

# The Diachrony of Morphosyntactic Alignment

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Fernando Zúñiga  
University of Bern  
fernando.zuniga@isw.unibe.ch

## Abstract

With morphological and syntactic argument properties, some arguments behave alike (i.e., they align with each other) while others do not. Such alignment patterns have received significant attention in the literature, but claims as to their origin and development are sometimes difficult to assess, due to scant actual data. This paper surveys the main hypotheses proposed in early and recent work on the topic, focusing on alignment type change and on major alignment types (ergativity, accusativity, split intransitivity) of morphological properties, with some remarks on syntactic properties. The survey shows that alignment type change may often occur when clauses denoting low transitivity are reanalyzed as clauses of either higher or lower syntactic valency, sometimes even introducing a partition in the verbal lexicon (occasionally being conditioned by semantic, pragmatic, or structural factors), or are extended from low-transitivity predicates to most bivalent predicates. Lastly, alignment type change can be either functionally motivated or not.

## Key words

Alignment, diachrony, ergativity, accusativity, split intransitivity, differential object marking, inverse

## 1. Introduction

The term alignment denotes the distribution of coding and behavioral properties of selected arguments in the clauses of particular languages. Coding properties consist of nominal case and verbal agreement morphology or, more generally, flagging of referential constituents and indexation on predicates (as well as constituent order). Behavioral properties include control of reflexivization and coreferential omission in coordination and subordination, but also the ability of the addressee of imperatives to be elided, as well as the ability of different arguments to launch floating quantifiers and to be focused, topicalized, and questioned.

Studies of alignment change have addressed how, and why, a particular alignment may have arisen or changed types as the consequence of either reanalysis, extension, or borrowing (e.g., Plank 1995, Harris & Campbell 1995, Creissels 2008b, Haig 2008, Coghill 2016). Until the late 20th century, scholarship typically focused on holistic characterizations of alignment types defined as reflecting underlying principles of the lexicon and grammar on the one hand (e.g., Klimov 1985, 1986) and on the empirical and theoretical limits of change on the other (e.g., Harris & Campbell 1995: Ch. 9). As the mainstream moved away from holistic typology (see, e.g., Nichols 1986, 1992), research focused more systematically on the status and distribution of different alignment types in various subdomains of grammar, and on the building blocks underlying specific alignment types and their development (e.g., Haig 2017).

Unfortunately, rather than showing that a specific change occurred or must have occurred, numerous studies argue that it might have occurred, often without discussing strengths and weaknesses of their proposal, either in the light of empirical evidence or vis-à-vis alternative

explanations. Since these three kinds of argumentative bases—attestation, reconstruction, speculation—are unevenly distributed in the literature, the assessment of the claims made is seldom straightforward. Nevertheless, a sustained interest in both the synchrony and the diachrony of morphosyntactic alignment makes it possible and desirable to attempt a review of the state of the art (incomplete though it may be), which is the purpose of this article. Section 2 introduces the essential terms and concepts used, Section 3 surveys views on the origins of some prominent alignment types, and Section 4 concludes the study.

## 2. Terminological and Analytical Prerequisites

Typologies of alignment are essentially based on Sapir (1917). The three most influential versions have been Comrie’s (1989, 2005), Dixon’s (1994, 2010), and Bickel’s (2011). See Haspelmath (2011) for a comparison between them; I follow the Bickelian approach here.

The mainstream view works with three basic predicate classes according to semantic and syntactic valency. In addition, I work with the following generalized semantic roles for the arguments of such predicates: S for the single argument of monovalent predicates; A and P for the agent-like and patient-like arguments of bivalent predicates, respectively; and A, T, and G for the agent-like, theme-like, and goal-like arguments of trivalent predicates, respectively.<sup>1</sup> I use the terms *one- and two-argument clauses* to describe syntactic make-up and the terms *intransitive and transitive* to describe complex form-meaning correspondences (Hopper & Thompson 1980). The present account classifies alignment types as either basic (viz., those based on valency and semantic role only) or conditioned (viz., those subject to factors that control the distribution of coexisting basic types).

### 2.1 BASIC ALIGNMENT

By exploring how the morphosyntax of the S align with those of the A and the P on the one hand (“Subject-alignment,” “monotransitive alignment”) and how the morphosyntax of the P aligns with that of the T and the G on the other (“Object-alignment,” “ditransitive alignment”), five basic alignment types (and seven labels) can be distinguished. First, total neutralization of semantic-syntactic differences (i.e., neutral alignment) is opposed to total differentiation (i.e., tripartite alignment). Second, there are two kinds of partial neutralization, depending on whether neutralization occurs within predicate classes (i.e., horizontal alignment, occasionally called “double oblique”) or across them.<sup>2</sup> The latter kind is further subdivided into the subtypes called ergative(-absolute) and (nominative-)accusative on the one hand and indirective and secundative on the other (see Haspelmath 2005 for an early systematic typological treatment of the latter). These basic alignment types are represented in Figures 1 and 2:

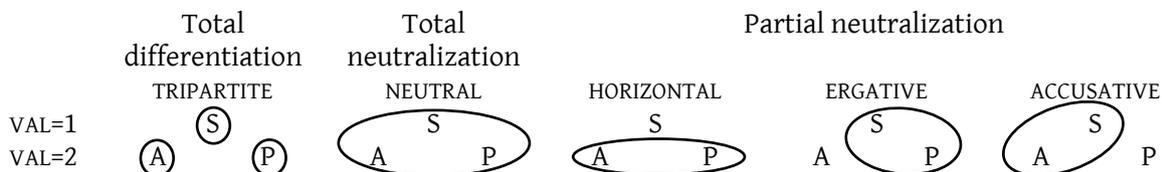
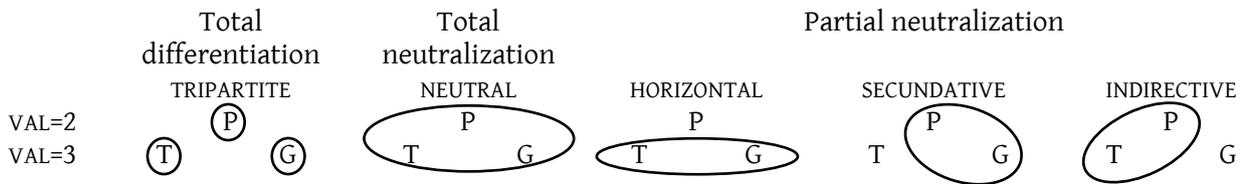


Figure 1. Monotransitive Alignment Types

<sup>1</sup> The morphosyntactic treatment of the agent-like argument of bivalent and trivalent predicates shows variation only extremely rarely (Bickel 2011), so I follow common practice here in glossing over this potential distinction.

<sup>2</sup> I use the term neutralization loosely here, without implying any theoretical import or diachronic process. See Bickel & Nichols (2009: 317) for the difference between alignment and syncretism in this context.



The following examples from Inuktitut (Eskimoan; Compton 2017: 835-836) illustrate some of these types regarding NP flagging:

- (1) a. *Arna-q pisuk-tuq.*  
 woman-ABS.SG walk-3SG.IND  
 ‘The woman is walking.’
- b. *Arna-up niri-janga aapu.*  
 woman-ERG.SG eat-3SG→3SG.IND apple[ABS.SG]  
 ‘The woman is eating the/an apple.’
- c. *Jaani-up aapu tuni-janga Miali-mut.*  
 J.-ERG.SG apple[ABS.SG] give-3SG→3SG.IND M.-ALL.SG  
 ‘John gave the apple to Mary.’

Cases follow an ergative-cum-indirective pattern: the S, P, and T arguments (*arnaq* ‘woman’ in (a) and *appu* ‘apple’ in (b-c)) are in the absolutive; the A (*arnaup* ‘woman’ in (b) and *Jaaniup* ‘John’ in (c)) is in the ergative; and the G (*Mialimut* ‘to Mary’ in (c)) is in the allative.

Not all basic types are equally frequent cross-linguistically: with individual coding properties, for instance, horizontal alignment appears to be rare, while neutral alignment is widespread, particularly with zero marking (Comrie 2013a, 2013b; Siewierska 2013). Ergative and accusative patterns have received significant attention in the literature, due to both their high frequency in Indo-European and their significance in theories of syntax.

## 2.2 CONDITIONED ALIGNMENT

It is common for different properties (e.g., flagging and indexation) not to align alike, and the same properties sometimes show different patterns in distinct subdomains of grammar (“splits”). Some of such splits are lexical and predicate-based: there can be more than one predicate class of the same valency (whose alignment specifics are uniform within each class). With other splits, the same predicates can show different alignment specifics depending on several, mostly grammatical, factors that do not partition the verbal lexicon.

Lexical predicate-based splits can be related either to semantic-role features (i.e., agentivity and patientivity of the A and P, respectively) or to lexical-aspect features (e.g., telicity and dynamicity). Considerable attention has been given to the existence of two monovalent predicate classes (“split-S”) in some languages—that is, the morphosyntax distinguishes between two versions of the single argument for different predicates. (In the instances that have received most attention in typological studies, they align with the A and P, i.e., monovalent verbs distinguish  $S_A$  from  $S_P$ . They may alternatively align with the A and the G, a pattern which has received much attention in descriptive and theoretical studies on “dative subjects.”) Many present-day studies capture the opposition between these two predicate classes with the terms “unergative” and “unaccusative,” which originated in the Chomskyan tradition. Functional-typological studies further distinguish “agentive-patientive” and “active-stative” subtypes, depending on whether the partition is governed by semantic-role features or lexical-aspect features. The resulting morphosyntactic patterns look accusative or ergative, depending on which monovalent class is taken into account; when both classes are considered, a conditioned, composite, alignment type arises.

Alignment typologies differ as to whether they treat such split-S patterns as a basic type in its own right (Sapir 1917), as a special case of the ergative type (Dixon 1994), or as something else (Mithun & Chafe 1999, Bickel & Nichols 2009). One of the reasons for this is the considerable cross-linguistic variation of the relative size of the two predicate classes, even within language families; a small class can be treated as marginal and then largely ignored (Merlan 1985, Creissels 2008a).

As to the other two kinds of lexical predicate-based splits, some languages distinguish two bivalent predicate classes (i.e., a “split-P” pattern), and/or two trivalent predicate classes (e.g., with the T and G arguments switching places regarding case marking or verb agreement). Such phenomena have received much less attention in the comparative and typological literature.

Splits that are not related to predicate classes consist in the complementary distribution of different alignment types in a given language, governed by (mostly grammatical) conditioning factors. Some of these factors are argument features; they may be related to semantic roles (e.g., volitionality or control of the A, and individuation or affectedness of the P); others include features like definiteness, person, and animacy of the various arguments. Yet other factors are clause features, either formal (e.g., subordination) or functional, which include grammatical aspect (e.g., perfectivity) and information-structure categories (e.g., topicality and focality).

Many studies focus on how these factors may condition the morphosyntactic treatment of the S with monovalent predicates (“fluid-S”).<sup>3</sup> Such lexically and grammatically conditioned split intransitivity patterns have been well studied—especially regarding argument features in several North American language families (Mithun 1991, 2008) and regarding features related to lexical and grammatical aspect in Mayan (Bohnenmeyer 2004). When the different factors condition argument realization with other valency predicate classes, further labels are usually employed in the literature. For instance, animacy/specificity-contingent P realization (e.g., in Indo-Iranian and Romance) is labelled “differential object marking” (DOM), whereas perfectivity-contingent A realization (e.g., in Indo-Iranian; see Coon 2013a, 2013b) often leads to one of the conditioned patterns subsumed under “split ergativity.” The literature on these two phenomena is vast; see Iemmolo (2011) and Seržant and Witzlack-Makarevich (2018), as well as McGregor (2009), respectively, for details and references.

Finally, there are languages where access to indexing slots and/or markers of related categories (e.g., voice or direction) are sensitive to features of several arguments involved with all bivalent or trivalent predicates (i.e., these are potential cases of a grammatical split). In particular, a nominal person/animacy-based hierarchy of the type [1/2 > 3 animate > 3 inanimate]—rather than semantic role—appears to govern some specifics of argument realization in some languages of the Americas and the Himalayas (viz., in “inverse languages,” see Klaiman 1992).<sup>4</sup> Some scholars see such patterns as parallel to the basic alignment types and use the term “hierarchical alignment” for them (e.g., Mallinson & Blake 1981: 65-66; Nichols 1992: 65; Siewierska 1998: 10). I call such patterns instances of *hierarchically conditioned alignment* here instead.<sup>5</sup>

### 2.3 ALIGNMENT TYPE LOOKALIKES

Two related phenomena have sometimes been treated on a par with either basic or conditioned alignment types. I exclude them from this discussion of the diachrony of alignment.

First, as mentioned at the beginning of §2.2, different coding/behavioral properties often align differently in individual languages (see, e.g., Kazenin 1994, Manning 1996, Polinsky 2016). In Warlpiri, for instance, case marking of personal pronouns works ergatively while the form of auxiliary indices works accusatively. Aldridge (2007) sees this as an instance of split ergativity,

<sup>3</sup> Note that Donohue’s (2008) term “semantic alignment” covers only coding properties of lexically split monovalent verb classes and is therefore a doubly particular case of split intransitivity.

<sup>4</sup> See Silverstein (1976) for the seminal article on such nominal hierarchies and Cristofaro & Zúñiga (in press) for some discussion of their theoretical status.

<sup>5</sup> See Zúñiga (2007a) for some discussion. Among several reasons for not treating these patterns as basic, such hierarchical conditioning co-occurs with either basic or other conditioned alignment types (often, but not exclusively, with the neutral indexation type).

because she treats pronouns and indices as different kinds of NPs, but I use “split” only for phenomena where the *same* coding or behavioral property shows a split, rather than *different* properties.

Second, different patterns of clause organization and argument realization are found, with considerable variation, in western Austronesian languages (often labelled the “Philippine type”; see Wouk & Ross 2002 for an overview). This often leads to two subtypes of two-argument clauses (in principle, with all bivalent predicates), whose distribution seems to be primarily driven by information-structure considerations (also, but not exclusively, related to specificity). To the extent that some of these languages show case markers and indices, basic alignment types may be identified and systematized. Nevertheless, I do not treat voice marking and voice deployment that work differently from their counterparts in other languages as instances of morphosyntactic alignment here.

### 3. *The Origins and Development of Alignment Patterns*

This section outlines what we know about the paths called accusative-to-ergative (§3.1) and ergative-to-accusative (§3.2), including some comments on further developments and special cases. It also outlines what we know about the emergence of split intransitivity (§3.3) and some other conditioned alignment types (§3.4). The focus of the section is on coding properties, but Subsection 3.5 touches upon behavioral properties.

#### 3.1 ERGATIVITY

Many studies address two inter-related diachronic facets of ergativity, namely the origins of ergative markers and the origins of the two-argument clauses where the P, and not the A, aligns with the S.<sup>6</sup>

As to the ergative markers, three kinds of sources cover most known instances (McGregor 2017).<sup>7</sup> First, many markers can be shown or argued to originate in other case markers, either via metaphorical extension or via construction reanalysis. With the former development, markers of origin/source of motion (i.e., genitives, ablatives, locatives) come to also mark sources of action (i.e., agents), and markers of secondary actors (i.e., instrumentals) come to also mark primary actors (i.e., agents). Ergative markers are indeed either identical (e.g., in Dyirbal and Nepali), formally similar (e.g., in Basque and Trumai), or behaviorally connected (e.g., in Kija and Jaminjung) to such related markers in many languages (Palancar 2002: 224-228, McGregor 2009: 499). With construction reanalysis, some instrumentals and possessive markers (i.e., genitives and datives) come to also mark agents (see 3.1.2 and Narrog 2014). Second, some ergative markers can be traced back to indexical elements like personal pronouns (either clearly, as in Kartvelian and some

<sup>6</sup> Haig’s (2017) case studies of Kurdish, Balochi and Taleshi (Western Iranian) aptly note that ergativity arises when both conditions are met (S=P and S≠A) and shows that each of the latter can evolve independently from the other (especially if DOM emerges, thereby changing—all other things being equal—the flagging alignment type to tripartite). See in this context also the recent critique (Everett 2009, Haig & Schnell 2016) of the Preferred Argument Structure hypothesis (Du Bois 1987, 2003), according to which morphosyntactic ergativity is ultimately based in universal information-management regularities. Roughly, the somewhat special status of the A seems to be best explained by tendencies related to topicality and animacy, and there is little evidence regarding an S-P unity in discourse. As far as marking is concerned, zero ergative flags are still unattested, and non-zero absolutes are quite rare and have drawn some attention (see, e.g., Round 2006).

<sup>7</sup> Studies occasionally suggest lexical sources for some markers, but these are poorly attested. Examples include *mayi* ‘vegetable food’ in Nungali (Mirndi) and a relational noun meaning ‘side’ in the Ao group of Tibeto-Burman (Coupe 2011: 32-34), but these may well have turned into an indexical (the former) or an oblique case marker (the latter) before further evolving into ergative markers (McGregor 2017). Hopper & Traugott (1993: 163) also mention a verb meaning ‘get, obtain’ as etymon of Malay *oleh*, but this element marks passive, rather than active, A’s. Similarly, ergatives originating in focus markers are merely possible at this stage (see McGregor 2008: 313 for Bunuban and McGregor 2012: 239 for Cariban).

Australian languages, probably, as in Polynesian, or possibly, as in other Australian languages; McGregor 2017). Others perhaps originate in articles or demonstratives (e.g., in Northwest Caucasian; McGregor 2008).<sup>8</sup> Lastly, some markers originate in directional elements. The etymon of the Sahaptin and Nez Perce ergative suffixes, for instance, is reconstructed as Proto-Sahaptian *\*im* ‘hither’ (Rude 1991, 1997).

Whether ergative case markers are actually borrowed is still a matter of debate; see McGregor (2017: 461-463) for details and references. The infrequent and areally restricted markers in African languages are likely to be contact-influenced (see §3.2), and morphological ergativity possibly arose in non-Pama-Nyungan via contact with Pama-Nyungan. Other instances, like some Indo-Aryan ergatives being borrowed from Tibeto-Burman, are less certain—but the loss of ergativity in Indo-Aryan might well have been influenced by contact with Dravidian. Some Indo-Aryan ergatives are regarded as borrowed within the family nowadays (§3.1.2). There appear to be no ergative markers in pidgins or creoles.

As to the two-argument clauses where the P aligns with the S, the literature proposes two kinds of sources, namely a special kind of transitive two-argument clause with a covert A (§3.1.1) and several low-transitivity constructions, including nominalizations (§3.1.2).<sup>9</sup>

### 3.1.1 *Transitive two-argument clauses*

The most widely received of the first kind of proposal is Garrett’s (1990). This author sees a potentially widespread source in two-argument clauses without an overt subject NP and with both a neuter (inanimate) object in the accusative-nominative and an adjunct in the instrumental (e.g., ‘[X] opened the door with the key’). Such clauses could be reanalyzed in such a way that the ACC-NOM and the INS cases would become the absolutive and the ergative, respectively (e.g., [opened door-ABS key-ERG]).<sup>10</sup> In Anatolian (Indo-European), the new clause type would have remained close to its origins and thus led to a person/animacy-based split-ergative pattern. In Gorokan (Trans-New-Guinea), the new clause type would have been extended to cover other kinds of A’s and then superseded the original two-argument clause.

There is no systematic survey ascertaining just how widespread such a development might be. It appears to have occurred in Hanis Coos (Penutian), where case markers patterned ergatively with nouns, the ergative  $\chi=$  was still in use as ablative/instrumental, and the active verb simply seems to have remained unaltered in the process (Mithun in press).

### 3.1.2 *Low-transitivity constructions*

Clauses expressing reduced transitivity figure prominently in the early literature on the origins of ergativity (e.g., Anderson 1977, Chung 1978, Comrie 1978, Dixon 1979). In Trask’s (1979) influential proposal, split-ergative patterns show systematic variation regarding both their synchronic characteristics and their origins. On the one hand, person/animacy-based flagging splits develop their ergative part by first making a passive construction (employed to pragmatically downgrade the A’s agentivity) obligatory and then reanalyzing it as a two-argument clause. On the other hand, aspect-based flagging splits develop by using stative participles as predicative heads in main clauses (with A’s taking some oblique case and/or the genitive) and later reanalyzing such clauses as two-argument. Trask’s brief article mentions many languages and genera to which his hypotheses would apply but does not present or discuss actual evidence of such changes. He also notes that both source constructions are similar, and that the distinction between them may be sometimes less than clear-cut (p. 396).

<sup>8</sup> See König (2012: 36, 2017) for a related development from definiteness marker to ergative marker and nominative marker in Angwa and Pãri (West Nilotic).

<sup>9</sup> A further kind of source, namely inverse constructions (of disparate syntactic types) originating in erstwhile passives, has been occasionally proposed (e.g., by Givón 1994), but there is still relatively little evidence supporting such a development. Gildea (1998: 128-232) makes a reconstruction-based case for it with one of the Cariban ergative patterns, and Dahl (2016) proposes an analogous interpretation for the attested evolution from Middle to Late Vedic.

<sup>10</sup> Some specifics of Garrett’s (1990) proposal (e.g., the exact nature of the purported instrumental/ablative marker) are not uncontroversial; see Goedegebuure (2013) and references therein.

Note in this context that an ever-growing literature discusses the origins of ergativity in the Indo-Iranian branch of Indo-European. For the Indo-Aryan group, the mainstream account is that constructions with doubly conditioned tripartitely aligned case (ergative =*ne* occurs only in perfective clauses, and accusative =*ko* occurs, roughly, with specific animate P's), like (2a) from Hindi, originated in those like (2b) from Sanskrit:

- (2) a. *Laṛk-e=ne bacch-e=ko mār-a hai.*  
 boy-OBL=ERG child-OBL=ACC hit-PERF.M.SG is  
 'The boy has hit the child.'  
 (Hindi; Verbeke & De Cuypere 2009: 371)
- b. *Devadatt-ena kaṭa-ḥ kṛ-taḥ.*  
 D.-INS mat-NOM make-PTCP.NOM  
 'The mat is / has been made by Devadatta.'  
 (Sanskrit; Verbeke & De Cuypere 2009: 378)

Both the origin of the Hindi verb form in *-a* in (2a) and its outcome are uncontroversial: a *tā*-participle in Sanskrit (reconstructed as a \**to*-form in PIE), like *kṛtaḥ* 'made' in (2b), was reanalyzed as an active past/perfective verb form in Hindi, like *mār-a* 'hit' in (2a). There is disagreement, however, regarding (i) the comparatively recent origin of the ergative enclitics in several NIA languages, and (ii) the structure and functions of the *tā*-construction in the earliest attestations, as well as the construction's subsequent development.

Three sources have been propounded for ergative =*ne*. First, some scholars see the old instrumental marker as likely etymon (e.g., Lehmann 2002, Heine & Kuteva 2002). This view is ill-founded: a purported development from *-ena/-īna* to =*ne* contradicts the known sound changes from OIA to NIA, and the instrumental apparently disappeared some thousand years before the ergative arose (Verbeke & De Cuypere 2009: 370-373; Butt & Deo 2017: 534). Second, other scholars propose a lexical source—most plausibly, Sanskrit *karne* 'ear' (e.g., Tessitori 1913, Butt 2001). This view is still met with reserves, because of the scarce actual data unequivocally supporting it, and because an expected intermediate (concrete) stage before the element develops into an (abstract) grammatical case marker is not attested (Verbeke & De Cuypere 2009: 375). The preferred account nowadays is that =*ne* was borrowed into early NIA languages in analogy to other clitics to reinforce existing case markers. Thus, the etymon of Hindi =*ne* is dative/accusative =*ne/=nai* in neighboring Old Rajasthani (see Hoernle 1880: 224-225 and Verbeke & De Cuypere 2009: 375-376; cf. Butt & Ahmed 2011).

The *tā*-construction in OIA, illustrated in (2a) above, has been given three different interpretations and, accordingly, different subsequent developments thereof have been proposed.<sup>11</sup> In one view, both the Sanskrit and the Hindi clauses are two-argument constructions where the P aligns with the S, and the intervening changes are therefore superficial. This view is found in a strong version (Klaiman 1978; Wallace 1982), a weak version (Hook 1991), and subtle versions (Hock 1986; Butt 2001; Butt & Deo 2017); see Dahl & Stroński (2016: 24-31) for details and references. The second view holds that the *tā*-construction is a possessive expression. This could be a resultative (e.g., (2b) would actually be 'with Devadatta there is a made mat'; see Jamison 1990 for Early Vedic and Peterson 1998 for Pali), or an evidential that spread from anticausative to bivalent verbs via raising and reanalyzing a possessor to subject/agent (Bynon 2005). The third view sees the *tā*-construction as passive(-like) (see, e.g., Anderson 1977 and Bubenik 1989b). For instance, Harris and Campbell (1995: 243-245) suggest that deverbal adjectives, originally interpreted as passive participles with bivalent verbs, were reanalyzed in Indo-Iranian as active perfective verbs. The corresponding S/P-marking nominative then turned into the absolutive, with

<sup>11</sup> Some studies postulate substratum influence as the likely source of ergative patterns in Indo-Aryan, but the current mainstream regards such proposals as dubious at best (see Stroński 2009 and Dahl & Stroński 2016: 23-24 for details and references).

the A-marking instrumental (in Indo-Aryan) or genitive (in Iranian) turning into the ergative.<sup>12</sup> This in turn led to an aspectually based split-ergative pattern in these languages.<sup>13</sup>

Despite the lack of actual evidence for the crucial period in early NIA—i.e., when the old case markers had already disappeared but new case morphology was just being developed—, this third view, often labelled “passive-to-ergative,” is probably the preferred textbook account nowadays. The most popular versions thereof (e.g., Dixon 1994: 190, Harris & Campbell 1995: 244), however, do not explicitly distinguish between bona fide passive constructions and other constructions based on a P-oriented participle. In fact, the source construction is not the actual passive clause in Sanskrit (headed by verbal *ya*-forms), which was frequently A-less and eventually fell out of use. The available evidence suggests that the *tá*-construction was stative-resultative, and that the instrumental phrase in (2b) had some subject properties in Epic Sanskrit (Bynon 2005; Butt & Deo 2017); there does not seem to be any unequivocal evidence in favor of analyzing (2b) as a canonical passive.

The passive-to-ergative hypothesis has been proposed for some linguistic groups outside Indo-Aryan, but its adequacy there is even more controversial (see Estival & Myhill 1988 vs. Dixon 1994: 191-192 for Polynesian, and Hale 1970 vs. McGregor 2008 for Australian). For Siuslaw (Penutian), reconstruction does suggest that a passive became obligatory with SAP P’s and was then reanalyzed as active, thereby leading to ergative flagging on nouns; erstwhile neutral SAP markers became accusatively aligned in the process (Mithun in press).<sup>14</sup> The possessive-construction hypothesis, for its part, is still considered relevant for Indo-Aryan (Peterson 1998, Creissels 2008b) and works well for other linguistic groups (Anderson 1977, Gildea 2004).<sup>15</sup> It is not clear whether there is reconstruction-based evidence supporting this hypothesis in Salishan, but there is for Cariban (Gildea 1997, 1998, 2004). For Iranian, several older studies favor the passive-to-ergative hypothesis (Cardona 1970, Bynon 1980, Payne 1980, Bubenik 1989a; but see Benveniste 1952), while recent studies interpret the Old Persian construction called *manā kartam* [1SG.GEN/DAT do.PTCP] ‘I have done’ as a construction expressing beneficiaries, experiencers, external possessors, etc. as non-canonical subjects (Haig 2008, 2017). In the latter view, the mechanism through which such clauses turned into ergative constructions is extension, rather than reanalysis, namely semantic (as genitive marking also covers agents) and paradigmatic (as competing two-argument clauses fall out of use in the past tense) (see also Bavant 2014). Lastly, a similarly attractive interpretation of the attested Eastern Aramaic (Semitic) construction called *qtil li* [kill.PTCP 1SG.DAT] ‘I have killed’ and its development has been recently proposed (Coghill 2016: 162-249). In this view, a passive participle combined with a dative-marked participant was first used with experiencer predicates and later extended to all bivalent predicates, eventually leading to an ergative alignment of the core arguments of the past-perfective two-argument clause.

As to possible further developments of split ergativity, three Indo-Iranian case studies show some limitations of Trask’s two-source model. First, attested developments in Western Indo-Aryan show that person/animacy-based splits have arisen independently of the passive-participle divide. Innovative tripartite flagging can apply to all (pro-)nominal paradigms (Gujarati), only nouns because SAP pronouns lost their S-A distinction (Punjabi), or only to a lexically (declension class) and grammatically (number) determined subset of nouns (Rajasthani) (Khokhlova 2016). Something similar happened in Northwest Iranian: varieties of Balochi retained ergative indexation in the perfective and accusative indexation in the imperfective domains, while simultaneously developing innovative patterns (Farrell 1995). Since Old Persian had nascent ergativity without a person/animacy-based split (p. 230), this conditioning factor must have

<sup>12</sup> There is an attested alternation in Early Vedic between the instrumental and the genitive as possible A-markers, which has received disparate interpretations (e.g., Andersen 1986; Bubenik 1989b, 1996).

<sup>13</sup> See Bubenik (1998, 2016), Verbeke (2013), and Dahl (2016) for some evidence and hypotheses as to the specifics of the development from Early Vedic Sanskrit to late MIA. See Butt and Deo (2017) for later developments in NIA.

<sup>14</sup> Kikusawa (2017) suggests a somewhat similar development for Tongan and Samoan, where case markers reconstructed as aligning ergatively came to coexist, possibly via a merger of absolutive and genitive cases, with some SAP clitics that align accusatively.

<sup>15</sup> Consider also the absolutive gender agreement found with Romance resultatives (Loporcaro 1998).

become relevant at a later point. In Balochi, only 3rd-person pronouns/demonstratives and nouns pattern ergatively in the perfective; SAP pronouns pattern accusatively irrespective of aspect. Furthermore, two distinct differential object marking patterns arose in ergative and accusative (later neutral) clauses, thus leading to a tripartite system and restoring the accusative one, respectively. A split-S pattern emerged as well, as erstwhile compound bivalent verbs were reanalyzed as agentive monovalent verbs (e.g., ‘he made (a) fly’ > ‘he flew’; see §3.3). Third, the eight Pamir languages (Eastern Iranian) surveyed by Payne (1980) also illustrate the disparate outcomes of language change. An ergative pattern in case marking is reconstructible, but no longer attested, in any of the languages. Some languages have replaced the ergative with a horizontal pattern: first, the old genitive and accusative markers fused in an innovative “oblique,” originally used as accusative in the imperfective and as ergative in the perfective; later, this marker probably spread from the P in the imperfective to the P in the perfective, yielding the attested [<sub>S<sub>ABS</sub></sub> A<sub>OBL</sub> P<sub>OBL</sub>] pattern. Also, all languages have retained the accusative pattern somewhere. Most languages have introduced a DOM pattern as well (by recruiting one or two adpositions for P-marking), which in turn has led to some horizontal patterns becoming tripartite, as in Yazgulami, Upper Wakhi, and Roshani.

Finally, Trask’s proposal regarding non-passive nonfinite sources has been explored in some detail, with interesting results (see, e.g., Alexiadou 2001, 2017): ergative-type flagging and indexation can originate as nominalizations are reanalyzed as main clauses (e.g., ‘my coming’ > ‘I<sub>ABS</sub> came’ / ‘its breaking by me’ or ‘my breaking it’ > ‘I<sub>ERG</sub> broke it<sub>ABS</sub>’). Such a development has been reconstructed for Cariban (Gildea 1998) and Jêan (Salanova 2007, 2009, 2017 and Gildea & Castro Alves 2010). It has also been proposed for Trumai (Guirardello 1999 and Guirardello-Damian 2010), Mayan (Coon 2012, Aissen 2017), and Eskimoan (Johns 2002, 2006; Compton 2017). A plausible case for it has been made for Austronesian languages like Tagalog (Starosta et al. 1982/2009; Ross 2002, 2009; Kaufman 2009, 2017; Aldridge 2017), where it nonetheless remains somewhat controversial. Notably, this reconstruction accounts for ergativity in unlikely domains of grammar from an Indo-European viewpoint—particularly in South American languages—, namely habitual and progressive (i.e. imperfective), as well as future and desiderative, clauses.

### 3.2 ACCUSATIVITY

Clauses denoting low transitivity are likely sources of clauses with accusative alignment in erstwhile ergative systems.<sup>16</sup> This has been proposed for Kartvelian; the accusative Series I might have arisen in Middle Common Kartvelian as an intermediate-transitivity construction was reanalyzed as a two-argument clause (i.e., a clause with the A in the nominative/absolute instead of ergative, the P in the dative instead of nominative/absolute, and the verb indexing the A only; Harris 1985: Chh. 6-7; see also Tuite 2017).<sup>17</sup> Something similar has been proposed for some Nyagarda languages (Pama-Nyungan), but authors disagree as to whether such source constructions were originally antipassives (Dixon 1980) or clauses with an absolute-dative case frame (Dench 1982). Accusative indexation could arise despite retention of ergative flagging as markers encoding topical A’s become more bound to the predicate and obligatory, with a subsequent loss of the ergative-absolute distinction. This has been proposed for Tabassaran (NE Caucasian) (Harris & Campbell 1995: 249-250).

A special kind of accusativity is found where, roughly, a non-zero nominative case marker contrasts with either a zero accusative or, less commonly, a non-zero accusative. Such “marked-nominative” patterns are rare outside Africa (König 2008: 138). Patterns with a zero accusative are

<sup>16</sup> A different potential source is the emergent analytic progressive (which can later develop into a present) of some languages, which introduces an accusative-like biclausal pattern that might evolve into an accusative pattern proper as the biclausal construction is reanalyzed as monoclausal (Creissels 2008b: 25-28). The *ari izan* progressive of Basque and the copular present of Avar are such constructions—but note that, as these constructions are reanalyzed, ergativity is actually reintroduced (Laka 2006: 189, Harris & Campbell 1995: 187-189).

<sup>17</sup> See Margetts (2008) and Zúñiga (2016) for similar TRANSITIVITY-DISCORD CONSTRUCTIONS in Oceanic and Algonquian, respectively.

found in Surmic and Nilotic (Eastern Sudanic, Nilo-Saharan) and are the result of three structural changes, according to Dimmendaal's reconstruction (2014). First, the morphosyntax of these languages evolved from dependent-marking to head-marking and from verb-final to verb-second or verb-initial. Second, genitive/instrumental markers were used to signal post-verbal A's, thus giving rise to an ergative pattern. Lastly, ergative markers were used to signal S's as well, thus restoring accusativity with the resulting unusual markedness relations of the cases. Based on consideration of broader evidence, König (2008: Ch. 4) reconstructs the source of the non-zero nominative as an oblique used for A's (as suggested by Dimmendaal, but in passive(-like) clauses) in some Nilotic languages like Maa and Dinka and in Omotic (Afroasiatic); as a definiteness marker in some other Nilotic languages like Pări and Angwa (see also König 2012: 36, 2017) and in Berber (Afroasiatic);<sup>18</sup> and as a topic marker in East Cushitic (Afroasiatic).

### 3.3 SPLIT INTRANSITIVITY

There seem to be two basic mechanisms through which the monovalent predicate class may be fragmented, both consisting in the reanalysis of low-transitivity two-argument clauses (Creissels 2008b: 13-14, in press). Harris (1985: Ch. 14) claims that, in the Proto-Georgian-Zan period of Kartvelian, a new  $S_A$  class originated in bivalent verbs with low-prominence P's (demoted, incorporated, or omitted; e.g., 'he mourned (it)' > 'he mourned'). The erstwhile two-argument clause was probably reanalyzed as one-argument in the perfective ("Series II"). This would in turn have shifted the alignment type to split-S in this domain, because the original monovalent verbs would have retained their morphosyntax (and now constitute an  $S_P$  class). This would explain the split-S patterns in the perfective clauses of Svan and Georgian and in all clauses in Laz.<sup>19</sup> Something roughly similar (e.g., 'he made (a) dance' > 'he danced'; see §3.1.2 above for a comparable process in Balochi) can be reconstructed for Mayan (Coon 2012) and is attested for Eastern Aramaic (Coghill 2016: 250-263) and Basque, where the  $S_A$  class is larger (and expanding) in western and central varieties when compared to eastern dialects and Old Basque (Aldai 2008).<sup>20</sup>

The creation of an  $S_P$  class may well be rather common, although it has received attention in the typological literature only recently (despite Sapir's 1917 mention and with the exception of Merlan 1985). Two-argument clauses with an inanimate or indefinite subject and an experiencer object (e.g., 'something scares me') are under pressure, stemming from relative discourse prominence, to syntactically demote the former argument and promote the latter. Under particular conditions—viz., accusatively-cum-secundatively aligned indexation with non-zero P-forms and the possibility of covert subjects—, such two-argument clauses can be reanalyzed as one-argument clauses headed by a patientive verb (e.g., 'I am scared'), thus leading to a split-S pattern. This process is reconstructed, showing as it does varying degrees of completion, expansion, and rearrangement, for some Athabaskan, Eskimoan, Muskogean, and Trans-New-Guinea languages (Malchukov 2008a), as well as for Halmahera languages (West Papuan) (Holton 2008) and Otomi (Otomanguan) (Palancar 2008).<sup>21</sup> Such patterns are robustly attested in the California, Northwest Coast, and Southeast linguistic areas, and Mithun (2008) suggests that they might have spread thanks to contact.<sup>22</sup>

Even though most known instances of emergent split intransitivity seem to correspond to some version of the processes outlined above (Creissels 2008a: 150, 2008b: 9), in some instances it seems

<sup>18</sup> Andersen (1988) analyzes Pări as showing a split between an (innovative) ergative pattern in indicative main clauses and a (conservative) marked-nominative accusative pattern in imperative main clauses and subordinate clauses.

<sup>19</sup> See Harris (1990) and especially Hewitt (1995) for some discussion of the analysis in terms of split-S pattern.

<sup>20</sup> See Arkadiev (2008) and Harris (2010) for slightly different approaches to the semantic motivations underlying the emergence of the  $S_A$  predicate class.

<sup>21</sup> Palancar's (2008) account of the Otomi development assumes an older agentivity-based split-S pattern that later accommodated an additional dynamicity-based fluid-S pattern. Such accommodation would have been achieved via partially assimilating the stative form of a subclass of agentive monovalent verbs to the form of patientive monovalent verbs (in order to systematically distinguish between stage-level and individual-level expressions of properties).

<sup>22</sup> Mithun (2008) also suggests that indefinite-subject clauses with a more open class of objects could lead to lexical split-S patterns as well (which may have happened in Tlingit and Atakapa).

to have arisen accidentally, that is, as a by-product of the reanalysis process, rather than thanks to a semantic motivation. The phenomenon found in Cariban languages is a case in point (Meira 2000).

### 3.4 OTHER CONDITIONED ALIGNMENT TYPES

The origins of DOM have attracted much attention in the literature. Even though most synchronic characteristics of the phenomenon are governed by argument features (see §2.2), the latter cannot exhaustively explain the distribution of the pattern or the emergence of the conditioning. A nominal hierarchy has been routinely used, by models centering on either indexing or disambiguating functions (Malchukov 2008b), to explain how ergative case patterns start with inanimate nouns (i.e., unusual or unexpected A's) and both accusative case patterns and DOM start with SAPs (i.e., unusual or unexpected P's) (e.g., Silverstein 1976; Dixon 1979, 1994; Comrie 1989). In some languages, however, topicality plays a decisive role: the most unexpected P's are arguably SAP topics, and pronouns denoting such elements are the first to be differentially marked if the pattern spreads, and the last to lose the marking if it narrows (see Iemmolo 2010 for attestation-based evidence in Romance; see also Zúñiga 2007b for reconstruction-based evidence in Tucanoan and Tariana).

The diachrony of hierarchically conditioned alignment is less well understood due to the scarcity of historical data for most languages that display such patterns. Nevertheless, there appears to be little counter-evidence for some hypotheses as to their disparate origins (Gildea & Zúñiga 2016): person-sensitization of erstwhile passives due to a preference for SAP subjects (Wakashan, Chimakuan, Salishan, Tanoan; perhaps also Algonquian); reanalysis of deictic verbal morphology as inverse markers (Sahaptian, Tibeto-Burman, South-Central Dravidian); reanalysis of zero 3A-forms as inverse verbs (Cariban, Tupí-Guaraní); and, possibly, the division of labor of two erstwhile cleft constructions that leads to direct and inverse clauses (Movima).<sup>23</sup>

### 3.5 BEHAVIORAL PROPERTIES

Early synchronic studies on the alignment of behavioral properties—typically centering on syntactic ergativity—revealed that (i) accusative flagging excludes ergative indexation, (ii) accusative morphology excludes ergative syntax, and (iii) some behavioral properties align accusatively while others show cross-linguistic variation (e.g., Anderson 1977, Comrie 1978, Croft 1991: 30-31, Kazenin 1994, Dixon 1994:143-181, and Manning 1996). Given the scarcity of data and the methodological challenges involved, it is perhaps unsurprising that the literature on the diachrony of alignment has hitherto concentrated less on syntax than on morphology.

Those studies that have addressed the development of syntactic ergativity show a predilection for two-way oppositions. Trask (1979) says that ergativity stemming from passives must traverse a potentially unstable ergative-syntax stage, while ergativity originating in constructions with stative participles is always exclusively morphological (and actually restricted to flagging, p. 395)—but remember from §3.1.2 that the empirical basis for Trask's claims is fairly limited. Manning (1996) tentatively suggests a slightly different possibility. Ergativity stemming from passives would swiftly change its syntactic make-up to accusative (pp. 70-71), but ergativity originating in nominalized verb forms—which is his preferred explanation for ergative patterns in Greenlandic (Eskimoan) and Tagalog—would naturally show ergative alignment of some behavioral properties (most notably: control of reflexivization, coreferential omission, and launching of floating quantifiers) (pp. 20-21).

Several recent studies downplay the importance of the source construction being necessarily a canonical passive. For instance, Palancar's (2002) Cognitive-Semantics-oriented monograph

<sup>23</sup> See Kikusawa (2017) for a reconstruction of the opposition between direct and inverse clause types in Pendau (Austronesian) as stemming from an opposition between an antipassive-like "Actor Voice" and a two-argument "Locative Voice," respectively. This is the mirror image of Rhodes's (1976) reconstruction of the Ojibwa (Algonquian) inverse suffix *-igw* as a passive marker.

assumes, and Polinsky’s (2016) study in the Chomskyan tradition claims, that, if two-argument clauses where the P aligns with the S (and not with the A) can be traced to some (different) prior stage, the A is hitherto known to be expressed by an adpositional phrase. This makes such views compatible with either the passive-to-ergative or the possessive-to-ergative hypotheses (§3.1.2).

In Polinsky’s account, one kind of ergativity (“PP-ERG”) is close to its origins in that the A is an adjunct-like argument (an “oblique subject” where the adposition has already been reanalyzed as a case marker), which behaves differently from the S/P regarding a particular subset of behavioral properties. These properties are subsumed under the rubric “A-bar movement” and are relativization, focusing and topicalization, content question formation, and tough movement (see Polinsky in press). The other kind of ergativity (“DP-ERG”) has moved further away from its origins in that the A is fully reanalyzed as a core argument, thereby losing its special status regarding A-bar-movement properties. Tongan (Polynesian) exemplifies the former type, where coding properties and A-bar-movement properties pattern ergatively, and Tsez (NE Caucasian) exemplifies the latter, where only coding properties pattern ergatively. Niuean (Polynesian) and Adyghe (NW Caucasian) illustrate the transition from PP-ERG to DP-ERG, with the former language closer to Tongan and the latter closer to Tsez regarding the loss of syntactic ergativity. Polinsky’s proposal admittedly “is intended not so much to add new data as to generate a more high-level discussion concerning the relationship between the two types” (2016: 141). Further research will either substantiate or falsify her empirical claims regarding the consistency of either type or the apparently unidirectional development path.

#### 4. Conclusion

The general picture emerging from this brief survey centering on the coding properties of selected arguments is that an important source of alignment type change is probably the reanalysis of low-transitivity one- or two-argument clauses, or of nominalizations, as strict two-argument clauses, which yields either ergative or accusative patterns—typically without partitioning the verbal lexicon. (Other probable sources exist as well, namely the spread of low-transitivity two-argument clauses restricted to a limited predicate class into becoming the default construction, and the reanalysis of two-argument clauses with instruments.) A roughly converse process, namely the reanalysis of low-transitivity two-argument clauses as one-argument clauses, seems to account for the emergence of split-intransitive patterns—typically partitioning the verbal lexicon. A preference for SAP agents as subject/topics and possibly the much-cited affinity between perfective aspect and P-orientation are likely factors that shape conditioned alignment types like DOM, inversion, and split-ergativity. Extension typically makes innovative patterns spread within a language (and perhaps even supersede the original patterns), but it can also turn ergative patterns into horizontal ones. Borrowing may support the innovations or even provide a stimulus for them, thus yielding to geographical “alignment areas.” Lastly, the loss of morphology can be phonologically conditioned, which is yet another instance of unmotivated alignment type change.

Many accounts of argument realization use general principles of language that favor particular grammatical configurations as opposed to others. While such explanations may be appropriate in certain instances (e.g., in Anatolian), the literature has often neglected that alignment patterns may merely reflect the formal properties of the source construction, rather than cognitive or processing principles leading speakers to associate argument types (Cristofaro & Zúñiga in press). The origin of ergativity in Cariban, the noun-class- and number-related loss of ergativity in Early Western Indo-Aryan, and possibly the origin of split intransitivity in Cariban are cases in point. At our present stage of knowledge, it is advisable (i) to expect alignment type change to arise not only via functionally motivated but also via purely formal, occasionally even accidental, processes, and (ii) to remember that at least some formal properties of clauses are but remnants of those their source constructions used to have.

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## Abbreviations

A agent-like argument of bivalent or trivalent predicates, ABS absolutive, ACC accusative, ALL allative, DAT dative, DET determiner, DOM differential object marking, DP determiner phrase, ERG ergative, G goal-like argument of trivalent predicates, GEN genitive, IND indicative, INS instrumental, M masculine, MIA Middle Indo-Aryan, NIA New Indo-Aryan, NOM nominative, NP noun phrase, OBL oblique, OIA Old Indo-Aryan, P patient-like argument of bivalent predicates, PC predicate class, PERF perfect, PIE Proto-Indo-European, PP prepositional phrase, PTCP participle, S single argument of monovalent predicates, SAP speech-act participant, SG singular, T theme-like argument of trivalent predicates, VAL valency

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