticated representations of semantic structure regularities according to which thematic roles and theta roles are largely redundant.

Role and Reference Grammar (henceforth RRG) distinguishes between predicate-specific semantic roles and predicate-class abstractions called thematic relations. For instance, in *Frodo saw the ring*, *Frodo* is the seer and *the ring* is the thing seen (semantic roles), but *Frodo* is also an experiencer and *the ring* a stimulus (thematic relations). Crucially, however, thematic relations are not primitives in this theory, but merely descriptive labels given to specific argument positions of particular semantic decompositions of predicates and their arguments. The following list illustrates how such thematic relations relate to individual predicates and their arguments according to RRG:

(1)   Thematic relations continuum (Van Valin & LaPolla 1997: 127)

a.   1st argument of DO $(x,)$: agent

b.   1st argument of **do´** $(x,)$: effector, consumer, creator, mover, etc.

c.   1st argument of **predicate´** (x, y): possessor, experiencer, wanter, location, etc.

     d. 2nd argument of **predicate´** (x, y): possessed, creation, theme, consumed, stimulus, desire, performance, etc.

     e. Argument of state **predicate´** (x): patient, entity

The most recent proposal regarding the issues at hand we are aware of is found in Croft (2012), which builds upon ideas already formulated by the same author in several studies over the last twenty-odd years and —in quite a similar spirit to RRG— uses semantic role labels as notional terms without theoretical significance. In Croft's so-called force-dynamic approach,[2] crucial reference is made to the causal structure of events, which most prominently feature initiators and endpoints, each of which can in turn be either physical or mental. In the English clause *Sue broke the coconut for Greg with a hammer* (Croft 2012: 206), the (physical) initiator (*Sue*) is the subject while the (physical) endpoint (*the coconut*) is the object, and there also is an antecedent oblique (*a hammer*) and a subsequent oblique (*Greg*) that correspond to an Instrument and a Beneficiary respectively. The portion of the causal chain leading from Sue through the hammer to the coconut is said to be a causal segment profiled by the verb *break* in the so-called transitive argument construction just illustrated; the last segment, i.e. the one including Greg, is profiled by the preposition *for*. Most importantly, Croft's approach does not resort to the notion of semantic roles at all, "either reified as separate semantic units or even defined as positions in argument structure" (p. 207): instead, there is a direct mapping between so-called semantic representation (i.e. the causal chain with its verbal profile) and argument roles (i.e. subject, object, and obliques). (See Croft 2012: chapter 5 for more details on terminology and analysis.)

Other functional approaches propose a reduction of semantic roles to other, more primitive semantic notions. Rozwadowska (1988, 1989) is a case in point: based on the three binary

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[2] Croft's work has elaborated notions proposed by both Leonard Talmy in the 1970s and 1980s and Ronald Langacker in the 1990s for the study of how purported real-world events are conceptualized and expressed in natural languages.

features [±change], [±sentient], and [±cause], she defines and distinguishes roles like Affected Agent, (prototypical) Agent, Experiencer, Instruments, Patients, Objects, Neutrals, etc. Analogously, Næss (2007) works with the binary features [±affected], [±volitional], and [±instigating] and does more or less the same job. For example, in Rozwadowska the (canonical) Agent is [+sentient], [+cause] and [−change], while the typical Patient constitutes the opposite of this and thus has the features [−sentient], [−cause] and [+change].

In functional-typological linguistics (especially in Basic Linguistic Theory, see e.g. Dixon 2010), semantic roles are seen as language-independent descriptive and comparative tools that make it possible to study the formal expression of grammatical relations across languages. Role definitions are typically based on semantic features such as affectedness, control, and volitionality. Roles are distinguished based on both semantic and formal cues; the latter include case or adposition marking and compatibility with certain adverbial expressions. The number of roles distinguished varies substantially, depending, for example, on whether differences in overt coding are deemed crucial for establishing a role, and on whether verbal semantics or syntax are at the center of attention. The number of roles distinguished in syntax-centered studies is rather low, because languages do not make a formal distinction between, say, 50 roles, but usually maximally 20 roles may be separated from each other on formal criteria only. Examples of rather typical definitions of central semantic roles in functional-typological linguistics are provided by the following definitions of proto-Agent (1) and proto-Patient (2) by Dowty (1991) in terms of logical entailments of these roles:[3]

(2)   Properties of the proto-Agent (Dowty's "Agent Proto-Role")

      a. volitional involvement in the event or state

      b. sentience (and/or perception) with respect to the event or state

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[3] Dowty's definitions are based on English only and therefore not necessarily language-independent, but they can also be seen as representative examples of how semantic roles may be defined in functional-typological linguistics.

    c. causing an event or change or state in another participant

    d. movement (relative to the position of another participant)

    e. its existence is independent from the event or state

(3)   Properties of the proto-patient (Dowty's "Patient Proto-Role")

    a. is controlled (volitionally affected) by another participant

    b. is causally affected by another participant

    c. undergoes a change of state (e.g. is moved or physically manipulated by another participant)

    d. is the target of sentience of another participant

    e. its existence depends on another participant or on the event or state

In Cognitive Construction Grammar (henceforth CxG), lexical semantics of nouns do not strictly define their roles, nor does verbal semantics directly determine the roles arguments take (Goldberg 1995, 2006). Rather than features of verbal semantics, semantic roles are considered constructional properties that encode event types basic to human experience, on occasion according to different alternative construals (Goldberg 1995: 39–40). According to this view, it is possible to use verbs in different constructions, which accord different semantic roles to their arguments, as well as other semantic and pragmatic properties. For example, the semantic role of *the key* is labeled as instrument in both *John opened the gate with the key* and *The key opened the gate* in Case Grammar, whereas in CxG *the key* can be conceptualized metaphorically also as an agent or force due to its appearance as the subject of the latter clause. A further distinction relevant to CxG is the one between argument roles and participant roles. The former roughly correspond to RRG's thematic relations (e.g. Agent, Recipient, and Patient), whereas the latter are semantically more specific and correspond to

RRG's semantic roles (e.g. the argument role Agent can be divided into buyer, hander, and giver, depending on the semantics of the construction in question).

3.   Where do semantic roles originate / come from?

Predicates and the events they denote have been relevant to how semantic roles have been defined in the literature; if there is a verb present, it is usually most directly responsible for the semantic role assignment in the construction in question. For example, with the verbs *break* and *paint* we have an Agent and a Patient, while the verbs *love* and *hate* license an Experiencer and a Stimulus. The verb also sets certain limits for the arguments it can appear with, both semantically and formally (bearing in mind that formal (case) marking is often motivated by semantics). In many cases, we are dealing with finer nuances, e.g., with the verb *kill*, the object usually refers to someone that is caused to die, which makes inanimate referents rather marginal (or at least figurative and arguably non-prototypical) with that verb, but this does not affect the basic patienthood of the direct object referent. In the typical cases, the verb is responsible for the semantic roles, while the arguments (if present) specify the identity of the participants. The lexical semantics of arguments thus becomes less relevant whenever a verb is present. However, the verb does not always assign semantic roles directly, but there is some variation as well, as in *John burnt the house* vs. *the lightning burnt the house*, where *John* is a canonical Agent, while *lightning* is best seen as Force. Therefore, if arguments are (formally) left out, we lose only information about the exact identity of a participant (along with some potential changes in the roles), but in case verbs are omitted, the consequences for the reading of a clause are usually more dramatic. Moreover, different semantic roles can be assigned to arguments of different lexical semantics, even though these arguments show no formal coding distinction. For example, the English verb *shoot* may take

different kinds of objects, which may in turn bear different semantic roles. In *the hunter shot a duck*, we have an Agent and an affected Patient, while in *the hunter shot two arrows*, the roles are Agent and Theme.

Nevertheless, predicates and verbs are, expectedly, not the whole story. First, case marking of arguments may vary with one and the same verb, which has consequences for the semantic role assignment. Two illustrative examples of this are given in (4) and (5):

Finnish (p.k.)

(4)   a. *Henkilö   heitt-i   keksi-n   yksilö-ön.*

        person[NOM] throw-3SG.PST   biscuit-ACC   individual-ILL

        'A person threw a biscuit into an individual.'

    b. *Henkilö   heitt-i   keksi-n   yksilö-lle.*

        person[NOM] throw-3SG.PST   biscuit-ACC   individual-ALL

        'A person threw a biscuit to an individual.'

Lezgian (Haspelmath 1993: 292)

(5)   a. *Zamara-di   get'e   xa-na.*

        Z.-ERG   pot   break-AOR

        'Zamira broke the pot.'

    b. *Zamara-di-waj   get'e   xa-na.*

        Z.-OBL.STEM-ADEL   pot   break-AOR

        'Zamira broke the pot accidentally/involuntarily.'

In (4a), the denoted event involves an Agent, a Theme, and a Goal, the latter in the illative case. In (4b), for its part, the third argument bears allative coding and its role has changed to

Recipient instead of a Goal (understood as an endpoint of transfer). In other words, the Finnish verb *heittää* 'throw' allows both Goal and Recipient roles, depending on the semantics of the third argument referent. The only difference between (4a) and (4b) lies in the case marking of the third argument, in both (4a) and (4b) its referent is equally animate. In Lezgian, the Agent coding varies between ergative and adelative, with semantic consequences. With the ergative, as in (5a), we are dealing with a typical Agent (a proto-Agent in Dowty's terms), while in (5b), the Agent is responsible for the event, but without instigating it intentionally. In both Finnish and Lezgian, the verbs in question thus allow their arguments to take different formal manifestations with different semantic roles associated to some of their arguments. In these cases, the semantic role of an argument is a combination of verbal semantics and formal marking; the verb sets the frame, but case marking specifies the role in question.

An important question related to this is whether we need formal evidence or not for distinguishing between different roles. In turn, this is related to the question whether the same roles can be distinguished for all languages, i.e., are roles universal, or should we restrict explicit distinctions to cases where we can base our claims on clear formal evidence? For example, can, or should, we distinguish between Recipients, Patients, and Addressees in primary object languages in which all of these receive identical formal treatment? Can we speak of distinct roles because there are numerous languages in which these roles are separated by formal cues? Or should we lump all the roles that receive identical coding together just because they are coded alike? Moreover, there are languages in which the intuitively plausible roles of Goal and Source are not explicitly distinguished, but the distinction may be based, for example, only (or at least primarily) on verbal semantics. The distinction may also be only pragmatic in that a given language lacks both grammatical and lexical means for distinguishing between the roles, but the intended reading is inferable only from contextual cues (see Wälchli & Zúñiga 2006 for a more detailed discussion of this).

Again, there are numerous languages in which the distinction is explicit, and we conceptualize motion events as obligatorily involving a source and a goal, but they can often be left out from linguistic expressions, as in *she is running*. Can we thus postulate these roles also for languages in which we have no formal evidence for our claims? Do motion verbs involve goals and sources irrespective of whether the distinction is ever made explicit?

In addition, context —which is closely related to lexical semantics, of course— is important for what kind of semantic role an argument bears. Illustrative examples can be found in Romance and Slavic languages, as well as in some Germanic languages, where the referent of a datively coded argument may be a Beneficiary or a Maleficiary, depending on the context. In Finnish, the interpretation of the allative displays similar variation. Consider:

Finnish (p.k.)

(6) *Hän* *tek-i* *tämä-n* *minu-lle.*

  3SG do/make-3SG.PST this-ACC 1SG-ALL

  'S/he did/make this for/to me.'

The allative coding of the argument in (6) implies that the participant in question is indirectly affected by the denoted event without being its primary target. Nevertheless, the exact nature of this indirect affectedness may be deemed beneficial or detrimental. The specific interpretation of such clauses follows from the lexical semantics of the arguments and the verb, as well as contextual factors (like the explicit antecedent of *tämän* 'this' in a preceding clause or an implicit one in the preceding discourse). The Finnish example in (6) may have two readings depending on the context and the reading of the verb *tehdä* 'do/make'. In the first reading, 's/he made this for me', the allatively coded argument refers to a (Recipient-)Beneficiary: something concrete has been transferred to the Beneficiary's sphere of control.

The second possible reading of (6) is 's/he did this to me', in which case the allative codes a Maleficiary: nothing concrete is transferred, but the Agent has done something that has detrimental consequences for the Maleficiary. This latter reading is possible, for example, if the subject referent has betrayed the referent of the allatively coded argument. More examples of this kind are discussed by Västi and Kittilä (this volume).

In the examples discussed so far, verbal semantics has been at least to some extent responsible for the semantic role assignment of a given construction. However, as Västi and Kittilä (this volume) show, semantic roles can also be defined in verbless constructions. In these cases, semantic role assignment crucially depends on the other elements available. One of the arguments of Västi and Kittilä is that verbs may be omitted whenever enough information is retrievable from other cues. Typical examples are provided by constructions with the allative or ablative, both of which have a semantic content and can thus function as "(quasi-)predicates" (Siro 1964: 26-29, Västi and Kittilä this volume) in the given constructions. Consider:

Finnish (p.k.)

(7)   a. *Tutkija-lle   palkinto.*

        researcher-ALL   prize[NOM]

        'A researcher [won/got] a prize.' (Lit. 'to a researcher a prize')

      b. *Poliisi-lta   myrskyvaroitus.*

        police-ABL   storm.warning[NOM]

        'The police [issued] a warning about a storm.' (Lit. 'from the police a storm warning')

In (7), the semantic roles of both arguments are clear even in the absence of a verb. One of the arguments is explicitly coded for its role (by the allative or ablative), and the role of the zero-

marked nominative argument can be inferred on the basis of that, very much in the same way as the role of the unmarked argument is inferred from the form of the marked argument in e.g. (5), where we know that based on the ergative/adelative coding of the Agent that the unmarked argument must refer to the Patient. Moreover, it is important to note that in cases such as (7), the contribution of the verb is less important, and the case form of the explicitly coded argument is more directly responsible for the semantic role assignment. The verb, which is nevertheless often explicitly present, rather specifies the nature of the denoted act of transfer, and may thus have only minor consequences for the semantic roles of the arguments. Consider:

Finnish (p.k.)

(8) *Tutkija-lle*   *annettiin/lahjoitettiin/myönnettiin*   *palkinto.*

    researcher-ALL   give.PASS/donate. PASS/award.PASS   prize[NOM]

    'A researcher was given/donated/awarded a prize.'

In (8), the semantic roles of the arguments remain the same despite the changes in the lexical verbs denoting the events in question; irrespective of the verb, the semantic roles borne by the explicitly present arguments are Recipient (*tutkija* 'researcher') and Theme (*palkinto* 'prize'). This is due to the fact that the semantics associated with the allative case and also the lexical semantics of the arguments present make only one semantic role assignment possible.[4] Further examples of constructions that may lack a verb due to an obvious semantic role assignment are provided by motion (which is semantically close to transfer) and possession (possession is in most (or all?) languages expressed also adnominally).

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[4] In this context, it may be interesting to note that 'give' as a lexical verb is missing in some languages, such as in Amele (Roberts 1998).

In (8), semantic roles are determined by a semantically specific element whose contribution may even override the verb's contribution, as shown in (8). In addition, there are also events where the semantic roles are less clear, which has evident consequences for their coding. A case in point are meteorological events (cf. Eriksen et al. 2010). It is not an easy task to decide, whether the water coming from the sky in English *it is raining* is best viewed as a Theme, an Agent, a Patient, or rather as something completely different. It seems that such meteorological expressions typically have semantically rather empty verbs —at least in terms of argument structure— that have mainly grammatical functions (such as the expression of tense, mood, etc.). In other words, similarly to (8), the arguments present are primarily responsible for the interpretation of a meteorological expression, especially in languages labeled as 'argument-type' by Eriksen et al. (2010). The omission of a verb does not affect the reading of the clause in any significant way, even though depending on the language this may affect the grammaticality of a given construction. A typical example is provided in (9):

Korean (Jae Jung Song, p.c.)

(9) *Pi-ka*   */nwun-i*   */wupak-i*   *o-nta.*

     rain-NOM   /snow-NOM   /hail-NOM   come-PLAIN.IND

     'It is raining/snowing/hailing.'

The semantically more important element of (9) is clearly the noun, the verb has primarily grammatical functions. In other words, the verb is not relevant for arriving at the intended reading of the given construction. In (9), the notion of semantic roles is, as noted above, trickier, but meteorological events are mentioned here for underlining the irrelevance of verbs in certain constructions.

The roles of optional obliques (so-called peripheral roles) differ from arguments in that their roles are much less directly (if at all) inferable from verbal semantics. The semantic link

between verb and obliques is especially insignificant in the case of location and time expressions that are in principle common to all events regardless of their nature, because all events occur in time and space. This means that the semantic role of an oblique is determined by its own lexical semantics in these cases, which suggests that formal specification is more important for obliques than for arguments. There are languages in which this holds (e.g., Finnish), but there are also languages in which temporal and spatial expressions are zero-marked, which is rather unsurprising given that the semantic role of such expressions can be retrieved from its lexical semantics, at least in most cases, without other cues (see Creissels & Mounole 2011: 158f for the special treatment given in some languages to some nominals like geographical names and nouns referring to humans). Also in English some temporal expressions are zero-marked, while many other obliques receive overt coding, cf. as in *I put the book back on the shelf [**in his studio**] [**Ø last week**]*.[5] Moreover, verbs may have lexicalized certain peripheral roles as a part of their semantics (more or less explicitly). For example, cutting typically requires an instrument, and any argument present referring to something that can be used for cutting will be interpreted as an instrument regardless of argument coding. An example of this is provided in (10):

Tukang Besi (Donohue 1999: 259)

(10) *Ku-simbi-ako*   *te*   *tuha-su*   *te*   *sede* *te*   *kabali.*

1SG-slash-APPL   CORE   family-1SG.PSR   CORE   taro CORE   machete

'I slashed at the taro (with a machete) for my family.'

The example in (10) includes three identically coded core arguments. This could cause ambiguity, for example, in case all arguments were animate, and animacy could not be used for determining which argument bears which role, but in (10) the semantic role assignment is clear. This follows from the inherent semantics of the lexical arguments and the verb. In (10), 'family' is the only candidate for bearing the beneficiary role (introduced to the clause via applicativization) due to animacy (the Agent is expressed only on the verb). The verb -*simbi* 'slash' licenses three arguments, namely an Agent, a Patient, and an Instrument. Even though both non-agentive arguments are inanimate, their semantics make it clear that *sede* 'taro' refers to the Patient and *kabali* 'machete' to the Instrument. In other words, the lexical semantics of arguments, not their formal marking, is directly responsible for the semantic role assignment in (10).

Jackendoff (1990) distinguishes between two tiers of semantic roles that he labels thematic and action tiers respectively. For example, in the sentence *Pete threw the ball* the two tiers are as follows (Jackendoff 1990: 126):

(11) *Pete   threw   the ball.*

     Source   Theme   (thematic tier)

     Actor   Patient   (action tier)

The thematic tier deals with motion and location and the action tier with Actor-Patient relations. Note in (12) that the thematic role Goal does not have a corresponding role on the action tier:

(12) *Bill   entered the room.*

     Theme   Goal   (thematic tier)

     Actor   —   (action tier)

In (12), we thus only have one acting participant (Actor) who is involved in a motion event. On the thematic tier, for its part, we also have a Goal (there cannot be motion without it), but the Goal is not seen as an affected patient. This underlines the different nature of the two tiers.

In this section, we have briefly discussed the ways in which semantic roles assigned to arguments may be motivated. In many cases, the verb is primarily responsible for this and the function of arguments is to specify the identity of the participants in the denoted event. Moreover, there are instances in which other elements play a central role in this, which often happens with semantically specific case forms. In yet other cases, it is primarily the lexical semantics of arguments that determines their semantic roles. It is, however, important to bear in mind that even though we have shown that there are cases in which other formal cues or the lexical semantics of argument override the verbs in relevance, it is not our goal to downplay the relevance of verbs. Verbs are the most evident and the least ambiguous source of the arguments' semantic roles, and they are necessary when the intended reading is not inferable from other cues. For example, cases such as (13) would be practically impossible to interpret without a verb present in the clause:

Finnish (p.k.)

(13) a. *isä*   *lapse-n*   *eilen*

     father   child-ACC   yesterday

     Lit. 'a/the father a/the child yesterday'

   b. *opettaja*   *muurari-a*   *aina*

     teacher   bricklayer-PART   always

     Lit. 'a/the teacher a/the bricklayer always'

In principle, examples in (13) are similar to those in (7), because in both cases the given construction lacks a verb. Nevertheless, the crucial difference between (13) and (7) lies in the fact that in (13) the arguments present appear in grammatical cases (nominative, accusative, and partitive in Finnish), which makes them semantically rather vacuous, and a combination of two grammatical cases fails to provide us with enough information for the intended reading of a construction. In (7), the arguments coded by semantic cases (ablative or allative) are responsible for the semantic roles of arguments, while in (13), a verb would be needed, because the arguments are semantically rather void. The relevance of verbal semantics and formal cues are inversely proportional to each other; when the verb is semantically rich and the arguments rather vacuous, the verb is the central element, while arguments gain more relevance when they bear semantic contents of their own.

4.   Different and related roles, and role subtypes

Most scholars have argued, either explicitly or implicitly, in favor of applying Occam's razor to the question of how many semantic roles need to be distinguished in descriptive and theoretical studies. More often than not, semantically relevant differences in formal coding (e.g. non-allomorphic variation in case marking patterns) arguably justify postulating different roles; the Spanish prepositions *desde* 'from' and *a* 'to' in the motion event portrayed in (14) are a case in point. The former encodes the Source while the latter marks the Goal:

Spanish (p.k.)

(14) *Corrí   desde   el   portón   a   la   casa.*
    run.1SG.PFV.PST   from   DEF.SG.M   gate   to   DEF.SG.F   house
    'I ran from the gate to the house.'

By a similar token, the comparatively rich inventories of local cases / adpositions found in Uralic languages can be used to argue in favor of distinguishing between related notions in a detailed way. In (15), for instance, *luo* codes the general vicinity of Pekka, while *viereen* is a bit more specific, meaning that the ball is thrown beside Pekka, not, e.g., behind him:

Finnish (p.k.)

(15) a. *Heit-i-n*　　　　*pallo-n*　　*Peka-n*　　*luo.*

　　　　throw-PST-1SG　　ball-ACC　　P.-GEN　　to

　　　　'I threw the ball to / to the vicinity of Pekka.'

　　b. *Heit-i-n*　　　　*pallo-n*　　*Peka-n*　　*viereen.*

　　　　throw-PST-1SG　　ball-ACC　　P.-GEN　　to/beside

　　　　'I threw the ball to / beside Pekka.'

Such a line of reasoning leads to a number of issues that are frequently glossed over or at least treated in a conspicuously a-theoretical fashion. For instance, is Goal one general role with potentially more specific subroles, or are the specific relations the actual semantic roles while Goal is a general hyper-role, so to speak? A similar question that has received some attention in the literature is whether different kinds of causing participants are to be considered separate roles: are animacy, volition, and the like best regarded as possible parameters of agents, or rather as qualities or even prerequisites of prototypical agents? Do case syncretisms or subspecification phenomena in particular languages suggest that the roles in question are conceived as more tightly interconnected than in languages that sharply and consistently distinguish their formal coding?

Among the scholars that have given principled answers to such questions we find those working in the RRG tradition. As mentioned in Section 2 above, this framework distinguishes

participant roles (PR, which are notional non-technical formulations for the functions "actors and props have […] in a play," Van Valin & LaPolla 1997: 84) from semantic roles sensu stricto (SR, which are technical but predicate-specific) and thematic relations (TR, which are obtained by generalizing over individual predicates, i.e. by considering different argument positions in the "logical structure" of the clause). Thus, there is a difference in this framework between what RRG treats as the participant roles of agent (e.g. *Leslie broke the glass on purpose*), effector (e.g. *Leslie broke the glass accidentally*), and force (e.g. *the flood washed away the village*) —defined notionally along the parameters of purposeful instigation and animacy—, and the thematic relations AGENT and EFFECTOR (in small capitals in their formalism), which are defined as follows:

(16) a. DO (x, [**do´** (x, […])])   (x = AGENT)

      b. **do´** (x, Ø)   (x = EFFECTOR)

Crucially, FORCE is not a separate thematic relation here; it is simply an inanimate EFFECTOR. Van Valin & LaPolla explicitly say that "[A]GENTS are always a type of EFFECTOR semantically, [which] means that AGENT is in effect an overlay over other, more basic thematic relations" (1997: 118). The TR INSTRUMENT is not defined separately either, since it is a manipulable FORCE, i.e. incapable of independent motion and action and "under the control of another EFFECTOR" (1997: 121).

This contrasts with the solution proposed by Rozwadowska (1988: 159). In her view, so-called Affected Agents ("Agents of monotransitive verbs that undergo some change, traditionally referred to as Agents and Themes at the same time," e.g. in *John rolled down the hill*) are a separate thematic relation vis-à-vis Agents ("Agents of prototypical Agent-Patient verbs," e.g. in *Leslie killed the gunman*) and Instruments. Næss (2007: chapter 5) proposes an analysis that is close in spirit to Rozwadowska but distinguishes between Agents, Forces, and

Instruments based on her features [±volition] and [±affectedness] (her third feature, viz. [±instigation], has the same positive value for all three thematic relations). Notice that *the bolt of lightning* in (b) below is an effector in RRG but a subtype of Force for Næss:

(17) a. Agent   [+VOL]   [−AFF]   *John broke the window on purpose.*

     b. Force   [−VOL]   [−AFF]   *John broke the window accidentally.*

                                                  The bolt of lightning broke the window.

     c. Instrument [−VOL]   [+AFF]   *The hammer broke the window.*

It is far from being a coincidence that features such as volition, affectedness, instigation (and perhaps also control, not included as a separate category here) have been chosen as the decisive features by Rozwadowska and Næss in their studies. As the examples above show, these features enable us to distinguish between core roles, such as Agent, Force, and Patient. Instigation and affectedness are both highly salient features, the former being associated with the Agent role and the latter with the role of Patient; many basic events (in the Goldbergian sense: 'salient events that cause a change in the world', see Goldberg 1995: 39–40) include either, or both of these roles. On the other hand, a theory of semantic roles that would build on features such gender and number would probably fail to explain central differences between the core roles, even though these features may have relevance for the formal coding of roles. For example, in German, only singular masculine nouns appear with a distinctly accusative-marked article, but it would be rather counter-intuitive to claim that the referents of masculine nouns are more typical Patients than the referents of feminine or neuter nouns.

Other roles have received comparatively less attention in the general literature but figure somewhat prominently in specialized studies. Recipients are probably best viewed as future Possessors, but these two roles are usually viewed as roles in their own right. Intended Recipients are arguably a subtype of Beneficiaries, but so are Deputative/Substitutive

Beneficiaries, and all of these are typically treated as subtypes of a single, somewhat generic, role. Animate and inanimate Goals are commonly treated in a parallel fashion in spite of their notable and cross-linguistically robust formal differences (see Kittilä & Ylikoski 2011 for a discussion in the context of Uralic). Motion events are usually distinguished from other manipulation situations, thereby leading to Theme being a different role from Patient, but change-of-state predicates are one single class, leading to affected Patients and effected Patients not being two separate roles (but see Hopper 1985 for cases in which these two types of Patients receive different coding).

It seems indeed adequate to treat argument-related semantic features like animacy as parameters, rather than as criterial features, of particular semantic roles. By contrast, general predicate-related features like volitional instigation, control, and affectedness (and possibly others, as well as perhaps different subtypes of control and affectedness) are probably best seen as criterial. How to best treat predicate classes (physical manipulation, motion, communication, cognition, relation, change of state etc.), however, does not seem to be a question with a clear answer, at least not for a theory of semantic roles that aims at being cross-linguistically applicable.

5. How much and what kind of information can we gather from formal marking patterns?

We discussed some factors relevant to defining semantic roles in Section 3. In this section, we will discuss the interpretation of semantic roles from a somewhat different perspective, namely from the viewpoint of formal marking patterns. We will illustrate in more detail how formal means affect the reading of clauses. The discussed features comprise case marking

(including coding by adpositions), constituent order, verbal cross-reference, and changes in verb morphology.

First, case (and/or similar) marking is central to the coding of semantic roles (and thus arguments), and there are even cases, where case marking is more central than verbal semantics in that semantic roles may be assigned even in the absence of a verb (see (7) and (8)). Cases have been divided into grammatical (or structural) and semantic cases, depending on their semantic specificity. Grammatical cases are semantically rather empty markers whose interpretation depends largely on the verb. Typical examples are illustrated in (18) and (19):

Finnish (p.k.)

(18) a. *Lapsi   rikko-i   maljako-n.*

     child   break-3SG.PST   vase-ACC

     'The child broke a/the vase.'

   b. *Lapsi   näk-i   kissa-n.*

     child   see-3SG.PST   cat-ACC

     'The child saw a/the cat.'

Tshangla (Andvik 2010: 125)

(19) a. *Gopen-gi   apa   she-wa.*

     chief-AGT   father   kill-NOM

     'The chief killed father.'

   b. *Ro-ki   gari giti-rang   ma-thong-ma   giwala.*

     3-AGT   car   when-EMPH   NEG-see-NOM   COP

     'He had never seen a car.'

In (18a) and (19a), we are dealing with a prototypical transitive event including an Agent and a Patient, while (18b) and (19b) comprise an Experiencer and a Stimulus. Despite the differences in semantic roles, the case marking in the given constructions remains unchanged and the case markers employed are thus semantically rather vacuous. In other words, if the accusative would code only affected targets of highly transitive events, it could not appear in (18b), where it codes a stimulus. Rather, the function of the markers in (18) and (19) is to make clear who is doing what to whom (i.e. which argument refers to the Agent/Experiencer and which to the Patient/Stimulus). This is manifest in (18a) and (19a), where both arguments are potential Experiencers (18a) or Agents (19a). In (18) and (19), formal features override semantics and we cannot infer the semantic role of an argument from its coding directly.

Canonical examples of semantic cases are found in (20) and (21):

Finnish (p.k.)

(20) a. *Liisa   laitto-i   kirja-n   pöydä-lle / laatikko-on.*

         Lisa   put-3SG.PST   book-ACC   table-ALL   box-ILL

         'Lisa put the book on the table/into the box.'

    b. *Liisa   anto-i   kirja-n   Kalle-lle /*Kalle-en.*

         Lisa   give-3SG.PST   book-ACC   Kalle-ALL /*Kalle-ILL

         'Lisa gave the book to Kalle /*into Kalle.'

Yidiñ (Dixon 1994: 59)

(21) *Waguja-ŋgu jugi-ø   gunda-l   galba:n-da.*

     man-ERG   tree-ABS   cut-PRES   axe-INSTR

     'The man is cutting a tree (with an axe).'

The examples from Finnish illustrate the use of two locative cases, allative and illative. The relation of these cases to a specific semantic role is more direct than that of accusative or nominative, for example. For example, in (20a), either the allative or the illative case is used depending on whether the entity in question is placed on a flat surface or into a container. In (20b), in turn, only the allative is possible, because only the allative can describe transfer of a Theme to the vicinity of a landmark (thus including the Recipient's sphere of control), while the illative is more concrete. This makes the illative incompatible with the expression of a transfer event. This also underlines the semantically more specific nature of semantic cases. The example in (21), for its part, illustrates the use of the instrumental case, a very common semantic case across languages, which, expectedly, codes instruments in Yidiñ. One thing worth noting is that grammatical cases usually appear in clauses denoting highly transitive events (see e.g, Næss 2007 for a thorough discussion), while semantic cases more typically code other kinds of events and their participants. In highly transitive events, the function of case marking of arguments is thus mainly to make clear who is doing what to whom, the roles of Agent and Patient are inherent in the verb, and case marking is not necessary to underline them.

Even though cases can be divided into grammatical and semantic according to their semantic specificity, it is important to note that the distinction is not clear-cut, and a number of cases are best seen as intermediate. Some semantic cases, such as the instrumental and the locatives, may appear with derived intransitives (passive, antipassive etc.) to mark a grammatically determined function, such as the Agent of the passive (see (26)). Second, some cases, especially the ergative, display massive variation in how their exact reading is determined. There are languages in which the ergative is rather clearly a grammatical case and all A's bear explicit coding (see (19) above), but there are also languages in which the ergative only codes Proto-Agents (in the sense of Dowty 1991), while non-prototypical Agents receive different coding, such as a locative case. In such languages, the ergative is

better seen as a semantic case due to its association with the notion of typical Agent. We should therefore not regard the ergative exclusively as a grammatical case, because there is a lot of variation in its use (see Næss 2007: 184-185 for a more detailed discussion of this). A similar claim can also be made for the accusative in languages with DOM, since the accusative does not appear with all objects.

Constituent order plays a role, although a less important one than that of case marking. It often distinguishes between Agent and Patient in languages that lack morphological means of argument discrimination, but mere changes in order are not used to distinguish between, say, Agent, Instrument and Location, as case markers are. One reason for this probably lies in the fact that it is not possible to differentiate between very many roles via word order only. For example, in prototypical transitive constructions, there are basically two slots, which means that the number of roles distinguishable by word order alone is two, while languages may have dozens of cases and adpositions. Clear tendencies are observable also in the placement of arguments or obliques; arguments referring to central roles (such as Agent and Experiencer) tend to precede constituents coding peripheral roles (such as Instrument and Location). However, changes in constituent order may be accompanied (or even caused) by other differences, such as modifications of case marking. For example, in English, the Patient-Agent order is typically attested in passives, where this is accompanied by evident changes in Agent coding. Needless to say, word order serves other functions as well, such as the expression of definiteness and/or topicality.

To some extent, verbal cross-reference resembles constituent order in its relevance for semantic role coding. In many languages verbal cross-reference is limited to primary arguments (subjects/Agents) only, and all peripheral roles are lumped together in that their markers do not appear on the verb, and thus no distinctions between them are made. However, it should be noted that occasionally, specialized applicativizing elements may help disambiguate roles of applied objects even though the latter are not cross-referenced on the

verb, as do the Philippine(-like) voice affixes. Moreover, an argument may select its case marker from an array of distinct available options, while languages often have only one cross-reference marker available per grammatical relation, which also decreases the number of distinguishable semantic roles. Agents and other roles with an animate referent most typically are cross-referenced, but this is probably partly due to the fact that primary arguments tend to have animate referents, at least in bivalent clauses (see Bickel 2010 for a cross-linguistic discussion and Metslang (to appear) for Estonian). There are, however, also cases in which verbal cross-reference can be claimed to be primarily responsible for semantic role assignment, as in (22):

Choctaw (Heath 1977: 207)

(22) a. *Hattak-at*   *oho:yoh(-a)*   *Ø-Ø-pisa-h.*

      man-SUBJ   woman(-OBL)   3AGT-3PAT-see-PRES

      'Man sees woman.'

   b. *Hattak-at*   *oho:yoh(-a)*   *Ø-i-hiyiya-h.*

      man-SUBJ   woman(-OBL)   3AGT-3DAT-stand-PRES

      'Man waits for woman.'

   c. *Hattak-at*   *oho:yoh(-a)*   *i-Ø-nokšo:pa-h.*

      man-SUBJ   woman(-OBL)   3DAT-3PAT-be afraid-PRES

      'Man is afraid of the woman.'

In (22), the coding of A and O remains unchanged, while the verbal cross-reference varies according to the semantic roles of the arguments. The differences between the roles in (22) are rather minimal, and all the examples in (22) denote events that rank rather low for semantic transitivity. Despite this, the roles receive different verbal cross-reference.

     A further instance where verbal cross-reference may be said to play a role is found in (23):

Basque (p.k.)

(23) a. *(Ni-k)*   *liburu-a*   *seme-ari*   *eman*

(1SG-ERG)   book-DEF   son-DAT.SG.DEF give.PARTIC.PERF

diot.

AUX.3SG.ABS.3SG.DAT.1SG.ERG

'I have given the book to my son.'

b. *(Ni-k)*   *alaba*   *Londres-ko*   *eskola*   *bat-era*   *bidali*

(1SG-ERG) daughter.DEF London-REL   school   one-ALL.SG send.PARTIC.PERF

dut.

AUX.3SG.ABS.1SG.ERG

'I have sent the daughter to a school in London.'

Basque is one of the comparatively few languages in which the verb (in (23), the auxiliary) cross-references three arguments (Agent, Patient/Theme, and Recipient). However, the third argument may appear on the verb only if it is dative-marked —a privilege reserved for animate Recipients and other arguments, but unavailable to inanimate Goals, which cannot be cross-referenced.

In contrast to verbal cross-reference, markers of valency-related operations like passivization or antipassivization make an important contribution to our interpretation of semantic roles. For example, semantic cases have new functions in the derived constructions, where the intended interpretation cannot be inferred without taking verb morphology into account. Verb morphology stresses the fact that a given case form has a reading different form the expected one, which resolves possible ambiguity.

Perhaps the most evident examples of verb morphology determining the semantic role assignment of arguments are provided by languages like Lardil and Warrungu:

Lardil (Klokeid 1976: 552)

(24) a. *Mangata   nethakun   yaraman-in.*

      child.NOM   hit   horse-ACC

      'The child hit the horse'

    b. *Yaraman   neyikun   (ma:nanga-n).*

      horse[NOM]   hit.PASS   (child-ACC)

      'The horse was hit by the child.'

Warrungu (Blake 1977: 25)

(25) a. *Bama-ŋgu   gamu   bidja-n.*

      man-ERG   water[ABS]   drink-NFUT

      'The man is drinking water.'

    b. *Bama   gamu-ŋgu   bidja-gali-n.*

      man[ABS]   water-ERG   drink-ANTIP-NFUT

      'The man is drinking water.'

Case marking in Lardil follows a nominative-accusative pattern, i.e., A is coded by the nominative and O by the accusative in basic active constructions, as in (24a). In derived passives, in turn, Patient is promoted to nominative-marked subject status and the Agent bears accusative coding (24b). The mirror image of this is attested in Warrungu, where A appears in the ergative and O in the absolutive in the basic active construction, while the Patient is demoted to an ergative-marked adjunct and Agent is promoted to absolutive-marked subject status in the derived antipassive. In (24) and (25), the interpretation of the accusative or the ergative depends entirely on the derived vs. non-derived nature of the given construction.

Examples in (24) and (25) illustrate the extreme instances where changes in verb morphology affect the reading of cases. Somewhat less dramatic cases are found in (26) and (27):

Russian (Siewierska 1984: 162)

(26) a. *Devock-a   my-la   pol-Ø.*

   girl-NOM   wash.IPFV-PST.F   floor-ACC

   'The girl was washing the floor.'

   b. *Pol-Ø   my-l-sja   devock-oj.*

   floor-NOM   wash-IPFV-REFL   girl-INSTR

   'The floor was being washed by the girl.'

West Greenlandic (Fortescue 1984: 86)

(27) a. *Tuttu   taku-aa.*

   caribou   see-3SG→3SG.IND

   'He saw the caribou.'

   b. *Tuttu-mik   taku-nnip-puq.*

   caribou-INSTR   see-ANTIP-3SG.IND

   'He saw a caribou.'

The Russian examples illustrate differences between active and passive, while in (27) the differences are between the basic active construction and the derived antipassive. In both languages, the instrumental case is used in the derived construction to code the demoted A or O. The function of the instrumental case is thus not the same as it is in the non-derived construction, where it codes instruments in both languages. The original semantics of the instrumental is bleached in (26-27b), and the case can code a grammatical function. However,

the rather frequent use of the instrumental (and also of locatives) in derived constructions to mark grammatical functions probably has a semantic basis. Especially the use of the instrumental in the passive is rather expected, because Agents and Instrumentals both cause events to happen, even though in different ways (cf. Croft's 2012 account of such "antecedent roles"). On the other hand, cases such as the abessive or superessive do not usually appear in derived voice constructions, since the semantic connection between the case form and the expressed function is less transparent with them.

In addition to the cases discussed in (24)-(27), there are instances in which certain semantic differences become evident only in derived voice constructions. Consider:

Djabugay (Patz 1991: 299)

(28) a. *Bama-lu   gurra: du:-ny.*

     man-ERG   dog.O   hit-PST

     'The man hit the dog.'

   b. *Yaba-nggu   djulbin guni-l.*

     brother-ERG   tree.O   cut-PRES

     'Brother cuts a tree.'

   c. *Bama   gurra:-nda   du:-yi-ny.*

     man   dog-DAT   hit-ITR-PST

     'The man hit the dog.'

   d. *Yaba   djulbin-da guni-yi-ng.*

     brother   tree-LOC   cut-ITR-PRES

     'Brother cuts a tree.'

In (28a-b), the animacy of the Patient does not have formal consequences, but the Patient invariably appears in the absolutive. Differences in animacy are manifested formally in the

antipassive, where animate Patients appear in the dative, while inanimate Patients bear locative coding, as shown in (28c-d). In other words, the animacy of the Patient is part of the dative or the locative coding in derived constructions. We may therefore conclude that derived constructions allow us to make some differences that are not possible in basic constructions, where the form overrides meaning. A similar case is attested in German, where the passive Agent can be marked with three prepositions, *von* 'of', *durch* 'through' and *mit* 'with', depending on the semantic nature of the Agent (see also Wälchli and Zúñiga 2006 for more examples and discussion).

In this section, we have briefly discussed the interplay between form and meaning in the semantic role assignment. It is clear that in most cases neither form nor meaning alone suffices for an unambiguous interpretation of role markers, but we need to take both into account. This is especially evident in derived constructions, where case forms may have functions quite different from those in the basic constructions. Put another way, formal features give a hint about what the role of an argument is, but the exact role is a combination of verbal semantics, formal features, and other factors (like context).

6.   Final remarks and content of this special issue

Like other notions in linguistics, semantic roles both vigorously resist being abandoned and persistently defy being defined in such a way that principled theories of linguistic meaning, linguistic form, and linguistic form-function correspondences can employ them without nontrivial provisos and/or significant gaps in the range of phenomena such theories successfully cover. Intensional, extensional, and sometimes even ostensional definition attempts raise a number of interesting descriptive, comparative, and theoretical issues, as we have seen in the preceding sections, which we have not tried to address comprehensively, let

alone definitively, here. In the light of the ideas surveyed and the data presented above, however, it is probably unsurprising that there should be no consensus regarding the question of the exact status that semantic roles must receive in theories of language structure. The exact definitions of semantic roles vary enormously according to who has defined them and for what purpose, which naturally makes the whole notion more heterogeneous.

The present paper, as well as the other articles in this volume, contribute to the ongoing discussion of the many and varied issues involved basically by drawing the readers' attention to some difficulties linguistic analysis of this sort faces, as well as to novel (but not revolutionary, certainly not radically so) ways of thinking about (or of tackling) some of the recalcitrant questions: what are semantic roles and what is their significance; how and where can they be identified; and how do they originate. First, the paper by Creissels studies the role of the Functive across languages. This role has not been previously studied from a broad cross-linguistic perspective, and its status as a semantic role can be seen as somewhat questionable, because it cannot be given a straightforward definition using typical features like agency and affectedness. Second, Zúñiga's paper offers a new perspective on the rather widely discussed role of Beneficiary. Zúñiga claims that surrogation and substitution should be seen as distinct from benefaction, even though these notions are intimately related. Dahl & Fedriani examine the dative role complex in Latin and its functionally equivalent complex in modern Romance languages, thus offering a diachronic perspective to the study of semantic roles. Västi and Kittilä's study focusses on verbless constructions, where semantic roles, however, can be identified. This paper suggests that semantic roles are best seen as constructional properties in the Goldbergian sense, but it goes one step further in discussing constructions that are genuinely verbless — thereby naturally challenging the central role of the verb in defining semantic roles. Haspelmath et al.'s study approaches semantic roles from a novel perspective as well, starting with language-internal generalizations and only then moving to the cross-linguistic level. This paper also shows that languages can be compared at

the level of individual verb meanings using a variant of the semantic-map method applied to micro-roles. Finally, Bickel et al. study whether and to what extent there is cross-linguistic evidence for postulating clusters of predicate-specific semantic roles such as Experiencer, Cognizer, Possessor, etc. Applying fuzzy cluster and NeighborNet algorithms to non-default case-marking patterns produces cross-linguistic evidence for role clusters around Experiencers, undergoers of body processes and Cognizers/Perceivers, as well as around Sources and transmitted speech, but no significant support is found for any other role clusters. This paper thus shows that there are clear differences between what had traditionally been assumed to be semantic roles to be treated on a par.

Abbreviations

ABL	Ablative case	AGT	Agent
ABS	Absolutive case	ALL	Allative case
ACC	Accusative case	ANTIP	Antipassive
ADEL	Adelative case	AOR	Aorist

APPL	Applicative		NOM	Nominative case
AUX	Auxiliary		O	Object-like argument
COP	Copula		OBL	Oblique
CORE	Core argument		OBL.STEM	Oblique stem
EMPH	Emphatic		PART	Partitive case
ERG	Ergative case		PARTIC.PERF	Perfective participle
DAT	Dative		PASS	Passive
DEF	Definite		PAT	Patient
F	Feminine		PFV	Perfective
GEN	Genitive case		p.k.	Personal knowledge
ILL	Illative case		PLAIN.IND	Plain indicative
IND	Indicative mood		PRES	Present tense
INSTR	Instrumental case		PSR	Possessor
IPFV	Imperfective aspect		PST	Past tense
ITR	Intransitive		REFL	Reflexive
LOC	Locative case		REL	Relative marker
M	Masculine		SG	Singular
NEG	Negation		SUBJ	Subject
NFUT	Non-future tense			

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