

The discriminatory function of case in DOM and the problem of weak universals

Standard typological methods are designed to test hypotheses on strong universals that broadly override all other competing universal and language-specific forces. In this paper I argue that there are also *weak universals*. Weak universal pressures systematically operate in the course of development but then interact with, or are even subsequently overridden by, other processes such as analogical extension, persistence effects from the source function, etc. This, in turn, means that there can be statistically significant evidence for violations at the synchronic level and, accordingly, only a weak positive statistical signal. But crucially, the absence of statistical *prima-facie* evidence for such pressures does not amount to evidence for their absence. By way of example, the present paper claims that the discriminatory function of case in differential object marking (DOM) systems is a weak universal: It keeps appearing in historically, synchronically and typologically very divergent constellations but is often overridden by other processes in further developments.

1. Introduction

In this paper, I adopt a dynamic approach to universals (Greenberg 1978) and, accordingly, the following definition of a universal:

- (1) A dynamic definition of universals
principled preferences that affect how languages change over time (Bickel 2011: 401).

I conceive of these preferences as statistical tendencies (cf. Bickel 2011) rather than “inviolable constraints” on language in Kiparsky (2008). This definition singles out those universals that are not predetermined by the historical origin of the structures in question, thus resembling Haspelmath’s “functional-adaptive constraints” on language (Haspelmath, this volume). Universal forces of this kind produce structures with “overwhelmingly greater than chance frequency” or “well more than chance frequency” (Greenberg 1963: 45, 47, *passim*), and they thus allow for exceptions. The number of such exceptions, in turn, is indicative of the *strength* of a universal force.

Strong universal forces reveal themselves as universal on both of the methodological approaches used in typology: on the *static* and on the *dynamic* approach (see Greenberg 1969 for these notions). The former crucially relies on the relative frequency in the synchronic distribution across languages, while the latter is based on the relative frequency of the relevant changes across languages from a proto-stage (STAGE 0) into the synchronic stage (STAGE 1).¹ A typical feature of strong universals is that the dynamic and the static evidence for these universals converge. For example, the force that ALL LANGUAGES MUST HAVE VOWELS (Comrie 1989: 19) finds solid evidence for universality on the static approach, in the sense that one would hardly find a spoken language violating this universal, i.e. a language without any vowels. The dynamic approach will equally show that, despite various language-specific pressures such as vowel reduction strategies and even vowel loss, these pressures never succeed to such an extent as to yield a language without any vowel, because no other universal or language-specific pressure may override this universal in any type of language change.

¹ Note that the static approach, too, assumes that the synchronic distributions are the result of diachronic changes that have led to them (cf. Haspelmath, this volume). It is, therefore, only methodologically but not ideologically synchronic.

Another strong universal – albeit somewhat weaker than the former – concerns inflection: IF THERE IS ANY INFLECTION IN NOUNS, THERE IS ALSO SOME INFLECTION IN PRONOUNS (Moravcsik 1993; Plank et al. 2002ff.). A still weaker universal – a number of exceptions may be found in the literature (cf. Handschuh 2014) – concerns case marking: IN A LANGUAGE WITH CASE, THE ZERO-MARKED CASE TENDS TO BE THE ONE THAT MARKS THE SUBJECT OF INTRANSITIVE VERBS (Greenberg 1963: 95).

Thus, there is gradience in the strengths of universals and, accordingly, in the number of exceptions found at STAGE 1 with each universal. By entertaining the idea of gradience a bit further, one may also think of a force that systematically operates in different languages in the development of a particular category, i.e. in the transition between STAGE 0 and STAGE 1, and is, therefore, a universal according to the definition in (1) above. However, this universal is not strong enough to override competing internal and/or universal forces to remain visible at STAGE 1. A universal of this kind is referred to as *weak universal force*:

(2) Definition of a weak universal force

A weak universal is a force that systematically exercises an impact in the historical development from STAGE 0 into STAGE 1 in a particular (grammatical) domain; this impact is found across geographic areas and genealogical affiliations in the diachrony with significant frequency, but may be marginal and heavily restricted or not be visible at all in the synchronic layer (STAGE 1).

The synchronic effects of a weak universal force often reside in marginal subdomains or are overridden altogether by some other, stronger processes (cf. Bickel 2014: 117). This, in turn, means that there will be a significant number of violations and, accordingly, only a weak positive statistical signal (if at all). As a result, the standard methodologies that rely on the relative frequency in the *prima-facie* data will provide disproof of universality.

To give an example, Hammarström (2015) argues on the basis of 5230 languages that there is a universal trend for SVO word order across languages (cf. Gell-Mann & Ruhlen 2011; Maurits & Griffiths 2014), henceforth, the SVO UNIVERSAL. Having said this, he claims that “the universal is not the only, nor the most important factor” constraining the synchronic distribution; the most important factor responsible for the current distribution is the order of the immediate ancestor, i.e. inheritance. The following figures explain this: SOV is much more widespread than SVO across language families with 65.1% SOV vs. 16.2% SVO,² but a change from SOV to SVO and from VSO to SVO is significantly more probable than the respective reverse changes (Croft 2003: 234; Maurits & Griffiths 2014). Hammarström (2015) shows that the pressure to retain the inherited word order accounts for 78% of the sample while the universal SVO accounts for only 14% of the static evidence. The SVO UNIVERSAL is thus a weak universal in the sense that it cannot so easily force a language to change into SVO against the pressure of inheritance.

In what follows, I argue that the *discriminatory function* of flagging is a weak universal despite apparent counterevidence. I illustrate this with qualitative data and arguments how different motivations may lead to a result that is easily misinterpreted if taken at face value. In order to do so, I first introduce the (*global*) *discriminatory function* and the related phenomenon of *local disambiguation* (Section 2). Section 3 exemplifies various differential object marking (DOM) systems and how the discriminatory function interacts with other, stronger forces in each of them. Finally, Section 4 provides a discussion of the phenomenon of weak universals and conclusions.

² SOV (43.3%) is attested only slightly more frequently than SVO (40.2%) if the genealogical bias is not controlled for (cf. Dryer 2013). This effect is just due to a few large families with SVO (Hammarström 2015).

2. The (global) discriminatory function

Since a transitive clause has two arguments (A and P), it must be ensured that the hearer will be able to discern which of the arguments should be interpreted as A and P, respectively. Moreover, other potential misinterpretations such as one NP modifying the other NP – if both are adjacent to each other – or both NPs being coordinated (without a conjunction) should be excluded. There are many ways in which the discriminatory function may be implemented in a particular language or even in a particular sentence, flagging being one of them:

- (3) Definition of the global discriminatory function of P flagging (economy subsumed)
In a transitive clause, the A and the P argument must be sufficiently disambiguated, e.g. by word order, agreement, voice, world knowledge, and it is only if they are not that there is dedicated P flagging.

A number of researchers have argued that there is only little or no evidence for (A or P) flagging systems being driven by the discriminatory function as defined in (3) cross-linguistically (*inter alia*, Aissen 2003; Malchukov 2008; various papers in de Hoop & de Swart, eds., 2008). Levshina (in prep.) shows on the basis of the large-scale AUTOTYP database that there is no statistically significant effect of the discriminatory function observable for flagging because there are only very few languages in which flagging is primarily driven by the discriminatory function. Sometimes even in these languages, the discriminatory function does not serve the purpose of discrimination between A and P alone: a function inherited from the source construction and often some ongoing conventionalization of the most frequent discrimination patterns override the discriminatory function to various extents.

Having said this, it has been repeatedly suggested that flagging might also serve the discriminatory function, especially, if A and P have similarly ranked input (cf., *inter alia*, Comrie 1978, 1989; Dixon 1994; Silverstein 1976; Kibrik 1997). Bossong (1985: 117) even assumed that the emergence of DOM is primarily due to the discriminatory function. In the following section, I follow this line of thinking and provide qualitative evidence for the claim that the discriminatory function does operate across genealogically and areally diverse DOM systems and is therefore a universal according the definition given in (1). However, it is not a typical universal in that its impact is mostly weakened by other competing pressures to which it is subordinate, the effect being that there is only marginal evidence for it at the synchronic STAGE 1.

3. Evidence from DOM systems

Consider the DOM system of the rural variety of Donno Sɔ (Dogon; Mali), as described in Culy (1995). The DOM suffix *-ñ* marks human and often animal-denoting pronouns and nouns if the latter are definite:

- (4) Donno Sɔ (Dogon; Culy 1995: 48)
Anta-ñ iɓera yaw aa bem.
Anta-DOM market.LOC yesterday see.PTCP AUX.1SG
'I saw Anta at the market yesterday.'
- (5) *Jalɔmbe izɔmbe-ñ keraa biyaa.*
donkey.DEF.PL dog.DEF.PL-DOM bite.PTCP AUX.3PL
'The donkeys bit the dogs.'

In contrast, neither indefinite animates nor inanimate definites are marked. We observe that at least two referential scales are simultaneously operating here:³

- (6) Animacy scale
human > animate > inanimate
- (7) Definiteness scale
definite > specific > indefinite

Crucially, superficially the discriminatory function does not seem to apply in this language since scale effects from (6) and (7) predominate: all animate and definite NPs are marked regardless of whether they really need to be globally disambiguated or not. However, the animate indefinite NPs that are not (yet) affected by the scale effects do show the operation of the discriminatory function. With these NP types, the DOM marker may be employed to discriminate between A and P in a particular utterance (cf. the Disambiguation Principle in Culy 1995: 52). For example, when both the object and the subject NP are indefinite and animate and there are no other clues how to discriminate between A and P, the DOM marker may be employed “against” the force of marking definite animates only:

- (8) Donno Sɔ (Dogon; Culy 1995: 53)
- | | | | | |
|---------------------|--------------|-------------|------------|------------------------|
| <i>Wezewezegine</i> | <i>yaana</i> | <i>po-ñ</i> | <i>don</i> | <i>wo mɔ ni tembe.</i> |
| crazy.person | woman | large-DOM | place | 3SG PS at found |
- ‘A crazy person found a large woman at his/her place.’

In this example, both indefinite NPs ‘crazy person’ and ‘a large woman’ may potentially be interpreted as As (Culy 1995: 53). Therefore, the DOM marker *-ñ* is used here to unequivocally mark the syntactic role of ‘a large woman’. The discriminatory function is the weakest among other forces here (Culy 1995: 53) because it applies in a way exceptionally by constraining only one slot on the referential scales in (6) and (7): the indefinite animate P. In accordance with Culy (1995: 51), one can thus posit the following forces and their relative weight (from the strongest to the weakest):

- (9) The relative weight of the main forces on DOM in Donno Sɔ (and Malayalam, see below)
- animacy scale + definiteness scale > discriminatory function*

Another important observation can be made here. Notice that the slot on the referential scales in (6) and (7) that is open for the application of the discriminatory function is immediately next to the slots that require rigid marking. I interpret this in the following way. In their historical developments, many DOM systems extend the DOM markers gradually from left to right on referential scales such as (6) and (7) (cf. Dalrymple & Nikolaeva 2011). For example, many languages start with a DOM system that applies only to animate nouns but then gradually extend the DOM marker onto inanimate nouns as well. Note that very often the difference in meanings between the two neighbouring slots on a referential scale is quite substantial and is certainly not graspable in terms of semantic extension. For example, the expansion of the DOM marker *-rā(y)* from mostly animates in Middle Persian (Key 2008: 244;

³ In this paper I do not make any assumptions about the nature of referential scales effects: whether they stem from generalizing the most frequent patterns conditioned by the discriminatory function (cf. Aissen 2003) or from the source (i.e. from topics, cf. Dalrymple & Nikolaeva 2011), or are language-specific (Bickel et al 2015), or whether they represent an independent phenomenon *sui generis*, is irrelevant here.

cf. also Paul 2008: 152–153) to the inclusion of inanimates in Modern Persian is not semantically straightforward, since the two are rather antonymic in meaning. I suggest that it is precisely the discriminatory function that is responsible for the expansion of the DOM marker into the next slot on the scale because the discriminatory function is not dependent on the lexical meaning of the noun in the same way as, for example, the animacy scale. The discriminatory function then applies to the next slot until that slot also becomes conventionalized, and so on.

A constellation very similar to Donno S_o is found in Malayalam (Dravidian). The Accusative marker *-(y)e* is regularly used with animate specific object referents but is normally ungrammatical with inanimate referents:

- (10) Malayalam (Dravidian; Asher & Kumari 1997: 204)
Tiiyə kuṭil naḥippacu.
 fire.NOM hut.NOM destroy.PST
 ‘Fire destroyed the hut.’

However, in one special case, it may be used on inanimate referents as well, i.e. precisely when there is no other way to (globally) discriminate P from A (Asher & Kumari 1997: 204, cf. Stiebels 2002: 16; Subbārāo 2012: 174–176):

- (11) Malayalam (Dravidian; Asher & Kumari 1997: 204)
 a. *Kappal tiramaalaka[-e] bheediccu.*
 ship.NOM wave.PL-ACC(=DOM) split.PST
 ‘The ship broke through the waves.’
 b. *Tiramaalakaḥ kappal-ine bheediccu.*
 wave.PL ship-ACC(=DOM) split.PST
 ‘The ship broke through the waves.’

As in Donno S_o above, the discriminatory function becomes visible only in those slots on the referential scales that are not (yet) affected by the scale effects. While in Donno S_o the indefinite animate slot became available for the discriminatory function, it is the inanimate slot (both definite and indefinite) in Malayalam. The relative weight of the discriminatory function of the DOM marker in Malayalam is lower than the effect of the referential scales, cf. (9) again.

Crucially, if one were to superficially evaluate whether or not the discriminatory function operates in Donno S_o or Malayalam, one would have to conclude that it does not because of the rigid marking of animates (definite animates in Donno S_o) and the rigid zero with inanimates. Thus, from the perspective of the discriminatory function, utterances like (4) redundantly mark their objects; conversely, examples such as (10) are economical but equally violate the discriminatory function since same-rank A and P are not disambiguated. I summarize:

- (12) The relative weight of the main forces in DOM in Donno S_o and Malayalam
animacy scale + definiteness scale > economy > discriminatory function

Catalan is another example. Here, the DOM marker *a* is obligatory only for strong (non-clitic) personal, relative and reciprocal pronouns in the non-colloquial register (cf. Escandell-Vidal 2009). Thus, the DOM marker of Catalan is primarily conditioned by the parts-of-speech scale pronouns are marked while other NPs are unmarked:

- (13) Parts-of-speech scale
(independent) pronouns > nouns

However, the DOM marker may exceptionally appear also with definite animate NPs in the contexts of subject-object ambiguity (Wheeler et al. 1999: 243):

- (14) Catalan (Romance; Wheeler et al. 1999: 243)
T'estima com a la seva mare.
 2SG.OBJ=love.PRS.3SG like DOM DEF.F 3SG.F.POSS mother
 'She loves you like (she loves) her mother.'

Again, the discriminatory function is subordinate to the parts-of-speech scale (13). It may only exceptionally violate the cut-off point between pronouns and nouns on this scale that is otherwise rigid in this language. Additionally, the animacy scale (6) and definiteness scale (7) apply in that they determine the NP type for which the discriminatory function may operate: the discriminatory function can only operate on definite animates but not on inanimates or indefinites in this language. I summarize:

- (15) The relative weight of the main forces in DOM in Catalan
parts-of-speech scale > animacy + definiteness scale > discriminatory function

The situation in Spanish is somewhat different but largely analogical. Animate and specific NPs must be marked while inanimate and/or non-specific NPs must remain unmarked. However, the DOM marker *a* is obligatory in certain contexts of disambiguation, even with inanimate NPs:

- (16) Spanish (Romance; von Heusinger & Kaiser 2007: 89)
En esta receta, la leche puede sustituir a=l huevo.
 in DEM recipe DEM milk can replace DOM=DET egg
 'In this recipe egg can replace the milk.'

We observe the same constellation here: the discriminatory function is subordinate to the effects of referential scales.

Another example is the DOM marker *-ǎn* in Hup (Nadahup). It is obligatory with definite animates (including pronouns) as well as with the plural collective marker *=d'əh* (Epps 2008: 170–177). At the same time, the DOM marker *-ǎn* may be used with indefinite animates to discriminate the P argument from A (Epps 2009: 95). Consider the following example, in which the A argument is left out because it is non-referential:

- (17) Hup (Nadahup; Epps 2009: 95)
Húp-ǎn tə'w-ə'y, húp-ǎn dóh-óy.
 person-DOM scold-DYN person-DOM curse-DYN
 '(Some people) scold people, cast curses on people.'

The P argument is not referential either, let alone definite. Since it is indefinite it should not be marked. However, in order to discriminate the P argument from a possible misinterpretation as A, the object marker is used here (Epps 2009: 95). Again, the discriminatory function is weak because it is subordinate to the referential-scale effects which primarily determine the slots in which the discriminatory function may apply (e.g. on inanimates or indefinites or non-referential NPs, etc.). The relative weight of these is the same as in Catalan in (15) above.

The subordinate discriminatory function is found in other Nahadup languages as well. For example, the object marker *-ĩ:yʔ* in Dăw accompanies topical objects but it may also be used for the discriminatory function (Martins & Martins 1999: 263–264).

Similarly, Awtuw (Sepik: Papua New Guinea) obligatorily marks all pronominal and proper-name direct objects regardless of whether there is a need for discrimination or not:

- (18) Awtuw (Sepik; Feldman 1986: 109)
 **Wan rey du-k-puy-ey.*
 1SG 3M.SG FA-IPFV-hit-IPFV
 [Intended meanings] ‘I’m hitting him.’ / ‘He’s hitting me.’

In addition, overt definiteness marked either by a demonstrative or a possessor NP has the tendency to attract the object marking regardless of the context (Feldman 1986: 109–110). By contrast, the marking of common nouns is optional. In case of ambiguity it becomes obligatory, or else the NPs will be interpreted as conjoined (Feldman 1986: 110):

- (19) Awtuw (Sepik; Papua New Guinea; Feldman 1986: 109)
 a. *Piyren-re yaw di-k-ael-iy.*
 dog-DOM pig FA-IPFV-bite-IPFV
 ‘The pig is biting the dog.’
 b. *Piyren yaw di-k-ael-iy.*
 dog pig FA-IPFV-bite-IPFV
 ‘The dog and the pig bite.’ / *‘The pig is biting the dog.’ / *‘The dog is biting the pig.’

The situation in Awtuw is slightly different from the one found in the languages above: the slot affected by the discriminatory function (common nouns) already allows for the overt marking; the discriminatory function turns the marking in a particular utterance from optional into obligatory for this particular interpretation.

The prepositional DOM marker *bǎ* of Chinese primarily occurs before animate, definite or, rarely, indefinite specific preverbal object NPs while postverbal objects are never marked with it (Li & Thompson 1981; Bisang 1992: 158–159; Yang & van Bergen 2007):

- (20) Chinese (Sinitic, Li & Thompson 1981: 464)
Tā bǎ fàntīng shōushi gānjīng le.
 3SG DOM dining.room tidy.up clean PFV
 ‘S/He tidied up the dining room.’

The discriminatory function as defined in (3) above is not relevant in (20). In addition to the general SVO and S *bǎ* OV word orders, Chinese also allows for OSV with topical objects and prominent subjects, cf. (21):

- (21) Chinese (Sinitic; Bisang 1992: 158, from Wang Mingquan 1987: 79)
 a. *Láng Mary chī-le.*
 wolf Mary eat-PFV
 ‘Mary ate the wolf.’
 b. *Láng bǎ Mary chī-le.*
 wolf DOM Mary eat-PFV

‘The wolf ate Mary.’

To force the interpretation of (21) with SOV, the *bǎ* marker has to be used in order to disambiguate the referentially more prominent NP (*Mary*) as P (cf. Bisang 1992: 158). Again as in the examples above, the DOM system of Chinese is primarily driven by the cut-off points on referential scales (definiteness, animacy) and some other strong rules pertaining to affectedness, aspectuality and the “disposability” of the object referent (cf. Li & Thompson 1981). Some of these functions are most probably inherited from the source, such as the requirement on disposability or the preverbal position, which may be explained as the retention of the properties of the source construction.⁴ The discriminatory function is, thus, again limited to a particular constellation of (21) in which the source function, referential scales effects and other forces allow it to operate.

The discriminatory function in Mam (Mayan) is carried out by the obligatory cross-referencing of both A and P on the verb; no flagging is involved. By contrast, the Antipassive form of the verb does not allow for cross-referencing the P argument which is regularly marked by the preposition / relational noun *-iʔj* ‘about’ or *-ee* (dative, beneficiary) (England 1983: 212):

- (22) Mam (Mayan; England 1983: 213)
- | | | | | |
|-----------|------------------|--------------|-----------------|---------------|
| <i>ma</i> | <i>ø-tzyuu-n</i> | <i>Cheep</i> | <i>*(t-iʔj)</i> | <i>xiinaq</i> |
| REC | 3A-grab-AP | Jose | *(3SG-RN) | man |
- ‘Jose grabbed the man.’

However, “if there is no confusion as to which noun phrase is the agent and which is the patient” the relational noun may be omitted in order to code the meaning of an unintentional act (England 1983: 212):

- (23) Mam (Mayan; England 1983: 212—213)
- a. *Ma ø-tzyuu-n Cheep t-iʔj ch'it.*
REC 3A-grab-AP Jose 3SG-RN bird
‘Jose grabbed the bird.’
- b. *Ma ø-tzyuu-n Cheep ch'it.*
REC 3A-grab-AP Jose bird
‘Jose unintentionally grabbed the bird.’

The discriminatory function thus delimits here the range of the input with which unintentional acts can be expressed (in the Antipassive). In other words, the discriminatory function of flagging is found in a very small subdomain of the language, i.e. in the unintentional use of the Antipassive.

A somewhat different constellation is found in Tamasheq (Berber). The marker *na* (*ná*, *nà* depending on the dialect and tone sandhi) occurs only in SOV word order –never in SVO or VSO – and only if there is no verb inflection (Perfective Indicative), i.e. no disambiguation via indexing is possible (Heath 2007: 92, 94).⁵ Moreover, both arguments must be expressed

⁴ The *bǎ* marker stems from the lexical verb ‘to hold’ in a serial verb construction (Sun 1996: 61–62).

⁵ It is referred to as “bidirectional case marker” in Heath (2007) as well as in the descriptions of some Mande languages, cf. Diagona (1995), Nikitina (forthc.). Bidirectional case markers cannot be straightforwardly related to either A or P marking since they occur only when both are present and do not show any phonetic or syntactic fusion effects. Note that bidirectional case markers are treated under the heading of differential argument marking, cf. Nikitina (forthc.).

overtly. For example, the marker cannot be used in the imperative with the subject dropped (Heath 2007: 92–93). These requirements suggest that the marker is conditioned by the discriminatory function:

- (24) Tamasheq (Berber, Afroasiatic; Heath 2007: 91; glosses adapted)
Hàr-òó nà háns-òò káru.
 man-DET.SG DOM dog-DET.SG hit
 ‘The man hit the dog.’

Without *nà*, both NPs may be misinterpreted as either a compound or as a possessor phrase ‘the man’s dog’ (Heath 2007: 91).

Moreover, some Mande languages such as Soninke, Bambara, Wan or Songhay languages of the area also have similar markers that primarily fulfil the discriminatory function of unambiguous identification of the subject and the object in a clause (Heath 2007; Creissels & Diagne 2013; Nikitina, *forthc.*). While Tamasheq, similarly to many Central Mande languages, has generalized the marker, extending it onto all SOV utterances, Wan (South-eastern Mande) employs the marker *laa* predominantly only in those input configurations which are in need of disambiguation given SOV: the marker is used with nominal A and pronominal P (62%) but not with pronominal A and nominal P (0%) (Nikitina, *forthc.*). In contrast to the languages discussed above, in these languages the discriminatory function is strong, as it applies across the board under SOV.

At least two Loloish languages (Tibeto-Burman) also attest a strong discriminatory function that is not subordinate to some other force. The direct-object markers *t^ha?* in Lahu and *t^hie* in Lolo are only used if the context does not help to discriminate between A and P. That is, these markers code direct objects only where the inherent semantics of the participants (such as animacy) and the semantics of the event fail to do so:

- (25) Yongren Lolo (Loloish, Tibeto-Burman; adapted from Gerner 2008: 299)⁶
ŋo ɛmo t^hie tʂɔ zi.
 1SG snake DOM follow go
 ‘I will follow the snake’

- (26) Yongren Lolo (Loloish, Tibeto-Burman; adapted from Gerner 2008: 300)
Sika t^hie χek^hu ti na.
 tree DOM house smash broken
 ‘The house smashed the tree.’

The absence of the Accusative marker would not be ungrammatical but would create ambiguity as to who is following whom in (25) or what is smashing what in (26) (Matisoff 1973: 156; Gerner 2008). However, along with the synchronically primary function to discriminate P from A (and also R from A), this marker also has the diachronically primary function of coding contrastive focus (Gerner 2008: 298–289). For example, (27) cannot be used with the DOM marker *t^hie* because of lack of focal contrast. By contrast, (27) is acceptable with it if the numeral is interpreted as bearing contrastive focus (Gerner 2008: 299):

- (27) Yongren Lolo (Loloish, Tibeto-Burman; adapted from Gerner 2008: 299)
 a. *Bɔlu mɔlu tsi ɔ.*
 Bolu trousers wash DP

⁶ I simplified the transliteration and slightly adjusted the glossing of all examples from Gerner (2008).

‘Bolu washed trousers.’

- b. *Bolu mɔlu sɔ khə^h tʰie tsi ɔ.*
Bolu trousers NUM.3 CLF DOM wash DP
‘Bolu washed THREE pairs of trousers [not just TWO].’

Importantly, (27) may at first glance be interpreted as counterevidence to the discriminatory function because both A and P arguments are sufficiently disambiguated by the lexical meanings anyway. Hence, the marking is not due to the discriminatory function. I claim that this is not a piece of counterevidence for the hypothesis of a weak discriminatory function. It may only count as counterevidence for the strong hypothesis of the discriminatory function being the only force constraining DOM (which is counter-intuitive anyway). The source function of marking contrastive focus overrides the discriminatory function here. A situation where various new and inherited functions cluster on one marker is typical of many grammatical categories. For example, if an indefinite article does not mark plural indefinite NPs but only singular ones, this cannot be taken as counterevidence for its being an indefinite article. A more plausible account is that the restriction to the singular is just the impact of the source meaning.

Another similar DOM system is the one of Khwe. In this language, proper names must obligatorily be marked with *à/-à*; additionally, this marker encodes contrast and/or focus on the NP (Kilian-Hatz 2006: 82–83). At the same time, the marker may also be used in contexts in which the distinction between subject and object would have been impeded, for example, when both arguments are animate and topical (Kilian-Hatz 2006: 82–83):

(28) Khwe (Khoe; adapted from Kilian-Hatz 2006: 83)

- a. *Tcá tí à kx'óā'.*
2SG.M 1SG DOM wait
‘You have to wait for me!’
- b. *Yàá! Cád à tí kyá-rá-hā!*
yes 2DU.F DOM 1SG love-ACT-PST
‘That’s it! I love you two (women)!’

Further examples may be added. For example, the DOM marker *-m* in Imonda (Papuan) is used obligatorily with some verbs such as *eg* ‘to follow’ or *hetha* ‘to hit’ as well as with others to denote something like resultativity (“directionality”) of the action (Seiler 1985: 163). However, in addition to that, the marker may also serve to disambiguate Ps from As when both have similar-rank input (Seiler 1985: 165). Furthermore, DOM in Guaraní is primarily conditioned by animacy, definiteness and topicality but it may also marginally fulfil the discriminatory function (Shain 2009: 89–92). In Telkepe (Aramaic, Semitic), the new object marker *ta* may be employed in those situations where agreement alone does not provide for disambiguation while it is otherwise heavily constrained by its meaning of marking topics (Coghill 2014: 354).

Above I have argued that the global discriminatory function as defined in (3) is found to operate in many diverse languages. Moreover, I have found that it is most frequently the weakest force alongside other forces such as referential scale effects (based on animacy, definiteness or parts of speech) or the source meaning (focus, topic, etc.). All these forces constrain the DOM systems at the same time. The weakness of the discriminatory function is not correlated, I claim, with scarce attestation across languages. On the contrary, I suspect that

its impact can be found across most of the DOM systems if one took a closer look at the historical developments and if the synchronic descriptions were more detailed.

The context-dependent, global discriminatory function in (3) is relatively costly because it requires whole-utterance planning and online decision making on the part of the speaker. It is costly for the hearer as well since ambiguous NPs (e.g. German *die Frau* ‘DET.NOM=ACC woman’) – if placed clause-initially – can only be interpreted by the hearer once enough context has been provided, and not incrementally (Bornkessel-Schlesewsky & Schlewsky 2014: 107). It is perhaps for this reason that the global discriminatory function often develops into what may be called a *local discriminatory function* (cf. Aissen 2003; Zeevat & Jäger 2002; Jäger 2004; Malchukov 2008: 208, 213). Under *local discriminatory function*, the NP is disambiguated as A or P immediately and regardless of whether the whole utterance might make the disambiguation redundant. The local discriminatory function is more efficient because it allows for more reliable incremental processing of the utterance. The degree of efficiency and processability, in turn, correlates with the strength of a force (Hawkins 2014: 60, 69). This is why the global discriminatory function (cf. (3)) is a weak force and its effects tend to be generalized over diachronically, for example, by conventionalizing the flagging on those NP types that tend to be disambiguated most frequently or, alternatively, by conventionalizing the marker in those constructions that require disambiguation most frequently (such as SOV in Tamasheq). A number of languages have undergone this change towards local disambiguation. I illustrate this with the development of DOM in Russian. I base my argumentation on the philologically profound evidence from Krys’ko (1994; 1997).

Old Russian inherited from Proto-Slavic the emergent DOM system that evolved in the following way. The direct object was marked by the Accusative case in affirmative clauses and by the Genitive case in clauses with predicate negation. Already during the Proto-Slavic period, the Genitive starts penetrating into affirmative transitive clauses (Klenin 1983). The reason is that, under predicate negation, the Genitive no longer carried any functional load but became just a purely syntactically conditioned rule.⁷ The Genitive was thus just another way to mark direct objects (when the predicate was negated) alongside Accusative. At the same time, due to the overall loss of all word final consonants, the old Accusative and Nominative markers became phonetically indistinguishable in the singular in most of the Proto-Slavic declensions and, subsequently, turned into zero (Table 1):

	Proto-Slavic Nominative	Proto-Slavic Accusative	Resulting form Accusative = Nominative
u-declension	*-us	*-um	> *-u > -b > \emptyset
i-declension	*-is	*-im	> *-i > -b > \emptyset
o-declension	*-os > *-us	*-om > *-um	> *-u > -b > \emptyset
jo-declension	*jos > -jus	*jom > -jum	> *-ju > *-jb > -jb > $j\emptyset$

Table 1: Phonetically driven conflation of the old Accusative with the old Nominative in most of the declensions (cf. Arumaa 1985: 130)

The new DOM marker – i.e. the Genitive case – replaced the old (zero) Accusative only on animate nouns and some pronouns. Moreover, crucially, only those animate nouns and pronouns were affected which belonged to the declension classes that did not differentiate between the Nominative and the Accusative anymore (cf. Table 1). Thus, the expansion of the new DOM marker (Genitive) was crucially conditioned by the local discriminatory function alongside the animacy scale (Krys’ko 1995).

⁷ Originally it had an emphatic function similarly to double negation in, for example, French, cf. Kuryłowicz (1971).

The evidence for this is abundant: (i) The Genitive did not replace the old Accusative in the *a*-declension because, in this declension, the old Accusative (-*o* > -*u*) had not become indistinguishable from the Nominative (-*a*) due to nasalization of the former. (ii) The first NP types affected were proper names while personal pronouns generally remained unaffected to begin with, which is atypical for DOM systems that tend to expand along the referential scales.⁸ The reason for this is that personal pronouns had not undergone the phonetic conflation of the Nominative (cf. *azb* '1SG.NOM') and the Accusative (cf. *mę* '1SG.ACC') and, hence, were not in need of disambiguation. (iii) The plural of the *o*-declension – in contrast to the singular – did retain the phonetic distinction between the old Accusative (-*y*) and the old Nominative (-*i*) and, thus, the old Accusative was not replaced by the new DOM marker here. Only later, between the 14th and 16th c., both the old Accusative plural and the old Nominative plural were conflated into -*y*. Precisely from this period on, the new DOM marker (Genitive plural) starts to be used instead of the Accusative in the plural (Krys'ko 1994: 144). (iv) The third person pronoun *j-* did not have a Nominative form in Early Slavic (various demonstratives were used instead here). Hence, there was no need for disambiguation, although the form *ji* itself would have been morphologically ambiguous between the Nominative and Accusative it was reserved for the Accusative only. This pronoun acquired the new DOM marker much later than the relative pronoun *ji-že* (both are etymologically related). Since the relative pronoun *ji-že* did have both the Nominative and the homophonous Accusative forms it acquired DOM very early. (v) Finally, as Krys'ko (1993) shows, the conflation of the old Nominative with the old Accusative took place much later in the Old Novgorodian dialect, because the latter retained the dedicated Nominative form -*e* in the *o*-declension as opposed to the old Accusative (-*o* > \emptyset). The erstwhile retention of the dedicated Nominative affix warranted the distinction between A and P and hence no DOM was needed until the Nominative affix disappeared in this dialect, too.

In all instances in which either the Accusative or the Nominative was not zero or the Nominative did not exist at all, the new DOM marker was introduced much later or not at all. It was precisely the Nominative-Accusative syncretism, i.e. the indistinguishability of A and P, that triggered the introduction of the new DOM marker. This relative chronology of the expansion of the Genitive to different NP types suggests that the discriminatory function was the crucial trigger conditioning it (first in Dobrovsky 1834: 39; Krys'ko 1994: 156; Tomson 1908, 1909). Although there is no direct evidence for the global discriminatory function as in (3), the consistent application of local disambiguation in different nominal and pronominal classes might suggest that there was a development from global to local disambiguation by means of conventionalization.

The domain of the discriminatory function was determined by a language-specific phonological process, namely, the loss of word-final consonants: only those declensions were affected which had undergone the phonetic conflation of the old Nominative and Accusative. I conclude that the following forces were crucial in the development of Russian DOM (alongside some others such as analogical levelling):

- (29) The relative weight of the main forces in the development of DOM in Russian
complete loss of word-final consonants > *discriminatory function* > *animacy scale*

It is clear that the complete loss of word-final consonants was a stronger force in Proto-Slavic than the discriminatory function because otherwise the latter would have blocked the former.

⁸ There are no unambiguous Genitive forms of pronouns in the position of a direct object in Early Slavic (Meillet 1897: 84, 97; Vondrák 1898: 327; Krys'ko 1994: 128). Following Meillet, Kuryłowicz (1962: 251) concludes that chronologically, the Accusative-from-Genitive with personal pronouns must be later than with animate masculine nouns.

Crucially, the resulting synchronic picture – if looked at superficially – clearly violates the animacy scale and the global discriminatory function as in (3). While some declensions distinguish between animate and inanimate nouns by means of the new DOM marker, other declensions do not have this distinction and mark animate and inanimate Ps indistinguishably.

4. Discussion and conclusions

In this paper I have taken a dynamic perspective on the development of DOM systems. I have provided qualitative evidence from a number of areally and genealogically unrelated languages for the claim that the discriminatory function of case keeps appearing in the diachrony of DOM systems in various subdomains and/or leaves behind traces in the form of local disambiguation. Importantly, the discriminatory function is not dependent on the respective historical source of the DOM marker and its particular developmental path. It is only the range of its application in a particular DOM system that is indeed very much constrained by the source meaning of the marker and/or by scale effects. Even scale effects themselves are sometimes just a strong residual of the source meaning of the DOM marker. For example, DOM markers of many languages (Persian, Romance, Kanuri, etc.) stem from topic markers (cf. Iemmolo 2010; Dalrymple & Nikolaeva 2011). In other instances, the scales are epiphenomenal as they represent conventionalizations of the most frequent patterns originally conditioned by the discriminatory function (e.g. in Russian).

Thus, most frequently the discriminatory function is subordinate to other, stronger pressures, foremost the source meaning of the relevant marker. In addition, pressures like paradigmatic levelling (cf. Jäger 2007: 102) or analogical extension play a role in individual systems. Even those DOM systems which are primarily conditioned by the discriminatory function synchronically (such as the one of Yongren Lolo) never have the discriminatory function as the only constraint. I conclude that – even though recurrent from language to language in the transition – the discriminatory function is not strong enough to resist competition with other forces.

But what conditions the power of the discriminatory function in a particular DOM system? The degree to which the discriminatory function is found to operate synchronically in a particular DOM system or subsystem sometimes correlates positively with how recent the DOM (sub)system is in the language. Thus, the evidence for the discriminatory function is most clearly found in those DOM (sub)systems that emerged relatively recently. For example, the use of the marker *laa* in Wan (Southeastern Mande) to discriminate between A and P is a very recent phenomenon, while its original function was one of marking the focus and the focused agent in a perfect-passive-like construction (Nikitina, *forthc.*). In Wan, it is the whole system of differential marking that is recent (Nikitina, *forthc.*). In Spanish, only the subsystem of definite inanimate NPs, as in (16), has recently been affected by DOM (inanimates are not affected by DOM in Old Spanish). It is this slot where the discriminatory function is found to operate occasionally. But differential object marking as such is quite an old phenomenon in this language.

By contrast, in older DOM systems, the effects of the discriminatory function tend to conventionalize to replace context-dependent rules that are much costlier in processing. The DOM marker is generalized in those contexts that were most frequently in need of global disambiguation. The generalization may proceed (i) along particular NP types or (ii) along particular constructions / word orders. For example, (i) Catalan generalized the DOM marker with personal pronouns regardless of whether there was a need for disambiguation or not in a particular utterance. By contrast, (ii) many Mande languages, Songhay and Tamasheq (Berber) generalized the marker in the APV (SOV) word order with no auxiliaries intervening between A and P in constructions requiring both overt A and P. These were precisely those contexts in which the distinction between A and P was particularly blurred. By contrast, the imperative

does fulfil the discriminatory function, albeit in a different way: the sole NP that is expressed overtly is the P argument while A is dropped. Hence, there was no need for a distinction between A and P by means of flagging here.

In more general terms, I have argued for the existence of weak universals – a type of universal force that applies across different languages and language families but which is not strong enough to prevail into the synchronic STAGE 1. I claim that the (global) discriminatory function is a weak universal. Its weakness is possibly motivated by a higher processing load (cf. Hawkins 2014: 60, 69) as compared to local disambiguation: it requires pre-planning of the whole clause by the speaker and hinders incremental processing by the hearer. By contrast, local disambiguation is straightforward and may be processed incrementally without “having to wait” until sufficient context is provided (cf. Bornkessel-Schlesewsky & Schlewsky 2014: 107). This is why patterns produced by the (global) discriminatory function often become conventionalized (cf. Aissen 2003; Zeevat & Jäger 2002; Jäger 2004; Malchukov 2008: 208, 213).

Weak universals constitute a number of challenges for typological research. While strong universals override all potentially competing pressures and can thus be detected by relatively simple techniques, weak universals enter into competition with both other functional motivations as well as language-specific factors, not least the source meaning of the relevant marker (cf. Cristofaro 2012, 2017; Hammarström 2015). The only way of modelling this adequately is a fine-grained competing-motivations account (cf. Haiman 1983; Du Bois 1985; Croft 2003: 59; Bickel 2014: 115; Hawkins 2014: 60, 69; *pace* Cristofaro, this volume).⁹ For the same reason, weak universals also pose a methodological problem for typological testing for universality, even on the dynamic approach that relies on the transition from STAGE 0 into STAGE 1. Dynamic methods based on transitional probabilities do take into account one of the competing motivations, namely, the impact of inheritance (transitional probabilities are measured according to the original state, i.e. STATE 0). However, many other factors that may influence the probability of change towards a particular pattern are glossed over on this approach as well. Finally, weak universals raise an important question about the nature of evidence in typology. Traditionally, typologists have been interested in defining what qualifies as positive evidence. Statistically significant signals that were due to the common genealogical or areal relationships of the languages of the sample have been ruled out as not offering positive evidence for universality. Other types of signals that may not count as positive evidence, such as same-source constructions, have also been identified (cf. Cristofaro 2017; Collins, this volume). At the same time, a definition of what really counts as negative evidence, i.e. the proof of absence, is missing. As was argued in this paper, a random distribution in the sample given coarse data mining methods without taking the dynamic and historical evidence into account might not be sufficient. This is problematic because, intuitively, it seems probable that strong universals are only the tip of the iceberg, not being numerous in number, while many more universals are rather weak universals of the type investigated here.

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⁹ In contrast to optimality-theoretic approaches that also primarily assume competition among universal constraints (cf. Aissen 2003), an adequate approach to weak universals has to take language-specific forces into account as well.

Abbreviations

All examples abide by the Leipzig Glossing Rules. Additional abbreviations are: FA – factitive, PS – person, DOM – differential object marker, RN – relational noun.

References:

- Aissen, Judith 2003: Differential object marking: Iconicity vs. economy, *Natural Language & Linguistic Theory*, 21(3), 435-483.
- Aristar, A. R. (1991). On diachronic sources and synchronic patterns: an investigation into the origin of linguistic universals. *Language* 67, 1–33.
- Arumaa, P. 1985: *Urslavische Grammatik*. Band III. Heidelberg: Carl Winter.
- Asher, R., Kumari, T., 1997. Malayalam. Routledge, London.
- Bickel, Balthasar (2011). Statistical modeling of language universals, *Linguistic Typology* 15(2), 401-414.
- Bickel, Balthasar (2014). Linguistic diversity and universals. In: Enfield, N J; Kockelman, Paul; Sidnell, Jack. *The Cambridge Handbook of Linguistic Anthropology*. Cambridge: Cambridge University Press, 101-124.
- Bickel, Balthasar; Witzlack-Makarevich, Alena; Zakharko, Taras 2015: Typological evidence against universal effects of referential scales on case alignment. In: Bornkessel-Schlesewsky, Ina; Malchukov, Andrej; Richards, Marc. *Scales and Hierarchies: a cross-disciplinary perspective on referential hierarchies*. Berlin: De Gruyter Mouton, 7-44.
- Bisang, Walter 1992: *Das Verb im Chinesischen, Hmong, Vietnamesischen, Thai und Khmer : vergleichende Grammatik im Rahmen der Verbserialisierung, der Verbserialisierung, der Grammatikalisierung und der Attraktorpositionen*. Tübingen: Narr.
- Bornkessel-Schlesewsky, Ina & Matthias Schlewsky 2014: Competition in argument interpretation: evidence from the neurobiology of language. In: MacWhinney, Brian, Andrej Malchukov & Edith Moravcsik (eds.), *Competing motivations in grammar and usage*. Oxford: Oxford University Press. 107-126.
- Bossong, Georg 1985: Markierung von Aktantenfunktionen im Guaraní. In F. Plank (ed.), *Relational typology*. Berlin: Mouton DeGruyter. 1–29.
- Coghill, Eleanor 2014: Differential object marking in Neo-Aramaic, *Linguistics* 52(2), 335-364.
- Comrie, Bernhard 1978: Ergativity. In: W. P. Lehmann (ed.), *Syntactic Typology: Studies in the Phenomenology of Language*. Austin: University of Texas Press.
- Comrie, Bernard 1989: *Language Universals and Linguistic Typology*. Second edition. Oxford: Blackwell.
- Creissels, Denis & Anna Marie Diagne 2013: Transitivity in Bakel Soninke, *Mandenkan* 50, 5-38.
- Cristofaro, Sonia 2012: Cognitive explanations, distributional evidence, and diachrony, *Studies in Language* 36(3), 645-670.
- Cristofaro, Sonia 2014: Competing motivation models and diachrony: what evidence for what motivations? In: MacWhinney, Brian, Andrej Malchukov & Edith Moravcsik (eds.), *Competing motivations in grammar and usage*. Oxford: Oxford University Press. 282-298.
- Cristofaro, Sonia 2017: Implicational universals and dependencies between grammatical phenomena. In N. Enfield (ed.), *Dependencies in Language: On the Causal Ontology of Linguistic Systems*, pp. 9–24. Berlin: Language Science Press.
- Croft, William 2003: *Typology and Universals*. Second edition. Cambridge: Cambridge University Press.

- Culy, Christopher 1995: Ambiguity and Case Marking in Donno So (Dogon). In: Akinlabi, Akinbiyi (ed.), *Theoretical Approaches to African Languages*. Trento: Africa World Press. 47-58.
- Dalrymple, M. & I. Nikolaeva 2011: *Objects and Information Structure*. Cambridge: Cambridge University Press.
- de Hoop, Helen & Peter de Swart, eds., 2008: *Differential subject marking*. Dordrecht: Springer.
- Diagana, Ousmane Moussa 1995: *La Langue Soninkée: Morphosyntaxe et Sens*. Paris: l'Harmattan.
- Dixon, Robert M. W.: 1994: *Ergativity*. Cambridge: Cambridge University Press.
- Dobrovskij, I. 1834: *Grammatika jazyka slavjanskogo po drevnemu narečiju*. St.-Peterburg: Tipografija departamenta narodnog prosvješćenija.
- Dryer, Matthew S. 2013. Order of Subject, Object and Verb. In: Matthew S. Dryer & Martin Haspelmath (eds.), *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology.
- Du Bois, John W. (1985). Competing motivations, in John Haiman (ed.), *Iconicity in Syntax*. Proceedings of a symposium on iconicity in syntax. Amsterdam and Philadelphia: Benjamins, 343–65.
- England, Nora C. 1983: *A Grammar of Mam, a Mayan Language*. Texas linguistics series. University of Texas Press.
- Epps, Patience 2008: *A Grammar of Hup*. [Mouton Grammar Library 43]. Berlin: Mouton de Gruyter.
- Epps, Patience 2009: Where differential object marking and split plurality intersect: Evidence from Hup. In: Epps, Patience & Alexandre Arkhipov (eds.): *New Challenges in Typology: Transcending the Borders and Refining the Distinctions*. Berlin: Mouton de Gruyter. 85-104.
- Escandell-Vidal, Victoria 2009: Differential object marking and topicality. The case of Balearic Catalan, *Studies in Language* 33(4), 832-885.
- Feldman, Harry. 1986. A grammar of Awtuw Canberra: Australian National University
- Gell-Mann, M. & M. Ruhlen 2011: The origin and evolution of word order, *PNAS: Proceedings of the National Academy of Sciences of the United States of America*, October 10:116.
- Gerner, Matthias 2008: Ambiguity-Driven Differential Object Marking in Yongren Lolo, *Lingua* 118, 296-331.
- Greenberg, Joseph H. 1963. Some Universals of Grammar with Particular Reference to the Order of Meaningful Elements. In Greenberg, Joseph H. (ed.), *Universals of Human Language*, 73-113. Cambridge, Mass: MIT Press.
- Greenberg, Joseph H. 1969: Some methods of dynamic comparison in linguistics. In J. Puhvel (ed.), *Substance and Structure of Language*. Berkeley: University of California Press. 147–203.
- Haiman, John. 1983. Iconic and economic motivation, *Language* 59, 781-819.
- Hammarström, Harald 2015: The Basic Word Order Typology: An Exhaustive Study. A paper given at the Closing conference of the Department of Linguistics at the Max Planck Institute for Evolutionary Anthropology, 3 May 2015, Leipzig. (Accessed at http://www.eva.mpg.de/fileadmin/content_files/linguistics/conferences/2015-diversity-linguistics/Hammarstroem_slides.pdf)
- Handschuh, Corinna 2014. *A typology of marked-S languages*. Berlin: Language Science Press.
- Hawkins, John A. 2014: Patterns in competing motivations and the interaction of principles. In: MacWhinney, Brian, Andrej Malchukov & Edith Moravcsik (eds.), *Competing motivations in grammar and usage*. Oxford: Oxford University Press. 54-69.

- Heath, Jeffrey 2007: Bidirectional case-marking and linear adjacency, *Natural Language and Linguist Theory* 25, 83-101.
- Iemmolo, Giorgio 2010: Topicality and differential object marking : Evidence from Romance and beyond, *Studies in Language* 34(2), 239-272.
- Jäger, Gerhard 2004: Learning Constraint Subhierarchies: The Bidirectional Gradual Learning Algorithm, in Blutner, R. & H. Zeevat, *Optimality Theory and Pragmatics*, Palgrave MacMillan. 251-287.
- Jäger, Gerhard 2007: Evolutionary Game Theory and Typology: A Case Study, *Language* 83(1), 74-109.
- Justeson, J. S. & L. D. Stephens: 1990. Explanations for word order universals: a log-linear analysis. In Proceedings of the XIV International Congress of Linguists, volume 3, pages 2372–76. Berlin/New York: Mouton de Gruyter
- Key, Gregory 2008: Differential Object Marking in a Medieval Persian Text. In: *Aspects of Iranian Linguistics*, (ed.) Simin Karimi, Vida Samiian, & Don Stilo. Cambridge Scholars Publishing: Newcastle upon Tyne. 227-247.
- Kibrik, Alexander E.: 1997, Beyond subject and object: Toward a comprehensive relational typology, *Linguistic Typology* 1, 279—346.
- Kilian-Hatz, Christa 2008: *A Grammar of Modern Khwe (Central Khoisan)*. [Research in Khoisan Studies, 23]. Köln: Rüdiger Köppe Verlag.
- Kiparsky, Paul 2008: Universals constrain change; change results in typological generalizations. In: Jeff Good (ed.), *Language Universals and Language Change*. Oxford: Oxford University Press. 23-53.
- Klenin, E. 1983: *Animacy in Russian: A new interpretation*. Columbus, Ohio: Slavica Publishers, Inc.
- Krys'ko, Vadim B. 1993: Novye materialy k istorii drevnenovgorodskogo nominative na -e, *Voprosy Jazykoznanija* 6, 78-88.
- Krys'ko, Vadim B. 1994. *Razvitie kategorii oduševlenosti v istorii russkogo jazyka*. Moscow.
- Krys'ko, Vadim B. 1997. *Istoričeskij sintaksis russkogo jazyka. Ob'ekt i perechodnost'*. Moscow.
- Kuryłowicz, Jerzy 1962. Personal and Animate Genders in Slavic, *Lingua* 11, 249–255.
- Kuryłowicz, Jerzy 1971: Słowiański genitivus po negacij. In: Urbańczyk, Stanisław (ed.), *Sesja naukowa międzynarodowej komisji budowy gramatycznej języków słowiańskich w Krakowie w dniach 3-5 grudnia 1969 r.* Polska Akad. Nauk. Oddział w Krakowie. 11-14.
- Levshina, Natalia, in preparation: Differential argument marking: disambiguation or prominence? Evidence from large typological data.
- Li, Charles N. & Thompson, Sandra A. 1981. *Mandarin Chinese: a Functional Reference Grammar*. Berkeley: University of California Press.
- Malchukov, Andrey 2008: Animacy and asymmetries in differential case marking, *Lingua* 118, 203-221.
- Martins, Silvana & Valteir Martins 1999: Makú. In: *The Amazonian Languages*, R. M. W. Dixon and A. Y. Aikhenvald (eds), 251–91. Cambridge University Press.
- Matisoff, James, 1973: The grammar of Lahu. Publications in Linguistics, vol. 75. Berkeley: University of California.
- Maurits, Luke & Thomas L. Griffiths 2014: Tracing the roots of syntax with bayesian phylogenetics, *PNAS* 111(37), 13576-13581.
- Meillet, Antoine 1897. *Recherches sur l'emploi du génitif-accusatif en vieux-slave*. Paris
- Moravcsik, Edith A. 1993: Government. In Joachim Jacobs, Armin von Stechow, Wolfgang Sternefeld, & Theo Vennemann (eds.), *Syntax: Ein internationales Handbuch zeitgenössischer Forschung*, Volume 1, 707- 721. Berlin: de Gruyter.

- Nikitina, Tatiana, forthcoming: Focus marking and differential argument marking: The emergent bidirectional case marker in Wan. In: Adamou Evangelia, Katharina Haude & Martine Vanhove (eds). *Information Structure in Lesser-described Languages: Studies in Prosody and Syntax*. Amsterdam/Philadelphia: John Benjamins.
- Paul, Ludwig 2008: Some remarks on the Persian suffix *-rā* as a general and historical linguistic issue. In: Simin Karimi, Vida Samiian & Donald Stilo (eds.), *Aspects of Iranian Linguistics*. Newcastle. 329-337.
- Plank, Frans, ed., 2002ff: Plank, Frans, Thomas Meyer, Tatsiana Mayorava & Elena Filimonova: *The Universals Archive*. <http://typo.uni-konstanz.de/archive/>
- Seiler, Walter. 1985. Imonda, a Papuan Language. (Pacific Linguistics, Series B, 93.) Canberra: Australian National University.
- Shain, Cory Adam 2009: *The distribution of differential object marking in Paraguayan Guaraní*. BA Ms. Ohio State University. Downloaded at https://etd.ohiolink.edu/!etd.send_file?accession=osu1243450139, 15.08.2017
- Silverstein, Michael 1976: Hierarchy of features and ergativity. In R. M. W. Dixon (ed.), *Grammatical Categories in Australian Languages*. Canberra: Australian Institute of Aboriginal Studies. 112–171.
- Stiebels, Barbara 2002: *Typologie des Argumentlinkings: Ökonomie und Expressivität*. Berlin: Akademie Verlag.
- Subbārāo, Kārumūri V. 2012: *South Asian Languages: A Syntactic Typology*. Cambridge: Cambridge University Press.
- Sun, Chaofen. 1996. *Word Order Change and Grammaticalization in the History of Chinese*. Stanford: Stanford University Press.
- Tomson, A. I. 1908. Roditel'nyj-vinitel'nyj padež pri nazvanijach živych suščestv v slavjanskich jazykach. *Izvestija Otdelenija russkago jazyka i slovesnosti Imperatorskoj akademii nauk* 13(1–2), 232–264.
- Tomson, A. I. 1909: K voprosu o vozniknovenii rod.-vin. p. v slavjanskix jazykax: Priglagol'nyj rod. p. v praslav. jazyke, *Izvestija ORJaS* t. 13, kn. 3, 281-302.
- Vondrák, W. 1898: Einige Bemerkungen anlässlich Meillet's Recherches sur l'emploi du génitif-accusatif en vieux-slave, *Archiv für slavische Philologie* 20, 325–42.
- von Heusinger, Klaus & Georg A. Kaiser 2007: Differential Object Marking and the lexical semantics of verbs in Spanish. In: G.A. Kaiser & M. Leonetti (eds.), *Proceedings of the Workshop "Definiteness, Specificity and Animacy in Ibero-Romance Languages"*. [Arbeitspapier 122.] Fachbereich Sprachwissenschaft, Universität Konstanz. 85-110.
- Wheeler, Max W, Alan Yates & Nicolau Dols 1999: *Catalan: a comprehensive grammar*. London: Routledge.
- Yang, Ning & van Bergen, Geertje 2007. Scrambled objects and case marking in Mandarin Chinese, *Lingua* 117, 1617–1635.
- Zeevat, Henk & Gerhard Jäger 2002: A reinterpretation of syntactic alignment. in D. de Jongh, H. Zeevat & M. Nilsonova (eds.), *Proceedings of the 3rd and 4th International Symposium on Language, Logic and Computation*, ILLC. Amsterdam.