

WHAT'S IN THE HEAD OF HEAD-MARKING LANGUAGES?

or

IS THERE CASE IN HEAD-MARKING LANGUAGES¹?

Andrej A. Kibrik (Institute of Linguistics, Russian Academy of Sciences)

kibrik@comtv.ru

Abstract

Marking of clause participants' semantic roles is an important concern in human languages. Dependent-marking languages, prevailing in the ENCA area, mark semantic roles by means of nominal case affixes. This article explores the expression of roles in head-marking languages, using Athabaskan languages of North America as the main source of evidence. In head-marking languages clause participants are represented by personal pronominal affixes on the verbs. Linear morphological positions in which personal affixes appear are functionally equivalent to nominal case affixes, while the construal of positions in terms of grammatical is misguided. Athabaskan verb involves the following positions: nominative, accusative, dative, and oblique. A typology of role marking in other types of languages is also proposed.

1. Introduction

This article is a contribution to "basic linguistic theory", to use the term of Dixon (1997), clearly expounded by Matthew Dryer as follows:

The expression "basic linguistic theory" (following R. M. W. Dixon) refers to the theoretical framework that is most widely employed in language description, particularly grammatical descriptions of entire languages. It is also the framework assumed by most work in linguistic typology. (<http://wings.buffalo.edu/soc-sci/linguistics/people/faculty/dryer/dryer/blt>; also see Dryer in press).

In this article I look at the phenomenon of head-marking of semantic roles in the clause that is very widely spread in the languages of the world and also found in a number of LENCAs. It seems that this phenomenon is not adequately represented in basic linguistic theory, as conceived by many typologists and descriptive linguists. Specifically, I claim that the head-marking technique of role marking is functionally equivalent to nominal cases – nominative, accusative, ergative, etc., rather than to grammatical relations – subject, direct object, etc. I also make some suggestions on terminology used to describe the head-marking technique.

In the previous years I wrote a number of papers in which I already used this approach and the corresponding terminology (Kibrik 1990, 1992, 1996a, 2002). This approach seemed so obvious and straightforward to me that it hardly called for detailed argumentation and explanation. However, I keep noticing that descriptive linguists and typologists keep using the system that I find flawed. In addition, in several oral presentations I experienced difficulties in making my approach clear to the audience without a very detailed explanation. In this article of an argumentative nature I attempt to convince the reader of how a fragment of basic linguistic theory must look.

2. Marking of semantic roles

Supposedly, the concern for clause arguments' *semantic roles* is a next to universal feature of speaking humans. In particular, if there is an event involving more than one participant, the speaker and the hearer care to know who is the agent and who is the patient, or who is the experiencer and who is the stimulus. There seem to be some languages that, despite this obvious concern, do not mark semantic roles in any consistent way (Gil 1999 about Riau Indonesian). But the vast majority of languages actually do mark semantic roles, or at least differences between two or more roles in one and the same clause. The most familiar type of role marking is by means of case markers added to nouns or NPs; this is characteristic of conservative Indo-European languages, such as Latin or Russian, as well as many other languages. According to certain rules, semantic roles map onto nominal cases. For example, in a language with the accusative role alignment such as Russian, in a transitive clause the agent-type argument is systematically marked by the nominative case and the patient-type argument by the accusative case (1).

(1) Russian

Pap-a	umy-l	dochk-u	'Dad washed the daughter'
dad-Nom.Sg	wash-Past(MSg)	daughter-Acc.Sg	

¹ Research underlying this article was supported by grant #05-04-04240 from the Russian Foundation for the Humanities.

This type of role marking is generally very typical of LENCA. Among the most characteristic LENCA are Turkic languages; they can be considered, so to speak, standard average LENCA. Consider a natural discourse example from a story told in Karachay-Balkar, a Turkic language of Northern Caucasus:

(2) Karachay-Balkar

	ol	sirnik-le-ni	zandir-ıp,	börü-le-ge	at-a	e-di
	he:Nom	match-Pl-Acc	light-Conv	wolf-Pl-Dat	throw-Conv	Cop-Past(3Sg)
<i>semantic role</i>	<i>Agent</i>	<i>Patient</i>		<i>Goal/recipient</i>		
<i>case</i>	<i>Nom</i>	<i>Acc</i>		<i>Dat</i>		

‘He was striking matches and throwing them at (*lit.* to) the wolves’

Two or three decades ago the standard view of clause structure, based primarily on typical LENCA such as Latin, Russian or Karachay-Balkar, used to involve the following theses:

- i. Participants (both arguments and adjuncts) bear semantic roles
- ii. Participants are coded by nominals
- iii. Semantic roles are marked/coded by the inflectional category known as *case* that modifies nominals

Thesis (i) is still valid while theses (ii) and (iii) were widely recognized as non-universal due to two important trends of research. I will consider these two trends one after another.

One trend is associated with the idea of “pronominal arguments” dating back to Boas (1911) and even earlier, but emphasized recently (in different terms) by a number of authors (Kumaxov 1974, Van Valin 1977, Jelinek 1984, Mithun 1986, Kibrik 1992 among others). Consider the following example from Abkhaz, a language of Abkhaz-Adyghean (or North-West-Caucasian) language family:

(3) Abkhaz (Kibrik 1991:136)

- a. axac’a apH°əs asalamšq’ə i-l-z-i-j°it’
man_i woman_j letter_k 3N.Nom_k-3SgF.Obl_j-for-3SgM.Erg_i-wrote
‘The man wrote the letter to the woman’
- b. i-l-z-i-j°it’
3N.Nom-3SgF.Obl-for-3SgM.Erg-wrote
‘He wrote it to her’

Each participant of the clause in (3a) is represented by a corresponding personal² affix in the inflected verb. Against the background of LENCA stereotypes, this can be understood as agreement of the verb with multiple NPs. However, this interpretation misses the point. Personal affixes in languages like Abkhaz are functionally analogous to pronouns of more familiar languages – the example in (3b) makes this clear. Often such *personal* affixes are termed *pronominal* affixes, and I will use these terms interchangeably below. The agreement interpretation is particularly inept for languages like Abkhaz because most of the time there is nothing to agree with. If an argument is a locutor (first or second person) then the only place where it appears in the clause would be a verbal personal affix. If an argument is a non-locutor (= third person) still very frequently there would be no full NP.

Incorporated, or *bound*, *pronouns* are genuine clause arguments, while the function of full NPs in a clause like (3b) is to referentially specify the pronominal argument. Nominals are not an inherent part of the clause that consists primarily of the inflected verb. This is the essence of the concept of *pronominal argument languages* that renders thesis (ii) non-universal. I have just presented a somewhat radical formulation of this approach that encounters certain problems, but these are not central to this paper. In any case, it is clear that pronominal affixes, or bound pronouns, have many argumental properties that are held by full NPs in more familiar languages. Mithun (2003) demonstrated that bound pronouns function much like free pronouns of English and other similar languages.

The issue of pronominal arguments is an important background but not the central concern of this article. Of primary importance is the second trend of research that originated in the work of Nichols (1986). How are semantic

² I occasionally use the expression “personal affixes” in this paper. Note that this expression is a simplification; on some occasions these are not just personal affixes but also gender affixes, and sometimes this may be more important than person. However, for the sake of simplicity I still generalize this phenomenon as “personal affixes”.

roles marked in a language like Abkhaz that lacks nominal cases (thesis (iii))? (This question is particularly relevant if one bears in mind that pronominal affixes on the verb rather than full NPs have many argumental properties.)

The phenomenon of role marking by means of nominal inflectional morphology has long been taken for granted in linguistics. Even after Fillmore (1968) reinterpreted the traditional term ‘case’ in a semantic vein linguists keep using the word combination “case marking” referring exclusively to the technique as in (1) and (2). Nichols (1986) drew general attention to the fact that the locus of role marking in a clause does not need to be restricted to nominal morphology. There exists a world-wide technique that is an alternative to the one of (1) and (2). Arguments’ (and adjuncts’) roles can be marked on the verb. Nichols observed this contrast very clearly when she compared languages of two North Caucasian language families: Nakh-Daghestanian and Abkhaz-Adyghean that are strikingly different in this respect. While the former use almost exclusively nominal cases to mark roles (Nichols dubbed this technique *dependent-marking*), the latter sticks generally to marking roles on the verb (*head-marking*). Compare the strongly dependent-marking Nakh-Daghestanian language Godoberi (4) with the head-marking Abkhaz (3):

(4) Godoberi (Kibrik 1996b: 116)

il-u-di	waša	w-ali
mother-Ext-Erg	son(Nom)	M-call.Past

‘Mother called up the son’

The opposition between head- and dependent-marking techniques³ is a really fundamental typological parameter. This feature permeates the whole grammars of languages. As has been demonstrated by Nichols (1992), the locus of marking strongly affects other morphosyntactic characteristics of languages.

Note that the locus of marking is totally independent of alignment type. Like Russian and Karachay-Balkar, Godoberi in (4) displays consistent dependent-marking⁴, typical of LENCA, but it differs from those two languages in using the ergative alignment. Abkhaz in (3) displays head-marking and ergative alignment; below I will demonstrate examples of head-marking combined with the accusative alignment.

In Godoberi the fact that it is the mother (rather than the son or anybody else) who did the calling and is thus the agent of the event is established by the fact that the noun meaning ‘mother’ bears the ergative case affix. This is what the dependent role marking is about. Let us see the working of the technique employed by Abkhaz. In Abkhaz, nominals are bare and contain no role marking altogether. All role marking resides in the verb. How do language speakers tell apart different referents when they encounter a structure such as in (3)?

Consider the marking of the agent role pertaining to the referent “the man” in (3). There is the prefix *i-* on the verb right in front of the stem that indicates that a masculine singular referent plays the role of the agent. If there is a full NP ‘the man’ in the clause, as in (3a), any speaker of the language knows that it is the man who did the writing. If the referent “the man” is known from the context (3b), the calculation is much the same.

The two trends of thinking address essentially the same circle of facts. Pronominal argument languages and head-marking languages coincide to a significant extent. However, these two lines of researchers largely ignore each other’s results. Proponents of the argumental and referring status of personal affixes pay little or no attention to the fundamental characteristic of marking locus, while students of the typology of locus (see e.g. Nichols and Bickel 2005) talk about Abkhaz-type structure in terms of mere agreement.

Any expression denoting a clause participants, be it a nominal or a pronominal, does two important things: first, it refers; second, it carries a certain semantic role with respect to the predication. These two functions cannot be reduced to one another, and none of them can be neglected. My point is that these two aspects must certainly be combined, and only a combination can yield a realistic picture of the phenomena in question.

³ The contrast between head- and dependent-marking can be observed in a number of various constituents (Nichols 1986). In this article, however, I only discuss the locus of marking in the clause, that is, the marking of relations between the predicate and clause participants. For example, the expression “head-marking language” is to be understood below as ‘language that uses the head-marking technique to mark roles in a clause’.

⁴ All the three languages used for illustrating dependent-marking so far – Russian, Karachay-Balkar and Godoberi – are not pure examples of dependent marking. As the given examples demonstrate, these languages possess an element of head-marking as the verb ‘agrees’ with one of the arguments in number, person, and/or gender. An example of a purer system is found in Japanese that marks roles exclusively on nominals; Japanese verb is devoid of any elements of head-marking.

In dependent-marking, nominal argument languages (the majority of LENCA) the referring and the role-marking functions are clearly distinct as they are fulfilled by different elements: referring primarily by nominal stems, role-marking primarily by case desinences. In head-marking, pronominal argument languages it seems that personal affixes on the verb do both jobs. (Note that this combination is reflected in the structure of glosses: in (3) a gloss of a personal affix consists of two parts, the reference part and the role part, separated by a dot; this will be detailed below.) I believe that these two functions must be teased apart very clearly, in order to properly understand how these languages work. This article is about the head-based technique of role marking. In the rest of this paper I am going to discuss the following questions:

- What ensures role marking in such languages?
- How this technique of role marking should be understood in comparison to the dependent-marking technique?

My main claim is that the linear positions of personal affixes on the verb have essentially the same function as nominal cases. For this reason, I propose to understand and, accordingly, gloss the linear positions in the verb in terms of cases. Analogously to dependent-marking languages, head-marking languages can have the accusative, ergative, and agentive/patientive alignment (cf. Siewierska 2005). In accordance with the alignment type, head-marking languages have nominative, accusative, ergative, and other case linear positions in their verb templates.

3. Athabaskan

My argument relies primarily on the data from languages of the Athabaskan family. Athabaskan are of course outside of the ENCA area, but they are generally thought to descend from the last wave of immigration from Siberia into America (not counting the Eskimo-Aleut languages that still reside on the both sides of the Bering Strait). Athabaskan constitute the core of the greater Na-Dene family (that also comprises two languages of Southern Alaska, Eyak and Tlingit). Athabaskan are among the largest language families of North America; there are some 40 languages in this family. The Athabaskan family comprises three areal groups: Northern (Alaska and Western Canada), Southern, or Apachean (Southwest of the U.S.), and Pacific (U.S. Pacific coast).

In some ways, Athabaskan languages are typical of North America – in particular, they are highly polysynthetic, head-marking, and arguably have pronominal arguments (see below). Nearly all grammatical meanings in Athabaskan are expressed by verbal morphology rather than by nominal morphology or function words. The roles of clause arguments are expressed exclusively by pronominal affixes on the verb. More peripheral roles can be expressed either on the verb or by means of postpositional phrases. In this respect, Athabaskan are quite representative of the North American type in general.

In some other ways, Athabaskan are very unusual, both at the American scene and more generally. The most obvious peculiarity of Athabaskan is that they are almost exclusively prefixal. There are very few languages of comparable morphological complexity, if any, that would be so highly prefixal; see Kibrik 2002

Athabaskan examples in this article are taken exclusively from Navajo, a language of the Southern (Apachean) group spoken primarily in the states of Arizona and New Mexico. Navajo is representative of Athabaskan in general, and many other languages could provide comparable examples. In some respects Navajo makes a better example of consistent head-marking than more northern Athabaskan languages; this concerns the head-marking of peripheral clause participants, see section 7. Navajo examples have been obtained through personal communication with Bernice Casaus, New Mexico, unless otherwise specified.

Athabaskan languages have very complex verb morphology. Usually the structure of the Athabaskan verb is described with the help of the notion of template (Kari 1989, Kibrik 1995; but cf. Rice 2000) – a sequence of linearly arranged slots, or positions, dedicated to certain classes of grammatical or lexical meanings and the corresponding morphemes. As Athabaskan are overwhelmingly prefixing, it is reasonable to count positions from right to left. The verb stem has number 0, and depending on language and theoretical approach the number of prefixal positions varies from about 10 to about 20. One frequently sees numerous prefixes in actual verb forms. Table 1 summarizes the linear order or prefixal morphological position in the Navajo verb. This table can be used for reference when particular linear positions are mentioned below. Note that some positions can hold more than one prefix in a verb form, so the template presented in Table 1 is a minimal one.

Morpho-logical position	Oblique	Preverb	Various derivational	Reflexive accusative	Iterative/ repetitive	Distributive	Accusative	Non-locutor Nominative	Qualifier	Mode	Locutor Nominative	Transitivity indicator	Root
Position #	11B	11A	10	9	8	7	6	5	4	3	2	1	0

Table 1: Basic prefixal morphological positions in the Navajo verb

4. Core arguments and marking of their roles in Athabaskan

If a core argument is a locutor (first or second person) under normal circumstances no independent pronouns would be used in Athabaskan. The locutor arguments are expressed by pronominal prefixes on the verb. There are two morphological positions dedicated to marking locutor arguments in Navajo: positions #2 and #6. Navajo, as Athabaskan in general, has accusative alignment: single arguments of one-place verbs and agentive arguments of two-place (transitive) verbs are marked by pronominal prefixes in position #2:

- (5) One-place verb with an agentive argument
dahnishjǫ́d 'I jump'
dah- ni- sh- jǫ́d
Morph. position # 3 2
upward- Impf- 1Sg.Nom- jump
- (6) One-place verb with a patientive argument
łinishgai 'I am white, I whitened'
łini- sh- gai
Morph. position # 2
Pref- 1Sg.Nom- white
- (7) Two-place verb, agentive monitored
nishteeh 'I carry him (here)'
ø- ni- sh- ł- teeħ
Morph. position # 3 2
3.Acc- Impf- 1Sg.Nom- TI↑- handle.AnO

In examples (5) through (7) one can observe the first person singular morpheme *sh-* appearing in position 2 and translating as English 'I'.

In contrast to that, patientive locutor arguments of transitive verbs appear in position #6:

- (8) Two-place verb, patientive monitored
[ʔákóʔ] shíłteeħ 'He carries me (over there)' (e.g. an invalid speaking)
shi- ø- ni- ł- teeħ
Morph. position # 6 3
[to.there] 1Sg.Acc- 3.Nom- Impf- TI↑- handle.AnO

Not surprisingly, the first person singular morpheme appearing in position #6 and translating into English by means of the accusative pronoun *me* looks similar to position #2 *sh-* discussed above. The shape of this position #6 morpheme in example (8) is *sh(i)-*, where *i* represents a shwa epenthesis between two consonants. Thus the two morphemes, *sh-* and *sh(i)-*, can be viewed as fundamentally identical. The same concerns the second person singular morpheme *n(i)-* in positions #2 and #6, although morphophonemics is much more complex.

In the tradition of Athabaskan linguistics such morphemes are viewed as incorporated pronouns rather than agreement affixes (Sapir and Hoijer 1967, Young and Morgan 1987, etc.). There is significant evidence demonstrating that this traditional approach is correct (Jelinek 1984, Kibrik 1992, Mithun 2003). At issue is

another question: how are *roles* of the arguments marked in the clause? The tradition does not provide us a direct answer to this question.

Apparently, the fact that the speaker referent is the agent in (7) and the patient in (8) is expressed plainly by the *linear position* in the morphological verb structure taken by the morpheme *sh(i)-*: position #2 and position #6, respectively. If one does not like the account of morpheme locations in terms of theoretical position numbers one can say that in (7) and (8) the first person singular morpheme appears on different sides of the imperfective prefix *ni-*. Functionally, position #2 is equivalent to the nominative case marker in languages like Russian or Karachay-Balkar, and position #6 to the accusative case marker.

If such functional equivalence is in place, my suggestion is that these two positions should be understood as the *nominative* and the *accusative positions*, and termed accordingly. This terminology is reflected in the glosses employed in examples (5) – (8) (as well as in the glosses of the Abkhaz example (3), *mutatis mutandis*). The gloss for each personal affix consists of two parts separated by a dot: in the first part, the morpheme’s referential properties are indicated, in the second its role, in terms of cases. But it must be understood very clearly that role marking is done not by the personal affixes themselves but by the linear slots wherein they are inserted. The difference between the dependent-marking technique of Russian and Karachay-Balkar on the one hand, and the head-marking technique of Navajo, on the other, is that in the former roles are marked by material markers, such as case affixes, while in the latter by the linear order of morphemes inside the verb.

In some instances there is a way to distinguish between the nominative and the accusative morphemes not just in terms of order but also in terms of material. For example, Navajo plural locutor pronouns differ both in position and in material shape.

- | | | |
|--------------------------|-------------------------|------------------------------------|
| (9) | niilk’e? | ‘We are cooling him down’ |
| | ∅- | ni- iid- ł- k’e? |
| <i>Morph. position #</i> | | 4 2 |
| | 3.Acc- | Pref- 1Pl.Nom -TI↑-cool |
| | | |
| (10) | nołk’e? | ‘You guys are cooling him down’ |
| | ∅- | ni- oh- ł- k’e? |
| <i>Morph. position #</i> | | 4 2 |
| | 3.Acc- | Pref- 2Pl.Nom -TI↑-cool |
| | | |
| (11) | nihiniłk’e? | ‘He is cooling us / you guys down’ |
| | nih- | ∅- ni- ł- k’e? |
| <i>Morph. position #</i> | 6 | 4 |
| | 12Pl.Acc -3.Nom- | Pref- TI↑-cool |

The plural locutor pronouns occupy the already familiar positions #2 and #6, in accordance with the referent’s role. In the nominative position, the first and second person pronouns have the underlying forms *iid-* and *oh-*, respectively. However, in the accusative position they have an entirely different form *nih-*. This phenomenon of different material form is analogous to suppletivism of pronouns in more familiar languages, such as *we* and *us* in English. Note that the accusative plural locutor pronoun is semantically underspecified as it does not distinguish the first and second persons.

Taking all facts outlined so far into consideration it is obvious that the technique of differentiating roles by morpheme form is supplementary, while positioning in different linear slots is the main one. It is easy to imagine a head-marking language in which personal affixes would never depend on the role and only the linear position in which the affix appears would matter. It seems less likely to find a head-marking language in which linear position would be entirely irrelevant, and only the shape of personal affixes would mark roles. Of course, relative contribution of these two role marking techniques must be a subject of an empirical typological research. In this article I rely on the assumption that the linear position technique is a much less idiosyncratic and more robust way to differentiate roles. In the discussion of Athabaskan evidence below I do not concentrate on differences in morpheme shape and restrict my argument to linear positions as the major role marking device.

Now let us turn to marking of non-locutor (= third person) arguments’ roles in Navajo clause. Unlike locutors, third person arguments in certain instances are not expressed on the verb. In particular, third person nominative is always

zero, see examples (8), (11) above, and third person accusative is zero when the nominative argument is a non-third person – see (7), (9), (10). A third person argument is expressed on the verb by a non-zero morpheme in the accusative position, but only if the nominative is a third person, too:

(12)	yiniłk'e?	'He is cooling her down'			
	yi-	ø-	ni-	ł-	k'e?
<i>Morph. position #</i>	6		4		
	33.Acc-	3.Nom-	Pref-	TI↑-	cool

There are several reasons to assume, on systemic grounds, that third person arguments (even when marked by zero), like the locutor arguments, are expressed in the verb, and that roles are marked there rather than anywhere else. First, when arguments are represented by full NPs they do not bear any role marking. Second, there cannot be more than one zero-marked argument in a clause, and therefore the role of the zero-marked referent can always be calculated, relying on the explicitly marked argument(s) and the lexical meaning of the verb. Third, besides the plain third person illustrated above there are special subtypes of the third person that are expressed by non-zero morphemes – the so-called fourth person, the indefinite, and the areal. Consider an example of the fourth person (essentially a deferential third person) functioning as the nominative:

(13)	dzizghas	'She (deferential) scratched him'			
	ø-	ji-	z-	ghas	
<i>Morph. position #</i>	6	5	3		
	3.Acc-	4.Nom-	Pf-	scratch	

Note that the fourth person, when it appears as the nominative, turns out in a different position than the locutor arguments: not in position #2 but in #5. All variations of the third person (that is, non-locutors) that have explicit nominative marking appear in position #5. These two positions are in complementary distribution with respect to person and the two of them in combination constitute the nominative position; see Table 1 above. The presence of two complementary positions does not undermine but rather supports the analogy with nominal cases as dependent-marking languages frequently have several complementary affixes for the same case; cf. declension-dependent allomorphs of case markers in Latin.

Thus I conclude that the roles of arguments are marked in the Navajo verb by means of linear positions of pronominal morphemes. Of course, this system may be less than 100% efficient. One can imagine a situation when a pronominal affix remains ambiguous for role – for example, if the other argument is marked by zero and there is no affix in between the nominative and accusative positions. It is true that such instances may happen. But this does not mean that such system cannot function. Note that nominal case marking is also far from being totally efficient. For example, in Russian only a subset of nouns distinguishes the nominative and the accusative forms, and instances of ambiguity happen.

5. Terminology based on grammatical relations is misguided

The understanding of the linear positions' function as role markers, as outlined above, is not traditional in Athabaskan linguistics. Traditionally, the linear positions within the verb form are dubbed "the subject position" and "the object position" (Sapir and Hoijer 1967, Young and Morgan 1987), and this terminology is replicated in dozens of recent publications.

In a broader contexts of the study of head-marking languages, the case-based interpretation of verbal positions occasionally occurs (e.g. Rude 1997 for Sahaptian), but it is rare. The majority of typologists use the conceptual system based on grammatical relations (subject etc.); see, for example, Mithun 1999, Givón 2001, Dryer 2005. This approach and the terminology reflecting it are typical of most descriptive and typological accounts of head-marking languages. To be sure, the question of the function of verbal positions or, vice versa, of the way how roles are marked on the verb, is rarely discussed explicitly. Typically, one can judge of the way how the given writer views these issues only on the basis of interlinear glosses used. If one sees a gloss like "1Sg.Obj" this is an indication that the writer believes that an adequate way to convey the function of the referent in the clause is in terms of grammatical relations (henceforth: GRs).

Examples below are taken from the very rich monograph by Marianne Mithun (1999) devoted to the native languages of North America. As North American languages are particularly inclined towards head-marking (see Nichols 1992: 69ff.), using the work by Mithun is particularly convenient. However, many other publications could be used to illustrate the point.

In her analysis of Salishan and Chumashan data, Mithun (1999: 52; 208-9) discusses the verbal marking of roles in terms of grammatical relations. The glosses used are “3SUBJECT”, “1PL.OBJECT” and the like. I argue against understanding personal affix positions on the verb in terms of grammatical relations “subject” and “object”. There are serious reasons underlying this point of view.

As has been demonstrated above, linear positions of personal morphemes on the verb serve to identify the arguments’ semantic roles. By analogy with more familiar dependent-marking languages, roles are marked by case-type devices, and not by grammatical relations. If one wants to distinguish cases and grammatical relations in grammatical theory they cannot serve one and the same function.

To make this line of reasoning clearer, consider the situation in a familiar dependent-marking language. Let us take a Latin example:

(14) *Puer-ø* *puell-am* *amat* ‘The boy loves the girl’
boy-Nom girl-Acc loves

In Latin, the distinction between role marking and grammatical relations is quite obvious. Roles are marked by means of case desinences, and case desinences serve exactly role marking. It would be odd to suggest that Latin case desinences are identical with GRs. No one proposes to call Latin cases in (14) “the subject case” and “the object case”, thus getting rid of case notions. Two sets of notions – cases (nominative, accusative, etc.) and GRs (subject, direct object, etc.) have evolved in basic linguistic theory, and the necessity to keep them apart seems obvious in application to a dependent-marking language such as Latin. Unlike the notion of case, the notions of grammatical relations serve to capture behavioral properties of arguments (or nominals), expressing both is clause-internal derivations (e.g. voice) and inter-clausal processes (e.g. relativization).

Of course, there are pairs of notions from the two sets that are very closely associated: subject NPs typically are in the nominative case, direct object NPs in the accusative case, etc. But this is not a reason to confuse these two sets of notions. In some languages (e.g. Russian) grammarians speak of “dative subjects”, in some other languages one and the same case can be used for both direct and indirect object, etc. So these two sets must be kept apart very clearly, and the fact of typical associations between members of these sets is not a reason for confusing them. To the contrary, this is the reason to make a clear distinction. In sum, cases and GRs in dependent-marking languages are established on different logical bases and are obviously distinct.

Now, there is still less grounds to confuse these two sets of notions in head-marking languages that are generally understood less clearly by the linguistic community. Rather a special effort needs to be made in order to clarify this system, foreign to the majority of linguists.

Furthermore, the choice or morphological positions in which personal affixes are inserted is a much more basic property of languages than subjecthood and objecthood that are fluid and are often hard to detect. Dozens of Athabaskan languages invariably have the same morphological strategy of role coding, but certainly differ greatly in terms of syntactic properties of nominals. This applies to other large head-marking language families as well. Van Valin (1981) discussed the data of the Mayan language Jacaltec and demonstrated that there are at least five subject-like clusters of argument properties functioning in different subsystems of Jacaltec grammar. Subjecthood is a very complex and multidimensional phenomenon, so using it requires a lot of caution. Using it in such a basic, nuclear part of a language as role marking is simply inadequate.

There is abundant literature on non-universality of GRs. As has been demonstrated by A.E.Kibrik (1997), among others, GRs are not to be taken as universal and elementary notions. The relevance of GRs in language L must be proven, relying on grounds entirely different from role coding, namely on behavioral properties of arguments (or nominals). This requirement applies to head-marking languages to a not lesser extent than to dependent-marking languages with cases. Naïve, pre-theoretical, and almost automatic application of the GR terminology to any given language is a very serious flaw of descriptive and typological accounts and it hinders the consolidation of basic linguistic theory.

A language like Navajo can be tested for relevance of GRs, independently of the head-marking technique of role marking employed by this language. Theoretically, such language may have some of the properties that substantiate the need for postulating GRs. But then it would be pronominal elements that would bear grammatical relations. In reality, Navajo lacks evidence for the relevance of GRs (see Kibrik 1996a: 262, 267).

There is a curious inconsistency in the conceptual system of authors employing the GR terminology when describing the head-marking of arguments' roles. Their conceptual system and terminology fluctuate depending on whether the given language has the accusative or an alternative alignment. In particular, in head-marking languages with the ergative alignment morphological positions in the verb are actually construed in terms of case notions. Mithun (1999: 209-213) discusses the data from head-marking and ergative Tsimshianic and Chinookan languages using the case-based terminology. Glosses of particular morphemes look like "1SG.ERGATIVE" or "3MASC.ERG". Recall that immediately before that (pp. 208-9) evidence from similarly head-marking but accusatively aligned Chumashan was accounted for in terms of grammatical relations. A still another set of notions is used in case of active alignment in the head-marking technique: Mithun uses the semantic role terminology to describe the function of morphological positions on the verb. Examples of glosses for Haida are "1SG.AGENT" or "1SG.PATIENT" (p. 216); similar glosses are used for Iroquoian (p. 220). This is again congruent with the terminology used for the technique found in active and dependent-marking Pomoan (pp. 218-9).

So it appears that it is somehow easier to recognizing the cofunctionality of dependent- and head-role-marking if the alignment pattern is "exotic" – ergative or active. But there is resistance to using case-based terminology exactly in application to the accusative pattern, and many authors opt for the GR-based terminology. I don't think there are any substantial reasons for such inconsistency. Simply the ergative and the active alignments do not leave the freedom to use the GR-based terminology, while the accusative alignment creates an illusion of such possibility, because of the association between certain cases and grammatical relations in familiar dependent-marking languages.

In my view, if one strives for a cross-linguistically valid and consistent conceptual system, one needs to develop parallel terminologies for head-marking techniques irrespective of alignment, and to develop coordinated decisions for the head- and dependent-marking languages.

6. Dative

The analogy between the head- and dependent-based systems of role marking does not end with the categories of nominative and accusative. There is evidence in Navajo demonstrating that in addition to the nominative and accusative morphological positions on the verb one must also posit the *dative* position. In fact, there can be more than one position where dative pronouns may occur: position #6 (the same as accusative), position #9 (which is, in the first place, the position for reflexive pronouns), and position #11B (which is, in the first place, a position for oblique pronouns, see below). When occurring in position #6 a dative pronoun differs from the accusative only in the third person, which is \emptyset - for the accusative and *bi-* for the dative. Generally, the dative pronouns tend to occur in position #6 in intransitive verbs (that is, lacking an accusative pronoun) and in position #9 or 11B in transitive verbs (that have position #6 already filled). (Further details were outlined in Kibrik 2001.) Semantically, the dative marks a variety of semantic roles, including goal/recipient, source, bene- and malefactive, experiencer, and the causee in causativized verb. In the following examples the causee role (the most productive and predictable class of datives) is illustrated.

(15) Causative from intransitive: position #6

?awéé? n-ná-**bi**-j-ii-łaaħ 'He (fourth person) is usually walking the baby'
 baby_i around-Iter-**3.Dat**_i-4.Nom-Pref-TI↑.walk.usually

(16) Causative from transitive: position #11B or 9 (Young 1995)

niha-?álchíní **bi**-náá-da-?i-y-iil-záá? 'We fed our children again' (lit. 'fed something to them')
 12Pl.Poss-children_i **3.Dat**_i-Rep-Distr-Indef.Acc-Pf-1Pl.Nom.TI↑-ate

The head-marked dative of Navajo displays properties that are very similar to cross-linguistic properties of the dependent-marked dative case. This is obvious of the range of semantic roles served by the Navajo dative that were listed above. Also, in many languages (consider English or Spanish) the dative case partly shares its coding

properties with the accusative. These facts corroborate the claim that the head-marked “cases” are functionally very similar to the dependent-marked cases we are so familiar with.

Interestingly, linguists are more prone to talk about the head-marked datives than nominatives and accusatives. Sometimes authors who generally stick to the GR-based treatment of linear morphemic positions suddenly slip into case-based terminology when they deal with roles such as recipient thus mixing GR notions with case notions. The same is true of head-marking systems with the active alignment. For instance, when discussing evidence of Muskogean (active alignment, head-marking), Mithun (1999: 237-9) combines the semantic role terminology with the notion “dative”; examples of glosses are “1SG.PATIENT” and “2SG.DATIVE”. So the notion “dative”, essentially the name of a case belonging to the paradigm “nominative – accusative – dative”, is reinterpreted as the name of a semantic role. Generally, there is a lot of confusion with the term “dative” in linguistics. For example, Givón (2001) uses the notion “dative” both as a semantic role (along with agent, patient etc.) [p. 107 and elsewhere] and as a term for case (along with nominative, accusative etc.) [p. 203 and elsewhere].

7. Oblique

Many head-marking languages limit their degree of head-marking to core arguments, while roles of other clause participants are marked according to the dependent-marking technique. This technique is found in Athabaskan, too: roles of non-core arguments and other participants are marked by separate words, traditionally termed postpositions. Consider two examples with a typical postposition of this kind, *-ch'íʔ* ‘to, toward’ (Young and Morgan 1987: 29):

- (17) *tsin* *ʔíʔ áhí* *bi-ch'íʔ* *yi-sh-ááʔ* ‘I am walking toward the tree’
 wood_i sticking.out 3.Obl_i-toward Prog-1Sg.Nom-walk
- (18) *shi-ch'íʔ* *yá-ø-ltiʔ* ‘He is talking to me’
 1Sg.Obl-toward Pref-3.Nom-talk

A postpositional morpheme can occur in Navajo only preceded by a personal pronominal morpheme. It is necessary even when a postposition follows a full NP, as in (17); in this case the pronoun is of course the third person. When there is no full NP (and there can hardly be one if the participant is a locutor) the postpositional phrase consist only of a postposition inflected for person, as in (18). As a rule, postpositions immediately precede inflected verbs.

Phonologically and morphologically, the postposition *-ch'íʔ*, when inflected for person, appears to be an independent word. However, many postpositions (see Young and Morgan 1987: 27ff.; Kibrik 1990; also cf. S. Rice 1997 on another Athabaskan language, Chipewyan) merge into one word with the following verb (Kibrik 1990: 241):

- (19) a. *ʔashkii* *ʔat'ééd* *híʔ* *y-e-i-ø-ní-lóóz*
 boy_i girl_j horse_k **3.Obl_j-to-3.Acc_k-3.Nom_i-Pf-lead**
 ‘The boy brought/led the horse to the girl’
- b. *y-e-i-ø-ní-lóóz*
 3.Obl_j-to-3.Acc_k-3.Nom_i-Pf-lead
 ‘He brought/led it to her’

In this example, the “postposition” *-aa* ‘to’ (similar in meaning to *-ch'íʔ*), together with the prefixed pronoun *y-*, integrates into the verb complex as a prefix. This integration is reflected phonetically in that the underlying *-aa* surfaces as *-e-*. Example (19b) demonstrates that the role-marking structure remains intact when no full NPs are present in the clause. Thus Navajo oblique case markers can be either analytic, as in (17) and (18), or synthetic, as in (19). While the term “postpositions” is adequate for the former, it is not for the latter, that is, verb-internal elements. Intergration of such elements into the verb is quite systematic, and for this reason I prefer the term “preverb” for this class of Navajo morphemes (Kibrik 1995), rather than “postpositions”. Preverbs are essentially role markers used for peripheral clause participants, that is, not core arguments. Extending the case-based analogy, I view preverbs as analogs of *oblique* case markers. Synthetic oblique case markers, like the verbal nominative, accusative and dative positions, follow the head-marking technique. But unlike these morphological positions, role

marking is accomplished not just by linear order inside the inflected verb. Linear order has significance too, as preverbs appear in the left periphery of the verb complex. But a specific role semantics is expressed by a preverbal morpheme, that is, by certain material. Marking of peripheral clause participants comes in pairs: position 11B⁵ is occupied by a pronominal morpheme that accomplishes the function of referring, and position 11A is filled by a preverb that marks a specific semantic role.

8. Alternative approaches

Above I proposed an analogy between linear positions in the verb of head-marking languages and case markers in dependent-marking languages, and the corresponding practice to use case terminology when glossing the roles of head-marked clause participants. I also argued against an alternative practice, often implicit, to construe and gloss the functions of pronominal affixes or linear positions (especially under the accusative alignment) in terms of grammatical relations. However, there are more than these two practices found in the current literature. Two other practices are reviewed below. In typological literature, it is often difficult to identify if glossing belongs to the cited source or to the author him/herself; but even if the former is the case, the decision to keep it demonstrates a certain degree of agreement with this glossing.

1) **No indication of semantic roles.** Nichols and Bickel (2005) quote Dayley (1985) on the Mayan language Tsutujil – this is the prime example of clause-level head-marking that they use. The meaning of the clause is ‘The boys threw rock(s) on top of the house’, and the gloss of the verb is “COMP-3SG-3PL-throw”, that is information on which referent bears which role is left out of the glossing. The same system is used in many other typological and descriptive publications, for instance Noonan’s (1992) grammar of Lango. This kind of glossing is simply incomplete.

2) **Marking in terms of macro-roles.** Siewierska (2004) chose an interesting solution allowing to avoid the case vs. grammatical relation controversy. She glosses the roles of head-marked clause arguments in terms of elementary “macro-roles” A (agentive argument of a transitive clause), P (patientive argument of a transitive clause), and S (single argument of an intransitive clause). This provides a universal method that allows to uniformly reinterpret evidence coming from various languages and sources. This method, however, fails to capture important language-specific properties. In particular, this glossing is blind to alignment type. In an ergative head-marking language the first person argument in *I am jumping* and *He hit me* is represented by one and the same pronominal morpheme, but this morpheme is rendered differently in glossing: “1SG(S)” and “1SG(P)”, respectively.

I find the macroroles approach a promising one. If one really does not like the idea to extend case terminology to verb morphology, a reasonable alternative would be to use macro-roles. But this must not be universal elementary macro-roles but rather more specific macro-roles sensitive to alignment type. A typological repertoire of such macro-roles was proposed by A.E.Kibrik (1997): Principal and Patientive for the accusative alignment; Agentive and Absolutive for the ergative alignment; Actor and Undergoer for the active alignment, etc.

9. Beyond Athabaskan and head-marking

In this article Athabaskan languages were chosen to illustrate how role marking works in head-marking languages. A question arises: how typical are Athabaskan, and to what extent they can serve as such illustration? The recent publication “World Atlas of Language Structures” (WALS; Haspelmath et al. eds. 2005) allows us to estimate how typical the Athabaskan languages are in terms of role marking. 378 languages were included in Anna Siewierska’s study of the typological feature “verbal person marking”. Out of these, about a half (193) demonstrate two personal markers on the verb, that is, are inclined towards head-marking. In WALS, one can compose the feature “verbal person marking” with another one – “number of cases” (meaning nominal cases; Oliver Iggesen). The two samples have 217 shared languages, out of which the most frequent type is “Both the A and P arguments AND No morphological case-marking” – 47 languages. That is, about a quarter of the composed sample’s languages are consistently head-marking. Also, about one third (128) of 378 languages explored by the combination of features “verbal person marking” and “alignment of verbal person marking” belong to the type “Accusative AND Both the A and P arguments”. Again, Athabaskan represent the most frequent type. This evidence probably suggests that

⁵ Note that this is the same position as the one sometimes used for datives (see section 6). The difference between such datives and obliques is that dative pronouns placed in position 11B are not followed by any preverb. In traditional Athabaskan terminology this phenomenon is known as “null postposition”.

using Athabaskan as a testing ground for discussing the research problem of this article is reasonable and much of our results can be extended to the head-marking type in general.

There are few consistently head-marking languages in the ENCA area. Obvious examples are Abkhaz in the Caucasus, Ket in Siberia and Ainu in the Far East. A number of other Caucasian, Paleoasiatic and Uralic languages have a strong inclination towards head-marking. Some Indo-European languages have acquired or are acquiring the status of heavily polysynthetic, head-marking languages with pronominal arguments, in particular Romance (French, Spanish) and Slavic (Macedonian, Bulgarian). Still ENCA is a predominantly dependent-marking continent, in contrast to the Americas that abound with head-marking. How relevant is the analysis above to LENCA and linguistic diversity in general? Let us briefly consider the types of languages other than heavily head-marking. (Also cf. Nichols and Bickel 2005.) It turns out that there are numerous languages that are not extremely but partially head-marking.

First, there exist double-marking languages, that is, languages that consistently display a two-way marking of roles: by means of nominal cases on NPs and by means of personal affixes on the verb. In the WALS the composed sample “verbal person marking” plus “number of cases” demonstrates that out of 217 languages in sample 33 languages belong to the type “Both the A and P arguments AND 6 or more cases”. In the ENCA area this type is well represented by diverse languages, including Basque, Kartvelian, some Uralic, Chukchi-Kamchatkan, Eskimo-Aleut, and Burushaski (if the latter can be included in ENCA). How are we to interpret the function of verbal personal affixes in double-marking languages: as genuine pronominal arguments, marked for role, or merely as agreement with external nominal arguments? This issue requires a close examination, but my preliminary view is the following. It is quite possible that both personal affixes and NPs have an argumental status, thus argumenthood is distributed rather than accumulated in one type of elements⁶. If so, both nominal and verbal role marking may be found in one and the same language. Of course, it is well known that these two kinds of role marking can be arranged differently in terms of alignment, compare Comrie 2005 and Siewierska 2005.

Second, there are many primarily dependent-marking languages that allow only some of the clause arguments to be represented by personal affixes on the verb – for example, just Agentives and Patientives, or only Principals. (Languages of this kind – Russian, Karachay-Balkar, Godoberi – were discussed at the beginning of this article.) Would we still be eager to interpret such personal affixes as pronominal arguments bearing semantic roles and insist on naming verb agreement “nominative role marking”? I don’t think there is a universal answer to this question. In this article I dealt with a typological extreme⁷. But even in a language like Latin personal endings bear some resemblance to Navajo personal affixes, for example because they typically are sole explicit markers of person in a clause. (This is also true of Karachay-Balkar, but not of Russian and Godoberi.) Drawing a dividing line between pronominal arguments and agreement – or perhaps between a greater number of phenomena – remains for future research. But the principle on which such problems can be solved are the same as those proposed in this paper for heavily head-marking languages.

Besides dependent- and head-marking and various mixtures of those, there is the fourth logical and typological possibility, namely null-marking. This is the technique familiar, for example, from English⁸. English has fixed grammatical SVO constituent order. This means exactly the following: in the clause *John kissed Mary* one knows who is the kisser and who is the kissed exclusively on the basis of the relative order of NPs and the verb. In particular, positioning a NP after the finite verb unequivocally indicates that this NP represents the patientive argument. Semantic roles are conveyed by the relative constituent order, and the primary function of relative order is to mark roles. The essentially morphological typology of the locus of marking characterizes this language type in a negative way because this type is purely syntactic. But functionally, the linear order of constituents accomplishes the same function as morphological material and morpheme order inside the verb. This idea was incorporated in Jaxontov’s (1975) notion of “syntactic cases” to refer to this technique typical of languages with little inflectional morphology, such as English or Chinese.

⁶ This discussion was partly inspired by personal communication with Matthew Dryer, 2000 (who of course is not responsible for the specifics of my suggestions).

⁷ According to the argument of Mithun (1986, 1987), languages like Athabaskan are still not full-scale pronominal argument languages since some of their third person pronominal affixes are zero, that is, really are not there, and – in connection with that – third person arguments are realized by full NPs. Other languages, such as Iroquoian, are still more extreme as their pronominal affixes are always explicit, and full NPs are deprived of argumental status altogether, especially in that there is no basic word order in these languages.

⁸ Of course, English has some minor forms of both dependent-marking (prepositional phrases and vestigial case in pronouns) and head-marking (vestigial verb agreement in present tenses). But overall English is rather null-marking.

Table 2 compares three systems of role marking found in a heavily head-marking language such as Navajo, in a primarily dependent-marking language such as Russian, and a null-marking, syntactic order-based language such as English. The Navajo system involving four types of “verbal cases” can be understood better if looked at through the prism of more familiar systems of a conservative Indo-European language and The Language of modern linguistic theory. In turn, the system found in head-marking languages allows one to see familiar phenomena from a more universal, less Euro-centric viewpoint.

Navajo	Russian analogy	English analogy
Nominative position #2 or 5	Nominative case markers	Pre-VP syntactic position
Accusative position #6	Accusative case markers	Post-verbal syntactic position
Dative position #6 or 9 or 11B	Dative case markers	Preposition <i>to</i>
Preverbs (position #11a)	Oblique cases and prepositions	Various prepositions

Table 2: *Three techniques of role marking: verbal morphological positions (Navajo, head-marking), nominal case markers (Russian, dependent-marking) and syntactic positions (English, null-marking)*

These three types of systems can also be put in the framework of a typology involving two binary parameters: type of argument (nominal vs. bound-pronominal) and type of expressing device (material vs. order); see Table 3. (This typology takes into account only pure types and ignores various mixtures such as double-marking, partial dependent- or head-marking, etc.)

Type of expressing device	Type of argument	
	Nominal arguments: free NPs	Pronominal arguments: bound personal morphemes
Material	Dependent-marking: Russian	<i>Head-marking – shape of morphemes: ???</i>
Linear order	Null-marking: English	Head-marking – morphological positions: Navajo

Table 3: *A typology of role marking*

In this typology, three out of the four types are real and cross-linguistically common types; they are boldfaced in Table 3. These are the types shown in Table 2. The fourth is a theoretical type that is head-marking but such that linear morphological positions are completely irrelevant, role marking done by differing shapes of morphemes alone. This would be a purely non-templatic language in which ‘I’ and ‘me’ are expressed by different forms appearing in undistinguishable morphological positions on the verb. Hopefully future research will show if such systems actually exist.

10. Conclusion

The main points I argue for in this article amount to the following. First, consistently head-marking languages can be understood adequately only if one combines two recent advances in basic linguistic theory: the typology of locus of marking and the typology of argument type that recognizes personal affixes on the verb as possible pronominal arguments. Second, what marks roles in such languages is primarily linear positions in the verb’s morphological structure in which pronominal elements are inserted. Third, these positions are functional analogs of case affixes in dependent-marking languages and can be understood and glossed in terms of cases: nominative, ergative, accusative, and the like. Fourth, understanding or naming these positions in terms of grammatical relations, such as subject and direct object, obscures the role-marking function of linear positions and unduly complicates and distorts the already complex meaning of GR terms.

The distinction between role coding and grammatical relations is usually kept clear with respect to standard LENCA, but becomes blurred in the accounts of head-marking languages. Reasons for that probably include the following:

- In familiar LENCA, the coding of both the participants and their roles is performed by means of morphological material, while in head-marking languages the coding of roles is performed via a different kind of device, that is, the relative linear order of morphemes
- Linguists are used to associations between linear position and grammatical relations; they often think of

English grammatical relations in terms of syntactic positions

- Linguists tend to view syntactic statuses as more cross-linguistically applicable notions than case marking, which is entirely groundless.

Despite all conscious efforts to emancipate basic linguistic theory of genealogical and areal biases, it is still Eurocentric, tacitly assuming that dependent-marking is somehow simpler, that head-marking is more exotic, and that GRs are universal explanatory notions.

The equi-functionality of two role-coding strategies – nominal cases and personal affix positions on the verb – should be recognized irrespective of whether we want to transfer case terminology to verbal positions or prefer to develop a new set of terms. If typologists care about a cross-linguistically applicable and valid conceptual system, they should use theoretical notions such as semantic roles, grammatical relations and case in a commensurable way across language types. Insufficiently grounded usage of concepts leads to misconceptions and, eventually, distorted typological generalizations. Grammatical relations and role-coding techniques must be very clearly distinguished, both in the thinking of linguists and in linguistic terminology.

ABBREVIATIONS IN GLOSSES

Pf – perfective	Nom – nominative	M – masculine
Impf – imperfective	Acc – accusative	F – feminine
Prog – progressive	Erg – ergative	N – neuter
Iter – iterative	Dat – dative	Indef – indefinite
Rep – repetitive	Obl – oblique	AnO – Animate object
TI – transitivity indicator	Poss – possessive	Pref – prefix of irrelevant function
↑ – transitivity increase	Sg – singular	Ext – stem extension
Distr – distributive	Pl – plural	
Conv – converb		

REFERENCES

- Boas, Franz. 1911/1964. Introduction. In *Handbook of American Indian Languages*. Washington, D.C.: Bureau of American Ethnology, 1–83.
- Comrie, Bernard. 2005. Alignment of Case Marking of Full Noun Phrases. Map and article #98. In *World Atlas of Language Structures. The interactive reference tool*, Martin Haspelmath, Matthew S. Dryer, David Gil, and Bernard Comrie (eds.). Oxford: Oxford University Press.
- Dayley, Jon P. 1985. *Tsutujil grammar*. Berkeley and Los Angeles: University of California Press.
- Dixon, Robert M. W. 1997. *The Rise and Fall of Languages*. Cambridge: Cambridge University Press.
- Dryer, Matthew S. 2005. Expression of Pronominal Subjects. Map and article #101. In *World Atlas of Language Structures. The interactive reference tool*, Martin Haspelmath, Matthew S. Dryer, David Gil, and Bernard Comrie (eds.). Oxford: Oxford University Press.
- Dryer, Matthew S. In press. Descriptive Theories, Explanatory Theories, and Basic Linguistic Theory. To appear in *Catching Language: Issues in Grammar Writing*, Felix Ameka, Alan Dench, and Nicholas Evans (eds.). Berlin: Mouton de Gruyter.
- Fillmore, Charles J. 1968. The Case for Case. In *Universals in Linguistic Theory*, E. Bach and R.T.Harms (eds.), 1-88. New York: Holt, Rinehart, and Winston.
- Gil, David. 1999. Riau Indonesian as a pivotless language. In *Tipologija i teorija jazyka: Ot opisanija k ob'jasneniju*, E.V.Raxilina and Ja.G.Testelec (eds.), 187-211. Moscow: Jazyki Russkoj Kul'tury.
- Givón, T. 2001. *Syntax: An Introduction*. Vol. I. Amsterdam: John Benjamins.
- Haspelmath, Martin, Matthew S. Dryer, David Gil, and Bernard Comrie (eds.) *World Atlas of Language Structures. The interactive reference tool*. Oxford: Oxford University Press.
- Jaxontov, Sergej E. 1975. Grammaticheskie kategorii amorfnogo jazyka. [Grammatical categories of an amorphous language.] In *Tipologija grammaticheskix kategorij*, V.N. Yartseva (ed.), 105-119. Moscow: Nauka.
- Jelinek, Eloise. 1984. Empty categories, case, and cogrammaticality. *Natural Language and Linguistic Theory* 2: 39-76.
- Kari, James M. 1989. Affix positions and zones in the Athapaskan verb complex: Ahtna and Navajo. *International Journal of American Linguistics* 55: 424-454.
- Kibrik, Aleksandr E. 1997. Beyond subject and object: Towards a comprehensive relational typology. *Linguistic typology* 1997.1: 279-346.

- Kibrik, Andrej A. 1990. Poslelogi v navaxo: poterja statusa chasti rechi. [Postpositions in Navajo: Loss of the part-of-speech status.] In *Chasti rechi*, V.M.Alpatov (ed.), 234–253. Moscow: Nauka.
- Kibrik, Andrej A. 1992. Relativization in polysynthetic languages. *International Journal of American Linguistics* 58: 135–156.
- Kibrik, Andrej A. 1995. Inflection versus derivation and the template for Athabaskan verb morphology. Paper presented at the Workshop on the Morphology-Syntax Interface in Athapaskan Languages (Albuquerque, July 3, 1995).
- Kibrik, Andrej A. 1996a. Transitivity decrease in Athabaskan languages. In *Studies in Athabaskan linguistics*. E. Jelinek et al. (eds.), 259-304. Albuquerque: UNM Press.
- Kibrik, Andrej A. 1996b. Transitivity in Godoberi lexicon and grammar. In: *Godoberi*. Aleksandr E. Kibrik (ed.), 107-146. Muenchen: LINCOM Europa.
- Kibrik, Andrej A. 2001. Navajo dative: Two bi- or not two bi-. Paper presented at the 2001 SSILA meeting. (July 2001, Santa Barbara.)
- Kibrik, Andrej A. 2002. A typologically oriented portrait of the Athabaskan language family. In *Third Winter Typology School*. Vera I. Podlesskaya (ed.), 38-48. Moscow: RGGU.
- Kumaxov, Muxaddin A. 1974. O strukture predlozhenija v jazykax polisinteticheskogo tipa [On sentence structure in polysynthetic languages]. In *Universalii i tipologicheskie issledovanija*, 125–134. Moscow: Nauka.
- Mithun, Marianne. 1986. When zero isn't there. *Berkeley Linguistics Society* 12: 195-211.
- Mithun, Marianne. 1987. Is basic word order universal? In *Coherence and grounding in discourse*, R. Tomlin (ed.), 281-328. Amsterdam: Benjamins.
- Mithun, Marianne. 1999. *The languages of native North America*. Cambridge: Cambridge University Press.
- Mithun, Marianne. 2003. Pronouns and agreement: The informational status of pronominal affixes. *Transactions of the Philological Society* 101.2: 235-278.
- Nichols, Johanna. 1986. Head-marking and dependent-marking languages. *Language* 62: 524-541.
- Nichols, Johanna. 1992. *Linguistic diversity in space and time*. Chicago: University of Chicago Press.
- Nichols, Johanna, and Balthasar Bickel. 2005. Locus of Marking in the Clause. Map and article #23. In *World Atlas of Language Structures. The interactive reference tool*, Martin Haspelmath, Matthew S. Dryer, David Gil, and Bernard Comrie (eds.). Oxford: Oxford University Press.
- Noonan, Michael. 1992. *A grammar of Lango*. (Mouton Grammar Library, 8.) Berlin: Mouton de Gruyter.
- Rice, Keren. 2000. *Morpheme order and semantic scope. Word formation in the Athapaskan verb*. Cambridge: Cambridge University Press.
- Rude, Noel. 1997. Dative shifting and double objects in Sahaptin. In *Grammatical relations: A functionalist perspective*, T. Givón (ed.), 323-349. Amsterdam: Benjamins.
- Sapir, Edward, and Harry Hoijer. 1967. *The phonology and morphology of the Navaho language*. UCPL 50. Berkeley: University of California Press.
- Siewierska, Anna. 2004. *Person*. Cambridge: Cambridge University Press.
- Siewierska, Anna. 2005. Alignment of Verbal Person Marking. In *World Atlas of Language Structures. The interactive reference tool*, Martin Haspelmath, Matthew S. Dryer, David Gil, and Bernard Comrie (eds.). Oxford: Oxford University Press.
- Van Valin, Robert D. Jr. 1977. *Aspects of Lakhota syntax*. Ph.D. diss., UC Berkeley.
- Van Valin, Robert D. Jr. 1981. Grammatical relations in ergative languages. *Studies in Language* 5: 361-394.
- Young, Robert, and William Morgan. 1987. *The Navajo language. A grammar and colloquial dictionary*. Albuquerque: University of New Mexico Press.
- Young, Robert. 1995. Navajo causatives. Paper presented at the Workshop on the Morphology-Syntax Interface in Athapaskan Languages (Albuquerque, July 3, 1995).