

John Benjamins Publishing Company



This is a contribution from *Argument Structure and Grammatical Relations*.

A crosslinguistic typology.

Edited by Pirkko Suihkonen, Bernard Comrie and Valery Solovyev.

© 2012. John Benjamins Publishing Company

This electronic file may not be altered in any way.

The author(s) of this article is/are permitted to use this PDF file to generate printed copies to be used by way of offprints, for their personal use only.

Permission is granted by the publishers to post this file on a closed server which is accessible to members (students and staff) only of the author's/s' institute, it is not permitted to post this PDF on the open internet.

For any other use of this material prior written permission should be obtained from the publishers or through the Copyright Clearance Center (for USA: www.copyright.com).

Please contact rights@benjamins.nl or consult our website: www.benjamins.com

Tables of Contents, abstracts and guidelines are available at www.benjamins.com

What's in the head of head-marking languages?*

Andrej A. Kibrik

Institute of Linguistics, Russian Academy of Sciences, Moscow

Marking of clause participants' semantic roles is an important concern in human languages. Dependent-marking languages 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 in Athabaskan are functionally equivalent to nominal case affixes, while the construal of positions in terms of grammatical relations is misguided. The Athabaskan verb involves the following positions: nominative, accusative, dative, and oblique. A typology of role marking in other types of languages is proposed.

1. Introduction

This article is intended as 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 2006).

* Research underlying this article was supported by grant #11-04-00153 from the Russian Foundation for the Humanities. I would like to thank Peter Arkadiev, Aleksandr E. Kibrik, and two anonymous referees for useful discussions of a preliminary draft of this paper. I am also grateful to the editors of this volume for their highly valuable input.

In this article I look at the phenomenon of head-marking of semantic roles in the clause, which is widespread in the languages of the world. 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.

In 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 argument and explanation. However, I keep noticing that descriptive linguists and typologists tend to continue 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 detailed substantiation. In this article of an argumentative nature I attempt to convince the reader of what the relevant fragment of basic linguistic theory must look like.

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 are concerned to know who is doing what to whom, that is, who is the agent and who is the patient, or who is the experiencer and who is the stimulus, etc. There seem to be some languages that, despite this obvious concern, do not mark semantic roles in any consistent way (Gil 1999 on 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 morphological 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 specific rules, semantic roles map onto nominal cases.¹ For example, in a language with 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. Sometimes the point of view is articulated that nominal cases serve grammatical relations (e.g. Haspelmath 2002:72). I find this view untenable for a number of reasons – primarily because grammatical relations are not universal and because they are a far less robust phenomenon than role marking; see Section 5 below.

(1) Russian

<i>Pap-a</i>	<i>umy-l</i>	<i>dočk-u</i>
dad-NOM.SG	wash-PAST(M.SG)	daughter-ACC.SG
'Dad washed the daughter'		

To take a natural discourse example, consider an excerpt from a story told in Karachay-Balkar, a Turkic language of the North Caucasus; this excerpt illustrates three different semantic roles and three corresponding cases:

(2) Karachay-Balkar

<i>sem. role</i>	agent	patient	goal/recipient
<i>case</i>	NOM	ACC	DAT
<i>ol</i>	<i>sirnik-le-ni</i>	<i>zandır-ip</i> ,	<i>börü-le-ge</i>
he (NOM)	match-PL-ACC	light-CONV	wolf-PL-DAT
<i>at-a</i>	<i>e-di</i>		
throw-CONV	COP-PAST(3SG)		

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

As is generally known, the mapping of semantic roles upon cases is not one-to-one. The nominative case can code a variety of semantic roles, and there are relatively tricky phenomena such as passive. The mapping is mediated by macro-roles serving as clusters of similar roles (see e.g. A.E. Kibrik 1997). But the point is that, whenever there is a verb with arguments or adjuncts bearing certain semantic roles, the major way of encoding those roles in a language like Russian or Karachay-Balkar is by means of nominal case inflection.

Cross-linguistically, there are dependent-marking techniques of role marking that usually are not treated as inflectional cases. In particular, these are adpositions, such as postpositions in Japanese; cf. (3).

(3) Japanese (Clancy & Downing 1987:18)

<i>yukichan ga</i>	<i>daidokoro no naka de isshookenmei</i>
Y.	NOM kitchen GEN middle INSTR busily
<i>onigiri o tsukut-te i-mas-u</i>	
onigiri ACC make-CONV be-ADDR-PRES	

'Yukichan is busily making onigiri in the kitchen'

They mark roles of core arguments much the same way as inflectional cases, but they are usually viewed as separate function words and attach to whole noun phrases rather than nouns per se. Also, Dryer (2005a, b) postulates an intermediate category of adpositional clitics that, similarly to adpositions, are not inflectional but attach to nouns just like case markers. For the purposes of this article, adpositional clitics and adpositions are not distinguished from case markers, as all of these devices constitute dependent-marking. What is said below about case can be extended, mutatis mutandis, to these other dependent-marking techniques.

Two or three decades ago the standard view of clause structure, based primarily on languages of Europe and North and Central Asia (LENCA) such as Latin, Russian or Karachay-Balkar, used to involve the following theses:

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

Thesis (4i) is still valid while theses (4ii) and (4iii) have been widely recognized as non-universal due to two important recent trends of research. I will consider these two trends in turn.

One trend is associated with the idea of “pronominal arguments” dating back to Boas (1911) and even earlier, but emphasized in more recent decades (in various terms) by a number of authors (Kumaxov 1974; Van Valin 1977; Jelinek 1984; Mithun 1986, 2003; Kibrik 1992 among others). Consider the following example from Abkhaz, a language of the Abkhaz-Adyghean (or North-West Caucasian) language family:

- (5) Abkhaz (Kibrik 1992: 136)
- a. *axaca'* *apH⁰as*
man_i woman_j
asalamsq' *i-l-z-i-j⁰it'*
letter_k 3SG.N.NOM_k-3SG.F.OBL_j-for-3SG.M.ERG_i-wrote
'The man wrote the letter to the woman'
 - b. *i-l-z-i-j⁰it'*
3SG.N.NOM-3SG.F.OBL-for-3SG.M.ERG-wrote
'He wrote it to her'

Each participant of the clause in (5a) is represented by a corresponding personal² affix in the inflected verb. Against the background of many LENCA, this can be understood as agreement of the verb with multiple NPs. However, this interpretation misses the point. Personal affixes in languages such as Abkhaz are functionally analogous to pronouns of more familiar languages – the example in (5b) 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 it is normally

2. The morphemes that I call “personal affixes” in this paper may in certain instances be marked for other categories as well, particularly number and gender.

represented solely by a verbal personal affix. If an argument is a non-locutor (= third person) still very frequently there is no full NP.

According to a rather radical formulation such as in Jelinek 1985, incorporated, or *bound pronouns* are genuine clause arguments, while the function of full NPs in a clause like (5b) is to referentially specify the pronominal argument. Nominals are thus not considered 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 (4ii) non-universal. Few people would subscribe to this radical formulation; more widely accepted is the view that argumenthood is shared by bound pronouns and coreferential NPs (cf. Mithun 2003). In any case, it is clear that pronominal affixes, or bound pronouns, have many argument properties that are held by noun phrases alone in more familiar languages. For the purposes of this paper, I keep the usage “nominal vs. pronominal arguments”, although it is strictly speaking inaccurate. In Kibrik (2011) I propose a notional replacement for this parameter, namely the distinction between “tenacious” and “alternating” pronouns.

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 roles marked in a language like Abkhaz that lacks nominal cases – see thesis (4iii)? (This question is particularly relevant if one bears in mind that pronominal affixes on the verb are argumental.)

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 is a world-wide technique that is alternative to the one of (1) and (2). Arguments’ (and sometimes adjuncts’) roles can be marked on the verb, see (5). Nichols observed this contrast very clearly when she compared languages of two North Caucasian language families, Nakh-Daghestanian and Abkhaz-Adyghean, which are strikingly different in this respect. While the former uses almost exclusively nominal cases to mark roles (Nichols dubbed this technique *dependent-marking*), the latter generally sticks to marking roles on the verb (*head-marking*). Compare the strongly dependent-marking Nakh-Daghestanian language Godoberi (6) with the head-marking Abkhaz (5):

- | | | |
|--------------|--|---------------------|
| (6) Godoberi | <i>il-u-di</i> <i>waša</i> <i>w-ali</i> | (Kibrik 1996b: 116) |
| | mother-EPENTH-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 (6) displays consistent dependent-marking,⁴ typical of most LENCA, but it differs from those two languages in using ergative alignment. Abkhaz in (5) displays head-marking and ergative alignment; below I will demonstrate examples of head-marking combined with 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 whatsoever. All role marking resides in the verb. How do language speakers tell apart different referents when they encounter a structure such as in (5)?

Consider the marking of the agent role pertaining to the referent ‘the man’ in (5). 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 (5a), 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, as is supposedly the case with (5b), the calculation goes much the same way.

The two trends of thinking – the argument type parameter and the locus of marking – address essentially the same circle of facts. Pronominal argument languages and head-marking languages coincide to a significant extent. However, these two lines of research 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 the locus of marking, while students of the typol-

3. The contrast between head- and dependent-marking can be observed in a number of different 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. In fact, these three languages are not pure examples of dependent marking. As the above 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, which marks roles exclusively on nominals; the Japanese verb is devoid of any elements of head-marking, cf. (3).

ogy of locus (see e.g. Nichols & Bickel 2005) talk about Abkhaz-type structures in terms of agreement.

Any expression denoting a clause participant, be it nominal or 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 neither 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.

In dependent-marking, nominal argument languages (in particular, most 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 appears that personal affixes on the verb do both jobs. (Note that this combination is reflected in the structure of glosses: in (5) a gloss of a personal affix consists of two parts, the reference part and the role part, separated by a dot; this will be explained in more detail below.) I believe that these two functions must be teased apart very clearly, in order to properly understand how these languages work. This study 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 should this technique of role marking be understood in comparison to the dependent-marking technique?

My main claim is that many head-marking languages employ the *linear positions* of personal affixes on the verb in the same function as nominal cases are employed in head-marking languages. 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 accusative, ergative, and active alignment (cf. Siewierska 2005a). In accordance with the alignment type, many 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 the Athabaskan languages of North America (see Krauss 1979; Rice 2000 for general characterization). Athabaskan constitutes the core of the greater Na-Dene family (which also comprises two languages of South-Eastern Alaska, Eyak and Tlingit). Na-Dene is among the

largest language families of North America; there are some 40 languages in this family. The Athabaskan subfamily comprises three areal groups: Northern (Alaska and Western Canada), Southern, or Apachean (Southwest of the U.S.), and Pacific (U.S. Pacific coast). Of course, Athabaskan is outside of the area in which LENCA are spoken, but it seems useful to include it into the discussion in the volume in order to provide a more general perspective. In the area of LENCA there are relatively few consistently head-marking languages, Abkhaz being the most obvious example.

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 postpositions. In these respects, Athabaskan is quite representative of the North American type in general.

In some other ways, Athabaskan languages are very unusual, both on the American scene and more generally. The most obvious peculiarity 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. In order to evaluate how rare is the Athabaskan type in this respect, compare the results of the studies Bickel and Nichols 2005 and Dryer 2005c.

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 of the family 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 2005; 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 is overwhelmingly prefixing, it is reasonable to count positions from right to left. The verb root has number 0, and depending on language and theoretical approach the number of prefixal positions varies from about 10 to about 30. One frequently sees numerous prefixes in actual verb forms, even though many prefixes are monophonemic and the resultant verb

forms do not necessarily appear very long. Table 1 summarizes the linear order or prefical 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.

Table 1. Basic prefical morphological positions in the Navajo verb

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

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. (Markus 2007 is a study of the circumstances in which specialized independent pronouns do occur 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, like 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

- (7) One-place verb with an agentive argument: *dahnishjíid* 'I jump'

<i>Morph. position #</i>	<i>dah-</i>	<i>ni-</i>	<i>sh-</i>	<i>jíid</i>
	3	2		

upward- IMPF- 1SG.NOM- jump

- (8) One-place verb with a patientive argument: *linishgai* 'I am white, I whitened'

<i>Morph. position #</i>	<i>tini-</i>	<i>sh-</i>	<i>gai</i>
	2		

PREF- 1SG.NOM- white

5. As Navajo morphophonemics is very complex, examples below begin with phonemic representation and also contain a line of morphophonemic representation listing morphemes in their underlying form. The following line indicates morphological positions, numbered in accordance with Table 1; position numbers are indicated only for those morphemes that are centrally relevant to the given example.

- (9) Two-place verb, relevant pronoun in the agentive position: *nisheeteh*
 ‘I carry him/her (here)’

	ø-	ni-	sh-	t-	teeh
Morph. position #		3	2		
	3.ACC-	IMPF-	1SG.NOM-	TI↑-	handle.ANO

In examples (7) through (9) one can observe the first person singular morpheme *sh-* appearing in position 2 and translating as English ‘T’.

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

- (10) Two-place verb, relevant pronoun in the patientive position: [?*ákqó?*]
shíteeh ‘S/he carries me [over there]’ (e.g. an invalid speaking)

[? <i>ákqó?</i>]	shi-	ø-	ni-	t-	teeh
Morph. position #	6		3		
	[to.there]	1SG.ACC-	3.NOM-	IMPF-	TI↑- handle.ANO

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 (10) is *sh(i)-*, where orthographic *i* is a schwa sound epenthesizing 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 appearing in positions #2 and #6, although the morphophonemics is much more complex.

In the tradition of Athabaskan linguistics such morphemes are viewed as incorporated pronouns rather than agreement affixes (Sapir & Hoijer 1967; Young & Morgan 1987, etc.). There is significant evidence demonstrating that this traditional approach is correct (Jelinek 1984; Kibrik 1992; Mithun 2003). At issue here is another question: how are the *roles* of the arguments marked in the clause? The tradition does not provide a direct answer to this question.

Apparently, the fact that the speaker referent is the agent in (9) and the patient in (10) 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 position numbers one can say that in (9) and (10) 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.

One may argue that morphological positions encode basic semantic roles (such as agent and patient) not immediately but through mediation of semantic macro-roles, that is clusters of semantic roles. Since Navajo follows accusative alignment, the relevant macro-roles (or hyper-roles) are Principal and Patientive,

to use the terms from A.E. Kibrik (1997). Whereas the verbs in (7), (9), and (10) each do have a genuine agent argument, some other verbs may involve, say, an experiencer Principal with the identical encoding in morphology. Even though this is indeed the case, this does not deny the fact that semantic roles are ultimately encoded through the morphological positions on the verb, just like through nominal case markers in dependent-marking languages. There is simply nothing else that might realize the encoding of semantic roles.

If functional equivalence of linear positions in the Navajo verb and the nominal case markers has been established, 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 (7)–(10) and in Table 1 (as well as in the glosses of the Abkhaz example (5), 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 into which 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 they are marked 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.

- (11) *niilke[?]* 'We are cooling him/her down'
- | | | | | | |
|--------------------------|--------|-------|----------|------|-----------------|
| <i>Morph. position #</i> | ø- | ni- | iid- | t- | ke [?] |
| | 4 | 2 | | | |
| | 3.ACC- | PREF- | 1PL.NOM- | TI↑- | cool |
- (12) *nolke[?]* 'You guys are cooling him/her down'
- | | | | | | |
|--------------------------|--------|-------|----------|------|-----------------|
| <i>Morph. position #</i> | ø- | ni- | oh- | t- | ke [?] |
| | 4 | 2 | | | |
| | 3.ACC- | PREF- | 2PL.NOM- | TI↑- | cool |
- (13) *nihiniilke[?]* 'S/he is cooling us/you guys down'
- | | | | | | |
|--------------------------|------------|--------|-------|------|-----------------|
| <i>Morph. position #</i> | nihi- | ø- | ni- | t- | ke [?] |
| | 6 | | 4 | | |
| | 1/2PL.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 material form is supplementary in Athabaskan, while positioning in different linear slots is the main one.⁶ 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.

On the other hand, there may be head-marking languages in which linear position would be entirely irrelevant, and only the shape of personal affixes would mark roles. Volodin and Vaxtin (1986), in a study of the relative contribution of morpheme order and morpheme shape to the head-marking pattern, did not find such languages in their sample. Some languages approximating this type actually exist, and I will provide a brief discussion in Section 9 below. In this paper I mainly concentrate on the linear position technique of marking participants' roles. In the discussion of the Athabaskan evidence below I do not focus on differences in morpheme shape, as linear positions are clearly the major role-marking device in the Athabaskan head-marking pattern.

Now let us turn to the marking of non-locutor (= third person) arguments' roles in the 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 (10), (13) above, and third person accusative is zero when the nominative argument is a non-third person – see (9), (11), (12). 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 as well; the latter fact is represented by the “33” symbol in glosses:

(14)	<i>yinilke²</i> 'S/he is cooling him/her down'	<i>yi-</i>	<i>ø-</i>	<i>ni-</i>	<i>l-</i>	<i>ke²</i>
		<i>Morph. position #</i>	<i>6</i>		<i>4</i>	
			<i>33.ACC-</i>	<i>3.NOM-</i>	<i>PREF-</i>	<i>TI↑- cool</i>

There are several reasons to assume, on systemic grounds, that third person arguments (even when marked by zero), like the locutor arguments, are expressed

6. Cf. somewhat similar analyses of Abkhaz in Bickel and Nichols 2007:215ff. and Hewitt 2008.

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:

(15)	<i>dzizghas</i> 'S/he (deferential) scratched him/her'
	<i>ø-</i> <i>ji-</i> <i>z-</i> <i>ghas</i>
	<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. Positions #2 and #5 are in a complementary distribution with respect to person and both of them in combination constitute the nominative; 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 case markers in Latin.

Thus I conclude that the argument roles are marked in the Navajo verb by means of the linear positions of pronominal morphemes. This system is shared by all Athabaskan languages and also many other head-marking languages. Of course, this system may be less than fully 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 happens to be no affix between the nominative and the accusative positions. It is true that such instances do occur. But this does not mean that such system cannot function. Note that nominal case marking is also far from being fully efficient. For example, in Russian only a subset of nouns distinguishes the nominative and the accusative forms, and instances of morphological ambiguity do 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 & Hoijer 1967; Young & Morgan 1987), and this terminology is replicated in dozens of more recent publications.

In the broader context of the study of head-marking languages, the case-based interpretation of verbal positions occasionally occurs (e.g. Rude 1997 for Sahaptian; Wichmann 2008 for Tlapanec; also cf. Bossong 2003 for Romance), but it is rare. The majority of typologists use a different conceptual system, again the one based on grammatical relations (subject etc.); see, for example, Mithun 1999; Givón 2001; Dryer 2005d. 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 in which roles are marked in head-marking languages is rarely discussed explicitly. Typically, one can judge 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).

One of the major language areas strongly inclined towards head-marking (see Nichols 1992:69ff.) is North America, so it is convenient to look for various approaches to head-marking among linguistic studies of this area. Many approaches of this kind are collected in the rich monograph Mithun 1999, surveying languages of North America. Probably in most instances Mithun reproduced approaches found in the original studies she is using. What one can easily see in the analysis of various North American head-marking languages is that the GR-based approach to head-marking is widespread. For example, the analysis of Salishan and Chumashan data (Mithun 1999:52; 208–9) follows this approach: verbal marking of roles is discussed in terms of grammatical relations, and the glosses used are “3.SUBJECT”, “1PL.OBJECT” and the like.

I argue against understanding personal affix positions on the verb in terms of grammatical relations “subject” and “object” and propose that they should better be understood as analogs of nominal cases. There are several serious reasons for preferring the latter point of view.

First, consider **an analogy with dependent-marking languages**, apparently more familiar to many linguists. As has been argued above, linear positions of personal morphemes in the head-marking pattern serve to identify the arguments’ semantic roles. Now, in dependent-marking languages, roles are marked by case-type devices, whereas grammatical relations are a phenomenon of a different kind. 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 textbook example from Latin:

- (16) *Puer puell-am amat*
 boy(NOM) girl-ACC loves
 'The boy loves the girl'

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 mark GRs. No one proposes to call Latin cases in (16) "the subject case" and "the object case", thus getting rid of specialized 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 the behavioral properties of arguments (or nominals), manifested in both clause-internal derivations (e.g. voice) and interclausal processes (e.g. relativization).

Of course, there are pairs of notions from the two sets that are closely associated: subject NPs typically appear 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 of concepts must be kept apart very clearly, and the fact of typical associations between members of these sets is not an excuse for merging 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 are 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. The conclusion of Section 4 that linear positions in certain head-marking languages mark semantic roles precludes the possible interpretation of these linear positions in terms of grammatical relations.

The second reason for rejecting the GR-based approach to head-marking is due to the **non-universal, strongly language-specific nature of GRs**. The choice of morphological positions in which personal affixes are inserted is a much more basic property of languages than subjecthood and objecthood, while the latter are fluid and 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 distinct 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 for granted 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 the basis of behavioral properties of arguments (or nominals). This requirement applies to head-marking languages to a no 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. In reality, Navajo lacks evidence for the relevance of GRs (see Kibrik 1996a: 262, 267).

The third argument against the GR-based analysis of head-marking is a curious **inconsistency**, typical of this analysis. As is well known, the locus of marking and the type of alignment are two entirely independent typological parameters. However, in the literature the understanding of the head-marking pattern fluctuates depending on whether the given language has accusative or some other alignment. In particular, in head-marking languages with 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.ERG” or “3M.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. So in ergative alignment the analogy between the head-marking and the dependent-marking strategies is readily seen, whereas in accusative alignment it is somehow blurred.

As for the third major alignment type, namely active alignment, the situation is still different. Typically, active role marking is construed not in terms of cases

(as in ergative alignment) and not in terms of GRs (as in accusative alignment) but in terms of semantic roles. For example, Mithun (1999) 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). The same approach is used for the technique found in active and dependent-marking Pomoan (pp. 218–219). Directly using semantic role notions for morphological markers is highly questionable, but what is particularly important for the current discussion is that in active alignment, as well as in ergative alignment, the analogy between head- and dependent-marking is actually acknowledged – in contrast to accusative alignment.

So it appears that it is somehow easier to recognize the cofunctionality of dependent- and head-role-marking if the alignment pattern is “exotic” – ergative or active. But there is resistance to such recognition and to using case-based terminology exactly in reference to accusative alignment, and many authors opt for the GR-based terminology. I do not think there are any substantial reasons for such inconsistency. The simple fact is that ergative and active alignments do not leave the freedom to use the GR-based terminology, while accusative alignment creates an illusion of such a 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 approaches for head-marking techniques irrespective of alignment, and to develop coordinated decisions for head- and dependent-marking languages.

6. Dative

The analogy between the head- and dependent-based role-marking systems 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 a *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, primarily, the position for reflexive pronouns), and position #11B (which is, primarily, a position for oblique pronouns, see below); see Table 1 for the list and functions of morphological positions. When occurring in position #6 a dative pronoun differs from the accusative only in the third person, which is *ø-* 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 with an accusative pronoun).⁷ (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 of a causativized verb. In the following examples the causee role (the most productive and predictable class of datives) is illustrated.

- (17) Causative from intransitive: position #6

?awéé? *n-ná-bi-j-ii-laah*
baby_i around-ITER-3.DAT_i-4.NOM-PREF-TI↑.walk.usually
'S/he (fourth person) is usually walking the baby'

- (18) Causative from transitive: position #11B or 9

(Young 1995)

niha-? *áłchíní* *bi-náá-da-?i-y-iil-záq?*
1/2PL.POSS-children_i 3.DAT_i-REP-DISTR-INDEF.ACC-PF-1PL.NOM.TI↑-ate
'We fed our children again' (lit. 'fed something to them')

The head-marked dative of Navajo displays properties that are very similar to the cross-linguistic properties of the dependent-marked dative case. This is obvious with respect to 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 recognizing 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 for head-marking systems with 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

7. The fact that there are a number of distinct positions for dative pronouns does not necessarily call the integral notion of "dative", as applied to Navajo, into question. By way of an analogy, in dependent-marking languages there may be multiple allomorphs of the same case – e.g. in Russian the dative case (in the singular) can be marked by the nominal endings *-u*, *-e*, and *-i*, which are lexically distributed. Various dative positions in Navajo are also in a kind of distribution.

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

- (19) *tsin* *zípáhí* *bi-chij?* *yi-sh-áál*
 wood_i sticking.out 3.OBL_i-toward PROG-1SG.NOM-walk
 ‘I am walking toward the tree’
- (20) *shi-chij?* *yá-ø-lti?*
 1SG.OBL-toward PREF-3.NOM-talk
 ‘S/he is talking to me’

A postpositional morpheme can occur in Navajo only when preceded by a personal pronominal morpheme. It is necessary even when a postposition follows a full NP, as in (19); in this case the pronoun is of course the third person. When there is no full NP (and there can rarely be one if the participant is a locutor) the postpositional phrase consists only of a postposition inflected for person, as in (20). As a rule, postpositions immediately precede inflected verbs.

Phonologically and morphologically, the postposition *-chij?*, when inflected for person, appears to be an independent word. However, many postpositions (see Young & Morgan 1987:27ff.; Kibrik 1990; also cf. Rice 1997:100ff. on another Athabaskan language, Chipewyan) merge into one word with the following verb (Kibrik 1990:241):

- (21) a. *'ashkii* *'atééd* *tij?* *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
 ‘S/he brought/led it to him/her’

In this example, the “postposition” *-aa* ‘to’ (similar in meaning to *-chij?*), 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 (21b) 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 (19) and (20), or synthetic, as in (21). While the term “postpositions” is adequate for the former, it is not for the latter, that is, verb-internal elements. Integration 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 2005), rather than “postpositions”. Preverbs are essentially role markers used for peripheral clause participants, other than 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 does have significance, as preverbs appear in the left periphery of the verb complex. But a specific role semantics is expressed by a pre-verbal morpheme, that is, by certain material. Marking of peripheral clause participants comes in pairs: position #11B⁸ 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

To recapitulate, I propose an analogy between linear positions in the verb of many 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 argue against an alternative practice, often implicit, to construe and gloss the functions of morphological positions (especially under 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 in this section. 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.

8. 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”.

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 her 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 a uniform reinterpretation of 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 macro-roles approach a promising one. If one really does not like the idea of extending case terminology to verb morphology, a reasonable alternative would be to use macro-roles. But these should 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 accusative alignment; Agentive and Absolutive for ergative alignment; Actor and Undergoer for active alignment, etc. Languages may differ in the extent to which they lend themselves to such treatment. If a correspondence between macro-roles and morphological positions is stable and straightforward, then the macro-role-based treatment is more tenable. However, there still remains the problem of a uniform account of head- and dependent-marking languages. Proponents of the macro-role-based analysis of morphological positions in head-marking languages need to have a way to explain why the same analysis is not applied to the dependent-marking pattern.

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

languages, and to what extent can they serve as an appropriate illustration? The 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” (Siewierska 2005b). 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; Iggesen 2005). 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” (Siewierska 2005b) and “alignment of verbal person marking” (Siewierska 2005a) belong to the type “Accusative AND Both the A and P arguments”. Again, Athabaskan represent the most frequent type. This evidence probably suggests that using Athabaskan as a testing ground for discussing the research problem of this article is reasonable and many of our results can be extended to the head-marking type in general.

Athabaskan languages are strongly head-marking, as is generally typical of North America. Of course, there are many languages that exhibit partial head-marking properties (Nichols 1992). How relevant is the proposed analysis to linguistic diversity in general? Let us briefly consider the types of languages other than heavily head-marking. (Also cf. Nichols & Bickel 2005.)

First, there are 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 WALS the composed sample of the features “verbal person marking” (Siewierska 2005b) and “number of cases” (Iggesen 2005) demonstrates that out of 217 shared languages 33 languages belong to the type “Both the A and P arguments AND 6 or more cases”. This combination is represented by genealogically diverse languages – for example, Basque, Kartvelian, some Uralic, Chukchi-Kamchatkan, Eskimo-Aleut, and Burushaski. Arkadiev (2010) is a focused study of the distribution of double-marking in the world’s languages. How are we to interpret the function of verbal personal affixes in double-marking languages: as genuine argumental pronouns, marked for role, or as agreement with external nominal arguments? This issue requires a close examination in each instance, but my general point of view is the following. As I argue in Kibrik 2011, it is quite possible that both personal affixes and NPs have argument status, thus argumenthood is distributed rather than accumulated in one type of element. 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 2005a; see Volodin and Vaxtin 1986 for a specialized study. So, even if a language has nominal cases, nothing logically prevents one from positing case functions for verbal morphological positions.

Second, there are many primarily dependent-marking languages that allow one of the clause arguments to be represented by personal affixes on the verb – for example, only Principals or only Absolutives. (Languages of this kind – Latin, Russian, Karachay-Balkar – were discussed in previous sections 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 do not think there is a universal answer to this question. In this article I have dealt with a typological extreme.⁹ But even in a language like Latin personal endings bear some resemblance to Navajo personal affixes, for example because they typically are the sole explicit markers of person in a clause. (This is also true of Karachay-Balkar, but less so of Russian.) Drawing a dividing line between those personal markers that are pronominal arguments and those that are mere agreement is a rather complicated task (cf. Kibrik 2011). But the principles on the basis of 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 thereof, there is the fourth logical and typological possibility, namely null-marking. This is the technique familiar, for example, from English.¹⁰ English has the 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 “kissee” exclusively on the basis of the relative order of NPs and the verb. In particular, positioning an 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

9. According to the argument of Mithun (1986, 1987), other American Indian languages, such as Iroquoian, are still more extreme as their pronominal affixes are always explicit, and full NPs are deprived of argument status altogether, especially in that there is no basic word order in these languages.

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

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.

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 – the system of a conservative Indo-European language (Russian) and the system of English which is 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.

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)

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

These three types of systems can also be put in the framework of a typology involving two binary parameters: the type of argument (nominal vs. pronominal) and the 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.)

Table 3. A typology of role marking

Type of expressing device	Type of argument	
	Nominal arguments	Pronominal arguments
Material	DEPENDENT-MARKING: RUSSIAN	<i>Head-marking – shape of morphemes</i>
Linear order	NULL-MARKING: ENGLISH	HEAD-MARKING – MORPHOLOGICAL POSITIONS: NAVAJO

In this typology, three out of the four types are cross-linguistically common types that have been discussed above in the paper; they are given in small caps in Table 3. These are the types shown in Table 2. The fourth (italicized) is the type that is head-marking but such that linear morphological positions are irrelevant, role marking done by differing shapes of morphemes alone. This would be a non-templatic language in which 'I' and 'me' are materially distinct, but appear in positions that do not really contrast them.

An approximation to this type is illustrated by Old Irish (see Mikhailova 2010). Old Irish is a double-marking language, that is it uses both case forms and personal affixes to encode roles; only the latter will concern us now. Principal is encoded in the Old Irish verb by the nominative personal desinences, going back to the common Indo-European conjugation. Patientive is encoded by the accusative pronominal affixes that may be either prefixes or suffixes. Consider the following examples (Old Irish is given in phonemic transcription):

- (22) Old Irish (Mikhailova 2010: 173–184; Mikhailova, p.c.)
- a. *marv-iδ* *eoch-u*
kill-PRES.3SG.NOM.FULL horse-ACC.PL
'S/he kills horses'
 - b. *ro=s-marva-Ø*
SBJV=3SG.F.ACC-kill-PRES.3SG.NOM.RED
'Hopefully s/he does not kill her'
 - c. *mor-Ø-θ-us*
praise-PRES.3SG.RED-EPENTH-3SG.F.ACC
'S/he praises her'

Nominative personal elements (traditionally, subject desinences) can appear in two forms, full and reduced. A full (traditionally termed absolute) personal ending *-iδ* appears in (22a). When there is a prefix/enclitic or a subsequent suffix, personal endings appear in a reduced form (traditionally, conjunct); in the third person singular the reduced pronominal element is zero (22b, c). Examples (22b) and (22c) demonstrate the accusative pronominal elements appearing in the pre-fixal and the suffixed positions, respectively. Prefixal and suffixed accusative pronouns are nearly identical in form in both morphological positions (*s-* and *-us* in the above examples), but are clearly distinct in terms of shape from the nominative personal markers.

Other languages potentially illustrating the *shape of morpheme* cell of Table 3 include Chintang, a Sino-Tibetan language of Nepal, in which personal prefixes are permutable (Bickel et al. 2007), and Southern Tiwa, a Kiowa-Tanoan language of the US Southwest that uses many portmanteau morphemes referring simultaneously to two or three clause participants (see e.g. Rosen 1990).

Note that languages of this kind do not undermine the basic argument of this paper. The only difference from the Navajo-type languages is that the functional equivalents of cases are not linear positions but the alternative shapes of pronominal morphemes.

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, semantic roles in such languages may be marked by 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 marking and grammatical relations is usually kept clear with respect to dependent-marking languages, but becomes blurred in the accounts of head-marking languages. Among the reasons for this, probably the leading one is the following. In dependent-marking languages, the coding of both the participants and their roles is performed by means of morphological material (of two distinct kinds), while in head-marking languages of the kind explored in this paper the coding of roles is primarily performed via a different kind of device, that is, the relative linear order of morphemes.

Despite all conscious efforts to emancipate basic linguistic theory from genealogical and areal biases, it is still Euro-centric, 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 morphological role-marking 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-marking techniques must be very clearly distinguished, both in the thinking of linguists and in linguistic terminology.

Abbreviations in glosses

↑	transitivity increase	NOM	nominative
ACC	accusative	OBL	oblique
ANO	Animate object	PF	perfective
CONV	converb	PL	plural
DAT	dative	POSS	possessive
DISTR	distributive	PREF	prefix of irrelevant function
EPENTH	epenthetic segment	PRES	present
ERG	ergative	PREV	preverb
EXT	stem extension	PROG	progressive
F	feminine	RED	reduced personal inflection
IMPF	imperfective	REP	repetitive
INDEF	indefinite	SBJV	subjunctive
ITER	iterative	SG	singular
M	masculine	TI	transitivity indicator
N	neuter		

References

- Arkadiev, P. 2010. Towards a typology of case in head-marking languages. Paper presented at the MPI for Evolutionary Anthropology, Leipzig, February 4, 2010.
- Bickel, B., Banjade, G., Gaensle, M., Lieven, E., Paudyal, N., Rai, I.P., Rai, N.K. Rai, M. & Stoll, S. 2007. Free prefix ordering in Chintang. *Language* 83: 43–73.
- Bickel, B. & Nichols, J. 2007. Inflectional morphology. In *Language Typology and Syntactic Description III*, T. Shopen (ed.), 169–240. Cambridge: CUP.
- Boas, F. 1911/1964. Introduction. In *Handbook of American Indian Languages*, 1–83. Washington DC: Bureau of American Ethnology.
- Bossong, G. 2003. Nominal and/or verbal marking of central actants. In *Romance Objects: Transitivity in Romance languages*, G. Fiorentino (ed.), 17–48. Berlin: Mouton de Gruyter.
- Clancy, P.M. & Downing, P. 1987. The use of *Wa* as a cohesion marker in Japanese oral narratives. In *Perspectives on Topicalization: The Case of Japanese 'wa'* [Typological Studies in Language 14]. J. Hinds, S.K. Maynard & S. Iwasaki (eds), 3–56. Amsterdam: John Benjamins.
- Comrie, B. 2005. Alignment of case marking of full noun phrases. Map and article #98. In *World Atlas of Language Structures. The Interactive Reference Tool*, M. Haspelmath, M.S. Dryer, D. Gil & B. Comrie (eds). Oxford: OUP.
- Dayley, J.P. 1985. *Tsutujil Grammar*. Berkeley CA: University of California Press.
- Dixon, R.M.W. 1997. *The Rise and Fall of Languages*. Cambridge: CUP.

- Dryer, M.S. 2005a. Position of case affixes. In *World Atlas of Language Structures. The Interactive Reference tool*, M. Haspelmath, M.S. Dryer, D. Gil & B. Comrie (eds), 210–213. Oxford: OUP.
- Dryer, M.S. 2005b. Order of adposition and noun phrase. In *World Atlas of Language Structures. The Interactive Reference Tool*, M. Haspelmath, M.S. Dryer, D. Gil & B. Comrie (eds), 346–349. Oxford: OUP.
- Dryer, M.S. 2005c. Prefixing vs. suffixing in inflectional morphology. In *World Atlas of Language Structures. The Interactive Reference Tool*, M. Haspelmath, M.S. Dryer, D. Gil & B. Comrie (eds), 110–113. Oxford: OUP.
- Dryer, M.S. 2005d. Expression of Pronominal Subjects. In *World Atlas of Language Structures. The Interactive Reference Tool*, M. Haspelmath, M.S. Dryer, D. Gil & B. Comrie (eds), 410–413. Oxford: OUP.
- Dryer, M.S. 2006. Descriptive theories, explanatory theories, and basic linguistic theory. To appear in *Catching Language: Issues in Grammar Writing*, F. Ameka, A. Dench & N. Evans (eds), 207–234. Berlin: Mouton de Gruyter.
- Fillmore, C.J. 1968. The case for case. In *Universals in Linguistic Theory*, E. Bach & R.T. Harms (eds), 1–88. New York NY: Holt, Rinehart, and Winston.
- Gil, D. 1999. Riau Indonesian as a pivotless language. In *Tipologija i teorija jazyka: Ot opisanija k ob'jasneniju*, E.V. Raxilina & Ja.G. Testelec (eds), 187–211. Moscow: Jazyki Russkoj Kul'tury.
- Givón, T. 2001. *Syntax: An Introduction*, Vol. I. Amsterdam: John Benjamins.
- Haspelmath, M. 2002. *Understanding Morphology*. London: Arnold.
- Haspelmath, M., Dryer, M.S., Gil, D. & Comrie, B. (eds). 2005. *World Atlas of Language Structures. The Interactive Reference Tool*. Oxford: OUP.
- Hewitt, G. 2008. Cases, arguments, verbs in Abkhaz, Georgian and Mingrelian. In *Case and Grammatical Relations: Papers in Honor of Bernard Comrie*. G.G. Corbett & M. Noonan (eds), 75–104. Amsterdam: John Benjamins.
- Iggesen, O.A. 2005. Number of cases. In *World Atlas of Language Structures. The Interactive Reference Tool*, M. Haspelmath, M.S. Dryer, D. Gil & B. Comrie (eds), 202–205. Oxford: OUP.
- Jaxontov, S.E. 1975. Grammatische kategorii amorfного языка (Grammatical categories of an amorphous language). In *Tipologija grammaticeskix kategorij*, V.N. Yartseva (ed.), 105–119. Moscow: Nauka.
- Jelinek, E. 1984. Empty categories, case, and configurationality. *Natural Language and Linguistic Theory* 2: 39–76.
- Jelinek, E. 1985. The projection principle and the argument type parameter. Ms.
- Kari, J.M. 1989. Affix positions and zones in the Athapaskan verb complex: Ahtna and Navajo. *International Journal of American Linguistics* 55: 424–454.
- Kibrik, A.E. 1997. Beyond subject and object: Towards a comprehensive relational typology. *Linguistic Typology* 1: 279–346.
- Kibrik, A.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, A.A. 1992. Relativization in polysynthetic languages. *International Journal of American Linguistics* 58: 135–156.
- Kibrik, A.A. 1996a. Transitivity decrease in Athabaskan languages. In *Studies in Athabaskan linguistics*. E. Jelinek et al. (eds), 259–304. Albuquerque NM: UNM Press.

- Kibrik, A.A. 1996b. Transitivity in Godoberi lexicon and grammar. In *Godoberi*. A.E. Kibrik (ed.), 107–146. Muenchen: Lincom.
- Kibrik, A.A. 2001. Navajo dative: Two bi- or not two bi-. Paper presented at the 2001 SSILA meeting, July 2001, Santa Barbara.
- Kibrik, A.A. 2002. A typologically oriented portrait of the Athabaskan language family. In *Third Winter Typology School*. V.I. Podlesskaya (ed.), 38–48. Moscow: RGGU.
- Kibrik, A.A. 2005. Inflection versus derivation and the template for Athabaskan verb morphology. In *Alaska Native Language Center Working Papers 5. Proceedings of the 2005 Athabaskan Languages Conference*, S. Gessner (ed.), 67–94. Fairbanks: ANLC.
- Kibrik, A.A. 2011. *Reference in Discourse*. Oxford: OUP.
- Krauss, M. 1979. Na-Dene and Eskimo. In *The Languages of Native America: Historical and Comparative Assessment*, L. Campbell & M. Mithun (eds), 803–901. Austin TX: University of Texas Press.
- Kumaxov, M.A. 1974. O strukture predlozhenija v jazykax polisinteticheskogo tipa (On sentence structure in polysynthetic languages). In *Universalii i tipologicheskie issledovaniya*, 125–134. Moscow: Nauka.
- Markus, O. 2007. Independent personal pronouns in Athabaskan: Their forms and functions. In *Working Papers in Athabaskan Languages 6*, A. Berez, S. Gessner, L. Saxon & S. Tuttle (eds), 67–82. Fairbanks AK: Alaska Native Language Center.
- Mithun, M. 1986. When zero isn't there. *Berkeley Linguistics Society 12*: 195–211.
- Mithun, M. 1987. Is basic word order universal? In *Coherence and Grounding in Discourse*, R. Tomlin (ed.), 281–328. Amsterdam: John Benjamins.
- Mithun, M. 1999. *The Languages of Native North America*. Cambridge: CUP.
- Mithun, M. 2003. Pronouns and agreement: The informational status of pronominal affixes. *Transactions of the Philological Society* 101(2): 235–278.
- Mikhailova, T.A. 2010. Drevneirlandskij jazyk: Kratkij ocherk (Old Irish: A brief survey). Moscow: JaSL.
- Nichols, J. 1986. Head-marking and dependent-marking languages. *Language* 62: 524–541.
- Nichols, J. 1992. *Linguistic Diversity in Space and Time*. Chicago IL: University of Chicago Press.
- Nichols, J. & Bickel, B. 2005. Locus of marking in the clause. Map and article #23. In *World Atlas of Language Structures. The Interactive Reference Tool*, M. Haspelmath, M.S. Dryer, D. Gil & B. Comrie (eds). Oxford: OUP.
- Noonan, M. 1992. *A grammar of Lango 8* [Mouton Grammar Library 8]. Berlin: Mouton de Gruyter.
- Rice, K. 2000. *Morpheme Order and Semantic Scope. Word Formation in the Athapaskan Verb*. Cambridge: CUP.
- Rice, S. 1997. Giving and taking in Chipewyan: The semantics of THING-marking classificatory verbs. In *The Linguistics of Giving* [Typological Studies in Language 36], J. Newman (ed.), 97–134. Amsterdam: John Benjamins.
- Rosen, C. 1990. Rethinking Southern Tiwa: The geometry of a triple agreement language. *Language* 66: 669–713.
- Rude, N. 1997. Dative shifting and double objects in Sahaptin. In *Grammatical Relations: A Functional Perspective* [Typological Studies in Language 35], T. Givón (ed.), 323–349. Amsterdam: John Benjamins.
- Sapir, E. & Hoijer, H. 1967. *The Phonology and Morphology of the Navaho Language* [UCPL 50]. Berkeley CA: University of California Press.

- Siewierska, A. 2004. *Person*. Cambridge: CUP.
- Siewierska, A. 2005a. Alignment of verbal person marking. In *World Atlas of Language Structures. The Interactive Reference Tool*, M. Haspelmath, M.S. Dryer, D. Gil & B. Comrie (eds), 406–409. Oxford: OUP.
- Siewierska, A. 2005b. Verbal person marking. In *World Atlas of Language Structures. The Interactive Reference Tool*, M. Haspelmath, M.S. Dryer, D. Gil & B. Comrie (eds), 414–417. Oxford: OUP.
- Van Valin, R.D. Jr. 1977. Aspects of Lakhota Syntax. Ph.D. dissertation, University of California at Berkeley.
- Van Valin, R.D. Jr. 1981. Grammatical relations in ergative languages. *Studies in Language* 5: 361–394.
- Volodin, A.P. & Vaxtin, N.B. 1986. Èrgativnost' i mexanizm glagoł'nogo soglasovanija (opyt typologii) (Ergativity and the mechanism of verbal agreement: An attempt of typology). In *Paleoaziatskie jazyki*, P.Ja.Skorik (ed.), 111–133. Leningrad: Izdatel'stvo Nauka.
- Wichmann, S. 2008. Case relations in a head-marking language: verb-marked cases in Tlapanec. In A. Malchukov and A. Spencer, *The Oxford Handbook of Case*, 797–807. Oxford: Oxford University Press.
- Young, R. & Morgan, W. 1987. *The Navajo Language. A Grammar and Colloquial Dictionary*. Albuquerque: University of New Mexico Press.
- Young, R. 1995. Navajo causatives. Paper presented at the Workshop on the Morphology–Syntax Interface in Athapaskan Languages (Albuquerque, July 3, 1995).