Are there universal cognitive motivations for ergativity?

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This paper explores the question of whether ergative grammatical patterns are universally motivated, either synchronically or diachronically, by cognitively transparent factors. The most cognitively plausible semantic and pragmatic elements that have been proposed in the literature as motivations for ergative patterns are semantic roles (ergativity as marker of agentivity, absolutive as marker of affectedness of patient), Preferred Argument Structure (introduction of new arguments as absolutes, tendency for ergative to be zero), viewpoint (ergative as marker of less central, more peripheralized agents), and transitivity (ergativity as one (foremost?) among many devices that emphasize the transitivity of certain events). Given this list of proposals, I next ask the question of how best to evaluate the various proposals. Much of the force of previous arguments has rested on universals of split ergativity, focusing on the conditioning factors for the ergative subset of clauses in languages for which only a subset of clause types display ergative patterns in grammar. I conclude that these splits do provide a window on the results of historical changes, but that they do not seem to provide the desired universal cognitive motivation for the existence of the ergative patterns themselves.

I then step back from the question of ergativity to the question of how semantic or pragmatic forces can shape grammar, and argue that it is primarily through the mediation of historical change that this happens. First, I consider
more generally the categories of historical change in grammar that have been identified in the literature: extension, reanalysis and borrowing. I argue that only one of the three, extension, directly reveals the influence of semantic motivation on grammatical pattern, but that even extension can operate in a relatively mechanical (i.e., functionally unmotivated) way. Then I review case studies of the creation of ergativity from South America (Cariban, Trumai, Katukina) and from other parts of the world (Indo-Iranian, other Indo-European, Western Nilotic, and Papuan) and cases of the further evolution of ergativity (Matses, Tibetan, Salishan). I conclude that there is no evidence of a single common function motivating the creation of ergativity, and that rather Stephen Anderson (1977) was essentially correct in attributing the creation of ergative main clause grammar to a mechanical process in which the grammar of the source construction happens to contain the agent in an oblique case.

1. Introduction: Alignment typology and associated functions

Alignment (cf. Harris 1987, Harris and Campbell 1995) is the complex of syntactic and morphological patterns that identify the four major patterns called nominative-accusative, ergative-absolutive, split intransitive (also called Active [Harris and Campbell 1995], Agent-Patient [Mithun 1991], and Split/Fluid-S [Dixon 1994]), and Inverse (types represented in any respectable typology of case-marking, verb agreement, etc., such as Comrie 1978, 1989, Dixon 1979, 1994, Givón 1984, 2001), plus minor types like tripartite, double-oblique, etc.. Presumably each of these alignments is functionally motivated, and hence both ubiquitous and often stable over time. If only one were motivated, e.g. nominative-accusative, then we would expect all languages to use that system today. Further, there is no necessary directionality to changes from one alignment system to another, with changes attested from nominative > ergative, ergative > nominative, ergative > split-intransitive, and nominative > split-intransitive, etc. Given the relative youth of the field of diachronic syntax, gaps in the documented directionality of change could easily be accidental, e.g., little is known of the sources of inverse (although see Givón 1994, Klaiman 1993, Zavala 1994, Zúñiga 2002, DeLancey 2003), and of changes from split intransitivity to another type. There are many antecedents to the idea that giving different prominence to competing functional motivations for grammar gives rise to changes in grammar (Givón 2001, etc.). So naturally, one seeks the competing functions that underlie the different alignment alternatives, as well as the historical shifts from one to another.

**Active/Split-S**: links A/S_A as Agents/Actors/S of events, versus O/S_O as Patients/Undergoers/S of states (Mithun 1991, Van Valin ####). Non-canonical marking of transitive arguments also occur, including “Dative Subject” constructions, indicating that the subject is not a prototypical agent, and “locative object” constructions, indicating that the direct object is not a typical patient (Givón 2001, DeLancey 2003, Onoshi, Dixon and Aikhenvald, eds, 2002).

**Ergative-Absolutive**: primary claims about functions of ergativity come from attempts to find a unified function underlying the most common patterns of split ergativity

<table>
<thead>
<tr>
<th><strong>Splits:</strong></th>
<th><strong>Ergative</strong></th>
<th><strong>Non-ergative</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>tense/aspect</td>
<td>past/perfective</td>
<td>nonpast/imperfective</td>
</tr>
<tr>
<td>person hierarchy</td>
<td>less topical/definite</td>
<td>more topical/definite</td>
</tr>
<tr>
<td>finite/nonfinite</td>
<td>either</td>
<td>either</td>
</tr>
<tr>
<td>[Cariban, Russian]</td>
<td>nonfinite</td>
<td>finite</td>
</tr>
<tr>
<td>[Mayan]</td>
<td>finite</td>
<td>nonfinite</td>
</tr>
</tbody>
</table>

**Explanations**
- links O/S as undergoers of change of state (Dixon 1994, T. Payne 1997)
- indicate that viewpoint is assigned to endpoint? (DeLancey 1981, 2003)
- indicates higher transitivity (Hopper and Thompson 1980, Givón 2001)

Three initial questions arise when considering the implications of these splits, and of the cognitive functions put forward to explain them.

First, How do we distinguish correlations that are significant from those that are spurious, or accidental? One distinction is consistency of a directional split. By this criterion, the connections between ergativity and either dependent or independent clauses must be spurious, since both ergative and non-ergative

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1 Note that these are often presented as exceptionless universals (e.g. Dixon 1994
morphosyntax can be restricted to either domain. Although the huge majority of attested tense-aspect based splits do go in the same direction, with pasts/perfectives ergative and non-pasts/imperfectives non-ergative, the other directionality is attested, as well as two cases with no apparent directionality (both types of counter-universal splits are attested in the Cariban language family, cf. Gildea 2003). Thus, the likelihood that this split offers a universal window on cognition is seriously compromised, at least in the sense that additional explanation is required for the counter-universal cases. I am aware of no clear counter-examples to the directionality of the person-based splits (although see Mattéi-Muller to appear), and outside of the domain of ergativity, the same person-animacy hierarchy plays a central role in direction systems (Zúñiga 2002, Givón’s ed. 1994 inverse-direct opposition). Thus, the person-based split has the greatest potential to provide reliable cognitive information that links consistently to ergativity.

Second, can a single cognitive function possibly underlie both all these splits and the (relatively rare) cases where no splits are attested? Is it important to find a single motivating function, like those that have been claimed for nominativity (topic, focus of attention, starting point) or will we need disjunct motivations for different subsets of ergativity, like those that have been claimed for split intransitivity (event structure versus semantic case roles)?

Third, regardless of whether we decide we are seeking a single function, a family of functions or disjunct functions, how might we identify each possible function in a methodologically satisfying way? Especially important here is the concern that we avoid circularity in our explanations: we must not use the fact of ergative splits as evidence to motivate our functions, and then use these very functions to motivate our ergative splits. While definitions have been the cause of considerable dispute, the utility of the notion “topic” clearly goes beyond nominativity, and in fact, most definitions of topic make no necessary reference to the syntactic status of an argument. Even more empirically satisfying, the notion of “focus of attention” (Tomlin 1995) comes from completely outside the domain of language, and thus is completely successful in avoiding circularity. Do all the proposed functions that purport to motivate ergativity similarly avoid circularity?

With these three questions in mind, let us look in a bit more depth at each of the claimed “ergative” functions.
1.1 Semantic roles

- Absolutive links O/S as undergoers of change of state (Dixon 1994, Payne 1997, etc.)
- Ergative marks agentivity (Dixon 1994, Payne 1997)

Against the semantic link between O and S

- Contact-object predicates (no change of state in O): kiss, hug, hit, …
- Cognitive predicates (no change of state in O): like, love, want, know, read, …
- Agentive S predicates (no necessary change of state in S): jump, shout, …

Against the semantic link between Ergative and agent

- Cognitive predicates (Ergative A is not agent)
- Inanimate causes of change of state (Ergative A is not a good agent)
- Person-based split ergativity (ergative A marks least prototypical agent)
- Agentive S predicates (agent is not marked ergative)

Conclusion: any perceived correlation between semantic role and ergative or absolutive case-marking is at best incomplete, and is thus probably spurious.

1.2 Assignment of Viewpoint

- indicates that viewpoint is assigned to endpoint (DeLancey 1981, 1982, 2003)
- indicates that agent is “peripheralized” (#Philip Davis reference#)

Against both claims:

- Only explains tense-aspect and person-based splits — what about languages with no splits, or with main/subordinate clause splits? That is, the viewpoint-based explanation of ergativity assumes alternation between an ergative pattern and a non-ergative pattern. Where there is no such alternation, it is not cognitively plausible to think of a language in which 100% of clauses code the unusual situation in which viewpoint is aligned with endpoint, or in which 100% of agents are peripheralized.
- Doesn’t explain tense-aspect based splits that do not follow the universal directionality — e.g. Cariban languages like Cariña, with an ergative future and all other tenses non-ergative, or Panare, with only the past-perfective and the progressive (regardless of tense) nonergative, or Akawaio, with past, perfective, nonpast and imperfect all four available in both ergative and nonergative clause types (Gildea 1993, 2003). The
future explicitly does not align viewpoint with ending point, and yet in Cariña, the grammar of ergativity occurs only in the future.

The notion of viewpoint has some independent cognitive instantiation outside of language, in the domain of visual cognition (cf. DeLancey 2003). Additionally, it is motivated by several distinct linguistic patterns, including direction (inverse) systems and deictic systems, both temporal (tense) and spatial (demonstratives). This explanation holds some promise for explaining the two dominant patterns of split ergativity, but it is not clear how it could provide a viable explanation for all patterns of ergative alignment. We thus need to seek either a different overarching function that might subsume this one, or we should conclude that different functions must be responsible for different patterns of ergativity.

1.3 Preferred Argument Structure


Problems:
• PAS is itself a linguistic discourse pattern, not a cognitive function — what is the independently motivated cognitive function of PAS?
• Campbell and Harris’ 1995 critique: the actual process of change from passive to ergative appears to be a counterexample to the claim that PAS motivates the change in that there is no mechanism to explain the markedness shift (i.e. decreased frequency of occurrence with new information) as the expression of the agent argument shifts from oblique > Subject.
• The use of O and S to introduce new participants into discourse is now well-established, however, I am not aware of a single case-study arguing for the relevance of this function to the evolution of ergativity: that is, as yet there is no serious proposal for a mechanism that could be driven by PAS, nor has there been a case-study demonstrating that PAS played a role in the evolution of main clause ergativity in a specific language. The assertions of its relevance will only become plausible given a hypothesized mechanism and an example of its use.

1.4 Transitivity (Hopper and Thompson 1980, Givón 2001)

##Get quotes from both H&T 1980 and Givón discussing why ergative grammar is so sensitive to transitivity, and in particular, the quote from Givón about how ergativity exists to serve the function of coding transitivity.##
Problems:

- Is transitivity a cognitive function? If so, how could a cognitive function of transitivity be identified independently of language?

- Ergativity does highlight transitivity, but so do many other mechanisms, most of which are equally active in ergative and non-ergative languages: e.g., detransitive voice constructions, causatives, applicatives, etc. To what extent are all these constructions plausibly motivated by a transitive function? To the extent that each construction that expresses a transitive clause serves some other clear — and more concrete — function, then exponents of the view of transitivity as an abstract function must bear the burden of proof that it ever exists independently of these more concrete functions — i.e., that it is more than epiphenomenal.

On a more practical level, Hopper and Thompson (1980) take it as a methodological given that the ergative side of any split is more transitive than the non-ergative side of the split. It is largely on the basis of this presupposition that they derive their multivariate scale of transitivity. In the same way that the counter-universal Cariban tense-aspect based splits are problematic for the Viewpoint explanation of split ergativity, they are problematic for the Hopper and Thompson method of discovering increases and decreases in transitivity. For instance, to the extent that we try to rely on ergativity as an automatic indication of increased transitivity, the counter-universal split in Carina (Mosonyi 1982, Gildea 2003) forces us to assert that future tense clauses are (in at least this one language) more transitive than past tense clauses.

One additional “split” is also widely attested in ergative morphosyntax, in which some morphology, generally case-marking, is ergative, but other morphology, generally verb agreement, is nominative; a still stronger split is that between ergative morphology and nominative syntax. This split has led some (e.g. Anderson 1976, 1977) to refer to ergative morphology as mostly a “surface” phenomenon, opposed to the nominative syntactic patterns that run “deep”. Estival and Myhill (1988) have explored how the creation of the morphology-syntax split follows a sequence, in which young ergative constructions show both morphological and syntactic (i.e. “deep”) ergativity, but then nominative syntax breaks into the system, creating the more common split between morphological (i.e., “surface”) ergativity with syntactic (“deep”) nominativity. Givón (1997, 2001) frames the synchronic cognitive motivation for this split in terms of topicality, with the syntax sensitive to the grammar of topic continuity, while the morphology is not similarly sensitive.
The next section takes a closer look at what we can learn about cognitive motivations for grammar from historical syntax, and how we can apply these lessons to the evolution of ergativity.

2. Historical change as a window on semantic motivations for grammar

How do we connect the functional motivation to the grammatical structure? Is it enough to merely observe the correlation and claim that we have now “explained” the structure? I would argue that it is not, since virtually all linguists recognize that morphosyntactic forms have at least some degree of independence from the semantic or pragmatic functions that map onto them. A mapping relationship between two independent constructs does not “explain” either of them, nor does it entail that one is responsible for the existence of the other. To the extent that the existence of ergative morphosyntax in main clauses — including all the splits — is to be understood, we must occupy ourselves with understanding the creation of ergative patterns and (to the extent that these are distinct) their introduction into main clauses. To the extent that we want to use a putative “ergative” function to motivate either the creation or introduction or ergative morphosyntax, we need to explore how the different claimed functions of ergativity might contribute to either process.

2.1 Defining the mechanisms: Reanalysis, Extension and Borrowing

2.1.1 Reanalysis

I will define “reanalysis” as change in the structure of an expression or class of expressions that does not involve any immediate or intrinsic modification of its surface manifestation. (Langacker 1977.58)

Reanalysis is a mechanism which changes the underlying structure of a syntactic pattern and which does not involve any modification of its surface manifestation... (Harris and Campbell 1995.50)

Reanalysis modifies underlying representations, whether semantic, syntactic, or morphological, and brings about rule change. (Hopper and Traugott 1993.32)

From a linguist’s point of view, undoubtedly the most frustrating thing about reanalysis is that initially there is no overt morphosyntactic indication that it has happened. Cognitively, I liken the process to the creation of two geographically distant dialects — the source construction and the reanalyzed
construction become cognitively distinct entities, but they are virtually identical at first, differentiated only by their semantics and their discourse distribution. Only over time, as each continues to evolve independently, does the cognitive distinction become obvious in a series of often extremely fine-grained overt morphosyntactic changes (cf. Harris and Campbell 1995:53). As argued in Heine (1993:54-8) for the creation of auxiliaries, and by Gildea (1997b) in a case-study of the reanalysis of a participle plus copula into first a passive, then an ergative, initial changes are semantic and pragmatic, and only later do the individual morphosyntactic changes follow (thus confirming predictions made by Givón 1975, 1979). Yet each of these small changes can be seen to fit together into chains, leading down paths that are increasingly well-attested in cross-linguistic studies of diachronic syntax. (Gildea 1998)

These four sentences illustrate the Middle-English grammar associated with the source of the modern progressive construction; the syntactic trees above the examples reflect the accepted grammatical analysis of this source construction. In all four examples, the subject is located with reference to an activity that has a stereotypical location: the forest, a construction location, a chapel and a stream or bathhouse, respectively. The activity in each case is coded by a verb root plus a reflex of the Old English nominalizer -ing / -unge. In old English, the notional object of the transitive verbs had to appear in the
genitive case, or be related to this derived noun by the genitive preposition of. The noun phrase headed by the nominalized verb was framed as a location by being made the object of a locative preposition, once freely chosen from the set of locative prepositions, later conventionally restricted to on. The copula was used in all locative predicates, including this one. Careful analysis of the semantic evolution of this construction (cf. Bybee et al 1994.127-137) shows that it was at first used only to locate an agent in the midst of an activity characterizable by spatial locations. As the construction became more frequently used, non-activity verbs began to occur, as well as verbs that were not characterizable by typical locations. Then even the sense of “in the midst of” faded, leaving the English progressive bleached almost completely of the various elements of its etymological meaning.

This sort of meaning change, along with the increased frequency of use of the construction with the innovative meaning, provides the fundamental motivation for syntactic reanalysis. However, although it is clear that the meanings of such constructions can change quite drastically, it is not clear that meaning change alone can justify the innovative syntactic analysis proposed beneath the examples. Generally, evidence for syntactic analyses is expected to come from syntactic facts, and the crucial characteristic of reanalysis is that it does not change the syntactic facts, but merely the representation of those facts in the brains of speakers. Only after speakers reanalyze a particular construction do we see the small changes that provide the necessary morphosyntactic evidence to allow us to argue for the reanalysis: first, the switch from adjectives to adverbs to describe manner of activity, then the reduction and loss of the preposition that marks the innovative Progressive meaning, and later the loss of the genitive cum accusative preposition. The mechanism that brings about these small changes is the topic of the next section.

2.1.2 Analogical extension

...reanalysis and analogy (generalization) have different effects. Reanalysis essentially involves linear, syntagmatic, often local reorganization and rule change. It is not directly observable. On the other hand, analogy essentially involves paradigmatic organization, change in surface collocations, and patterns of use. Analogy makes the unobservable changes of reanalysis observable. (Hopper and Traugott 1993.61)
Analogy, strictly speaking, modifies surface manifestations and in itself does not effect rule change, although it does effect rule spread either within the linguistic system itself or within the community. (Hopper and Traugott 1993.32)

**Extension** is a mechanism which results in changes in the surface manifestation of a pattern and which does not involve immediate or intrinsic modification of underlying structure... (Harris and Campbell 1995.51)

Extension is a much simpler mechanism to describe than reanalysis. The basic idea is that speakers recognize (by abductive logic, cf. Givón 1989, Hopper and Traugott 1993.38-40) that there is some essential similarity between two construction types. Recognition of this essential similarity creates a condition of analogy between the two, and this condition then opens the door for morphological forms or syntactic patterns to be “borrowed” from one construction to the other. (Gildea 1998)

Continuing with the illustrative example of the Middle English roots of the modern English progressive construction, analysts of Middle English are faced with a problem, first articulated by Timberlake 1977 as the **Reanalysis/Actualization** problem. When younger speakers analyze the same surface string of words differently than older speakers, how is an analyst to know that this has happened? The answer is that the linguist must wait until the younger speakers, recognizing some crucial similarity between their reanalysis of the surface string and the pre-existing analysis of some other, related construction, begin to change the grammar of the newly reanalyzed construction in such a way as to make it overtly more similar to the grammar of the related construction. Thus, once younger speakers have reanalyzed the string in (1) as representing a construction with *V-ing* a progressive verb rather than a noun, a condition of analogy is created between the nonfinite form *V-ing* and finite verbs: nominalizations are modified by adjectives, e.g. *devout praying, slow building*, whereas verbs are modified by adverbs, e.g. *pray devoutly, build slowly*; nominalizations can be objects of prepositions, e.g. *on hunting*, whereas verbs cannot, *on hunt*; transitive nominalizations can only relate to their notional arguments via the intercession of adpositions or the genitive, e.g. *his hunting of deer*, whereas verbs can have subjects and direct objects, e.g. *he hunted deer*.

In time, these morphosyntactic properties typical of verbs are analogically extended to the innovative progressive verb. In the main clause progressive construction, adjectival modifiers are replaced with adverbial
modifiers to describe the manner, etc. of the activity; the erstwhile locative/progressive preposition *on* binds phonologically to the front of the root, then reduces and disappears altogether, *on V-ing > an-V-ing > a-V-ing > V-ing*; the erstwhile genitive/accusative preposition *of* lingers for a few hundred years, first becoming optional, then restricted to nonstandard dialects by the beginning of the 19th century. While I know (and speak) a modern dialect that optionally uses *a-*, I have never encountered a speaker of a modern dialect where the *of*-adjunct still survives, even optionally.

(2) Copula, Preposition, V-ing, Notional O in genitive case or *of* phrase

a. 1205 Layamon (Visser, p.1998)
   *thær he wes an slaeting* [hunting]

b. 1205 Layamon (Visser, P. 2001)
   *...thei weren at robbinge.*

c. 1275 Passion of Our Lord (Visser, P. 2001)
   *...heo weren at wenynge of ure louerdes aryste.*

d. 1250 Layamon (Visser, p.1998)
   *thar he was in hontynge*

(3) Preposition restricted to *on*, which begins to reduce phonologically to *an*, *a*, *Ø*

a. Wyclif 1380 (Visser, p. 2002)
   *...thenne thei ben not Ø scorninge of God but Ø worshipyng.*

b. 1472 Paston Letters (Visser, p. 2002)
   *Ther was he Ø kepyng of a coort.*

c. 1475 (Visser, p. 2002)
   *I am Ø doyngne of my nedynges*

d. 1475 Cely Papers (Visser, p.2004)
   *now whyll I am awhryttyng of thys letter...*

e. 1481 Stonor Letters (Visser, p.1998)
   *John Cheynye is owt a hawkynge, as sone as he comyth home I shall delyver your letter.*

f. 1523, Berbers, Froissart (Visser, p.2004)
   *He had been a hunting of the hare.*

g. 1840, Dickens (Visser, p.2004)
   *You’re a hurtin’ of me!*
I’ve been a-turning of it over.

Later developments are illustrated extensively in Visser (1961.1992-2008), but for our purposes here, we can simply cite his conclusions regarding these two developments.

To account for the development of ‘he is hunting’ from ‘he is on hunting’ we have to assume that there occurred at an early period constructions with an (a) instead of on before the form in -ing, and that this an/a came to be slurred over and was eventually elided.” Visser 1961.1994

Visser goes on to describe evidence that supports these assumptions (early forms of an for on, both in locatives and with -ing, and multiple examples of elision of a word-initially).

Nouns in -ung / -ing could be modified in Old English by a complement of the genitive... Later the genitive was replaced by an of- adjunct... Gradually this of- adjunct found its way into the expanded form [the progressive — SG] in Middle English, both with and without a- before the -ing. At long last constructions with direct objects began to put in an appearance here and there, but it was not until the beginning of the Modern Period that the usage became normal. (p. 1995) ... [the of- adjunct] has remained in use up to the present day, but began to be substandard about the beginning of the 19th century. (p. 2002)

In essence, I suggest that this is a clear case of extension in that the morphosyntax of direct objects is extended to the of- adjunct of the progressive. It is less clear that the reduction and loss of on is motivated by analogy to other main verbs (even factoring in the concurrent creation of the modal auxiliaries). Another way of understanding both losses is as a natural response to a non-iconic mapping from function to morphology. The innovative progressive use of the construction leads to the reanalysis of each component of the construction: the copula is reanalyzed as a helping verb, an auxiliary for the progressive; the verb plus -ing becomes a (nonfinite) main verb indicating progressive; the erstwhile preposition on becomes yet a third marker of the progressive; and the preposition of marks the accusative uniquely in the progressive construction. This creates a somewhat counter-intuitive situation, in which four independent morphological markers combine to indicate a single aspectual distinction. As Heine (1993.121-4) illustrates with the parallel case of Ewe, such a situation usually does not last:

In addition to the phonetic erosion, another process took place according to which complex forms that are used for the expression of one basic function tend to be simplified. This process has been described by Heine and Reh (1984.97ff.) as
adjustment. Adjustment involves a development towards isomorphism, whereby a one-to-one correspondence is established between form and meaning. (Heine 1993:122)

In addition to making “the unobservable changes of reanalysis observable” extension also operates independently of reanalysis, based on analogy between existing patterns of grammar. An example would be the extension of person-marking forms from one set of referents in a paradigm to another, as in the examples in Table 1, with specific changes summarized in Table 2.

<table>
<thead>
<tr>
<th>Proto-Carib</th>
<th>Proto-Parukoto</th>
<th>Kaxuyana</th>
<th>Hixkaryana</th>
<th>Waiwai</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>t(i)-</td>
<td>w(i)-</td>
<td>w(i)-</td>
<td>w(i)-</td>
</tr>
<tr>
<td>1Sa</td>
<td>w(i)-</td>
<td>w(i)-</td>
<td>k(i)-</td>
<td>k(i)-</td>
</tr>
<tr>
<td>1So</td>
<td>u(y)-</td>
<td>k(i)-</td>
<td>k(i)-</td>
<td>k(i)-</td>
</tr>
<tr>
<td>1O</td>
<td>u(y)-</td>
<td>Ø(y)-</td>
<td>r(o)-</td>
<td>o-</td>
</tr>
</tbody>
</table>

| 2A          | m(i)-          | m(i)-    | m(i)-      | m(i)-  |
| 2Sa         | m(i)-          | m(i)-    | m(i)-      | m(i)-  |
| 2So         | a(y)-          | o-       | o(y)-      | m(i)-  |
| 2O          | a(y)-          | o-       | o(y)-      | a(w)-  |

| 1+2A        | kit(i)-        | kit(i)-  | t(i)-      | t(i)-  |
| 1+2Sa       | kit(i)-        | kit(i)-  | t(i)-      | t(i)-  |
| 1+2So       | k(i)-          | k(i)/kit(i)- | t(i)- | t(i)-  |
| 1+2O        | k(i)-          | k(i)-    | k(i)-      | k(i)-  |

Table 1. From Split-S to Nominative/Tripartite in the Parukoto group (Gildea 1998)

| PC *w(i)- | ‘1Sa’ (Sa) > PP | *w(i)- | ‘1A/Sa’ (active) |
| PC *t(i)- | ‘1A’ (A) is lost in PP |
| PC *k(i)- | ‘1+2O/So’ (stative) > PP | *k(i)- | ‘1So’ (So) |
| PC *u(y)- | ‘1O/So’ (stative) > PP | *Ø(y)- | ‘1O’ (Accusative) |
| PC *kic-  | ‘1+2A/Sa’ (active) > PP | *kit- | ‘1+2So’ (moving ‘1+2So’ > 1+2Nom) |

| PP *k(i)- | ‘1+2O/So’ (stative) > Kax. | k(i)- | ‘1+2Sa’ (drift towards 1+2Sa?) |
| PP *k(i)- | ‘1So’ (So) > Hix, Wai | k(i)- | ‘1S’ (S) |
| PP *m(i)- | ‘2A/Sa’ (active) > Wai | m(i)- | ‘2A/S’ (nominative) |
| PP *kit(i)- | ‘1+2A/Sa’ (active) > Hix, Wai | t(i)- | ‘1+2A/S’ (nominative) |

Table 2. Specific source and target categories coded by each extended prefix
This example illustrates how analogical extension works in the absence of syntactic reanalysis. Existing prefixes in an existing paradigm have simply extended (and in some cases, contracted) the set of semantic referents that they index. In each extension, a situation of analogy exists, in terms of person if not of syntactic roles, between source and recipient categories. Note that such analogy is not necessarily a *motivation* for each extension: analogy exists between many prefixes without a concomitant extension of form, and in fact, each of the extensions attested reflects only one of several analogical possibilities. But while not every condition of analogy results in an extension, the occurrence of such extensions is arguably constrained to situations in which analogy exists.

2.1.3 Borrowing

By *language contact*, we mean a situation in which the speakers of one language are familiar in some way with another... Language contact is often a catalyst to change through reanalysis or extension, while borrowing, of course, can come about only through language contact. We use the term *borrowing* to mean a mechanism of change in which a replication of the syntactic pattern is incorporated into the borrowing language through the influence of a host pattern found in a contact language. (Harris and Campbell 1995.51)

...an external explanation for a particular structural change is appropriate... [only , PH & ET] when a source language and a source structure in that language can be identified. The identification of a source language requires the establishment of present or past contact of sufficient intensity between the proposed source language and the recipient language... (Thomason and Kaufman 1988.63-4, cited in Hopper and Traugott 1993.220)

The final major mechanism by which new grammar arrives in a language is borrowing. Essentially, the conditions for borrowing are created when two (or more) languages are in intensive contact for an extended period of time, with extensive bilingualism. Of course, such extensive contact will almost certainly be evident from massive lexical borrowing (cf. Moravcik 1978.110; Hopper and Traugott 1993.133), so this is a mechanism which is easily checked. Although there is some dispute here, it appears that a language can borrow morphological material alone (e.g. personal prefixes), syntactic patterns alone (e.g. “calqued” constructions, in which morphological material from the borrowing language is pressed into service in a new construction which mirrors a construction from the source language), or morphological material plus associated syntactic patterns (e.g. postpositions into a previously prepositional language, or an ergative case-marker into a previously nominative construction). (Gildea 1998)

Arguably, borrowing is simply another case of extension in which the source for the extension comes from outside, rather than inside, the language where the target ends up. I know of one case, Katxúyana (Cariban) where particularly rapid evolution of ergativity is almost certainly due to contact with a related language (Tiriyó), thus providing conditions to use cognate grammar to
calque the ergative construction from Tiriyó into Katxúyana. This case will be briefly illustrated in section 3.3.1.

2.2 How historical changes do not reveal cognitive functions

The list of mechanisms in section 2.1 does reasonably well at answering the question “How do languages change?” However, it does not transparently address the related question, “Why do languages change?” Teleological explanations have been offered by functionalists at various times in the history of our discipline, in which changes take place “in order to express” the modern functions (cf. Harris and Campbell 1995.24-5 for examples from the 11th century until modern times, in both Arabic and European linguistic traditions). If this sort of explanation is true, then the ideal place to look for evidence of the function of a given construction is at the moment of that construction’s creation. However, like most (if not all) teleological explanations, this one is suspect: There is now ample evidence that most grammatical innovation does not arise out of a functional void, such as to ameliorate the inability to express certain semantic distinctions, but rather arises as the conventionalization of a new and socially innovative way to express a concept that could easily be expressed with the existing grammatical resources of a language (cf. Traugott and Hopper 1993, Gildea 1998, etc.). In fact, usually an innovative construction simply provides a sociolinguistically distinct (and often more specific) way to express a distinction already perfectly well expressed in the grammar.

However, it is the case that certain correlations can be seen between the semantics and/or grammar of source and target constructions, and it is also the case that patterns that occur with great frequency in unrelated languages are likely to be motivated by universal functional principles. Hence, it is instructive to take a closer look at how the three types of grammatical change can be seen to reflect such functional principles in their operation.

2.2.1 How Category extension does not reveal cognitive motivation

Analogy is a well-documented part of human cognition, and thus extension based on analogy does not necessarily provide any evidence for language-specific functional principles that underlie forms that get extended. On the other hand, it is clear that, while analogy may be argued to be a necessary condition for extension (although see below), it is clearly not a sufficient condition for extension. As we identify additional factors that lead to extension, we will need to test each of them to see to what extent they might expose
cognitive motivations for the creation of specific types of categories, e.g. ergative case-marking or absolutive verb agreement.

2.2.2 How borrowing does not reveal cognitive motivation

Borrowing takes a pre-existing pattern and imports it into another language. It might be thought of as a subset of analogical extension, in which the condition of analogy exists between structures from two distinct languages, and the extension therefore takes place across language boundaries. Again, analogy alone does not suffice to explain the extension, but without significant creation of a new structure out of old resources, borrowing does not readily reveal cognitive motivation.

2.2.3 How construction reanalysis does not reveal cognitive motivation

Construction reanalysis takes a pre-existing pattern and reinterprets it as having another meaning, but it does not create the pattern per se. Selection of the pattern must be motivated by meaning, but creation of the grammar is motivated only to the extent that the selected meaning motivates the source grammar (e.g. object nominlization > passive participle > passive w/ oblique A, section 3.1.3). Thus, when a construction is utilized with a new meaning/function, becomes more frequently used with the new meaning/function, and then becomes reanalyzed, the grammar of that source construction is not obviously a part of the selection process. Consider how Anderson (1977) frames his discussion of the selection of the source grammar for later ergative clause types in Indic and Iranian:

There are two quite distinct periphrastic constructions, the passive and the possessive, which are abundantly documented as potential sources for newly-created perfects; and both of these constructions have the property that the NP filling the relation $S_t [A]$ will appear in an oblique case as opposed to the direct or nominative form in which $S_t [S]$ or $O [O]$ will appear. (Anderson 1977.340-1)

The argument that follows from Anderson’s observation is that the motivation for the ergative case-marking is not the creation of an ergative system — if so, then such a mechanism would always lead to the creation of an ergative system. However, of course the creation of resultatives, perfectives and past tenses (especially in well-known cases of reanalysis of perfects) has given rise to perfectly nominative constructions as well (in, e.g., Romance and Germanic languages, including English). In other words, the universals that accompany reanalysis are those that link the semantics of source constructions with the semantics of reanalyzed constructions (e.g. desideratives > future, go >
future, come > past, passive > perfective > past, etc.), but unless the grammar that accompanies the source constructions is universal and, in some way, arguably motivated by the meaning of the source constructions, then the grammar is arguably epiphenomenal. Since ergative case-marking is never entailed by the semantics of the source constructions, and since reanalysis of the source constructions appears to motivated by the desire to obtain or renew tense-aspect distinctions, it appears that Anderson’s (1977) observation remains valid: the introduction of an ergative case-marker into main clause syntax is simply a by-product of the reanalysis when the source construction happens to possess an oblique agent phrase.

2.3 How non-analogical extension can reveal cognitive motivation

There is a second context in which extension occurs, in which the motivation is not analogy between two constructions, but an apparent desire by speakers to explicitly mark a function that was expressible, but previously not marked explicitly in the grammar. Examples of this sort of change can be seen in the evolution from either a nominative or an ergative alignment to a Split Intransitive alignment, or in the evolution from a more “pure” ergative alignment to a morphologically ergative but syntactically nominative alignment, and on to a purely nominative alignment.

Considering first the latter case, we have ample evidence of deep ergative systems that begin to adopt nominative patterns. As Givón (1984, 1994, 1997, 2001) has argued at length, nominative syntax comes first in the form of the most topic-driven syntactic domains, such as control of interclausal coreference, logophoric/reflexive possessive or other pronominal references, and reflexivity. Later developments are the behavior properties (i.e. relations between A of active and the oblique of passive, or relativization), and still later are alterations in the morphological patterns, first in verb agreement, and only at the very end in case-marking. Gildea (1997) provides a detailed case-study of the creation of an ergative clause type in the Cariban family, followed by the loss of ergative syntactic patterns and the innovation of nominative syntactic patterns even in this clause type. Estival and Myhill (1988) provide multiple examples of the same diachronic pattern, in which a passive construction is reanalyzed as ergative, then nominative patterns begin to break up the consistency of the ergative morphosyntax until, in some cases, every single trace of ergativity disappears.
I have found little in the literature regarding the evolution of split intransitive systems (but cf. Mithun 1991 for some suggestions). The beginnings of a change from nominative to split intransitive are suggested in Finnish, where the single argument of a few unaccusative verbs have gained the possibility of receiving the partitive case, which otherwise marks the O of a transitive clause (Harris and Campbell 1995.276-9). Thus, this Finnish example represents a case in which a marker of O extends to also mark the patient S argument of a handful of intransitive verbs.

The other direction of change, in which the ergative marker extends from A to an agentive subset of S, is more broadly attested. Modern Tibetan (as described in DeLancey 2003) presents a case in which the ergative case-marker in a standard split-ergative alignment has extended to marking semantic agents. The marker is obligatory on the A in perfective transitive clauses, and optional on the A in imperfective transitive clauses and agentive S in perfective intransitive clauses. The only agents that never bear the ergative case-marker are agentive S in imperfective intransitive clauses. Tibetan is the only language in its immediate branch of Tibeto-Burman that shows the ergative marker in intransitive clauses, and it is also the only language for which the ergative = agent argument has been made. Thus, it represents a pretty clear case in which the ergative marker has extended from agents of transitive clauses to the single argument of active intransitive verbs. Moyse (2003) presents two more cases of what she calls “extended ergativity”, in which the ergative marking occurs on the S arguments of a lexical subset of intransitive verbs in particular semantic, pragmatic or syntactic contexts. In Drehu (Austronesian, Loyalty Islands; Moyse-Faurie 1983), certain intransitive verbs receive an ergative S in the progressive and in the past when (a) the S bears some responsibility for the event occurring and (b) the S is not in final position. In Nemi (Austronesian, New Caledonia; Ozanne-Rivierre 1979) certain intransitive verbs take an animate S marked with the ergative, but an inanimate S in the unmarked absolutive.

This existence of extension as a source of new categories in a language is extremely significant: the synchronic functional analysis of the nominative

2 DeLancey (pc) believes that the comparative and historical data are not sufficiently strong to endorse the claim that this extension is motivated by the desire to express agentivity (i.e., there are possible pragmatic motivations that have received support in the Tibeto-Burman literature), but he agrees that this extension is clearly restricted to the category of agent, such that whatever pragmatic function is proposed as motivating this extension must be compatible with a restriction that the “extended” ergative marks only agents to the exclusion of other semantic roles.
and split intransitive patterns is reinforced by a diachronic analysis that shows extension of forms to create a new grammatical category without the necessary analogy to pre-existing grammatical categories. The motivation for these new grammatical categories is thus not analogy, but direct expression of universal semantic or pragmatic motivations that underlie grammatical patterns. This provides powerful reinforcement to the claim that the nominative expresses the primary topic and that (in at least some cases) split intransitivity expresses semantic roles.

Recalling our problem identifying a consistent functional motivation for ergativity, we can now search for parallel examples of the creation of ergativity by such functionally motivated extensions. However, after an initial survey of the South American ergative systems with which I am personally familiar, along with a survey of current literature on the typology of ergativity and the evolution of alignment systems, I have found nothing to contradict Anderson’s (1977.347) observation:

...it is noteworthy that there are apparently no attested instances of ... the change ... where the accusative marker of O [O] spreads to encompass S_j [S] as well (but not S_l [A]), thus creating an ergative system out of a nominative-accusative one.

In other words, neither the putative semantic similarity between O and S, nor the discourse affinity between O and S, has ever been observed to lead to the creation of an absolutive grammatical category. I would expand Anderson’s observation to include the other putative functions of ergativity, the desire to emphasize transitivity, or to peripheralize an agent: none of these has ever been observed to lead to the creation of an ergative or an absolutive category by extension.

The remainder of this paper will be devoted to reviewing all of the attested sources of ergativity, those found in South American indigenous languages in more detail than others, and in each case, to pointing out the absence of clear evidence for a unifying ergative function.

3. Attested or reconstructed sources of ergative patterns (morphology and syntax)

Add to the references here: Chung, Dixon, Comrie, etc.

**passive > ergative**
- Polynesian passive > ergative (Estival & Myhill 1988); disputed, probably incorrect
• Australian passive > ergative (Hale 1970); disputed, incorrect
• Salishan passive > ergative (Estival & Myhill 1988); disputed, unclear case
• Indic passive > ergative (Anderson 1977 and many others); disputed but clearly correct
• Cariban passive > ergative (Meira 1995, Gildea 1997, 1998); still not disputed

**possessive perfect > ergative**
• Iranian possessive Perfect > ergative (Anderson 1977); disputed but correct
• Shina possessive Perfect > ergative, then borrowing of TB case-marker (Anderson 1977); speculative but perhaps correct

**instrumental A > ergative**
• Anatolian instrumental A > ergative A (Garrett 1990)
• Gorokan instrumental A > ergative A (Garrett 1990)

**topicalization > ergative**
• Päri topicalization of S/O > basic ergative (Dixon 1994)

**nominalization > ergative**
• Cariban nominalizations > ergative (Gildea 1992, 1998); disputed but correct
• Trumai nominalizations (in clefts) > ergative (Guirardello 1999)
• Jê nominalizations > ergative gerunds (Rodrigues & Cabral 2003)
• Katukina nominalizations > ergative

### 3.1 Reanalysis of passive to ergative past-perfective: source of the universal split

This is the best attested source of ergativity, due to the ample historical documentation of data from early Sanskrit through the various modern split-ergative languages of the Indic branch. This particular reanalysis is clearly correct in the case of Indic (cf. Anderson 1977, Cardona 1970, etc.), and intuitively it is so good a source for ergativity that passive was once claimed to be the **only** source of ergative main clause grammar (Estival and Myhill 1988), a claim that has been contradicted a number of times in the literature (cf. Dixon 1994, Harris and Campbell 1995.245, note 6; section 3.3 of this paper provides additional counterexamples). Section 3.1.1 illustrates the evolution from a participle in a copular clause > passive > active ergative in the Cariban language family. Section 3.1.2 shows a second source of passive in the Cariban family, a...
patient nominalization in a predicate nominal clause, which also goes on to become an active ergative. The passive is my personal favorite as a source of ergativity because it provides a clear case of motivated creation of ergative patterns, and as an additional bonus, it can be argued that the source of passive constructions provides a motivated source also for the creation of a universal tense-aspect based split ergative pattern, with past/perfective showing ergative morphosyntax, but nonpast-imperfective showing non-ergative morphosyntax. Section 3.1.3 makes this argument in some detail.

3.1.1 Participle > passive > ergative in the Cariban family

In Gildea (1997, 1998 chs. 8, 13), I reconstruct the source of a cognate main clause ergative construction in 4 languages (Apalái, Tiriýó, Wayana, Katxúyana), and a cognate passive *cum* inverse in 1 language (Carib of surinam), to a Proto-Carib construction in which a stative participle (verbal adjective to some analysts, derived adverb to others) occurs as the complement of the copula, with the subject of the copula being the patient (notional O) of the participle. In other words, the source construction was virtually identical to the source of the English passive (as documented in Yang and Givón 1994). As in English, once the construction was reanalyzed as a passive, the first innovation was the possibility of adding an oblique agent phrase to the passive clause; the English passive has not progressed beyond this stage. In the Cariban family, once the oblique A was added (at least in the 5 languages in question), it then became the direct antecedent of the ergative case-marked A when the passive was reanalyzed as the distant past tense. Additionally, the nominative copula agreement became absolutive auxiliary agreement and similarly, the control and behavior properties that pertained to the intransitive subject of passive became the absolutive (or “deep ergative”) properties of the innovative distant past tense.

The source construction is illustrated in 5 from Hixkaryana, a language that shows no evidence whatsoever of reanalysis. For our purposes in this construction, the important facts are: (i) the subject of the copula, *iro tho ‘these old things’, is also the notional object (patient) of the participle; (ii) the participle has an obligatory stative reading, that is, it does not refer to an event of throwing out, but to a property of the patient, that it is fit only for throwing out; (iii) there is no option to include an oblique agent phrase to indicate the agent of throwing out — a sensible lack, given that the participle really does not refer to an event with an agent, but only to a property being predicated about the
subject of the copula, a property that does not depend in any way on the identity of the individual who would do the throwing out.

(4) The source construction in Hixkaryana (Derbyshire 1985.46): $t-V$-$\text{še}$/$-\text{so}$

<table>
<thead>
<tr>
<th>Adj</th>
<th>COP</th>
<th>[ S ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>tarvmafe</td>
<td>naha $\sim$ ro tho</td>
<td></td>
</tr>
<tr>
<td>t- arvma -je</td>
<td>naha $\sim$ ro tho</td>
<td></td>
</tr>
<tr>
<td>Prtcp-throw.out-Prtcp</td>
<td>3.Cop this Devalued</td>
<td></td>
</tr>
</tbody>
</table>

It is a mighty leap from the construction represented in Hixkaryana to the cognate passive construction attested in Carib of Surinam: the participle is now eventive; an agent phrase is not only possible, but is attested in virtually all occurrences of the construction in narrative text, and it is this agent phrase, rather than the intransitive subject (patient) of the passive, that has the subject property of control of coreference with the third person logophoric (reflexive) prefix (cf. Hoff 1995, Gildea 1994, 1997).

'These old things are to be thrown out.'

(5) The passive (Hoff 1995) / inverse (Gildea 1994) in Carib of Surinam: $t-V$-$\text{se}$/$-\text{ye}$/$-\text{Ø}$

<table>
<thead>
<tr>
<th>[ S-Ø ]</th>
<th>[ Obl A ]</th>
<th>V-passive</th>
<th>(Aux)</th>
</tr>
</thead>
<tbody>
<tr>
<td>am pooto iñporiï $\sim$ iʔwa t$p$aato (maï)$\sim$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>am pooto iñporiï $\sim$ iʔwa t- paato -Ø maï</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a big stream 3-AGT PRTCP-crossed-PRTCP 3.COP</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

'A big stream was crossed by him' (Hoff 1968)

Hoff (1995) argues persuasively that this is virtually a canonical case of a passive construction; departing from a different theoretical perspective, in Gildea (1994) I argue that the synchronic functional distribution of the construction (both in terms of frequency of agent phrase and in terms of topicality measurements for both agent and patient) is more consistent with a passive that is being reanalyzed as an inverse voice construction, which Givón (1994, 1997) argues is a necessary step in the evolution from passive to ergative.

The cognate construction in Apalai represents an additional step closer to fully active past tense, and the construction arrives at a fully productive past tense in Wayana and Tiriyó. The final product of this evolution is illustrated in the Tiriyó examples in 7a-b, which show the unmarked absolutive argument controlling agreement with the optional copular auxiliary and the A occurring with an ergative case-marker that is cognate to the oblique marker in Carib.
Illustration of the changes in control and behavior properties is beyond the scope of this paper, but as documented in Gildea (1997), the ergative A and the absolutive S form a single nominative category in control of coreference with the logophoric possessive/postpositional prefix, and in control of coreference with the (nominative) subject of an innovative adverbial clause type.

(6) The new ergative in Tiriyó (Meira 1999): \( t-V-se/-ye/-e/-\emptyset \)

\[
\begin{align*}
\text{a. } & w\dot{\text{a}}rì \quad (nai) \quad ñì\dot{\text{á}}e \\
& w\dot{\text{a}}rì \quad nai \quad t- \quad t\dot{\text{á}} \quad -se \\
& \text{woman } 3:\text{Cop} \quad \text{PRTCP-go-PRTCP} \\
& \text{‘The woman went’}
\end{align*}
\]

\[
\begin{align*}
\text{b. } & w\dot{\text{a}}rì \quad (nai) \quad ñì\dot{\text{á}}k\dot{\text{a}}e \quad ñì\dot{\text{kí}} \quad yà \\
& w\dot{\text{a}}rì \quad nai \quad t- \quad eek\dot{\text{a}} \quad -se \quad ñì\dot{\text{kí}} \quad yà \\
& \text{woman } 3:\text{Cop} \quad \text{PRTCP-bite-PRTCP} \quad \text{snake AGT} \\
& \text{‘The snake bit the woman’}
\end{align*}
\]

In passing, I note here that the cognate construction in Katxúyana was recognized as a simple past tense by all speakers with whom I worked, and that younger speakers produced this past tense in narrative texts with roughly the same distribution as seen in Tiriyó narratives. However, Katxúyana and Hixkaryana are much more closely related to each other (both belong to the Parukotoan Group, as seen in Table 2) than either is to Tiriyó or Wayana, so it is odd that the two should treat the cognate construction so differently. Further, in working with narrative texts as told by the eldest Katxúyana shaman in 1994, I was able to encounter no examples of this ergative past tense, no examples of a participle with an agent phrase, and only 5 examples of participles that might be interpretable as eventive (that is, alongside a possible stative interpretation was also a possible eventive interpretation).

At this point, a bit of nonlinguistic history completes the picture: the Katxúyana population was decimated over the first half of this century, and in 1968, the remaining 40 Katxúyana relocated to become a minority within the large Tiriyó community at Missão Tiriós in northern Pará, Brazil. All Katxúyana there are now bilingual in Katxúyana and Tiriyó, and everyone younger than 45 became a fluent speaker of Tiriyó at the same time that they were learning their native language. Thus, we have here excellent evidence for a contact-induced change: the Katxúyana all speak Tiriyó, a language in which the participle has
already gone through the passive and inverse stages en route to becoming an ergative past tense. The Katxúyana language possesses cognates to all the morphological units found in the Tiriyó ergative past tense construction. Thus, the young speakers of Katxúyana simply use the morphological resources of Katxúyana to produce the calqued grammar of the Tiriyó past tense; older speakers recognize and interpret this innovative construction, but do not produce it themselves in narrative discourse.

3.1.2 Cariban Patient Nzn > passive > Ergative (Venezuelan Branch)

In a second, independent innovation, it appears that an absolutive nominalization in another group of Cariban languages becomes first a passive and then an ergative perfective/past. The nominalization in question occurs on both transitive and intransitive verbs, and produces a noun that refers, in some languages, to a past action, and in other languages, to the absolutive participant in the event described by the verb. The former meaning also has the potential to be reanalyzed as a main clause past tense verb with ergative morphosyntax, but in that case it does not necessarily pass through a passive stage en route to ergativity (cf. the pleonastic pivot, section 2.3.1). The latter meaning provides a clear context in which the reanalysis must go through a grammatical stage that is best considered a canonical passive; in the remainder of this section, we restrict our consideration to the latter variant of the nominalization.

The source construction is outlined schematically in Figure 1: the nominalized clause is the predicate, appearing to the left of the copula, whose subject occurs last in the sentence. The entire nominalized clause refers to the absolutive participant in the event expressed by the nominalized verb, and in a typologically strange twist, the derived noun is also obligatorily possessed by the notional absolutive (a calque into English would yield a construction something like “I am my escapee”, and “The mango is its pickee (a picked one) by the man”).
In the first reanalysis, the nominalization is reanalyzed as a passive verb and the copula as the auxiliary of the passive. This stage is attested in the Panare -sa’ and -hp passives (cf. T. Payne 1990). As seen in 3a-c, the Panare passive verb bears a subject prefix, as does the postverbal auxiliary; the subject occurs following the auxiliary, with no case-marking, and the agent of the event referred to by the passive verb occurs as the object of the dative postposition uya. Although the morphology and much of the syntax are consistent with a conservative analysis of this construction as representing a nominalization in a predicate nominal construction, Payne (1990) provides a functional analysis of the construction that suggests passive is a better analysis, and in earlier work (Gildea 1998) I present evidence that Panare predicate nominal constructions require the copula to be expressed, whereas after reanalysis of nominalizations as main clause verbs, the auxiliary is not similarly obligatory. Thus, the absence of the auxiliary in 3c provides evidence that this construction is grammatically not a predicate nominal construction.
(7) a. The Panare passive with both the auxiliary and the superordinate S

```
S-V      Aux    S   A-Oblique
y-ki-\textit{t}-sa'    m\textit{\textalpha}n   manko Toman uya
3Abs-cut-T/A is.Inan mango Thomas Dat
'The mango has been cut by Thomas / Thomas has cut the mango.'
```

b. The Panare passive with only the auxiliary

```
S       V      Aux      S  A-Oblique
naro  y-\textit{k}tsa'    k\textit{\textalpha}h    \textcircled{\textO}   (t\text{\textalpha}n\text{\textalpha} uya)
naro-\textcircled{\textO}  y- ^-\textit{k}t\textit{-sa}'    k\textit{\textalpha}h    \textcircled{\textO}  t\text{\textalpha}n\text{\textalpha} uya
parrot-Abs  Trns-PO-cut-Perf  3.is.Proximate  \textcircled{\textO}  \textcircled{T\text{\textalpha}n\text{\textalpha} na Dat
'The parrot is cut (by T\text{\textalpha}n\text{\textalpha}).'
```

c. The Panare passive with neither auxiliary nor superordinate S

```
S-V      Aux    S   A-Oblique
\textit{y}k\textit{t}sa'    \textcircled{\textO}  \textcircled{\textO}  tyuya
\textit{y}k\textit{-kt-sa'}    \textcircled{\textO}  \textcircled{\textO}  ty-uya
3Abs-cut-Perf  \textcircled{\textO}  \textcircled{\textO}  3-Dat
'He cut it / it has been cut by him.'
```

Since the only clear subject properties in this construction are case-marking and auxiliary agreement, when the auxiliary and its postverbal subject are omitted (7c), there is little surface evidence for the status of the patient as subject, inviting the reanalysis of the clause without an auxiliary as a simple verb form, with an ergative subject and a preverbal absolutive argument, cf. the cognate form in Makushi, seen in example 8.

(8) The Makushi Completive Aspect

```
O       V        -A-Erg
yei-\textcircled{\textO}  yah\textit{t}-yonpa -sa'    -i -ya
tree-Abs  cut-Conative-Completive-3-Erg
'He tried to cut the tree.' (Abbott’s 487, p. 118)
```

This reanalysis, from passive to perfective aspect or past tense active clause, is attested with two different sources in the Cariban family alone, and it appears that the same source is implicated in creating the ergative half of the tense-aspect based ergative splits found in the Indic branch of the Indo-European language family. To date, no other source has been documented for the universal tense-aspect based ergative splits, so to the extent that we can explain the affinity between the sources of passive constructions and the
perfective/past semantics that seem to come associated with them after reanalysis as verbal inflection, we will have provided a historical explanation for a significant portion of the universal pattern. The next section offers a first attempt to explain this affinity.

3.1.3 The semantic/pragmatic motivation for the universal

In explaining the origins of the universal tense-aspect based split, it is enough to explain only the origins of the ergative portion of the pattern, on the assumption that the non-ergative portion is the background against which the ergative pattern is innovative.3 In order to explain the connection between ergative clause grammar and past-perfective semantics, we must go all the way back to the forms that serve as the source of the innovative construction that becomes the passive cum ergative. In the source construction, we must account for the structural properties that allow for a reanalysis as passive and then as ergative; foremost among these properties is the selection of an S/O pivot. To count as an explanation for the universal, the same properties that motivate the selection of an S/O pivot in the source construction should also motivate the semantic source of past-perfective tense-aspect meaning.

The property that meets both needs is the pragmatic decision to talk about the patient of an event/action. Numerous studies from various functional theories of linguistics (e.g. Givón, Halliday, Dik, Tomlin) have made the claim that primary topic (given various labels and definitions) is coded as subject of a clause so if a speaker intends to talk about the patient of an action, then it is the patient that will be selected to serve as the subject of the utterance. The utterance in question is a predicate nominal clause that attributes some property to the subject, namely, the property of having been affected as a result of some action, e.g. The window is/was broken. The predicate nominal construction has as syntactic requirements (i) that the predicate contain either a noun or an attributive element like an adjective (i.e. not a finite verb), and (ii) that the complement of the copula (the predicate) consist of either an argument (noun) coreferential with the subject argument, or an element (adjective) that attributes a property or a location to the subject argument. Thus, the verb that expresses the action must be realized as either a patient nominalization (any other type of nominalization would not yield a noun coreferential with the subject of the

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3 In fact, this assumption is too simplistic, as innovative non-ergative patterns can also arise in the context of otherwise dominantly ergative systems (cf. the Makushi progressive, Gildea 1993, 1998 ch. 12), but for the moment the focus of our attention is on the creation of the connection between ergativity and past-perfective.
predicate nominal clause) or a passive participle-like verbal adjective (a non-passive would not identify the property as pertaining to the patient of the action).

The semantics of patient-hood simultaneously motivate the past-perfective meaning. In fact, a prototype patient does not exist — i.e. will not even have the properties attributed to it in the source construction — until the completion of the activity expressed by the verb. Thus, the passive participle or the patient nominalization that serves as the complement of the copula will already have default resultative semantics. The path from resultative to perfect, then perfective, then past is well-documented (Bybee et al 1994).

Thus, a passive will always begin as a past-perfective kind of construction with an S/O pivot, which means that after reanalysis, it will combine ergative case-marking and syntax with past-perfective semantics, thereby motivating the ergative half of the near-universal pattern for tense-aspect based split ergativity.4

3.2 Reanalysis of possessive perfect to ergative past-perfective

Here, the source does not universally give ergative main clauses, but it does give universally resultative main clauses, which then evolve into past-perfectives. Examples from well-known European languages that do not produce ergative morphosyntax include English (have V-en) and Romance (Span. haber V-do, etc.). Among the many cases that produce non-ergative main clauses are a three that result in some degree of split ergativity. French avoir V-é produces a limited absolutive pattern of gender agreement (DeLancey 1981, 1982). The Iranian possessive perfect gives absolutive agreement and a dative-possessor construction that is one of the better-documented cases of a source for ergative case-marking as well (Anderson 1977). The case of Shina is somewhat speculative, but Anderson (1977) suggests a plausible hypothesis in which ergativity arrives in Shina via first a reanalysis of the possessive perfect as a verbal perfect, then via the borrowing and generalization of a new ergative case-marker from a nearby Tibeto-Burman language. Since I have no new cases to add from South America, I pass directly to an analysis of the connection between ergativity and past-perfective.

Again, the semantics of resultativity serve as the source of the universal past-perfective meaning associated with the reanalyzed possessive perfects. But

4 Note how this is congruent with DeLancey’s (1982) observations about viewpoint alignment.
unlike with passives, possessive predicates have no obligatory S/O pivot forcing the morphosyntax of ergativity. Instead, the resulting main clause case-marking and verb agreement patterns will be simply a reflection of the language-specific grammar of the elements found in the source construction, the main clause possessive predication. When the semantic possessor occurs as the nominative subject of the possessive predicate, the resulting new construction has a nominative subject; when the possessor occurs with oblique case-marking (a ‘dative’ possessor), the resulting new construction has a subject with unique marking, which is then available to be reanalyzed as an ergative subject. In this case, the synchronic pattern will indeed present an alignment of endpoint and patient viewpoint, as pointed out in DeLancey 1982, however, this is not the outcome of most cases of possessive perfect > past-perfect main clause, and as such, it is clearly not tenable to ascribe the motivation for this evolution to the expression of viewpoint. This construction is a common source of past-perfectives in the commonplace process of tense-aspect renewal, but when ergativity occurs, it is simply an accidental by-product of a particular subtype of possessive predicate construction.

3.3 Reanalysis of nominalizations to ergative (any tense-aspect)

Nonfinite inflections of verbs are the primary source of verb forms that are available to use in the renovation of tense-aspect inflections in any language. As shown in study after study (cf. Heine and Traugott eds 1991 _inter alia_, Heine 1993, Bybee et al 1994, Harris and Campbell 1995), new tense-aspect distinctions almost universally come from biclausal constructions, in which the matrix verb contains the semantics that generally lead to the new tense-aspect distinction (e.g. go > future, desire > future, come > past, finish > completive > past, etc.) and some dependent verb form contains the primary lexical information. The source matrix verb generally evolves first into an auxiliary, later becoming a bound tense-aspect morpheme; the source dependent verb form becomes the verbal head of the innovative tense-aspect clause. The list of nonfinite forms that enter into this grammaticalization path will trivially contain nominalizations, and as such, it is trivially true that an available source for new tense-aspect distinctions in languages will be nominalized forms of verbs.

Less trivially, there are also cases in which different nominalizations enter into main clauses as complements of semantically rather empty main verbs, such as copulas. In these cases, the semantics of the resulting tense-aspect distinctions may be more greatly influenced by variations in the semantics of the
source nominalizations. As already seen in section 2.1.2, patient nominalizations in Venezuelan Cariban languages have given rise to past-perfective inflections. Similarly, agentive nominalizations have given rise to habitual, and thence to imperfective tense-aspect distinctions (Gildea 1998 ch. 10). When nominalized verbs are reanalyzed as finite verbs indicating a certain tense-aspect distinction, obviously the grammar of the innovative clause types headed by these reanalyzed nominalizations will be different from that of etymologically prior main clauses. This will then create a tense-aspect based split, in which certain grammar will be unique to clauses based on the reanalyzed nominalizations, whereas other grammar will be associated with main clauses that come from different, older sources. This is the case in a number of languages in the Cariban family, as documented most extensively in Gildea (1998); Guirardello (1999) argues for this same source of ergative patterns in Trumai (South American isolate), and recent work shows parallel patterns (nominalizations > gerunds) in the Tupian Stock (Rodrigues and Cabral 2003) and in the Jê family (nominalizations > finite verbs; Alves 2003).

Given that such direct reanalyses of nominalizations can lead to tense-aspect based splits in main clause grammar, we must then ask whether any particular alignment pattern is associated with reanalyses of nominalizations directly to main clauses. The answer is that the alignment of the source will be reflected in the grammar of the result. So it is that, when the genitive maps to the subject role (as in Mayan languages), the results of a reanalysis will be a nominative clause (as in Mayan, reference). However, when the genitive maps to the absolutive role, as in South American language families like Cariban, Tupian, Jê and Trumai (isolate), or only to the A role, as in Katukina (Katukinan), then the resulting clause types will be ergative, regardless of the tense-aspect distinction that ends up being coded by the reanalyzed nominalizations. The direct reanalysis of nominalizations as finite verbs can be a source of overall ergative grammar, as in Trumai and Katukina, it can be the source of universal split ergative patterns, as in Makushi and Kuikuru (Cariban), or it can be the source of counter-universal, or previously unattested, split ergative patterns, as in Cariña, Panare, and Akawaio (Cariban) and Timbira Apâniekrá (Jê).

When the reanalysis of nominalizations brings ergativity into main clauses, this appears to be nothing more than an accidental consequence of the grammar of the source construction; unlike the possessive perfect, which always gives resultative semantics, different nominalizations can serve as the source for
a variety of tense-aspect distinctions. Thus, this source of ergativity is in fact the source of non-universal patterns of split ergativity, showing conclusively that the arrival of ergative morphosyntax into main clauses can be completely disconnected from any motivating “ergative” function.

In the following subsections, I document: the Cariban cases in which the possessor of a nominalized verb becomes the new main clause absolutive 3.3.1; the Jê case, in which the patterns are a subset of those found in the Cariban family (3.3.2); the Trumai case, in which the same source and result come about by means of a different source construction (3.3.3); and the less fully explored case of Katukina, in which the possessor of a nominalized verb is the apparent source of the current main clause ergative argument (3.3.4).

### 3.3.1 Cariban Ergative (Full Set II) and Nominative-Absolutive (Partial Set II)

As is documented in my earlier work (Gildea 1998, 2000), there are three different source constructions that serve as vehicles for nominalizations to become main clause verbs; as a result, there are three different resulting main clause patterns that show etymological nominalizations in their inflections. The first pattern is already documented above, in which the nominalization becomes the nucleus of a passive clause, then a main clause past tense verb inflection. The remaining two patterns I call Full Set II, which has absolutive person-marking on the verb, ergative case-marking and non-agreeing auxiliaries, versus Partial Set II, which has nominative auxiliary agreement, absolutive person-marking on the verb, and no nominal case-marking. Focusing on the identity in verbal absolutive person-marking and ergative case-marking, I have treated the passive source as another case of Full Set II (Gildea 1998); however, the auxiliary that comes from the passive construction agrees with the absolutive argument, whereas the auxiliary that comes from the pleonastic pivot (documented below) is in an invariant third person form.

The simpler, more iconic label **Ergative** pattern would be appropriate for the what I have called Full Set II; the lack of distinctive case-marking in the Partial Set II construction leaves only person-marking morphology to provide labels; given the existence of both a nominative pattern (auxiliary agreement) and an absolutive pattern (verbal person-marking), the Partial Set II might be more iconically called a **Nominative-Absolutive** pattern. The more iconic labels are useful in comparing the Cariban reanalyses with parallel reanalyses recently demonstrated to have taken place in Timbira Apâniekrá (Jê; section 2.3.2).
Ergative and Nominative-Absolutive main clauses in the Cariban family both have as their sources biclausal constructions with the matrix verb a copula (zero, in some cases) and the predicate noun an obligatorily possessed nominalized verb. The ergative pattern is found already in the nominalized clause: the notional absolutive argument obligatorily possesses the nominalized verb, whereas the notional A argument can only occur as an optional adjunct oblique phrase. The difference between Ergative Full Set II and Nominative-Absolutive Partial Set II constructions is the pivot found in the source clause: the Full Set II source is organized around a pleonastic pivot, whereas the Partial Set II is constructed around a nominative pivot. The detailed case for each has been made elsewhere (Gildea 1998, 2000), so in this paper I limit myself to the illustration of each pattern.

Figure 2 shows the syntax of the source construction for the Ergative Full Set II clause type, with the pleonastic pivot. The leftmost unit is the NP consisting of the nominalized verb with its obligatory absolutive possessor; the optional oblique A-phrase is represented as following the [absolutive V-Nzr] unit inside the NP, but in fact it can precede the core of the NP, or even occur outside the NP, clause-finally. In the source for this particular inflection, there is a zero instead of a copula, and the subject NP is an inanimate demonstrative pronoun, pleonastically referring to the clause.

![Tree diagram of the source with the pleonastic pivot](image)

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5 While I illustrate here only with source constructions in which the complement of the copula is a nominalization, the Cariban family does present other examples of each pivot type in which the complement of the copula is a postpositional phrase, with the object of the postposition being the obligatorily possessed nominalization.
An example of this source construction with intransitive verbs can be seen in the Apalaí examples in 9a-b. The nominalization is possessed by the notional S, and the subject of the matrix clause is an inanimate demonstrative pronoun moro ‘that’.

(9) The source construction in Apalaí (Koehn and Koehn 1986.109)

a. y- i tô -rî moro
   1- go-Nmlzr that
   ‘I was going.’

b. a- i tô -rî moro
   3- go-Nmlzr that
   ‘He was going’

(lit. ‘That is my going’)
(lit. ‘That is his going.’)

Returning to Figure 2, after reanalysis the morphosyntax of possession becomes the morphosyntax of the absolutive, whereas the oblique agent phrase becomes the new ergative. These developments can be seen in the ‘Universal’ tense inflection (generally an imperfective aspect) in Makushi (12a-b) and Akawaio (13a-b). The erstwhile pleonastic subject of the predicate nominal clause becomes irrelevant, and is generally lost. In Makushi a reflex of this pronoun is seen in the particles mîrî ‘Addressee Involvement’ (12a) and sîrî ‘Speaker Involvement’ (12b), formally identical to, respectively, the distal and proximal inanimate demonstrative pronouns. In Akawaio, a reflex of the pronoun is seen in the form mörö, whose use is still not completely understood: two apparently disjunct synchronic functions are, like Makushi, to indicate addressee involvement, but unlike Makushi, to indicate future time (cf. Caesar 2003, ch 3).

(10) The post-reanalysis construction in Makushi (Abbot 1991.106) (*-rî > -Ø)

a. a- ti -Ø mîrî
   3- go-Univ Addressee.Involvement
   ‘He is going now’ or ‘He will go soon’ or ‘He goes.’ (of interest to you)

b. uu-tî -Ø sîrî
   1- go-Univ Speaker.Involvement
   ‘I’m going (of interest to me)’

(11) The post-reanalysis construction in Akawaio (Fox pc)

a. u-dô -Ø (mörö)
   1-go-Imperf that
   ‘I am going (soon)’

b. i- dô -Ø (mörö)
   3-go-Imperf that
   ‘He goes/is going/will go’

To summarize the main characteristics of the pleonastic pivot, the subject of the matrix clause is simply a pleonastic pronoun, coreferential with
the entire nominalized clause that occurs in the predicate. This pleonastic subject is readily lost after reanalysis, leaving the ergative morphosyntax (by which the nominalization expresses its notional arguments) to become the basic argument structure of the reanalyzed clause. Other tense-aspect distinctions originate in different nominalizations or by the addition of a copula inflected for other tense-aspect distinctions (for examples, cf. Gildea 1998 ch 9).

The nominative/absolutive pattern of the Partial Set II construction comes about by means of the exact same sort of possessed nominalization at the core of the predicate, but in the source construction, the matrix clause takes as its subject the notional A/S of the nominalized verb, creating a nominative pivot (i.e., the S subject of the matrix clause must be coreferential with the notional A/S of the nominalization). Constructions formed in this way throughout the family include negation and the desiderative; those found in only one or two languages include a generalized imperfective and a future in Panare, and a progressive in Katxúyana. The nominative pivot generally requires the nominalization to occur in a postpositional phrase, but in the case of Panare, one pair of nominalizations occurs directly as the predicate, creating a single inflection with transitivity-conditioned allomorphy: -ñe ‘Nonspecific Aspect Transitive’ and -n/-në ‘Nonspecific Aspect Intransitive’. Figure 3 illustrates the grammar of the source construction for the transitive half of the nonspecific aspect clause.

![Figure 3: S/A Pivot > Nominative/Absolutive: the A nonspecific aspect](image)

The A nominalization is possessed by the notional O, just as the corresponding nominalization would be in English: *his employer*. This possessed
noun refers to the notional A of the verb employ, and as such would readily be the predicate of a main clause like She is his employer. Such a phrase would never take an oblique agent phrase, in Panare or in English: She is his employer *by her. In Panare, this clause was reanalyzed as a simple main clause, presumably first with a habitual reading, which then extended to a generalized imperfective that Payne and Payne (in progress) call the Nonspecific Aspect. The examples in 12a-b illustrate the morphosyntax of the new clause type after reanalysis; in both cases, the context of elicitation yields an immediate future reading, but this could readily be shifted, either by context or by the addition of adverbials or an auxiliary inflected for one of a number of tense-aspect distinctions. In 12a, the first word is the main verb, bearing the aspect suffix; the erstwhile possessive prefix y- ‘3’ becomes the absolutive prefix. Next, the erstwhile copula of the predicate nominal clause becomes the auxiliary, inflecting for animacy and deixis of the subject (cf. Gildea 1993a). The A was the erstwhile S of the copula, and the postverbal O is an innovation in main clauses in Panare (cf. Payne 1994, Gildea 1998, 2000). In 12b, the O is the preverbal pronoun, in a tight constituent relationship with the verb, which is the reanalyzed nominalization. The postverbal A is the erstwhile subject of the predicate nominal clause; the absence of the auxiliary is due to the absence of a copula in the source predicate nominal clause: first and second person subjects of predicate nominal clauses do not require a copula as third person subjects do, and as a result first and second person subjects generally do not take an auxiliary in the reanalyzed nonspecific aspect clause.

(12)a. y-ktu-ñe (kÀh) mÀh aire
‘S/he cuts / is going to cut the meat.’

b. amÀn pêtyuma-ñe yu
you hit-T/A I
‘I’m gonna hit you’

The story becomes somewhat complicated at this point, because the A nominalizer only occurs with transitive verbs, leaving the nonspecific aspect inflection without a way of being expressed on intransitive verbs. The intransitive half of the inflection thus comes from a different nominalizer, the action nominalizer -n. The noun created by adding -n to a verb generally refers to an action (it is cognate to Apalaí -ŗ and to Makushi/Akawaio -Ø, seen above.
as the source of a general imperfective inflection in the Full Set II system) and is obligatorily possessed by the notional absolutive argument, thus in intransitive verbs by the notional S. In the source construction of the intransitive nonspecific aspect clause, it appears that there was a reanalysis of the meaning of this nominalizer to something more like an S nominalization, which could be paraphrased literally in English as something like *I am my singing*, or *I am my sitting*. Thus, the subject of the matrix clause is marked via both copular agreement and the postverbal order, and it is coreferential with the possessor of the nominalization, which is itself coreferential with the matrix clause subject.

![Diagram](https://via.placeholder.com/150)

**Figure 4: S/A Pivot > Nominative/Absolutive: the A Nominalizer**

After reanalysis, the erstwhile nominalization becomes the aspect-marked main verb; the obligatory possessor prefix becomes an S prefix. The erstwhile main clause S and the copula that agrees with it become the new main clause S and the (optional) auxiliary that agrees with it.

(13) **EXAMPLES of -n ‘Nonspec’ from Gildea 1998**

Seen alongside the transitive construction, the S prefix on the intransitive verb joins the O prefix on the transitive verb to create an absolutive category; the postverbal auxiliary agrees with A and S, creating one nominative category, and the post-auxiliary position of the A/S nominal creates a second nominative category. Thus, there are two obligatory positions in the source construction: possessor of the nominalized verb and subject of the matrix clause copula. What creates the pattern of the Nominative-Absolutive is that for transitive verbs, the A claims one position and the O the other, whereas for
intransitive verbs, the S claims both positions, thereby creating parallel
treatment of A/S in one position, versus parallel treatment of O/S in the other
position.

3.3.2 Jê (Possessor > Absolutive)

Alves (2003) shows apparent cases of both Ergative and Nominative-
Absolutive patterns, both strikingly parallel to the Cariban patterns just
illustrated. Parallel to the Cariban Full Set II are Apâniekrá simple past clauses,
with ergative case-marking on the A (14a-b), a preverbal absolutive NP (14a) in
alternation with absolutive person-marking on the verb (14b-c), and the main
verb in an etymologically nonfinite (NF) form. There are no auxiliaries in the
Apâniekrá simple past construction.

(14) The Ergative-Absolutive clause type

a. rɔp tɛ hɔtʃɔtʃɔk tʃar
dog ERG chicken bite.NF
‘The dog bit the chicken.’

b. ɦi i-Ɂe iʔ-ɨ kur
meat 1-erg 3-eat.NF
‘Meat, I ate it.’

c. a-mɔr
2-walk.NF
‘You walked.’

The Apâniekrá simple past is etymologically a nonfinite clause, a
nominalization possessed by the absolutive with the A added in an oblique
phrase. In addition to showing the identity between simple past and synchronic
nonfinite/nominalized clauses in Apâniekra, Alves gives evidence from three
other Jê languages, Kayapó, Apinajé and Suyá, that the exact pattern presented
in Apâniekrá simple past clauses — including argument structure and the
morphological form of the verb — is the pattern presented in nonfinite clauses.
Since all the languages in the sample agree on this structure for nonfinite
clauses, it must be reconstructed as nonfinite clause grammar to at least the
common ancestor of this group of Jê languages; in future research, it may prove
possible to reconstruct this same grammar to Proto-Jê nonfinite clauses. Thus,
the Apâniekrá simple past clause is a direct reanalysis of the nonfinite clause as
simple past, possibly by means of a periphrastic pivot and zero copula like the
isomorphic Full Set II clause types in Cariban.
Parallel to the Cariban Nominative-Absolutive Partial Set II are Apâniekrá negative, desiderative, prospective and evaluative (e.g. ‘it is good that’) clauses. The nominative portion of this alignment comes from the behavior of the A and S free pronouns, which occur in subject position with no case-marking (15a-d). The Absolutive portion of this alignment comes from absolutive person-marking prefixes on the verb (15a-c), in the case of the O alternating with a preverbal O NP (15d), in the case of the S agreeing with the nominative free pronoun in subject position (15a-b). The verb is in the etymologically nonfinite form, and the main semantic content of negative, desiderative, prospective and evaluative come from an invariant auxiliary that follows the verb, whereas the tense of the negative construction, at least, comes from the second position tense clitic (15d).

(15) The Nominative-Absolutive clause type
a. ka nē apu ŋ̃-q̃kukrēn na
   2 NEG PROG 2-run.NF NEG
   ‘You’re not running.’

b. mē pa-ŋ̃kre ku nē mē pa-j̃q̃kukrēn na
   Pl 1Incl-three 1Incl Neg Pl 1Incl-run.NF Neg
   ‘We three didn’t run.’

c. nē wa h-ir narē
   NEG 1 3-keep.NF NEG
   ‘I’m not going to keep it.’

d. ka=ha wakə pir na
   2=FUT knife grab.NF NEG
   ‘I won’t grab the knife.’

In the Apâniekrá constructions that present this nominative-absolutive pattern, Alves argues that the auxiliary is etymologically a finite verb.6 This main verb (the auxiliary after reanalysis) would take no person marking, as it would be directly preceded by its O, the erstwhile nonfinite complement verb (the main verb after reanalysis). Thus, the sentence-initial nominative A/S pronoun etymologically comes from the A of the main verb cum auxiliary, and the preverbal absolutive nominal/prefix etymologically comes from the possessor of the nonfinite verb cum main verb.

6 Alves (pc) does not necessarily endorse the further claim I make here, that these auxiliaries were once transitive complement-taking verbs; this is a hypothesis that remains to be tested in future research.
The nominative-accusative clause type in Apãniekrá is found in all the rest of the tenses and aspects, such as future (16b-c) and simple present tense (16a, d). The nominative free pronoun is generally sentence-initial (16a-c), followed by a second-position tense clitic when tense is specified (e.g. the future in 16b-c), and the accusative NP precedes the verb (16c) in alternation with an accusative verbal prefix (16d).

(16)  The Nominative-Accusative clause type

a. ka mɔ
   2 walk
   ‘You walk.’

b. ka=ha mɔ
   2=FUT walk
   ‘You will walk.’

c. ke=ha rɔp hɔtʃɛtʃɔk tʃa
   3=FUT dog chicken bite
   ‘The dog will bite the chicken.’

d. hĩ wa ku-ku
   meat 1 3-eat
   ‘meat, I eat it.’

The nominative-accusative pattern in Apãniekrá shows no properties of nonfinite clauses: the verb is unmarked, the argument structure groups A with S rather than O with S, and there are no clause-final auxiliaries. Thus, this clause type reconstructs as a finite clause, at least as far back as the common ancestor of Apãniekrá, Suyá, Kayapó and Apinajé.

In summary, Alvez shows that both ergative case-marking in the simple past and absolutive verbal prefixation in the simple past and several other tense-aspects both have as their source nonfinite clauses, in which the absolutive possesses the nominalized verb and the A occurs in an oblique phrase. While a great deal of detailed work remains to be done in comparative Jê morphosyntax, Alvez (2003) represents a significant breakthrough in our understanding of the origins of ergativity in the Jê languages, and it will serve as a point of reference for those future studies.
3.3.3 Trumai (Possessor > Absolutive) (Guirardello 1999)

Main clause grammar in Trumai is almost completely ergative, with little in the way of nominative patterns, even in the expected domains of imperatives and jussive constructions (Guirardello 1999, 2003). Guirardello (1999) does a careful internal reconstruction of the source of all the main clause ergative patterns, showing that each of them (case-marking, absolutive-V constituency, and ‘raising’ of complement clause absolutive to main clause absolutive) have as their source properties of obligatorily possessed nominalizations. She further reinforces the argument by showing that nominalizations in complement clauses are morphologically identical to finite verbs. Finally, she solves the puzzle of the verbal particle *ke*, which marks the verb in main clauses when the absolutive does not immediately precede the verb (i.e. when the VP is “broken”); the source of this *ke* is ultimately a nominalizing morpheme, which derives an unpossessed noun from the verb that precedes it. Thus, she shows that the various ergative patterns in Trumai main clause grammar were not created as a part of their arrival in main clauses, but they were simply inherited from nominalizations when those were reanalyzed as main clause verbs. In the following sections, I present a very brief summary of Guirardello’s (1999) arguments.

Example (18a-d) presents the Trumai basic main clause patterns for intransitive (18a-b) and transitive (18c-d) verbs: note that the preverbal S in 18a is, in 18b, in alternation with the third person pronominal enclitic -e (the allomorph that follows a consonant); similarly, the preverbal O in 18c is, in 18d, in alternation with the other allomorph of the third person pronominal enclitic, -n.

\[
\begin{align*}
(18)a. & \quad \text{axos yi waTkan} & b. & \quad \text{iyi waTkan-e} \\
& \quad \text{child Yi cry} & \quad \text{IYI cry -3} & \quad \text{‘The child cried.’} & \quad \text{‘S/he cried.’} \\
& \quad \text{A-Erg [ O V ]} & \quad \text{A-Erg V-o} \\
(18)c. & \quad \text{hai-ts ha atle padi huk’an} & d. & \quad \text{hai-ts padi-n huk’an} \\
& \quad \text{1-Erg 1 mother wait still} & \quad \text{1-Erg wait-3 still} & \quad \text{‘I am going to wait for my mother.’} & \quad \text{‘I am going to wait for him/her.’}
\end{align*}
\]

Guiradello further shows that the ergative A may be freely omitted without prompting the occurrence of any sort of pronominal clitic. She similarly shows that a dative argument can occur either with basic intransitive or transitive verbs, and that some verbs require a dative argument which, like the
ergative A, may be freely omitted without prompting a pronominal clitic. In combination with an absolutive argument, the dative argument creates a clause type that she labels *extended intransitive*; in combination with both an ergative and an absolutive, the dative argument creates a ditransitive clause, which she labels *extended transitive*.

The parallel pattern for nominalizations can be seen in dative complement clauses, in which the main clause calls for an absolutive subject and a dative complement, the complement clause filling the position of the dative complement. In 19a-b, the main clause verb is *pudits* ‘like’, whereas in 19c the main verb is *huts’a* ‘see’ and in 19d it is *wiami* ‘tell’. With all three verbs, the subject is the absolutive argument and the VP of the complement clause must bear the dative suffix. As illustration, consider how the complement clause in 19a has both a free pronoun S, *ha*, and the complement verb, *otl* ‘sleep’, followed by, in turn, the NP final particle *yi* and the dative suffix *ki*. To observe the parallel between possessed nouns and main clause verbs, consider the what happens when the absolutive argument of the complement clause is third person and does not occur as an explicit NP: a third person enclitic occurs as the final element before the dative suffix. In 19b and c the missing absolutive NP is an S, in 19d it is an O; in 19b and d, where the pronominal enclitic occurs directly between the V and the dative suffix, the form is *ae*, whereas in 19c, between yi and the dative suffix, it is reduced to simply *a*.

\[
\begin{align*}
19a. & \quad S \ V \ [ S V YI]-DAT \\
& \quad ha \ pudits \ ka\_in \ [ha \ otl \ yi]-ki \\
& \quad 'I like sleeping.' \\
19b. & \quad S \ V \ [ V-s]-DAT \\
& \quad Yatamalu \ pudits \ ka\_in \ [katnon-ae]-tl \\
& \quad 'Yatamalu likes (her) working.' \\
19c. & \quad S \ V \ [ V-yi-s]-DAT \\
& \quad ha \ huts'a \ chi\_in \ [ sa \ yi-a] \ -tl \\
& \quad 'I saw (her) dancing.' \\
19d. & \quad S \ V \ [ V-o-DAT \ A-Erg] \\
& \quad inatl \ yi \ chi\_in \ waimi \ ke \ [ disi-ae \ -tl \ axos-pa \ wan-ek] \\
& \quad 'She told me that the kids killed it.'
\end{align*}
\]
nominalizing morphology in the complement clause, it is not immediately clear that the complement clause is best analyzed as a nominalized clause. The two most obvious arguments for its nominal status are the ability of the NP final morpheme yi to follow the clause (19c) and the ability of the complement verb to bear the dative case suffix, which otherwise only occurs on nouns. An additional argument follows from the form of the absolutive enclitic, which is identical to one of the two enclitics that marks the possessor of inalienably possessed nouns. First, we see in 20a that the inalienably possessed noun may simply occur following its possessor; then in 20b we see the longest allomorph, ake ‘3’, of the possessive enclitic. But the parallel we are seeking is to an inalienable noun in the dative case, and as seen in 20c-d, the parallel is perfect, with the possessive enclitic taking the form -ae when between the possessed noun and the dative suffix, and taking the form -a when between yi and the dative suffix.

One of the most striking syntactic patterns in Trumai is the “raising” of the absolutive argument of a complement clause to become the absolutive argument of the main clause verb. This pattern is illustrated in 21a-d, all showing complement clauses with the main clause verb padi ‘wait’. In both 21a and 21c, the proper name Sula represents the absolutive argument of the complement clause, as the S in 21a and as the O in 21c. Given that complement clauses appear to be identical to main clauses, when the absolutive of the complement clause is not expressed as a noun phrase, one might expect that the complement verb would take the third person absolutive pronominal enclitic. However, as seen in 21b and 21d, when the absolutive argument of the complement clause is not an explicit NP, the absolutive enclitic occurs following not the complement clause verb, but rather the main verb.
As Guirardello demonstrates, like the other main clause patterns, this striking pattern is simply the pattern found with the possessor of any inalienably possessed noun. Thus, in 22a, we see the sequence possessor-possessed serving as the O NP of the verb *tuxa’tsi* ‘pull’; in 22b, we see that the possessor is not an explicit NP, but rather than showing up as the expected possessive enclitic on the inalienable noun, we find the possessor referenced by the absolutive enclitic on the verb.

Thus, we again see that complement clauses simply behave as inalienably possessed nominalizations, and by reanalysis, the argument structure in main clauses patterns in the same way. What makes the case of Trumai different from those we have already seen for the Cariban, Tupían and Gê language families is the mechanism by which nominalizations arrive as the main predicating elements in independent clauses — whereas the others arrived as the complements of copulas, in Trumai the most plausible mechanism is as the relative clause portion of cleft constructions (Guirardello 1999). Parallel reanalyses are attested in African languages (Heine and Reh 1984): after reanalysis, the grammar of relative clauses becomes the grammar of main clauses and the grammar of the cleft (i.e. the copula and perhaps the relativizer) becomes a topic marker. This is exactly the situation in modern Trumai, albeit with one extra twist.
First, the grammar of relative clauses is split, with the simple
nominalizations seen above serving when the relativized argument is not the
absolutive. However, when the relativized argument is the absolutive, the
standard nominalization cannot be used, as the absolutive must obligatorily
possess it; thus, when the relativized argument is the absolutive, a nonpossessed
nominalization is used. This nominalization is formed by putting the particle or
suffix  ke  after the verb (23a-c). The simple unpossessed nominalization is shown
in 23a; 23b-c show the relative clause function of the same morpheme, in each
case with the relative clause serving as the predicate portion of a modern cleft
and the relativized absolutive argument serving as the subject of the copula.

(23)a.  katnon-ke  
work -Nzr

b.  ha chï ka_in wal ke  
1 Cop Foc/Tns sing Rel

‘worker’

‘It is me who is singing/the singer.’

c.  hi atle chï ka_in hai-ts amidoxos ke  
2 mother Cop Foc/Tns 1-Erg call Rel

‘Your mother is who I called/the called one by me.’ (*my called one)

In addition to the structure of the absolutive relative clause, the clefts in
23b-c show both the modern copula,  chï , and the topic markers that are
historically derived from the old copula in the historical cleft construction, the
focus/tense particles  ka_in  (present tense) and  chï_in  (past tense) (Get a
different example with past tense!). These focus/tense particles are ubiquitous in
modern Trumai discourse, with nearly every sentence containing one in second
position (generally after a single argument or after the VP, sometimes after the
entire sentence). They are composed of two parts which can still, in exceptional
circumstances, be separated: the first part the copula  chï  and what Guiaradello
presumes was once a copula,  ka , the second part the emphatic focus marker  in .
The use of the etymological absolutive relative clause in main clauses is also
common, occurring anytime the absolutive argument is put into focus (cf. 24a-b).
As the erstwhile relativizer  ke  serves no apparent function in main clauses, it
is simply glossed as ‘KE’.

(24)a.  axos yi ka_in wapta ke  
child YI Foc/Tns fall ke

‘The child fell.’

b.  kodechï chï ka_in hai-ts disi ke  
snake Foc/Tns 1-Erg kill ke

‘I killed the snake.’
Guirardello 1999 gives the argumentation for this reconstruction, including the stages by which the two distinct source cleft constructions evolved into the two types of standard main clause sentences.

For our purposes, the source of all ergative patterns in Trumai still reconstructs to the grammar of nominalizations, such that ergativity is not created by the reanalysis, but simply brought into main clauses when nominalizations are reanalyzed as main clause verbs.

### 3.3.4 Katukina (Possessor > Ergative)

The Katukina main clause ergative pattern is quite different from that in the other languages considered so far: instead of the usual morphological clues, such as ergative case-marking and absolutive verb agreement, in Katukina the verb marks the person and number of the ergative argument only; if the ergative argument is an explicit noun, that noun precedes the verb and the two form a tight VP constituent. In contrast, the O and S may precede or follow the VP, or may disappear altogether without apparent grammatical consequences (Queixalós 2003, In press). In 25a-c, the intransitive verb precedes the S noun (25a) or the S pronoun (25b), or occurs with no argument noun or morphology. In 26a-d, the transitive verb precedes the O noun (26a-b, d) or the O pronoun (26c); person and number of A is always marked in a verbal prefix, and when an explicit ergative noun occurs, it must immediately precede the transitive verb, which now bears an additional relational prefix n-.7

\[
\begin{align*}
(25) & \text{ a. } tyuku \ wa:pa \\ & \text{ die dog shout 1 die} \\ & \text{ ‘The dog died.’} \\
& \text{ b. } wiwok \ adu \\ & \text{ shout 1} \\ & \text{ ‘I shouted.’} \\
& \text{ c. } tyuku \\ & \text{ die} \\ & \text{ ‘S/he/it died’}
\end{align*}
\]

\[
\begin{align*}
(26) & \text{ a. } [Kirak \ n- \ a- \ hikna ] \ wa:pa \\ & \text{ Kirak Rel-3-seach.for dog} \\ & \text{ ‘Kirak searched for the dog.’} \\
& \text{ b. } a- \ hikna \ wa:pa \\ & \text{ 3-seach.for dog} \\ & \text{ ‘S/he searched for the dog.’}
\end{align*}
\]

---

7 Relational prefixes are an areal phenomenon of the Amazon, found in (at least) the Tupian, Cariban and Macro-Gê families (Rodrigues ####). Relational prefixes occur on the head of a dependent-head dyad (generally possessor possessed, object-Postposition, and OV); when one is present, it is generally one of a set of properties that indicate a constituency relationship between the preceding dependent and the following head.
[Kirak n-a-hikna] adu
Kirak Rel-3-search.for I
‘Kirak searched for me.’

I-search.for dog
‘I searched for the dog.’

Queixalós (in press, 2003) goes on to show a number of syntactic properties that are sensitive to the absolutive or the ergative categories, including the obligatory use of the antipassive when questioning the A of a clause. While no historical work has been done in Katukina, the parallelism between main clauses and possessed nouns is clear: consider the predicate nominal construction in (27), where the predicate noun and its possessor have exactly the morphosyntactic properties of a transitive verb and its A, respectively.

(27) [Yowai n-a-obatyawa] Wahio
    Yowai Rel.-3º-wife Wahio
    “Wahio is Yowai’s wife.”

In the case of Katukina, neither comparative nor internal reconstruction have yet established the nature of the relationship between possessed nouns and the AV verb phrase. Given the weight of the cases from other South American languages — and given the generally uniform directionality of syntactic change — the initial hypothesis must be that modern main clause grammar in Katukina is historically derived from possessed nominalizations. However, this will remain just a hypothesis pending further research.

3.3.5 On the absence of universal correlations to such splits

Whereas the passive and the possessive perfect sources contributed both the grammatical antecedents to ergative patterns and a predisposition to be reanalyzed with perfective and then past tense meanings, the nominalization sources provide only the grammatical antecedents to ergativity, without any inherent predisposition for particular tense-aspect values upon reanalysis as main clause verbs. As such, it is not surprising that the only documented cases of counter-universal tense-aspect based split ergativity are found in languages where the innovative ergative grammar comes from reanalyzed nominalizations.
3.5 Reanalysis of topicalization constructions (any tense-aspect)

The final documented source of ergativity is the reanalysis of topicalization constructions, a source which is not tied to any particular types of split ergativity. The one case of this discussed in the literature (Dixon 1994) is Päri (Western Nilotic); since clefts are typically listed among the topicalizing constructions of a language, one might imagine grouping with the Päri case the Trumai reanalysis of a cleft as a kind of topicalization > ergative.

Päri topicalization of S/O > basic ergative (Andersen 1988, in Dixon 1994) — nominative is marked, accusative is the unmarked citation form, and the etymologically unmarked order was VSO. A fronted NP is topicalized, and occurs in the unmarked (accusative) case. S and O are fronted so often that it becomes obligatory, and thus both are unmarked, as opposed to A, which retains the etymological Nominative marker, now reanalyzed as Ergative.

Thus, the left dislocation construction neutralized the distinction between the S and O, leaving A with a unique marker, formerly the nominative and now the ergative. This appears to be a case where one might argue that Preferred Argument Structure is in some way involved in the creation of a new grammatical absolutive category. The outstanding question that must be answered is why the A was not fronted as frequently as the S, and thus why it did not also lose its case-marking. One provisory answer is consistent with the hypothesis that PAS motivates the formation of an absolutive category: the left dislocation construction was used only with full NPs, and one of the motivations for selecting full NPs over pronouns is precisely to introduce new participants into discourse (i.e., PAS).

In contrast, the function that motivated the Trumai clefts that served as the mechanism for introducing nominalizations into main clause grammar in Trumai must have been different. The argument follows from the fact that when placing the absolutive participant into first position in the cleft structure, the clause must be marked by ke and there is no evidence for an absolutive-Verb constituent, the VP. Rather, the basic clause type, with the Absolutive-Verb VP, must have arisen from constructions in which some participant other than the absolutive was placed into first position. Hence, Preferred Argument Structure cannot be the motivation for basic pattern, but only for the less-ergative subtype of main clauses.
5. Conclusion

Consider the gaps: ergative syntax always comes from reanalysis, nominative and split-S comes from either reanalysis or extension; ergative morphology always comes from reanalysis, nominative and split-S comes from either reanalysis or extension. The absence of a clear case of extension creating ergativity argues against a clear functional motivation unique to the ergative pattern. With the exception of the passive > past/perfective ergative, it appears that ergativity is a historical accident that has come up again and again in many parts of the world. Syntactic patterns are more sensitive to functional pressures, and thus syntactic ergativity is lost relatively quickly, but morphology is far more conservative, and as ergative morphology serves quite well the function of distinguishing semantic roles in transitive clauses, it can sustain itself for long periods once it is in place.

References


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