Case markers as subordinators in South American indigenous languages
Rik van Gijn (University of Zürich)

1. Introduction

South American Indigenous languages show recurrent patterns in their subordination strategies (Van Gijn et al. 2011). Recurring constructions, found across language families are for instance the use of bound subordinators, internally headed relative clauses, multi-verb constructions, clause chaining, switch reference, and nominalization. Van Gijn (2014) showed that nominalization as a subordination strategy is found significantly more often in South American languages than would be expected on the basis of global patterns. One of the particularly common constructions identified in Van Gijn (2014) is the formation of adverbial clauses by using case markers to indicate the semantic relation of the adverbial clause to the proposition expressed in the main clause.

The present contribution is intended as a follow-up study to Van Gijn (2014), aimed at achieving a more detailed perspective on case-marked adverbial clauses in South American languages, and to establish the extent to which the patterns found are non-random, and can be accounted for in terms of language contact, genealogical retention, or perhaps more general explanatory principles, to do with human cognitive or communicative preferences.

The paper is organized as follows: in Section 2 I introduce some more background to the issue of case marking in subordinate clauses, outline the leading questions of the paper, and introduce the language sample used for this paper. Section 3 is dedicated to a comparison of the case systems of the sample languages. Section 4 describes the patterns found of case markers used in adverbial clauses, which are discussed in terms of different possible accounts in Section 5. In Section 6, finally, the general conclusions for the paper are drawn.
2. Preliminaries

It is a widely observed phenomenon that case markers, generally associated with the noun phrase, are often also found in subordinate clauses. This is found in unconnected geographical areas and across many different language families (e.g. Blake 2001, Heine 2008). This raises the question what the driving forces behind this connection between NP case marking and subordinate clause case marking are. Three types of answers seem to be likely candidates:

1. *Genealogical retention*

The functional extension of case markers to mark subordinate clauses is a common grammaticalization path and can be stated in terms of general grammaticalization principles (see e.g. Heine & Kuteva 2007, Heine 2008), but the specifics of this grammaticalization path may of course differ from one situation to another. One of the potentially determining factors in which case markers end up in which types of subordinate clause is genealogical retention. Although case systems seem to suffer rather different fates in different situations (see Kulikov 2006, 2008), some case systems seem to be particularly time-stable. We also know that some aspects of case marking, like patterns of syncretism (see Baerman & Brown 2005) have a substantial genealogical component. It is, therefore, conceivable that specific extensions of case markers to subordinators were established before the languages of a family started to diverge, and that they simply retained this extension.

2. *Contact-induced diffusion*

It has long been recognized (see e.g. Weinreich 1953, Thomason & Kaufman 1988) that grammatical (especially morphologically bound) material is less easily borrowed than lexical material. It is less clear, however, how easily more abstract structural dimensions of systems may spread through contact (see e.g. Matras & Sakel 2007, Johanson 2008). It has furthermore been observed that some aspects of case marking, including the presence of case and the number of cases per language, but also some formal parameters like fusion, seem to have (macro-)areal tendencies (Bickel & Nichols 2008). It may therefore also be the case that language contact is the main responsible for the occurrence of case markers in subordinate clauses.
3. Functional pressures

The fact that case markers are in general often found on subordinate clauses may in itself be regarded as resulting from functional pressures. One of the explanatory principles invoked in Cristofaro (2003) to explain patterns of subordination is the likelihood for a subordinate event to be construed as a thing (versus a process). Following Langacker (1987a, b), Cristofaro notes that entities are processed differently than e.g. actions or properties, the distinguishing cognitive feature of nouns is “that they designate sets of entities that are scanned summarily as a unitary whole (things)” (Cristofaro 2003: 159), whereas actions are prototypically processed in phases that occur sequentially in time. In subordination constructions, in Cristofaro’s approach, the main event imposes its processing profile over the entire construction, leaving the dependent events to be scanned without such a sequential profile, which makes them cognitively more like things. Moreover, subordinate clauses typically perform discourse and syntactic functions associated with nouns (argument of a verb, reference, etc.) which also makes them more like nouns, and therefore more likely to acquire nominal characteristics like case marking (see Croft 1991, Malchukov 2006).

The three answers, in their pure form, predict different distributional patterns: the genealogical factor predicts similar extensions of case markers to subordinate clauses within but not across families, whereas the areal factor predicts the opposite pattern. The functional factor would predict overall, continent-wide preferences. Of course, the three answers are not mutually exclusive, and different factors may have conspired to produce the actual patterns.

The goal of this paper is to a) establish the bandwidth of case marking in South America in terms of presence of case, and the types of cases that are present and b) the extent to which the case functions that are present in South American languages have been extended to marking subordinate verbs, and c) which factors might have played a role in shaping the distributions that we find. In order to achieve these goals I have looked at a sample of 60 South American languages, representing 26 families and 10 isolate languages. The approximate location of the sample languages is given in Map 1, the designations of the numbers in Table 1.


Table 1: The sample languages, their iso-codes, affiliations and main sources

<table>
<thead>
<tr>
<th>#</th>
<th>Name</th>
<th>iso</th>
<th>affiliation</th>
<th>Main source(s)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Ika</td>
<td>ARH</td>
<td>CHIBCHAN</td>
<td>Frank 1985</td>
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<td>2</td>
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<td>Romero-Figueroa 1997</td>
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<td>3</td>
<td>N Embera</td>
<td>EMP</td>
<td>CHOCOAN</td>
<td>Mortensen 1999</td>
</tr>
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<td>4</td>
<td>Panare</td>
<td>PBH</td>
<td>CARIBAN</td>
<td>Payne &amp; Payne 2013</td>
</tr>
<tr>
<td>5</td>
<td>Yanam</td>
<td>SHB</td>
<td>YANOMAMAN</td>
<td>Goodwin-Gómez 1990</td>
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<tr>
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<td>EME</td>
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<td>8</td>
<td>Páez</td>
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<td>Jung 2008</td>
</tr>
<tr>
<td>9</td>
<td>Tríó/Tiriyó</td>
<td>TRI</td>
<td>CARIBAN</td>
<td>Meira 1999</td>
</tr>
<tr>
<td>10</td>
<td>Cubeo</td>
<td>CUB</td>
<td>TUCANOAN</td>
<td>Morse &amp; Maxwell 1999</td>
</tr>
<tr>
<td>11</td>
<td>Awa Pit</td>
<td>KWI</td>
<td>BARBACOAN</td>
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<tr>
<td>12</td>
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<td>JUP</td>
<td>MAKUAN</td>
<td>Epps 2008</td>
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<td>14</td>
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<td>Aikhenvald 2003</td>
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<tr>
<td>15</td>
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<td>QVI</td>
<td>QUECHUAN</td>
<td>Cole 1982</td>
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<td>Dâw</td>
<td>KWA</td>
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<td>BARBACOAN</td>
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<td>TUPI-GUARANI</td>
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<td>AGR</td>
<td>JIVAROAN</td>
<td>Overall 2007</td>
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<td>SHP</td>
<td>PANOAN</td>
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</tr>
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<td>Jarawara</td>
<td>JAA</td>
<td>ARAWAN</td>
<td>Dixon 2004</td>
</tr>
<tr>
<td>28</td>
<td>Apuriná</td>
<td>APU</td>
<td>ARAWAKAN</td>
<td>Facundes 2000</td>
</tr>
<tr>
<td>29</td>
<td>Kashiho</td>
<td>CBR</td>
<td>PANOAN</td>
<td>Zariquiey 2011</td>
</tr>
<tr>
<td>31</td>
<td>Huallaga Qu.</td>
<td>QUB</td>
<td>QUECHUAN</td>
<td>Weber 1989</td>
</tr>
<tr>
<td>32</td>
<td>Yaminahua</td>
<td>YAA</td>
<td>PANOAN</td>
<td>Faust &amp; Loos 2002</td>
</tr>
<tr>
<td>33</td>
<td>Karo</td>
<td>ARR</td>
<td>TUPIAN</td>
<td>Gabas Jr. 1999</td>
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<td>34</td>
<td>Yanesha’</td>
<td>AME</td>
<td>ARAWAKAN</td>
<td>Duff-Trip 1997</td>
</tr>
<tr>
<td>35</td>
<td>Wari’</td>
<td>PAV</td>
<td>CHAPACURAN</td>
<td>Everett &amp; Kern 1997</td>
</tr>
<tr>
<td>36</td>
<td>Rikbaktsa</td>
<td>RKB</td>
<td>MACRO-GE</td>
<td>Silva 2011</td>
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<tr>
<td>37</td>
<td>Kwazá</td>
<td>XWA</td>
<td>ISOLATE</td>
<td>Van der Voort 2004</td>
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<tr>
<td>38</td>
<td>Ese Ejja</td>
<td>ESE</td>
<td>TACANAN</td>
<td>Vuillermet 2012</td>
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<tr>
<td>39</td>
<td>Trumai</td>
<td>TPY</td>
<td>ISOLATE</td>
<td>Guirardello 1999</td>
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<td>Kanoë</td>
<td>KXO</td>
<td>ISOLATE</td>
<td>Bacelar 2004</td>
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<tr>
<td>41</td>
<td>Kamaiurá</td>
<td>KAY</td>
<td>TUPI-GUARANI</td>
<td>Seki 2000</td>
</tr>
</tbody>
</table>
In terms of genealogy, the sample is built up as indicated in Table 2:

Table 2: Genealogical units in the sample

<table>
<thead>
<tr>
<th>Isolates</th>
<th>12</th>
<th>Arawan</th>
<th>1</th>
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<tr>
<td>Tupian</td>
<td>6</td>
<td>Aymaran</td>
<td>1</td>
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<tr>
<td>Arawakan</td>
<td>4</td>
<td>Boran</td>
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<td>Panoan</td>
<td>4</td>
<td>Chapacuran</td>
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<tr>
<td>Cariban</td>
<td>3</td>
<td>Chibchan</td>
<td>1</td>
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<tr>
<td>Macro-ge</td>
<td>3</td>
<td>Chocoan</td>
<td>1</td>
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<tr>
<td>Quechuan</td>
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</tr>
<tr>
<td>Barbacoan</td>
<td>2</td>
<td>Jivaraoan</td>
<td>1</td>
</tr>
<tr>
<td>Guaycuruan</td>
<td>2</td>
<td>Matoacoan</td>
<td>1</td>
</tr>
<tr>
<td>Makuan</td>
<td>2</td>
<td>Mosetanen</td>
<td>1</td>
</tr>
<tr>
<td>Nambikwaran</td>
<td>2</td>
<td>Peba-Yaguan</td>
<td>1</td>
</tr>
<tr>
<td>Tacanan</td>
<td>2</td>
<td>Yanomaman</td>
<td>1</td>
</tr>
<tr>
<td>Tucanoan</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Proposed linguistic areas (Sprachbünde) are indicated in Map 2: the Andes (Torero 2002), the Vaupés (Aikhenvald 2002), the Guaporé-Mamoré (Crevels & van der Voort 2008), and the Chaco (Comrie et al. 2010).
3. Case systems in South American languages and their extensions to subordinate clauses

In this section I will review the patterns of case both in general terms and in terms of whether or not uses of case extend to mark subordinate verbs for the relationship they bear to a superordinate predicate. In order to structure the discussion, I have made a number of subdistinctions within possible case systems. First I distinguish between core, or structural, case on the one hand (ergative, accusative, genitive), and peripheral, or semantic, case on the other. This distinction is not without its problems, and we will see that South American languages often have polysemous case markers with both core and peripheral functions. For the sake of exposition, I have treated these multi-functional markers as instances of homonymy. By doing so, I do not intend to make a synchronic statement about these markers, but rather to try and group the behavior of the different core functions versus peripheral functions of case markers since they are quite different and may also be expected to lead to different types of grammaticalizations in subordinate clauses. I will mention where relevant when core verbal case markers or genitive case markers have peripheral functions as well. Peripheral functions are subdivided into
dative/benefactive\(^1\) (section 3.3), instrument/comitative\(^2\) (section 3.4), and spatial cases (section 3.5). Two further categories are ‘Oblique’ (Section 3.6), for those markers that have more than one of the peripheral functions just mentioned, and ‘Other’ (Section 3.7) for those markers to which none of the above categories apply. First, however, I will assess the extent to which the languages in the sample have case at all (Section 3.1).

### 3.1. Presence of case

Case markers in this paper are defined as functional elements that indicate the relationship a noun or NP bears to its head. I take a broad view on case markers, where I disregard fusion as a criterion, but rather look at grammatical wordhood, following Bickel & Nichols (2007). Excluded are those markers that either take obligatory agreement or govern case, since they form grammatical words of their own. Map 3 shows the languages with case markers (black) and the languages without case markers (grey). As can be seen, case as a category is very widespread in South American languages, and is found in Andean as well as Amazonian languages. The languages that do not have case use one (or both) of two strategies: verbal strategies and/or adpositional strategies. Both these strategies are in fact widespread, but most languages use them in addition to case marking.

An example of a language that resorts to verbal strategies seemingly exclusively is Itonama, an isolate language spoken in northeast Bolivia

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\(^1\) Here I have glossed over the fact that in some languages dative behaves as a core case. Instead I gave preference to the semantic connections between dative and benefactive markers.

\(^2\) This grouping is based on their frequent formal/functional connection cross-linguistically (Stolz et al. 2005, 2006: 23-25).
(reference number 42). Crevels (2012:248) mentions that the language has no case markers or adpositions. What it does have, is person marking, applicatives, incorporation, and spatial and directional markers on the verb, which can perform the functions normally associated with case. The pattern of “verbal case marking” is exemplified in example (1).

(1) Wichi [Matacoan], Terraza 2009: 220

\[
\text{n-p’u-hu wahat n-k’oti}
\]

1-roast-\text{APPL} fish 1POS\text{-grandfather}

‘I roast fish for my grandfather.’

Other sample languages that are like Wichi are neighboring Guaykuruan language Pilagá (Vidal 2001), Nambikwaran Mamaindê (Eberhard 2009) and the Bolivian Isolate Itonama (Crevels 2012).

The other type of alternative strategy is exemplified by the Chapacuran language Wari’, which has a single preposition, which cannot be counted as a case marker because it shows agreement. This preposition is also used to mark certain subordinate clauses

(2) Wari’ [CHAPACURAN], Everett & Kern 1997: 22

\[
\text{param ’ina-em pain ca}
\]

desire 1SG:\text{REA.NONFUT-2SG} \text{PREP:3NEUT IRR.NONFUT}

\[
\text{mao wa}
\]

go \text{INF}

‘I want you to go.’

Other sample languages with prepositions of this type (i.e. with inflected adpositions and no case markers) are the Cariban language Panare (Payne & Payne 2013). Inflected adpositions are a common feature in Tupian (Rodrigues & Cabral (2012) and Cariban languages (Derbyshire 1999), though not necessarily to the exclusion of case markers. Verbal relation marking through e.g. applicatives, motion and position markers is also a very common strategy, which seems to have more areal characteristics (see e.g. Wise 2002, Guillaume & Rose 2010, Van Gijn forthc.). In the remainder of this paper, only the
languages with case markers that fall within the definition given above will be considered.

3.2. Core case

An issue that has come up in the discussion about Andean versus Amazonian profiles is the presence of core case, and related to that the alignment pattern of the language. Andean languages are reputed to have rather clear accusative alignment patterns in main clauses, marked by case. Alignment patterns in Amazonian languages tend to be either ergative-based, or to exhibit split marking in one of the roles. Moreover, case markers to indicate structural relations (both in the clausal and in the noun phrase context) are said to be rare in Amazonian languages (see e.g. Dixon & Aikhenvald 1999: 8). In this paper I define core case in a shallow way as case markers that encode ergative, accusative, or genitive (nominative and absolutive marking is too uncommon to yield any useful patterns).

Map 4 shows the presence in the sample languages of one or more of these three cases. As can be seen on Map 4, structural case is certainly not uncommon in Amazonian languages, but it does seem to be more present across the board in Andean languages.

For the subset of languages with core case, Maps 5 and 6 show languages with ergative and accusative case markers, respectively. The distribution of both types of case markers suggests that areal factors may play a role.

The languages with ergative case markers are Ika, Northern Embera, Yanam, Puinave, Timbira, Shipibo-Konibo, Kashibo-Kakataibo, Yaminahua, Ese Eja.
Trumai, and Cavineña. Ergative alignment is considered to be a recessive feature of languages (Nichols 2003), i.e. it tends not to be time-stable, either within families or within areas. Nevertheless, ergative case marking is stable in the Panoan (e.g. Loos 1999: 240) and Tacanan (Guillaume & Rose 2011: 464) language families.

Most of the ergative markers in the sample have several possible functions, which is consistent with the observation that ergative case markers most commonly develop from other case markers (McGregor 2009: 499). In Panoan languages, the ergative marker is generally homophonous with other case markers, e.g. in Shipibo and in Kashibo-Kakataibo, the ergative marker -n (=n in Kashibo) is also used to mark instrumental, temporal, and genitival functions. In Yaminahua, the ergative markers seems to be less extended, marking ergative and vocative. The Ika ergative case marker -se additionally marks locative, Yanam -n also marks instrumental. Northern Embera -(p)a additionally marks ablative, Puinave -at indicates ablative, and in Timbira, ergative te also marks genitive. The connection between ergative case markers and other case functions is frequent cross-linguistically (Heine & Kuteva 2002: 180, Heine 2008: 467) and may suggest that the ergative in these languages may
have arisen through reinterpretation of other case roles in e.g. nominalized or passive constructions.

Languages in the sample with an accusative marker are Cubeo, Awa Pit, Hup, Desano, Imbabura Quechua, Dāw, Tsafiki, Miraña, Aguaruna, Huallaga Quechua, Rikbaktsa, Kwaza, Sabanê, Cuzco Quechua, and Bororo. A number of these languages have a conditionally appearing accusative marker, for instance in the Tucanoan languages of the sample, an object marker is used only for animate objects (Cubeo) or specific objects (Desano). Similar or stronger constraints exist in Kwazá, Hup, Awa Pit, Miraña, Aguaruna, Rikbaktsa\(^3\), and Sabanê.\(^4\) This means that accusative case markers that conform to the inflectional prototype of appearing automatically, without conditioning (Corbett 2006) are almost exclusively found in the Andes.

Maps 7 and 8 show the extension of the ergative and accusative case markers (respectively) to subordinate clauses. Disregarded here are headless relative clauses that fulfill a referential function and receive the appropriate case marker.

\(^3\) The conditioning of the accusative case marker \(-ti:\) in Rikbaktsa is constructionally conditioned, as it appears only in so-called “periphrastic structures” which contains an auxiliary that can only be marked for subject (Silva 2011: 112).

\(^4\) The exact function of the “object marker” \(-k(\alpha)\) in Sabanê is unclear, further research may show that the marker should not be analyzed as an accusative marker.
according to the role the relativized argument plays in the main clause, exemplified in (3), since they do not really constitute a semantic extension of the case marker.

(3) Yaminahua [PANOAN], Faust & Loos 2002: 147

\[
\text{mani pei-pefe-a-tō mexteteke pi-i.}
\]
banana leaf-carry.on.shoulders-PTC-ERG twigs eat-PROG

‘The lizard with wings (lit.: he who carries banana leaves on his shoulder) eats twigs.’

Also not taken into consideration are instances of NPs containing a relative clause, which are marked by a phrase-final clitic, as in Trumai:

(4) Trumai [ISOLATE], Guirardello 1999: 412

\[
[di nīchits ka’chī pata-t’ ke] =k mi‘irau
\]
woman now walk arrive-NLZ REL =ERG necklace
\[
kiti hai-tl
\]
give 1SG-DAT

‘The woman who just arrived gave me a necklace.’

As can be seen on Map 7, most ergative cases do not function as subordinators. There are a few potential cases of extensions, to be discussed below. That ergative case markers do not extend to mark subordinate clauses is not unexpected given the cross-linguistic dispreference for clausal transitive subjects in transitive clauses (Hopper & Thompson 1980). The fact that accusative case subordinators are predominantly found in the Andes is also not unexpected given the conditional appearance of the accusative marker in many Amazonian languages, which are often related to animacy.

The potential extensions of the ergative marker are found in the Tacanan languages Cavineña and Ese Ejja, in the isolate language Trumai, and in Timbira [MACRO-Gê]. Cavineña presents the clearest case: the ergative marker =ra is also found on purpose of motion and (though a minor pattern) reason clauses (5).

(5) Cavineña [TACANAN], Guillaume 2008: 715, 719

a. tudya i-ke kwinana-wa wira=ra
then 1SG-FM emerge-PERF urinate=PRP.MOT
‘I went outside to urinate.’

b. e-tsaka uje-da ju-ya aje-ra
NPREF-legs painful-ASUF be-IMPFV walk=REAS
‘My legs hurt from walking.’

In Trumai, reason clauses are marked with the marker -ak, which is close to the ergative marker -(a)k/-ek. The reason marker -ak and the ergative marker -Vk seem to be historically related, especially considering conspicuous though somewhat opaque patterns of allomorphy: the ergative marker had allomorph -ts used for the first person, the reason clause marker has allomorph iets’. The marker -ka is used in combination with a third person absolutive clitic on the verb. Although the diachronic specifics of the relation between the ergative marker and the reason marker (including the pattern of allomorphy) remain somewhat enigmatic, Guirardello (1999: 406) hypothesizes that the use of the reason marker may have been an extension of the function of the ergative marker to encode the causer in a causative construction (although synchronically the markers have to be regarded as different). Trumai purpose clauses are marked with (a)hak, possibly also related to the ergative marker (though with less confidence). In Timbira there is a possible extension of the ergative/genitive marker to reason clauses, discussed below in this section.

In Ese Ejja the ergative case marker possibly forms part of a number of subordinators. Vuillermet (2012: 599-600) argues that some of the switch-reference markers of the language have been partially formed on the basis of an absolutive (ø) versus ergative (=a) opposition where the latter mark coreference between the intransitive subject of the dependent clause and the transitive subject of the main clause, and the former between the absolutive argument of the dependent clause and the intransitive subject of the main clause (Table 3). These absolutive-ergative oppositions are suggested to derive from attributively used participial constructions displaying case agreement with their head noun (ibid.).
Table 3: correspondences of absolutive and ergative cases in Ese Ejja subordinators (Vuillermet 2012)

<table>
<thead>
<tr>
<th></th>
<th>(S_{DEP} = P_{MAIN})</th>
<th>(S_{DEP} = A_{MAIN})</th>
</tr>
</thead>
<tbody>
<tr>
<td>before</td>
<td>-ximawa=(\emptyset)</td>
<td>-ximawa=a</td>
</tr>
<tr>
<td>condition</td>
<td>=(\emptyset)=xemo</td>
<td>=a=xemo</td>
</tr>
<tr>
<td>reason</td>
<td>=(\emptyset)=xejojo</td>
<td>=a=xejojo</td>
</tr>
</tbody>
</table>

Summarizing, there is little evidence for grammaticalization paths from ergative to subordinator in the sample, but for the languages that potentially show such a grammaticalization there seems to be at least a connection between ergative and reason clauses, and - related to that - possibly purpose clauses. There are too few data points to be able to say anything about whether these grammaticalizations are driven by genealogical, areal, or general pressures, but it is probably not a coincidence that both Tacana languages show evidence of this path.

Moving on to the accusative markers, Quechuan languages show a straightforward connection of the accusative case to marking nominalized clausal complements:

(6) Cuzco Quechua [QUECHUAN], Lefebvre & Muysken 1988: 18

\[ \text{papa mikhu-}y\text{-}ta \text{ muna-}n \]

potato eat-INF-ACC want-3

‘He wants to eat potatoes.’

A similar construction exists in Aguaruna.

(7) Aguaruna [JIVAROAN], Overall 2007: 428

\[ \text{nanjama-}a\text{-}u\text{-}ai \text{ anintaï tsupi-}hu\text{-}ta\text{-}na \]

begin-HIAP-REL-COP:3:DECL heart cut-APPL-ACT.NLZ-ACC

‘He began to cut (the boa’s) heart.’

In addition, there are relativized complements:

(8) Aguaruna [JIVAROAN], Overall 2007: 534

\[ \text{dika-}a\text{-}ma\text{-}ha\text{-}i \text{ } / \text{ ami} \]

\[ \text{dika-}a\text{-}ma\text{-}ha\text{-}i \text{ } / \text{ ami} \]
know-IMPFV-REFL-1SG-DECL [ 2SG
wai-tu-ka-mau-na-ka ]
see-1SG.OBJ-INTS-NONA/S:REL-ACC-FOC]

‘I know you (who) saw me.’

Bororo can also mark its complements with the object marker -ji:

(9)  Bororo [BOROROAN], Nonato 2008: 147
a-jorödü-re [boe e-wogu-re diü]ji
2SG-see-ASSERT Bororo 3PL-fish-ASSERT COMP-ACC

‘You saw that the Bororos fished.’

The constructions in these languages are comparable: they show an extension of the accusative marker to marking clausal complements. In all of the cases this extension is facilitated by the presence of some kind of subordinator or nominalizer, which makes these uses of the accusative marker comparable to the nominalized relative clauses mentioned above, which were not taken into consideration. The marker -re in Cubeo [TUCANOAN] is possibly found as an element in a number of different-subject forms of the switch-reference system, e.g. for ‘when’ clauses (-e-re), simultaneous (-e-reka), where the initial -e is a nominalizer (Morse & Maxwell 1999: 161-9). However, given that the case marker -re has functional extensions into the spatial realm (locative, ablative) it is unclear which functional connection is responsible for the extension to adverbial clauses. Kamaiurá [TUPI] deserves a special mention because, in the analysis of Seki (2000), the language exhibits a ‘nuclear case marker’ -a, which does not distinguish between different types of core case, but instead marks an argument as belonging to the core. This marker can also be used to mark clausal complements:

(10)  Kamaiura [TUPI], Seki 2000: 171.
1-potar=ete i-jo-taw-a
1SG-want=really 3-go-NLZ-NUC

‘I want him to go.’
Summarizing, in a number of languages the accusative markers extend to marking clausal complements, though in combination with some type of subordinator or nominalizer.

The third structural case marker considered here is the genitive. Maps 9 and 10 show the presence of the genitive case marker and its distribution as a subordinator, respectively.

As can be seen on Map 9, the genitive is particularly widespread in western South America, though by no means exclusively in the Andes. The genitive is a feature of several families, like e.g. Quechuan, Aymaran, Panoan, Tacanan, Barabacoan. Map 10 shows that in only very few cases the genitive extends to mark subordinate clauses, and as we will see, most of these cases are somewhat problematic.

In Mosetén [MOSETENAN], in possessive construction the possessor is marked with one of the so-called linker suffixes -tyi’ (masculine) or -si’ (feminine), depending on the gender of the head noun. These markers can also be used to form relative clauses and simultaneity clauses (in the form of converbs). However, in its nominal use, the linker suffixes have a broader
extension: they function as relation markers within the noun phrase, also for instance between adjectives and nouns.

(11) Mosetén [MOSETENAN], Sakel 2004: 106

\[jaem\ 'tyi' \ mintyi'\]

good-LK.M man

‘a good man’

In Imbabura Quechua, the benefactive marker -paj has extended to marking genitives as well. This marker is found as a constitutive element of the same-subject purposive marker -ngapaj (-nga is third person future). Since other Quechuan languages have extended the cognate benefactive -paj (this marker is different from the genitive marker in most Quechuan languages) to purpose clauses, it seems likely that, in Imbabura Quechua, it was the benefactive function that allowed for the extension as well.

In Awa Pit, genitive is marked by -pa, which has an allomorph -wa after a vowel. Sequential clauses are marked with -tpa (after V-final stems) or -tawa (after C-final stems). This marker seems to contain the postposition that is used for genitive (Curnow 1997: 271). However, Awa Pit has a homophonous locative/allative postposition -pal-wa which is probably a more likely source for the extension to sequential clauses (see section 3.5).

In Timbira, finally, the marker -te\textsuperscript{5} marks reason clauses. In Alves (2004), this marker also encodes ergative and genitive in NPs. However, in Popjes & Popjes’ (1986) analysis, this marker encodes experiencers of habitual states, and subjects of transitive clauses in past-tense clauses.


\[jaco \ me \ capi \ te \ pĩ \ here \ jakep \ ame \ to\]

Jaco and Capi ERG/PAST wood twig cut 3PL INST

\[ajpẽn \ cahhyr \ prãm \ te\]

REC beat want REAS

‘Jaco and Capi cut twigs because they wanted to beat each other with them.’

In summary, there seems to be no uncontroversial evidence of an extension of genitive markers to marking subordinate clauses in the languages of the sample.

3.3. Dative cases

The category of dative case is broadly conceived of here as those case markers that encode beneficiaries, recipients, maleficiaries, etc. unless they also mark locative, instrumental, or spatial relations, in which case they have been classified as ‘obliques’ (see below). Maps 11 and 12 show the distributions of dative cases in general (Map 11) and as subordinators (Map 12).

The extension of a dative marker seems to be common in the Andean languages. It is a pattern found throughout the Quechuan family, where the benefactive marker -paq (or regional variants thereof) can also be used to mark purpose clauses. The extension of the dative/genitive marker in Imbabura Quechua to purpose clauses was mentioned above. Other Quechuan varieties generally distinguish between the genitive and benefactive, with only the latter expanding to purpose clauses, strengthening the argument for a grammaticalization path benefactive \( \rightarrow \) purposive for Imbabura Quechua as
well. Example (13) shows the use of the marker -paq, in combination with the irrealis nominalizer -na:

(13)  Huallaga Quechua [Quechuan], Weber 1989: 206

  wañu-chi-ma:-na-n-paq  parla-ku-sha  
  die-CAUS-1OBJ-NLZ-3POSSESS-BEN  converse-REFL-3PERF

  ‘They agreed to kill me.’

This construction is possibly related to the Central Aymaran construction. As is well-known, Quechuan and Aymaran languages have had a long history of contact and structural convergence (see e.g. Adelaar & Muysken 2004).

(14)  Central Aymara [Aymaran], Hardman 2001: 213

  ch'uq  pall-ja-fiani  p"iry  apa-ñataki  
  potato  sort-PART-4×3FUT  fair  carry-OBLG-PRP

  ‘We’ll sort potatoes to take to market.’

Further potential areal extensions are found in foothill languages Mosetén (15) and Leko (16):

(15)  Moseten [Mosetenan], Sakel 2004: 438

  khäki  katyi-’in  jää’mä  dyam-~dyam  jedye-’in  jää’mä  
  because  HSAY-PL  filler  little-RED  thing[F]-PL  FILLER

  saeks-i-dye-si’  
  eat-VSM-BEN-LK.F

  ‘Because there are only a few things to eat.’

(16)  Leko [ISOLATE], Van de Kerke 2009: 324

  dira  hoyno-tha  hal-ate  uywas-ich-moki
  four  pig-DIM  buy-PAST.1  raise-INF-BEN

  ‘I bought four pigs to raise.’

Further north, Northern Embera likewise marks purpose clauses with a marker that can also be used to encode beneficiaries.
Northern Embera [CHOCOAN], Mortensen 1999: 121

\[ k^h \text{uriwa} \text{ ete-de} \ w^a-tua \ m^u \ w^a\text{rra-r}\text{a} \ m^u-a \]

Guatín go-LOC go-IMPFV 1SG offspring-PL 1SG-ABL

\[ h^u \ tawa-i \ k^h \text{ar\text{e}h} \]

breast give.drink-IRR BEN

‘Guatin, go get my children so that I may nurse them!’

The path beneficiary to purpose is clearly the most common for dative-like markers, and particularly associated with the Andes and adjacent areas. Nevertheless, a few alternative grammaticalization paths are shown by other languages. The beneficiary marker -llii in Miraña can mark reason clauses, and the dative marker -(i)va in Yagua can additionally mark ‘until’-clauses. Trumai dative markers extend to certain complement relations (complements of verbs of dicendi, verbs of liking and perception verbs), and there is a possible diachronic connection between dative and temporal conditional clauses (Guirardello 1999: 192-3). In Timbira, the dative/benefactive marker -mã is homonymous with topic marker mã (except that the latter is not bound) which in turn seems to have developed into a third-person different-subject marker in semantically versatile complex sentences (Alves 2004: 146). Although the grammaticalization chain beneficiary > topic > different subject marker is speculative, it is an imaginable development, perhaps via a cleft construction.

Table 4 summarizes the uses of dative/benefactive case markers in subordinate clauses in the languages of the sample.

Table 4 Extensions of dative-like case markers to subordinate clauses

<table>
<thead>
<tr>
<th>Language</th>
<th>Case marker</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timbira (P)</td>
<td>ŭmã BEN/DAT</td>
<td>Perception complements (DS)</td>
</tr>
<tr>
<td>Embera, Northern</td>
<td>kʰârêh BEN</td>
<td>Purpose</td>
</tr>
<tr>
<td>Imbabura Quechua</td>
<td>-(p)aj BEN</td>
<td>Purpose (-ngapaj)</td>
</tr>
<tr>
<td>Miraña</td>
<td>-(l)lîî BEN</td>
<td>Reason</td>
</tr>
<tr>
<td>Yagua</td>
<td>(i)va DAT</td>
<td>Until</td>
</tr>
<tr>
<td>Huallaga Quechua</td>
<td>-(p)aq BEN</td>
<td>Purpose</td>
</tr>
<tr>
<td>Trumai</td>
<td>-(k)i DAT</td>
<td>Complementation (perception, fear,</td>
</tr>
<tr>
<td></td>
<td>-(a)s/(i)s DAT</td>
<td>liking, communication)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temporal/conditional</td>
</tr>
<tr>
<td>Cuzco Quechua</td>
<td>-(p)aq BEN</td>
<td>Purpose, conditional</td>
</tr>
<tr>
<td>Mosetén</td>
<td>-(d)e BEN</td>
<td>Purpose</td>
</tr>
</tbody>
</table>
3.4. Comitatives and instruments

As shown in Map 13, comitative and instrumental case markers are extremely common in South American languages. Quite often, there is a single marker for both functions, confirming the functional connection between the semantics of these case roles. It is not very common, however, for an instrumental or comitative marker to grammaticalize into a subordinator (Map 14). Only a handful of examples in the sample languages show this connection, without there being any obvious genealogical or areal pattern. In terms of recurring grammaticalization paths the most common pattern is for the comitative or instrumental case marker to encode simultaneity/manner or overlap (when) clauses. This link is found in Bororo, Desano\(^6\), Kwazá, Mosetén, Trumai,

\(^6\)The use of the comitative marker bêrã to mark temporal clause is constructionally rather restricted, as it is used only for constructions with a time word and a nominalized form of the verb wa ‘to go’ (Miller 1999: 151).
possibly in Yaminahua and Kokama. The use of the comitative marker in Bororo simultaneous clauses (possibly with a causal reading), and the instrument marker in Kwazá when clauses are given in (18) and (19), respectively

(18) Bororo [BOROROAN], Nonato 2008: 79

\[\text{e-jagare-re} \quad [\text{tu-okwage-i \ ji-dù}] \quad \text{apo}\]

3PL-be.happy-ASSERT [3A-eat-INF THM-COMP COM

‘They were happy eating it [the corn].’

(19) Kwazá [ISOLATE], Van der Voort 2004: 508

\[\text{hako’ri duky-töi ùi-e-’nā-tsy-wy-ko}\]

moon other-CL.eye lie-again-FUT-GER-time-INST

‘in the next month when it will be new moon’

Another connection, observed in Emerillon and Hixkaryana is between instrument and reason.

(20) Emerillon [Tupí-Guarani], Rose 2011: 335

\[\text{[aman-a-r-aʔa-te} \quad o-ʔar-a-r-ehe]\]

rain-REF-REL-son-REF-FOC 3C-fall-REF-REL-REAS quickly

\[o-kakuwa.\]

3C-grow

‘Because it is the son of the rain who is born, he grows very quickly.’

Table 6 summarizes the different extensions of the comitative and/or instrumental markers in the sample languages.

Table 6: Extensions of comitative and instrumental case markers to interclausal relation markers

<table>
<thead>
<tr>
<th>Language</th>
<th>Case marker(s)</th>
<th>Extensions</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emerillon</td>
<td>-ehe (comitative)</td>
<td>reason</td>
<td></td>
</tr>
</tbody>
</table>

7 Some of the subordinate markers in these languages show elements that may be linked to comitative marker, like instrument marker =put(pe) in Kokama which is possibly present in subordinators -npu (sequential, -n is a nominalizer) and =puka (‘when’, =ka is a locative), see Vallejos 2010. In Yaminahua one of the comitative markers, -ya, as well as the instrument marker -ña may be part of the subordinator yanā ‘when’.
Hixkaryana | *ke* (instrument) | reason
---|---|---
Desano | *bêrã* (comitative) | when | Constructionally limited
Trumai | *tam* (comitative) | simultaneity
Mosetén | *tom* (comitative) | simultaneity
Bororo | *apo* (comitative) | simultaneity | Possibly extensions to reason
Kokama (P) | =*pu(pe)* (instrument) | when, succession | Extensions are not entirely certain
Yaminahua (P) | -*ya* (comitative), -*ña* instrument | when | Extensions are not entirely certain
Kwazá | -*ko* (instrument) | when

### 3.5 Spatial cases

Spatial case markers are clearly the most common type of case markers in South American languages, and of the case markers, they most often extend to mark subordinate verbs and clauses for their relation to some superordinate clause. Both these facts are visualized in Maps 15 and 16, respectively.

*Map 15: Presence of spatial case*

*Map 16: Spatial case in subordinate clauses*
I have not counted location clauses because they do not genuinely present semantic extensions, although they may be indicative of a rather flexible distinction between nouns and verbs, especially if no nominalization is required before the case marker can be applied, as in (21).


```
bueno tiow noiy ver

bueno CLEFT there PERF

eto-pi-a-po-yi=ro

finish-words-LK-PFV.REFL-LOC=3SGM

‘Well, this is where already the words were finished.’
```

Table 7 sketches the different extensions of the spatial case markers to contexts of clause combinations.

**Table 7: Extensions of spatial case markers to interclausal relation markers**

<table>
<thead>
<tr>
<th>Language</th>
<th>Case marker(s)</th>
<th>Extensions</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embera</td>
<td>-de LOC</td>
<td>simultaneity, when; comparison (purpose of motion)</td>
<td></td>
</tr>
<tr>
<td>Yanam (P)</td>
<td>-hā various spatial</td>
<td>temporal (-piha)</td>
<td></td>
</tr>
<tr>
<td>Puinave</td>
<td>-a DIR, and -'u ADH</td>
<td>temporal, conditional, reason, complements</td>
<td></td>
</tr>
<tr>
<td>Emerillon</td>
<td>-upi PERL</td>
<td>comparative (simultaneity) cognition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Koti DIR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paez</td>
<td>-te LOC</td>
<td>temporal (DS) &gt; concessive succession</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-xīī ABL</td>
<td>comparative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-na DIR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awa Pit</td>
<td>-kima LIM</td>
<td>until (temp)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-pu/-wa LOC/DIR/GEN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hup</td>
<td>-an various spatial</td>
<td>simultaneity</td>
<td>Many relator-like spatial elements can have temporal interpretations.</td>
</tr>
<tr>
<td>Desano</td>
<td>kore before pi?ri after</td>
<td>precedence succession</td>
<td>Unclear if the postposition has a spatial meaning as well.</td>
</tr>
<tr>
<td>Tariana</td>
<td>-se various spatial</td>
<td>sequence simultaneity</td>
<td></td>
</tr>
<tr>
<td>Imbabura Quechua</td>
<td>-manda ABL</td>
<td>reason</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-kaman LIM</td>
<td>until</td>
<td>-ngakaman is used</td>
</tr>
<tr>
<td>Language</td>
<td>Postposition</td>
<td>Description</td>
<td>Notes</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------</td>
<td>--------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Dâw</td>
<td>xâx 'among'</td>
<td>simultaneity</td>
<td></td>
</tr>
<tr>
<td>Hixkaryana</td>
<td>hona DIR</td>
<td>purpose</td>
<td></td>
</tr>
<tr>
<td></td>
<td>way 'to, by'</td>
<td>manner</td>
<td></td>
</tr>
<tr>
<td>Tsafiki</td>
<td>=bi LOC/DIR</td>
<td>Purpose of motion</td>
<td>SR clauses can take locative postpositions without a clear</td>
</tr>
<tr>
<td></td>
<td>=le LOC</td>
<td>temporal</td>
<td>interpretational difference. Perhaps further locatives are</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>possible in these constructions.</td>
</tr>
<tr>
<td>Miraña</td>
<td>-tu ABL</td>
<td>succession, comparative</td>
<td></td>
</tr>
<tr>
<td>Yagua</td>
<td>-jû DIR</td>
<td>purpose</td>
<td></td>
</tr>
<tr>
<td>Kokama (P)</td>
<td>=ka LOC/DIR</td>
<td>when (=puka)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>=kuara INESS</td>
<td>reason (=iku)</td>
<td></td>
</tr>
<tr>
<td>Urarina</td>
<td>hana INESS</td>
<td>when</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ahinia before</td>
<td>before (temp)</td>
<td></td>
</tr>
<tr>
<td>Aguaruna</td>
<td>-nî LOC</td>
<td>simultaneity, condition, concession</td>
<td>DS clauses for second person are marked with a morpheme that is</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>cognate with the locative case marker</td>
</tr>
<tr>
<td>Shipibo (P)</td>
<td>-ain DIR</td>
<td>simultaneity</td>
<td>the case marker seems to form part of one of the DS markers</td>
</tr>
<tr>
<td>Huallaga</td>
<td>-kama/-yaq LIM</td>
<td>until</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-pita ABL</td>
<td>reason, succession, comparative, neg.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-chaw LOC</td>
<td>purpose, simultaneity</td>
<td></td>
</tr>
<tr>
<td>Yaminahua</td>
<td>-ax ABL</td>
<td>succession</td>
<td></td>
</tr>
<tr>
<td>Yanesha’</td>
<td>-ot LOC</td>
<td>reason</td>
<td>possibly wider functionality</td>
</tr>
<tr>
<td></td>
<td>-o ’mar LOC</td>
<td>reason</td>
<td></td>
</tr>
<tr>
<td>Jarawa</td>
<td>kaa PERL</td>
<td>reason</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Status as case marker</td>
<td>not entirely certain</td>
</tr>
<tr>
<td>Rikbaktsa</td>
<td>-ere(ka) INESS</td>
<td>temporal, conditional</td>
<td></td>
</tr>
<tr>
<td>Ese Ejja</td>
<td>=jo LOC</td>
<td>reason, condition, precedence, when</td>
<td>Both are part of the SR</td>
</tr>
<tr>
<td></td>
<td>=xe PERL</td>
<td>reason, condition, precedence, when</td>
<td>paradigm</td>
</tr>
<tr>
<td>Mekens</td>
<td>(e)se LOC</td>
<td>temporal, conditional</td>
<td></td>
</tr>
<tr>
<td>Cavineña</td>
<td>=ju LOC</td>
<td>temporal</td>
<td>The marker =ju is also DS marker.</td>
</tr>
<tr>
<td>Cuzco Q</td>
<td>-manta ABL</td>
<td>reason</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-kama LIM</td>
<td>until</td>
<td></td>
</tr>
<tr>
<td>Moseten</td>
<td>-ya ’ADESS</td>
<td>when, conditional</td>
<td></td>
</tr>
<tr>
<td>Leko</td>
<td>-ra LOC</td>
<td>temporal, conditional, reason</td>
<td></td>
</tr>
<tr>
<td>Yuraraké</td>
<td>=jsha ABL</td>
<td>concession, succession</td>
<td></td>
</tr>
<tr>
<td>Aymara (P)</td>
<td>-ta ABL</td>
<td>temporal</td>
<td></td>
</tr>
</tbody>
</table>
By far the most common extension is from spatial to temporal, which is not surprising given the close connectedness between space and time in human languages (see e.g. Haspelmath 1997). Although not a general rule, stative locatives tend to extend towards simultaneity or when clauses (22), whereas ablative markers naturally extend to succession clauses (23).

(22) Embera [CHOCOAN], Mortensen 1999: 114

\[ māwā \quad b-\text{u-de} \quad s’e-\text{t}i-a \quad ūmāk’tirā \quad s’a \]

like,this be-PRES-LOC come-PAST-DECL man here

\[ b-\text{u-ta} \]

be-PRES-ABS.FOC

‘(…) while this was happening, there came a man who looked just like him.’

(23) Páez [ISOLATE], Jung 2008: 171

\[ lu:ts’k \quad we\;\text{we?-n’i-xū} \quad jat-te \quad ka-\text{pij-a-ìx-ja?} \]

child-DIM speak-PERF.PTC-ABL house-LOC CAUS-learn-TR-INF

\[ tak’-e-’t’ì \]

begin-IPFV-HAB-ASSERT.3PL

‘When the child knows how to speak, they start to teach it in the house.’

Since for many languages temporal and conditional clauses are marked in similar ways, the case markers that encode temporal relations can also code conditional relations in those languages

(24) Leko [ISOLATE], Van de Kerke 2009: 316

\[ iya \quad kelecha \quad he-\text{ir-a-ra} \quad lamkas-tan \]

you money have-NEG-PFV-LOC work-OBLG

‘If you don’t have money, you should work.’

Another common type of extension of spatial markers is towards reason clauses.


\[ qella \quad ka-y-pīta \quad osyoosu \quad ka-y-pīta \quad chay-ll-a-ta \quad miku-n \]

lazy be-INF-ABL lazy be-INF-ABL that-just-ACC eat-3
‘Because they are lazy, they just eat that.’

And those languages with a limitative marker usually extend it to mark temporal relations as well.

(26) Awa Pit [BARBACOAN], Curnow 1997: 263

[Demetrio kayl-na ]=kima kal ki-ni-s
[Demetrio return-INF ]=until work(1) work(2)-FUT-LOCUT

‘I will work until Demetrio returns.’

Summarizing, there is a very strong connection between spatial case and temporal interclausal relation when it comes to the use of case markers. In some languages, the use of spatial case markers extends further, to conditionals. Other common extensions are reason and purpose.

3.6. Oblique cases

The oblique cases form a somewhat disparate group, and therefore the patterns yielded by this group of case markers is expected to show effects that are correspondingly diverse. Maps 16 and 17 show the distribution of oblique case markers and their extensions to subordinators, respectively. Table 8 summarizes the information per language.
Table 8: Extensions of oblique case markers to interclausal relation markers

<table>
<thead>
<tr>
<th>Name</th>
<th>Marker</th>
<th>Extension</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cubeo (P)</td>
<td>-re DAT; LOC</td>
<td>temporal</td>
<td>Classification as case marker problematic</td>
</tr>
<tr>
<td>Hup</td>
<td>-VT LOC; INST; COM</td>
<td>simultaneity</td>
<td></td>
</tr>
<tr>
<td>Miraña</td>
<td>-ri INST; LOC</td>
<td>succession; reason</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-ma COM, INST, BEN</td>
<td>succession</td>
<td></td>
</tr>
<tr>
<td>Yagua</td>
<td>(i)ma INST; LOC</td>
<td>simultaneity</td>
<td></td>
</tr>
<tr>
<td>Timbira (P)</td>
<td>kãm LOC; COM</td>
<td>general subordinator</td>
<td></td>
</tr>
<tr>
<td>Jarawara</td>
<td>jaa OBL</td>
<td>temporal, conditional, reason, location</td>
<td></td>
</tr>
<tr>
<td>Apurinã</td>
<td>-ā LOC; INST</td>
<td>conditional</td>
<td></td>
</tr>
<tr>
<td>Karitiana</td>
<td>-ty OBL</td>
<td>desire, cognition, perception</td>
<td></td>
</tr>
<tr>
<td>Kanoë</td>
<td>-ni OBL</td>
<td>temporal</td>
<td>perhaps marginally</td>
</tr>
<tr>
<td>Movima</td>
<td>n- OBL</td>
<td>temporal, purpose</td>
<td></td>
</tr>
<tr>
<td>Yurakare</td>
<td>=la PERL, INST</td>
<td>reason, cognition</td>
<td></td>
</tr>
<tr>
<td>Mapudungun</td>
<td>-mew OBL</td>
<td>reason, location</td>
<td>glossed as an instrument marker, has a wide range of interpretations.</td>
</tr>
</tbody>
</table>

As can be seen in Table 5, most extensions of oblique markers are towards temporal clauses. This is further evidence of the close connection between
location and time, since all oblique markers in the sample can have spatial interpretations.

In some cases, the multi-functionality of the oblique marker translates directly into multi-functionality as a subordinator. This is for instance the case in Jarawara (27) and Movima (28):

(27) Jarawara [ARAWAN], Dixon 2004: 489, 496
   a. awa ini tati jaa bahi ite jaa otaa
      tree branch head OBL sun sit OBL 1EXC.S
      ka-ma
      in.motion-back
      ‘When the sun sits on the topmost branches of the trees, we go back.’
   b. ee hijari jaa ee hijara na-ba ee-ke
      INC.S talk.NLZ OBL INC.S talk AUX-FUT INC-DECL
      ‘If we want to talk , we should talk now.’
   c. jobe wata-re jaa hinaka jobe-bona otaa
      house exist-NEG OBL 3SG.POSS house-INTN 1EXC.A
      hiri ne
      make AUX
      ‘Since there wasn’t a house (for Alan), we made a house for him.’

(28) Movima [ISOLATE], Haude 2006: 310
   a. jayna n-os ena’ lani-wa
      DSC OBL-ART.NEUT.PAST DUR.STD bathe-NLZ
      n to ’baycho
      INTR remember.MST
      ‘Then, as I was bathing, I remembered.’
   b. ji<wa-->wa--’ne n-os sa-al-wa=’ne
      come<MID-->=F OBL-ART.NEUT.PAST DR-search-NLZ=F
      us pa:pa=’ne
      ART.M father.of=F
      ‘She came to look for her father.’
Perhaps somewhat counterintuitive, in some languages, oblique markers are used to mark complement clauses.

(29) Karitiana [Tupí-Arikem], Storto 2011: 229

a. y-py-sondyp-yn       yn   [Inacio 'ep opiï]-ty
   1-ASSERT-know-NONFUT I   Inácio tree cut-OBL
   ‘I know that Inácio cut the tree’

b. y-py-so’oot-yn       yn [Inacio ’ep opiï]-ty
   1-ASSERT-see-NONFUT I   Inácio tree cut-OBL
   ‘I saw that Inácio cut the tree’

(30) Yuraraké [Isolate], Van Gijn 2006: 319

a. nij wišhê-tê-y chitta mala-y=ti=la
   NEG notice-MID-1SG   throw.SG   go.SG-1SG=SUB=OBL
   ti-petche
   1SG-fish
   ‘I did not remember that I left my fish.’

b. ka-yle-ơ=ya na ta-ppê tiri
   3SG-know-3=REP DEM 1PL-grandfather Tiri
   ama-shku-ta imbêtê-shṭa-ơ=ti=la
   WH-ADV-MID behave-FUT-3=SUB=OBL
   ‘Our grandfather Tiri knew how he would behave.’

In summary, the extensions of the oblique markers seem to follow the extensions mentioned above in this paper, in particular towards temporal and reason clauses depending on the range of their semantics. Perhaps surprisingly, some languages use oblique markers to mark clausal complements.

3.7. Other cases

A number of other cases, which do not fall into any of the above categories, are also found in subordinate clauses. The patterns are too diverse and small to make sense in a genealogical or areal way, so I will not show any maps. Instead, Table 9 summarizes the relevant information.
Table 9: Extensions of other case markers to interclausal relation markers

<table>
<thead>
<tr>
<th>Language</th>
<th>Case marker</th>
<th>Subordinator use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kokama (P)</td>
<td>=ra ‘for the purpose of’</td>
<td>condition (-ra/-ri), purpose (-mira, -tara)</td>
</tr>
<tr>
<td>Warao</td>
<td>ebe/kuare ‘because of’</td>
<td>reason</td>
</tr>
<tr>
<td>Páez</td>
<td>-pa?ka ‘because of’</td>
<td>reason</td>
</tr>
<tr>
<td>Cubeo</td>
<td>-pe similative</td>
<td>comparative, purpose (P) kijepé</td>
</tr>
<tr>
<td>Hixkaryana</td>
<td>hori ‘for the purpose of’</td>
<td>manner, purpose</td>
</tr>
<tr>
<td>Miraña</td>
<td>-d? similative</td>
<td>comparative</td>
</tr>
<tr>
<td>Urarina</td>
<td>bana ‘at the time of’</td>
<td>when</td>
</tr>
<tr>
<td></td>
<td>baja after netohweñ until</td>
<td>sequential until</td>
</tr>
<tr>
<td>Shipibo-Konibo</td>
<td>-tian ‘at the time of’</td>
<td>temporal (present in SR paradigms)</td>
</tr>
<tr>
<td>Jarawara</td>
<td>tabijo ‘lack of’</td>
<td>reason</td>
</tr>
<tr>
<td>Apurinã</td>
<td>-sawaku ‘at the time of’</td>
<td>when</td>
</tr>
<tr>
<td></td>
<td>-xika ‘because of’</td>
<td>reason</td>
</tr>
<tr>
<td>Kashibo</td>
<td>=sa similative</td>
<td>cognition</td>
</tr>
<tr>
<td>Huallaga Q</td>
<td>-naw similative</td>
<td>comparative, ‘be about to’ reason</td>
</tr>
<tr>
<td></td>
<td>-rayku cause</td>
<td>reason</td>
</tr>
<tr>
<td>Cuzco Q</td>
<td>-rayku, ‘because of’</td>
<td>reason</td>
</tr>
<tr>
<td>Leko</td>
<td>-bacha ‘because of’</td>
<td>reason</td>
</tr>
</tbody>
</table>

Many of the markers in this group have semantics that can be readily used either with respect to referential expressions or event-expressions. In fact it is not clear to what extent these are extensions at all, and if they are, what their direction of diachronic development is: from nominal to verbal use or vice versa.

One type of situation is a similitative nominal marker that can also be used as a similitative verbal marker (the Quechuan languages, Cubeo, Miraña)

(31) Cubeo [TUCANOAN], Morse & Maxwell 1999: 101; 182

a. ñulä-ri-{$\ddot{p}e$}  $\ddot{a}r\ddot{a}x\ddot{a}=a\ddot{b}e$  $\ddot{i}$
   cicada-CLS:3D-SIM  be.similar=N/H.3SG.M  3SG.M
   ‘He (i.e. the ant-eater) is similar to the cicada.’

b. pîdö-ji-re  $x\ddot{e}-x\ddot{a}-k\ddot{i}$  $j\ddot{o}-p\ddot{e}$  $x\ddot{i}$
   blow-CLS:funnel-OBJ  grab-IMP-M.SG  this-SIM  1SG.POSS
Some languages have purposive case markers that can be used with nouns or verbs (Kokama, Hixkaryana)

(32) Hixkaryana [CARIBAN], Derbyshire 1985: 21; 39
a. *t*ono *omsamt*xem*o* tun*à* *hori*
she.went young.girl water PRP
‘The young girl has gone for water.’
b. *kur*aha *wanimo* *ihoko*
bow-wood I.picked.it.up occupied.with-it
*ryesniri* *hori*
my.being PRP
‘I picked up the bow-wood with a view to working on it.’

Similarly, temporal case markers that can be used either with nouns or verbs are found (Urarina, Shipibo, Apurinã). In Apurinã, the temporal marker -sawaku only attaches to nouns that express some kind of time concept (Facundes 2000: 388).

(33) Apurinã [ARA*WAK*], Facundes 2000: 388; 611
a. *ôtu-sawaku* *n-apo-pe*
day-TEMP 1SG-arrive-PFV
‘I arrived during the day’
b. *a-makatsu*ka *txa-ru* *komera*-*pe* *u-payaka-sawaku*
IPL-take AUX-3M.OBJ manioc-pulp 3M-be.soft-TEMP
‘When it is soft, we take the manioc pulp.’

Finally, reason case markers are sometimes also found on verbs to mark reason clauses (Warao, Leko, Cuzco and Huallaga Quechua, Páez)

(34) Cuzco Quechua [QUECHUAN], Lefebvre & Muysken 1988: 19; 23
a. *qan-rí* *ima-rayku-n* *mana saluda-wa-rqa-nkí-chu*
4. Discussion

At the start of this paper, I indicated three major forces that may determine the distribution of any linguistic feature, in this case the use of particular case markers as subordinators: genealogical retention, areal, contact-induced diffusion, and general communicative-cognitive principles. Starting with the latter, it was mentioned above that nominalization of subordinate clauses can be argued to follow functional principles in that an event-denoting unit is used in a syntactically atypical way, namely as an argument, modifier, or adjunct. In grammaticalization theory, the development from noun phrase to subordinate clause (e.g. Heine & Kuteva 2007) is regarded as a functionally motivated, common path. Therefore in a broad sense, general functional motivations play account for the patterns found in e.g. Van Gijn (2014) where nominalized subordinate clauses in South America are found to be very common.

We can approach the issue of ‘naturalness’ also from a semantic angle. Figure 1 gives a schematic representation of the associations between case markers and subordinators in the sample languages (the languages where the associations are uncertain have been left out), where the thickness of the line correlates with the frequency of the connections.
If we look at Figure 1 from the perspective of the case marker, the following connections are most common:

(35) Accusative $\rightarrow$ Complementation
Dative/Benefactive $\rightarrow$ Purpose
Comitative/Instrumental $\rightarrow$ Temporal
Spatial $\rightarrow$ Temporal
Oblique $\rightarrow$ Temporal

From the perspective of the subordinators, the following are the most frequent connections:

(36) Complementation $\leftarrow$ Accusative
Condition $\leftarrow$ Spatial
Purpose $\leftarrow$ Dative
Reason $\leftarrow$ Spatial
Temporal $\leftarrow$ Spatial
Concession $\leftarrow$ Spatial
Manner ← Spatial
Comparison ← Spatial
Location ← Oblique

Genetti (1986), discussing case-marker-based subordinators in the Bodic branch of the Tibeto-Burman family, develops a localist theory of grammaticalization of case markers into subordinators, based on work by Diehl (1975), who argues for four general spaces: LOCATION, which locates physical objects in space, SOCIAL, which is location with respect to (human) beings, TEMPORAL, which locates events in time, and LOGICAL, which concerns the relations between propositions. On the basis of this abstract schema, Genetti (1986: 394) establishes the natural connections between cases and subordinators indicated in Table 10.

Table 10: Natural extensions of locative case markers (Genetti 1986)

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>SOURCE</th>
<th>GOAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCATION</td>
<td>locative</td>
<td>ablative</td>
</tr>
<tr>
<td>SOCIAL</td>
<td>comitative</td>
<td>ergative/instrument</td>
</tr>
<tr>
<td>TEMPORAL</td>
<td>when/while</td>
<td>since, after</td>
</tr>
<tr>
<td>LOGICAL</td>
<td>if</td>
<td>because</td>
</tr>
</tbody>
</table>

In a general sense, the centrality of spatial cases in the grammaticalization path towards subordinators in South American languages is corroborated by the fact that, of all the cases, as can be seen in Figure 1, they are the prime source of subordinators across areas and language families, and have several different extensions, as shown in (36). Location → Subordinator is a path also observed more generally, especially towards temporal and reason clauses (e.g. Heine & Kuteva 2002: 205-6). In fact, as Heine & Kuteva (2002: 206) say: “It is hard to find languages where some expressions for locative concepts are not extended to also refer to temporal concepts.”

In a more detailed way, the connections are more diffuse, but some naturalness effects can still be discerned. Table 11 shows a more refined classification of the data, giving the frequencies (in number of languages) of the

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8 The names are slightly altered to better fit the set-up of this paper. Comitative is termed 'associative' in Genetti (1986) and ergative and instrument are taken together.
occurrence of extensions of the case markers indicated in the top row to the
subordinators indicates in the first column, following Genetti’s proposal. The
gray cells are the ‘natural’ connections.\(^9\)

**Table 11: Extensions in the sample and naturalness.**

<table>
<thead>
<tr>
<th></th>
<th>LOC</th>
<th>ABL</th>
<th>ALL</th>
<th>COM</th>
<th>INS</th>
<th>DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overlap</td>
<td>13</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Condition</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Sequence</td>
<td>8</td>
<td>7</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reason</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Until</td>
<td></td>
<td>3</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purpose</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
<td>1</td>
<td>7</td>
</tr>
</tbody>
</table>

The naturalness effects predicted by Genetti (1986) are certainly not all found in
the data, though a few can be observed: a preference for locative markers to
extend towards overlap markers, as well as between dative and purpose.
Furthermore, ablative markers most often extend towards sequence
subordinators, and comitative markers most often to overlap subordinators.

In summary, general principles do seem to play a role in the distribution of
case-derived subordinators in South America, on at least three levels:

i. Nominalizations express the syntactically nominal status of subordinate
   clauses

ii. There is a clear space-time connection

iii. Certain specific ‘natural’ semantics extensions (locative-overlap,
    dative-purpose, and to a lesser extent ablative-sequence and comitative-
    overlap) can be observed.

A second potential influence on the distributional patterns of case-based
subordinators is areality. Above I mentioned four major linguistic areas. I will
briefly survey each of these areas with respect to case marking and extensions to
subordinators.

\(^9\) I have counted categories such as ‘inessive’ as locatives; limitative markers were
grouped with allative, perlitative markers are disregarded in Table 11. General temporal
subordinators have been counted both as overlap and as sequence markers.
The Andean linguistic area is generally associated with structural case and accusative alignment (Torero 2002, Adelaar 2008). Although object markers are certainly also found in the Amazonian macro area, they do seem to be subject to more restrictions than the accusative markers of the highlands. Extensions of accusative case markers to subordinate clauses is also predominantly restricted to Andean languages, though this seems to partly be a genealogical effect, as it is mainly restricted to Quechuan languages. The fact that Aguaruna (at the periphery of the Andean area) also has extensions to complement marking of the accusative marker may be the result of language contact. Another potentially areal phenomenon at the periphery of the Andean linguistic area is the extension of dative/benefactive markers to purpose clauses found in foothill languages Mosetén and Leko.

The Vaupés region, in terms of case marking, is characterized by a nominative-accusative profile, differential object marking (with information structure interfering), and a multi-purpose spatial marker (Aikhenvald 2002). It is unclear whether any of the extension patterns have areal motivations. Spatial case markers have been extended to temporal clauses in Tariana, Desano, Hup, and Dâw, but the extensions seem to be rather different, except for the extension of multi-purpose spatial markers to at least temporal overlap clauses in Hup and Tariana.

The Guaporé-Mamoré linguistic area is characterized by head-marking patterns, and at most peripheral case. Nominalized subordinate clauses are also mentioned as an areal trait (Crevels & Van der Voort 2008: 171). In terms of case extensions, a number of languages on the Bolivian side of the area show extensions of oblique markers to subordinators, though with rather different semantics. There may also be a negative areal effect in the lack of extensions of spatial case markers to subordinators in the (north)eastern part of the Guaporé-Mamoré (and adjacent areas). As mentioned above, the western fringe of the area may show some contact effects with the Andean linguistic area in terms of the extension of the dative/benefactive.
The Chaco is mainly characterized by the absence of case (see also Comrie et al. 2010: 91). This is in itself an interesting fact, since case markers seem to be generally present in South American indigenous languages. More particularly, Chaco languages seem to have a preference for expressing relations between an event and its arguments and/or adjuncts on the verb by means of applicatives and person markers, or - in the case of Tapiete - by person-marked adpositions.

Summarizing, there are some potential areal effects, both within and between linguistic areas, although areal accounts, in the absence of actual forms being borrowed, remains speculative.

A third potential factor in shaping distributions of case markers as subordinators is genealogy. Looking at the representatives of the larger families Arawak, Carib, Macro-Ge, Panoan, Quechuan, and Tupian may yield certain consistent genealogical trends, or further evidence for contact-induced change in the case of inconsistent patterns.

The members of the Arawak family in the sample are characterized by relatively small and semantically versatile case inventories. Although nominalization is a frequent subordination strategy for relative clause formation (Aikhenvald 1999: 100), complement and adverbial clauses are often formed by more verbal strategies. Nevertheless, some case extensions are found in the sample. Tariana and Yanesha’ have extended their spatial case markers to temporal and reason clauses, respectively, and Apurinã uses its oblique case marker (locative/instrument) to mark temporal clauses. The latter language also has further markers (because of, at the time of) that can be used both with nouns and subordinate verbs.

Nominalization is the dominant strategy in Carib subordination (Gildea 1998, Derbyshire 1999: 56-7, Gildea 2012: 481). Carib languages furthermore often have a host of postpositions, which can be inflected for person. These postpositions cannot always be counted as case marker as per the definition given at the beginning of this paper, but some of them can because they either do not

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10 Vilela (Lule-Vilela), not part of the sample of this paper, has peripheral case markers.
take person inflection or because their inflection is in complementary distribution with an over complement. Of the three Cariban sample languages, Hixkaryana is the only one that uses case markers as subordinators (instrument to reason, allative to purpose, as well as the marker hori ‘for the purpose of’ to purpose clauses). Some of the adpositions that cannot be counted as case markers seem to play a role in subordinate clause formation in all three Cariban sample languages, whether directly or historically (e.g. the locative adposition tao seems to be present in Tiriyó ahtao ‘temporal/conditional’ (Meira 1999), and Payne & Payne (2013: 421) mention several adpositions as potential sources for subordinating suffixes in Panare.

Not very much is known about general strategies that Macro-Ge languages use for subordinate clauses. Rodrigues (1999: 197) mentions the presence of switch-reference systems in some languages to mark coordinate clauses. The three Macro-Gean sample languages Bororo, Timbira, and Rikbaktsa show rather divergent patterns both in their case marking systems as such (e.g. Timbira is has an ergative case marker, Bororo and Rikbaktsa accusative), though the languages generally share the presence of a large inventory of peripheral case markers. Extensions to subordinate clauses are not abundant in the data that I have looked at, and are restricted to the extension of the accusative case marker to marking complements, as well as of the comitative marker to simultaneity clauses in Bororo, uncertain extensions of the ergative/genitive case marker to reason and the dative to (DS) perception complements in Timbira, and of the inessive -ere(ka) to temporal/conditional clauses.

The Panoan languages are relatively homogeneous in a number of aspects, such as the presence of an ergative marker (generally containing some nasal element) that has a number of other functions as well. Most Panoan languages also have a complex switch-reference system in common, which is used to encode many different adverbial clause types (especially temporal and purpose). The SR markers may show potential connections with case markers, although in a number of instances this is due to the fact that both case markers and switch reference markers are part of the same bigger transitivity concord system. Apart from those correspondences, there does not seem to be a lot of extensions of case markers to subordinators (extension of the ablative to temporal clauses with a
time lapse between the two events in Yaminahua, and an extension of the similative to cognition complements in Kashibo-Kakataibo).

The central and southern Quechuan languages share many properties, also in their case systems, and also in their extensions to subordinators: extensions of the accusative marker to marking several complement types, of the dative to purpose clauses, the ablative to reason clauses, the limitative to ‘until’ clauses, and the ‘because of’ marker to reason clauses are typical Quechuan extensions. Although the northern Quechuan varieties underwent some changes in their case systems compared to the southern one (such as a merger of the benefactive and genitive in Imbabura Quechua), the ‘Quechuan’ extensions still exist.

Like Cariban languages, many Tupian languages have adpositions that can inflect for person, although in a number of languages these adpositions have developed into inflectional case markers (Rodrigues & Cabral 2012: 517). With the exception of Kamaiurá which, in Seki’s analysis, has a nuclear case marker, Tupian languages do not have structural case markers. Dative/benefactive, comitative (and to a lesser extent instrument), and spatial cases are common. Again, extensions to subordinate clauses are relatively marginal: Emerillon uses the comitative marker -ehe to mark reason clauses, and the spatial markers -koti ‘allative’ to cognition complements, and -upi ‘perlative’ to comparative constructions. Karitiana oblique -ty, like -koti, is used to mark complement clauses.

The language families, then, show rather diverse effects, possibly related to the time-depth and/or geographical spread of the families, with Quechuan and Panoan languages being relatively homogeneous, the others less so. In conclusion it seems that genealogical effects can influence distributional patterns, but at the same time case systems (and their extensions to subordinators) seem to be diachronically rather unstable, so that older, or more dispersed language families show more disparate patterns.

5. Conclusion
Nominalized subordinate clauses are very common cross-linguistically, but perhaps especially in South American languages. It is therefore not unexpected to find many examples of case markers that have been extended to mark subordinate clauses, following proposed diachronic channels for subordinate clauses arising from or being equated with nominal structures (Heine & Kuteva 2007).

The semantics of the extensions show some unity across languages, which seems to be attributable to a combination of naturalness effects, areal effect, and genealogical effects, which can be summarized as follows.

General, functionally/cognitively motivated principles:

i. Nominalizations express the syntactically nominal status of subordinate clauses
ii. There is a clear space-time connection
iii. Certain specific ‘natural’ semantics extensions (locative-overlap, dative-purpose, and to a lesser extent ablative-sequence and comitative-overlap) can be observed.

Potentially areal effects:

i. Accusative to complement clause markers in northern Andes and adjacent areas.
ii. Dative to purpose clauses in southern-central Andes and adjacent foothills.
iii. General spatial markers to complement clauses in Tariana and Hup (Vaupés).
iv. Lack of extensions of case markers in the eastern Guaporé-Mamoré region and adjacent areas.
v. Lack of case in general in the Chaco.

Genealogical effects:

i. Relatively few extensions of case markers to subordinators in Arawak, Macro-Ge, and Tupian.
ii. Some potential diachronic but uncertain connections between case markers and subordinators in Carib and Panoan.

iii. Perhaps a (minor) pattern of extensions of peripheral case markers to complement-marking elements in Tupian.

iv. A relatively homogenous set of extensions of case markers to subordinators in Quechuan languages.

Abbreviations

1 first person; 2 second person; 3 third person; 4 fourth person (we inclusive); A transitive subject; ABL ablative; ABS absolutive; ACC accusative; ACT action; ADH adhesive; ADV adverbial; AFF affirmative; APPL applicative; ART article; ASSERT assertive; ASUF adjective suffix; AUX auxiliary; BEN benefactive; C coreferent; CAUS causative; CL classifier; COM comitative; COMP complementizer; COP copula; DAT dative; DECL declarative; DEM demonstrative; DIM diminutive; DIR direction; DR direct (voice); DSC discontinuative; DUR durative; EMPH emphasis; ERG ergative; EXC exclusive; F feminine; FM formative; FOC focus; FUT future; GER gerund; HAB habitual; HIAF high affectedness; HSAY hearsay; IMPFV imperfective; INAN inanimate; INC inclusive; INESS inessive; INF infinitive; INST instrument; INTN intention; INTR intransitive; INTS intensive; IRR irrealis; LIM limitative; LK linker; LOC locative; LOCUT locutor; M masculine; MID middle voice; MOT motion; MST mental state; N/H non-human; NEG negation; NEUT neuter; NLZ nominalizer; NONA/S non-subject; NONFUT non-future; NPREF noun prefix; NUC nuclear case; OBJ object; OBL oblique; OBLG obligatory, obligative; PAST past; PERF perfect; PERL perative; PFV perfective; PL plural; POSS possessive; PREP preposition; PRES present; PROG progressive; PRP purpose; PTC participle; REA realis; REAS reason; REC reciprocal; RED reduplication; REF reference; REL reflexive; REL relativizer; REP reportative; S intransitive subject; SG singular; SIM simulative; STD standing; STV stativizer; SUB subordinator; TEMP temporal; THM theme; TR transitive; VSM verbal stem marker; WH question word

References


