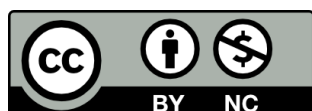

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Typology of grammatical relations: Explanations in the typology of grammatical relations and alignment systems¹

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Abstract: The languages of the world are very similar in their function to facilitate basic human needs for self-expression and communication. In order to do this, languages typically assign properties, in the form of predicates, to entities or concepts, expressed in language as arguments of these predicates. Verbal predicates can vary in valency, being able to have up to three core arguments attached to them. In order to distinguish these arguments from each other, languages can apply a wide variety of strategies, which are realized at different linguistic levels, such as morphology and syntax. Syntactically, languages can use rigid word order patterns to encode grammatical relations. They can also employ morphological marking of either the verb or the arguments, known as head marking and dependent marking, respectively. Even within these different strategies, languages have a variety of options to specifically realize them. For instance, dependent marking languages that use case markers for their arguments can employ various alignment systems. Additionally, they can use different combinations of alignment systems in different linguistic contexts. One can thus see that languages display a considerable amount of variation in a fairly basic aspect of language, namely the fundamental structure of their basic sentences. This paper will explore different explanations as to why languages show this variation, mostly focusing on grammatical relations and alignment systems. This will be done through close analysis of previous literature on alignment systems. This analysis showed that for all possible alignment types, a clear explanation could be offered.

Key words: typology, grammatical relations, alignment systems, morpho-syntax, case marking

1. Introduction

Regardless of their endless diversity, all of the world's languages are very similar in their basic function. In order to effectively describe actions and concepts in the real world, languages assign predicates, often, but not always, in the form of verbs, to certain arguments, which take the form of nouns. Where these nouns refer to the objects or concepts in the real world that speakers want to say something about, the predicate expresses the action or property that they want to assign to these nouns. The number of arguments attached to a verb can vary. Intransitive, transitive and ditransitive verbs take one, two or three arguments, respectively (Faulhaber, 2011). Additionally, many languages have so-called impersonal verbs, which do not take any arguments whatsoever. This class of verbs usually mainly in-

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cludes weather verbs or verbs relating to atmospheric conditions (Malchukov, Ogawa, & Siewierska, 2011). Among the possible arguments of a verb, a distinction is usually made between subjects and objects, with an additional distinction between direct and indirect objects in case of a ditransitive verb.

Despite their universality in argument structures, languages display considerable diversity in their overt expression of these structures. Languages employ different strategies in order to distinguish certain arguments from each other. Not only do they have the possibility to make these distinctions at different levels of language, such as morphology and syntax, in the forms of inflection and word order, respectively, languages also vary in the exact ways in which these strategies are employed, such as different morphosyntactic alignments (Williams, 1981).

One logical option for languages to mark their arguments is the use of word order. Languages with a fixed word order can reserve sentence positions for different arguments (Sinnemäki, 2010). This works especially well in languages that place one argument before the verb and the other argument after the verb, such as the many SVO languages the world has, as well as those very few languages that have attested OVS word order, despite the fact that these languages are really rare. Languages with other basic word orders can of course still employ word order to mark their arguments, as long as they are rigid in their basic order. In these languages, however, it might become problematic when one of the arguments is not overtly expressed, for instance when topic drop occurs (Liceras & Díaz, 1999).

Another effective strategy for languages to distinguish their arguments is marking. Many languages encode information such as person, number and gender about either the subject, the object or both on verb inflection, so-called head marking. Another form of marking is dependent marking, where arguments are assigned case markers that encode their grammatical function (Nichols, 1986). This latter strategy is quite effective, because these case markers are usually very easy to distinguish.

In order to further analyze these case markers and the grammatical functions they encode, it is useful to define certain semantic macro-roles, which encompass a multitude of semantic roles across languages and across different semantic verb types. Although a variety of terms have originally been proposed, a distinction is now often made between intransitive subjects, indicated by the letter S, transitive subjects, indicated by A, and transitive objects, indicated by O (Dowty, 1991). In (1-2) below, examples of an intransitive and transitive sentence from Latin can be seen. The first, intransitive sentence has only one single argument, the S argument, whereas the second one has both a subject, the A argument, and an object, the O argument.

(1) *canis* *curr-it*
 dog.NOM run-3
 "The dog runs." (Ayer, 2014)

(2) *canis* *occid-it* *catt-um*
 dog.NOM kill.PERF-3 cat-ACC
 "The dog killed the cat." (Van Everbroeck, 2003)

Using these macro-roles, one can more easily compare the case marking systems of different languages and see if languages use similar forms for certain arguments with similar functions, resulting in different types of morphosyntactic alignment. This article will attempt to explain why the languages of the world are so diverse in their alignment strategies. The expectations are that an explanation of some kind, ranging from speakers' preferences to notions like frequency and economy, can be offered for all of the different types of alignment found. In the following, an overview will first be presented of the different types of alignment, followed by possible explanations for the occurrence of certain alignment types as well as the preference for some types over others.

2. Alignment types

First of all, languages can use different morphological forms for certain grammatical roles or they can use the same form for multiple different roles, so-called syncretism (Bickel & Nichols, 2009). Secondly, languages can also use different morphological forms for the same macro-role in different situations, so-called split alignment. These splits can be moderated by a variety of linguistic factors, which will be discussed later on.

Logically, when relating syncretism to the S, A and O arguments, there are five different possibilities as to the different or identical forms they can have. First of all, all three arguments can have different forms. Additionally, either one of the three arguments can have a different form than the remaining two, while the other two arguments have the same form. Finally, all three arguments can have the same form. All of these possibilities occur in the languages of the world, although some of them are considerably more frequent than others.

The most common alignment pattern is nominative-accusative alignment. Languages with this type of alignment mark the object of a transitive sentence with a distinct case marker, the accusative case. The subject of an intransitive subject and that of a transitive sentence have the same form. This case form, which is usually but not always unmarked, is called nominative. Many Indo-European languages, including Latin, have nominative-accusative alignment. As one can see in (1-2) above, intransitive and transitive subjects appear in the nominative case in Latin, while transitive objects receive an accusative marker, which has several different allomorphs, including *-am*, *-um* and *-em*, for different declensions and genders. Similarly, in Japanese, as can be seen in (3-4) below, the case marker *-ga* indicates nominative case, while *-o* marks accusative case.

- (3) *otoko-ga* *tsui-ta*
 man-NOM arrive-PFV
 "The man arrived." (Mazuka & Itoh, 1995)

- (4) *otoko-ga* *komodo-o* *mi-ta*
 man-NOM child-ACC see-PFV
 "The man saw the child." (Mazuka & Itoh, 1995)

The second most common type of alignment is ergative-absolutive alignment. In these languages, rather than with transitive subjects, the intransitive subjects pattern together with transitive objects. The ergative case is used for

the subjects of transitive sentences, whereas intransitive subjects and transitive objects are marked with the same, usually unmarked, absolutive case. Basque is an example of such a language, as can be seen in (5-6), which show how transitive subjects are distinguished from zero-marked intransitive subjects and transitive objects through the ergative case marker *-ek*. At first sight, if one looks at these two alignment types neutrally, neither of these types seems to be unambiguously more logical than the other. Still, nominative-accusative languages are much more frequent than ergative-absolutive languages, the former being around three times more frequent than the latter (Nichols, 1993).

(5) *gizon-a* *etorri* *da*
 man-NOM arrive-PFV be.3
 "The man has arrived." (King, 1994)

(6) *gizon-a-k* *mutil-a* *ikusi* *du*
 man-SG-ERG boy-SG see have.3
 "The man saw the boy." (King, 1994)

Languages that mark all three macro-roles with a different case are called tripartite languages or ergative-accusative languages. Aside from using an ergative case for transitive subjects and an accusative case for transitive objects, tripartite languages also have a distinct case for intransitive subjects. This case is usually called the intransitive case and always has zero marking. Tripartite languages are fairly uncommon. An example of such a language is Nez Perce. In (7-8), examples showing the intransitive, ergative and accusative cases used in this language are shown.

(7) *hi-páayn-a* *háama*
 3.INTR-arrive-ASP man
 "The man arrived." (Rude, 1986)

(8) *háama-nm* *pée-'wi-ye* *wewúkiye-ne*
 man-ERG 3.TR-shoot-ASP elk-ACC
 "The man shot the elk." (Rude, 1986)

Languages with purely direct alignment, where different arguments are in no way explicitly distinguished from each other and listeners have to rely on context and world knowledge in order to effectively interpret sentences, are really rare. The single case in which the core arguments appear in these languages is called the direct case, which is always unmarked. An example of a language that does not distinguish between subjects and objects anymore is Scottish Gaelic, as can be seen in (9-10). There are, of course, many languages, including English and Dutch, for instance, that have either partly or entirely abolished their case systems and do not overtly mark their arguments morphologically, but most of these languages employ other strategies in order to distinguish their arguments, such as the rig-

id SVO word order of English or the use of different markers for subjects and objects on the verb, such as those in Yimas (Van Everbroeck, 2003).

- (9) *ruith* *mi*
 run.PST 1
 "I ran." (Robinson, 2008)

- (10) *chunnaic* *mi* *an* *cat*
 see.PST 1 the cat
 "I saw the cat." (Robinson, 2008)

The final possible alignment type would then be alignment where both arguments of transitive sentences are marked in the same way, whereas the arguments of intransitive sentences are marked differently, so-called transitive alignment. This type of alignment is extremely rare, but it does occur. One of the few languages to have this type of alignment is Rushani, albeit only in the past tense, resulting in a split alignment system. In the present tense, the language displays a typical nominative-accusative system, but the case form that is used to mark transitive objects in the present tense is also used for transitive subjects in the past tense, as can be seen in (11-12), making it a transitive case in this tense.

- (11) *az-um* *pa* *Xaray* *sut*
 1-SG to Xorog go.PST
 "I went to Xorog." (Payne, 2002)

- (12) *mu* *tā* *wunt*
 1.TR 2.TR see.PST
 "I saw you." (Payne, 2002)

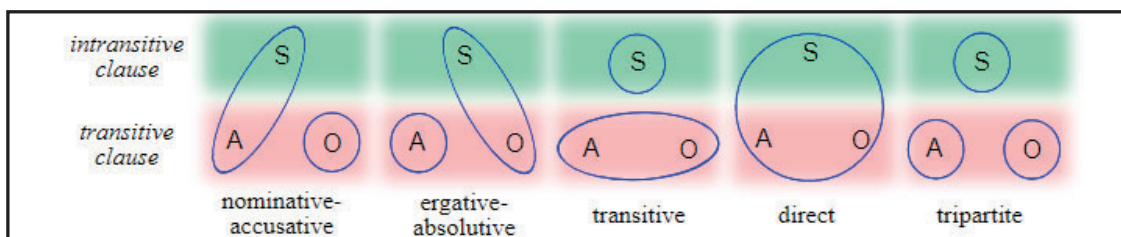


Figure 1. The five possible alignment types

Aside from the five alignment systems mentioned above, which are shown in Figure 1 above, there are also many languages that display a combination of alignments across different situations, so-called split alignment. This split can be conditioned by a multitude of variables. Some languages, for instance, distinguish between multiple intransitive verb types based on different semantic roles for their respective arguments and mark these arguments distinctly. This split is strongly related to volition and the degree to which the subject of the verb is a true agent. In languages with this type of split, verbs that have very volitional and agentive subjects, so-called ac-

tive or unergative verbs, mark their arguments similarly to transitive subjects, whereas verbs that have less agentive subjects, so-called stative or unaccusative verbs, mark these subjects like transitive objects (Duranti, 2004).

Another type of split alignment is a split based on tense or aspect. Some languages, such as Georgian, show a split based on tense. In the present tense, Georgian has nominative-accusative alignment, whereas in the past tense, it has ergative-absolutive alignment (Comrie, 1978). A split like this can also be conditioned by aspect, like in many Indo-Iranian languages, where a nominative-accusative system is found in the imperfective aspect, while an ergative-absolutive system is attested in the perfective aspect (Bubenik, 1989). As can be seen in (11-12), Rushani also has a split alignment system like this, namely a split based around tense similar to the one in Georgian.

Animacy is also often an important factor in the alignment of languages. Generally, in languages with this type of split, less animate subjects are more likely to be receive an ergative marker, while more animate subjects are usually unmarked. Conversely, some languages tend to mark only highly animate objects with an accusative marker. The patterns shown across languages with animacy splits led to the formulation of the animacy hierarchy (Song, 2014). This hierarchy ranks referents according to their degree of animacy, where referents with a lower animacy are placed further down in the hierarchy. At the top of this hierarchy are personal pronouns, with first and second person pronouns being more animate than third person pronouns, followed by proper nouns and then common nouns referring to humans, other animate referents and inanimate referents, in that order. In fact, the place a referent receives in the hierarchy is not just based on animacy, but on an interaction between certain factors, such as animacy, person and referentiality (Croft, 2003). Factors that are also occasionally claimed to be involved in the formation of the hierarchy are number and definiteness.

3. Explanations

As was discussed above, languages are not only able to mark grammatical relations at different linguistic levels, but they also display considerable diversity in the specific strategies they employ at these different levels. An example of this can be seen in case marking, where languages can use the same cases for different arguments and even different cases for the same arguments in different situations. This results in a variety of different combinations of these cases, some of which are a lot more common than others. This raises the question why these specific patterns are more common than the rest. The following will provide explanations for as many of the observed patterns and their frequencies as possible.

A notion that is essential to incorporate when trying to explain these findings is the notion of economy, which means that speakers should not specify unnecessary information in their utterances (Van Gelderen, 2004). This effectively explains why in most languages, intransitive subjects are usually unmarked, as this single argument does not need to be overtly distinguished from any other core arguments. It also explains the fact that nominative-accusative and ergative-absolutive languages are by far the most common types of alignment and tripartite or transitive systems are really rare, as it is only

necessary to distinguish transitive subjects from transitive objects, but it is not necessary to distinguish either of these from intransitive subjects. This means that only one of the two arguments of transitive clauses needs to be explicitly marked in order to distinguish it from the other argument, while the other argument can simply remain unmarked, just like intransitive subjects.

This does not yet explain, however, the preference of either nominative-accusative or ergative-absolutive alignments. As was stated before, nominative-accusative systems are much more frequent than ergative-absolutive systems. This appears to make sense, as nominative-accusative systems use the same case form for two different arguments that pattern similarly syntactically, both functioning as the subjects or topics of sentences and usually, in the case of active verbs at least, also as agents of the verb. This makes one wonder, however, why ergative-absolutive systems exist altogether. The occurrence of ergative-absolutive alignment has been linked to discourse and information structure and the fact that intransitive subjects and transitive objects appear to behave similarly in that they very frequently introduce new referents in the discourse through full noun phrases, whereas transitive subjects appear in the form of full noun phrases considerably less frequently (Du Bois, 1987). Although this theory has been criticized based on the finding that lexical intransitive subjects do not pattern in frequency with either lexical transitive subjects or objects, this dispreference for lexical transitive subjects appears to have been confirmed across languages (Everett, 2009).

Although the explanation of split alignment systems based on semantic roles seems quite straightforward, as it makes sense for the subjects of active verbs to pattern in their semantic role characteristics with transitive subjects and for the subjects of stative verbs to pattern with transitive objects, explanations for the other two split alignment types mentioned above, although less straightforward, can also be proposed. For instance, for split alignments based on tense or aspect, one can clearly see a cross-linguistic pattern. Languages that have such a split always have a nominative-accusative system in the present tense or imperfective aspect and an ergative-absolutive system in the past tense or perfective aspect (Tsunoda, 1981). This pattern can be explained by assuming that the central participant of an action or the participant whose viewpoint is taken has a tendency to be unmarked in languages. In the imperfective aspect, one could arguably say that the subject is the most central participant, whereas the object is more central in the perfective aspect, because the object is more affected by the action of the verb in the latter case than in the former (Malchukov & de Hoop, 2011).

When looking at (11-12) again, Rushani also seems to follow this pattern of marking the subject only in the past tense, which might suggest that this language originally had a fully-fledged split alignment system with ergative-absolutive alignment in the past tense, which has started to decay through the increased marking of objects in the past tense. If one now looks at the fact that young speakers of Rushani are starting to occasionally leave subjects in the present tense unmarked in spoken language, one finds evidence that the odd transitive alignment Rushani is displaying might in fact be an unstable transition stage from split alignment to common nominative-accusative alignment, which is in line with the rarity and apparent illogicalness of this type of alignment (Payne, 2002).

Finally, split alignments revolving around animacy can be explained in terms of frequency and economy. Since highly animate referents are much more likely to be agents and subjects and less animate referents are more likely to be patients and objects, it would make sense economically to leave these arguments unmarked when they appear in a semantic role both speakers and listeners would expect them to be in, whereas arguments that appear in unexpected semantic roles could be marked overtly in order to make this semantic role explicit (Aissen, 2003). This can be clearly seen in languages with this type of split alignment, such as Yankunytjatjara, which only marks objects that appear in the form of proper names and pronouns, which are at the top of the animacy hierarchy, with an accusative case, while using the ergative case for all types of subjects except for first and second person pronouns, which are also highly animate (Goddard, 1985).

4. Discussion

The languages of the world show considerable variation in the strategies they use in order to mark grammatical relations. Within the different case marking systems of the world, all logically possible alignment types occur, as well as variations of different systems that are conditioned by all sorts of linguistic factors. This makes one wonder why there is so much variation in this otherwise very basic feature of language and raises the question why languages would favor certain alignment types over others. Seeking explanations in terms of economy, frequency and other preferences, the occurrence of these different alignment types as well as languages' motivations to choose one over another are analyzed.

As can be seen, most of these cross-linguistic patterns of alignment can be explained quite nicely, even though these explanations might not be so straightforward or obvious at first sight. The two most common alignment types, nominative-accusative and ergative-absolutive alignment, are the most economical, because they only distinguish the arguments of transitive verbs, which are the only arguments that necessarily require this distinction, as opposed to the arguments of intransitive verbs, which do not need to be distinguished from any other arguments in the sentence. Furthermore, most split alignment types can be explained by varying degrees of nuances or shifts by arguments between semantic roles. Examples of this are the shift of viewpoint from agent to patient in alignment systems split by tense or aspect and the different semantic roles of active and stative verbs in alignment systems split by verb type. Finally, economy also seems to play an important role in various cases, such as the general preference of languages for nominative-accusative and ergative-absolutive alignment and the use of zero marking for arguments that appear in expected semantic roles, such as animate nouns appearing as subjects and inanimate nouns appearing as objects.

These findings show that explanations can be provided for the different alignment systems of languages across the world. These explain both the preferences for certain individual alignment types over others, such as the preference for nominative-accusative or ergative-absolutive alignment over other alignment types, and the occurrence of split alignment systems, such as splits conditioned by animacy or verb tense. In order to clarify the occur-

rence of these different alignment types, these explanations call on several distinct notions, namely economy, frequency and cognitive preferences.

Of course, the different notions used here to explain the variation in alignment systems display interaction and it can be difficult to correctly attribute portions of an observation to an individual notion. Especially, either cognitive preferences or frequency can partly form the basis for economy effects, in the sense that the marking of a certain argument might be a more economical choice for speakers if they have certain cognitive preferences relating to this argument in certain contexts or if these arguments are very frequently attested in certain contexts. The notion of cognitive preferences is also somewhat vague and hard to define and one could alternatively define them to encompass both economy and frequency effects, but they can be clearly seen at play as a distinct factor, for instance in alignment systems split by tense or aspect.

As grammatical relations and alignment form an intriguing aspect of the core structure of languages, they have always been an intensively studied topic within linguistics, in the form of both descriptions of the alignment systems of individual languages (Rude, 1986; Robinson, 2008) and typological comparisons of wide arrays of languages (Nichols, 1993; Bickel & Nichols, 2009). Several papers have also sought to offer explanations for the patterning of alignment systems (Bubenik, 1989; Everett, 2009; Malchukov & de Hoop, 2011). This paper hopes to combine the knowledge of these different types of studies on alignment by offering both typological descriptions of alignment systems found in languages across the world and numerous explanations for the occurrence of these different systems. This way, the current paper aspires to contribute to the field of linguistic typology, not only by offering a clear overview of the various types of studies performed so far on this topic, but also by giving a definitive answer to the complex question why different alignment systems are the way they are.

5. Conclusion

Grammatical relations constitute a core feature of the languages of the world and a richly studied topic within linguistic typology. One of the possible strategies languages can turn to in order to codify grammatical relations, case marking, leaves languages with several logical options for morphosyntactic alignment, all of which occur in the languages of the world. The different alignment types and combinations of alignment systems create intricate patterns across languages and one might wonder what motivations languages could have for preferring certain alignment types over others. This paper hoped to contribute to the field of linguistic typology by offering a clear overview of the different types of alignment and possible explanations for their occurrence or prevalence in languages across the world. Through careful consideration of previous studies on a variety of languages, analyses and explanations for every alignment type were offered.

These analyses attempted to provide clear answers to very relevant questions concerning grammatical relations, an important and interesting topic within linguistic typology. Most importantly, it was found that, resorting to the notions of economy, frequency and cognitive preference, explanations could be offered for the different alignment systems or combinations

of systems found across the languages of the world, effectively answering some intriguing questions regarding the basic structure of human language.

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Glossing abbreviations:

- 1 = first person
 2 = second person
 3 = third person
 ACC = accusative case
 ASP = aspect
 ERG = ergative case
 INTR = intransitive
 NOM = nominative case
 PERF = perfect tense
 PFV = perfective aspect
 PST = past tense
 SG = singular
 TR = transitive