Mechanisms of change in areal diffusion: new morphology and language contact

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Borrowing, or diffusion, of grammatical categories in language contact is not a unitary process. In the linguistic area of the Vaupés in northwest Amazonia, several different mechanisms help create new contact-induced morphology. Languages which are in continuous contact belong to the genetically unrelated East-Tucanoan and Arawak families. There is a strong cultural inhibition against borrowing forms of any sort (grammatical or lexical). Language contact in the multilingual Vaupés linguistic area has resulted in the development of similar – though far from identical – grammatical structures. In Tariana, an Arawak language spoken in the area, reanalysis and reinterpretation of existing categories takes place when diffusion involves restructuring a pre-existing category for which there is a slot in the structure, such as case. A new grammatical category with no pre-existing slots may evolve via grammaticalization of a free morpheme – this is how aspect and aktionsart marking was developed. The development of a five-term tense-evidentiality paradigm involves a combination of strategies: reanalysis with reinterpretation accounts for the obligatory tense marking,
and the history of visual, inferred and reported evidentials. The nonvisual evidential evolved via grammaticalization of a lexical verb while the most recent, assumed, evidential involves reanalysis and reinterpretation of an aspect marker and grammatical accommodation.

I. PRELIMINARIES

Languages in contact – where a significant proportion of the speakers of one also have some competence in the other – gradually become more like each other. Language contact may bring about gradual convergence resulting in structural isomorphism, whereby the grammar and semantics of one language are almost fully replicated in another (cf. Gumperz & Wilson 1971; Nadkarni 1975; Friedman 1997). One then expects creation of new categories, and reinterpretation and reanalysis of old ones.

Contact-induced changes can involve significant restructuring of a grammatical system: for instance, changing the typological profile of the language from head-marking to dependent-marking. Such system-altering changes involve the introduction of new categories – by analogy with other language(s) in the area. In contrast, system-preserving changes do not involve any new categories; they may involve adding a new term to an already existing category, or grammaticalization of a morpheme to preserve threatened functional categories (Heath’s 1997, 1998 ‘lost wax’ and ‘hermit crab’ processes; see also discussion in Watkins 2001: 59–60).

System-altering changes on the way to convergence result in the restructuring of languages in contact. For instance, a head-marking language can acquire dependent-marking properties; a suffixing language may acquire prefixes (and lose suffixes); or an active-stative language may acquire nominative-accusative properties. An additional type of change – which can be considered system-preserving rather than system-altering – is grammatical accommodation. It involves reinterpretation of a native morpheme on the model of the syntactic function of a phonetically similar morpheme in the diffusing language. This can be exemplified by the influence of the Hittite imperfective marker -ske- on Eastern Ionic Greek (as described by Watkins 2001: 58): as a result, the Greek morpheme became more productive than it had been previously. Examples of grammatical accommodation were described for Pipil by Campbell (1987: 263–264; termed ‘shifts due to phonetic similarity’). Two examples are nouns.

[2] This is also termed ‘metatypy’ by Ross (2001).

[3] The very idea of such restructuring and concomitant system-altering changes goes against the oft-quoted ‘structural compatibility requirement’. In its strong form, this requirement states that borrowing can operate only between similar systems (see, among many others, Weinreich 1953: 25 and Moravcsik 1978). This claim holds only as a tendency (as demonstrated by Harris & Campbell 1995 and Haig 2001).
MECHANISMS OF CHANGE

One is a marker of possession -pal which was originally a relational noun, as in nu-pal ‘mine’, mu-pal ‘yours’, and so on. On the basis of similarity with Spanish para ‘for, in order to’, this morpheme can now appear without any prefixes and have the meaning of ‘in order to, so that’ and is used to introduce a subordinate clause. Another example is the relational noun -se:l ‘alone’, cf. mu-se:l ‘I alone, I by myself’. This noun has been remodeled after the phonetically similar Spanish sólo ‘alone’, and has become an ‘adverb’ – it no longer requires possessive prefixes: se:l ‘alone, only’. It has also shifted its meaning from ‘alone’ to ‘only’, to include the ‘only’ meaning of Spanish solo. This is comparable to what Haugen (1969) calls ‘homophonous extensions’; that is, formations which resemble a model phonetically but not necessarily semantically, e.g. Norwegian American brand ‘bran’ (meaning in Standard Norwegian: ‘fire’), which acquired its new meaning under the influence of English bran.

It is useful to distinguish between diffusion of forms and diffusion of patterns, since linguistic communities differ with respect to their acceptance of loan forms. Some adopt loan forms on a large scale while others consider using ‘foreign’ importations as tokens of unacceptable language-mixing. What language-internal resources are, then, likely to be deployed to develop new morphology? This is the problem I am going to address here.

The mechanisms identified as major internal driving forces in language change are reanalysis, reinterpretation (or extension) and grammaticalization. The purpose of this paper is to show how these mechanisms help create new contact-induced morphology in a situation of massive indirect diffusion of grammatical patterns between genetically unrelated languages.

I argue that, contrary to Harris & Campbell (1995: 51), borrowing (or diffusion, or calquing) of grammar in language contact is not a unitary mechanism of language change. Rather, it is a condition – or an externally motivated situation – under which the above three mechanisms can apply in an orderly and systematic way. The status of categories in the languages in contact is what determines the choice of a mechanism: whether it is ‘just’ reanalysis of existing morphological material, or whether some grammaticalization and reinterpretation is involved.

Some terminological remarks are in order. Reanalysis is understood as a historical process by which a morphosyntactic device comes to be assigned a different structure from the one it had, with no change to its surface form and little change to its semantics. For instance, in Udi a number of verbs – which originally contained noun class agreement markers – were reanalyzed as simple stems, as part of the process of losing the noun class system (Harris & Campbell 1995: 66–67). Reinterpretation (or extension) is a ‘change in the surface manifestation’ of a pattern ‘which does not involve immediate or intrinsic modification of underlying structure’ (Harris & Campbell 1995: 97). Reanalysis most often occurs together with reinterpretation (cf. Trask 2000: 274). Examples of reinterpretation without reanalysis involve ‘a shift in the
categorial status of a linguistic form resulting from its occurrence in ambiguous positions’; for instance, the English noun *fun* has been reinterpreted as an adjective, leading to its use in contexts like *This is a fun game* (Trask 2000: 280). Grammatical accommodation can be considered a contact-driven type of reinterpretation (based on a chance similarity between languages in contact).

Whether grammaticalization and reanalysis are to be considered separate mechanisms is a matter for debate (see discussion in Harris & Campbell (1995: 92) and a critique of the concept of grammaticalization in Campbell 2001). Grammaticalization is generally viewed as a path from a lexical item to a grammatical morpheme. A typical example of grammaticalization is the verb ‘finish’ becoming a marker for ‘completed’ aspect. Grammaticalization necessarily involves reanalysis: the structure of a grammaticalized construction changes, while its surface realization does not have to. However, not every case of reanalysis involves grammaticalization. This justifies considering them separately, at least for the purposes of this paper.

My aim is to show that reanalysis without concurrent grammaticalization goes together with system-altering changes – where no new structural slots appear. Only those system-altering changes whereby a new category with a previously non-existent structural slot develops involve grammaticalization of lexical items. Creating a new paradigm may involve a combination of varied strategies. These may include reanalysis of already existing devices, grammaticalization of a lexical item and also grammatical accommodation.

To illustrate this, I discuss diffusion of categories and contact-induced morphological changes in two language families spoken in the multilingual area of the Vaupés, in northwest Amazonia: Arawak and East-Tucanoan. The categories considered are case marking, aspect and aktionsart, and tense-evidentiality.

In section 2, I provide background information about the linguistic area and the languages involved, and their typological profiles. In section 3, I discuss the diffusion of case marking. The contact-induced development of aspect and aktionsart is illustrated in section 4. In section 5, I outline a historical scenario for the tense-evidentiality system. The last section, section 6, contains a summary.

2. BACKGROUND: EAST-TUCANOAN AND ARAWAK LANGUAGES IN THE VAUPÉS

The linguistic area of the Vaupés is known for its institutionalized multilingualism based on language group exogamy: one should marry a person...
belonging to a different language group. Language is acquired through patrilineal descent, and is a badge of identity for each person (Aikhenvald forthcoming-a). There is a strong cultural inhibition against using foreign forms of any sort (grammatical or lexical). Languages which are in continuous contact with each other belong to the genetically unrelated East-Tucanoan and Arawak families. The East-Tucanoan languages are Tucano, Piratapuya, Wanano, Desano, Tuyuca, Tatuyo, Barasana, etc. At present, the Tucano language is rapidly gaining ground as the lingua franca in the Brazilian Vaupés (see chapter 11 of Aikhenvald forthcoming-a on the ensuing obsolescence of many other indigenous languages). The Arawak family is represented by Tariana. In the past, Tariana was a dialect continuum (comparable in its diversity to East-Tucanoan languages).

East-Tucanoan languages are typologically very similar. The ‘East-Tucanoan type’ has developed as a result of long-term interaction of phenomena of two kinds: genetic affinity and continuous contact. The existing typological similarities may be due to Sapir’s ‘drift’, whereby genetically related languages tend to become more similar. But since the East-Tucanoan languages are in continuous contact, it is hard – if not impossible – to distinguish language convergence due to drift from convergence due to a constant contact and gradually arising isomorphism in morphosyntactic structures. For East-Tucanoan, we have some grammatical descriptions and reconstructions (I am also relying on some of my own field data on the Tucanoan languages).

The analysis of contact-induced changes in Tariana (Arawak) is facilitated by our knowledge of two closely related languages spoken outside the Vaupés proper: Baniwa/Kurripako to the northeast (most information comes from my fieldwork; also see Taylor 1991; Aikhenvald 1999b), and Piapoco to the northwest (Klumpp 1990, 1995). (See Aikhenwald 2001 for a discussion of the state of North Arawak reconstruction.)

All East-Tucanoan languages are dependent-marking, with some head-marking. They are almost exclusively suffixing and mildly synthetic. East-Tucanoan languages are nominative-accusative, with a special core case for topical nonsubjects (obligatory with pronouns).

In contrast, all Arawak languages, including Tariana, are predominantly head-marking, polysynthetic to varying extents and mostly suffixing with only
a few prefixes. The forms of prefixes are rather uniform across the family, while suffixes vary. Pronominal prefixes cross-reference core participants, namely the subject of a transitive verb (A) and of an intransitive active verb (S_a). The subject of an intransitive stative verb (S_o) and the direct object (O) are either marked with suffixes, as in Baniwa and many other Arawak languages, or not marked at all, as in Tariana and a few more languages. That is, Arawak languages display an active-stative profile: the subject of a transitive verb and the subject of an active intransitive verb are marked in one way, and the subject of an intransitive stative verb and the direct object of a transitive verb in another (see Aikhenvald 1999a). There are typically no core cases for marking grammatical relations; several locative cases distinguish meanings like ‘in’, ‘to’, ‘from’, etc. The typological differences between Proto-Tucanoan and Proto-Arawak are summarized in table 1.

Language contact in the multilingual Vaupés linguistic area has resulted in the development of similar – though far from identical – grammatical structures. The bulk of contact-induced change proceeds from East-Tucanoan, spoken by the majority population of the Vaupés, into Tariana. Contact-induced changes the other way round have also been attested (see Aikhenvald forthcoming-d). The East-Tucanoan impact on Tariana involves (a) emergence of new categories present in East-Tucanoan but absent from Arawak, and (b) reinterpretation of existing categories to accord with East-Tucanoan patterns.

Diffusion of structural patterns – in the almost complete absence of loan forms – implies that formal marking for the new grammatical categories is developed from the language’s own resources. Tariana employs reanalysis and reinterpretation of existing categories, grammaticalization of lexical items, and grammatical accommodation. Below, I will show how this applies
to case (section 3), aspect and aktionsart (section 4), and tense-evidentiality (section 5).

3. THE DEVELOPMENT OF CASE MARKING: REANALYSIS AND REINTERPRETATION

The impact of East-Tucanoan languages on Tariana has resulted in the development of case marking for grammatical relations, alongside restructuring of the locative case system.

All East-Tucanoan languages display a typologically uncommon system of nonsubject case marking. The marking is obligatory for personal pronouns and proper names. It is also required on topical and specific nonsubjects; that is, direct objects, experiencers, beneficiaries and even locative and temporal constituents. This ‘catch-all’ case marker (termed ‘specificity marker’ by Barnes 1999: 219) -re is uniform in its function across the East-Tucanoan group and can be reconstructed for Proto-Tucanoan. (Other Tucanoan languages have -Ce where C is an alveolar consonant.)

Arawak languages typically do not employ any case marking for core grammatical relations. Tariana is a notable exception – it has a case marker for topical and specific referents in a nonsubject function, -naku/-nuku, which is functionally identical to the marker -re in East-Tucanoan languages. The examples in (1)–(4) demonstrate the functional similarity between Tucano -re and Tariana -naku/-nuku. In examples (1) and (2), this case marks a topical specific object.

(1) wi’i-re’ weé’ Tucano (East-Tucanoan)
    house-TOP.NON.A/S do + PRES.VIS + N3.P

(2) panisi-nuku nu-ni-naka Tariana
    house-TOP.NON.A/S 1SG.do-PRES.VIS
    ‘I make a (specific) house (for my relatives to live in).’

The nonsubject case is not used with generic referents, as illustrated in examples (3) and (4).

(3) wi’i weé’ Tucano
    house do + PRES.VIS + N3.P

(4) panisi nu-ni-naka Tariana
    house 1SG-do-PRES.VIS
    ‘I make houses (in general; i.e. I am a builder).’

[6] Examples from East-Tucanoan and other Arawak languages follow the existing sources. Examples from Tariana and Baniwa are given in phonemic transcription. Tariana phonology is described in chapter 2 of Aikhenvald (forthcoming-b); Baniwa transcription is based on my fieldwork data (cf. Aikhenvald 1999a, b).
The topical nonsubject case in Tariana can mark any nonsubject constituent provided their referents are definite, specific and/or topical, matching the function of its East-Tucanoan counterpart. Just like in East-Tucanoan languages, it is obligatory for pronouns and personal names.

The variant -naku in Tariana is used by representatives of the older generation. The variant -nuku is characteristic of younger people. (In Tariana, enclitics tend to undergo assimilation between the two final vowels.) The marker -naku has a cognate in a closely related Arawak language, Baniwa, where -naku is a locative case meaning ‘on the surface’ or ‘to the surface’.

This brings us to another major difference between most Arawak and East-Tucanoan languages. Most Arawak languages of the Upper Rio Negro area have a fair number of locative case markers. In contrast, East-Tucanoan languages have just one locative case, e.g. Tucano, Wanano, Pirapuya -pi; Barasano -hi, Desano -ge. This case covers location, direction to and from, and also occurs on temporal constituents (and is reconstructable for Proto-Tucanoan).

The oblique case system in Tariana follows the East-Tucanoan model. Similarly to East-Tucanoan languages, Tariana differentiates just one locative case marker, -se, which has the meaning of ‘to, towards, onto, out of, in/on’. The functional similarity between the single locative case in Tariana and in East-Tucanoan languages can be illustrated by the following pairs:

<table>
<thead>
<tr>
<th>Desano</th>
<th>Tariana</th>
<th>Tucano</th>
</tr>
</thead>
<tbody>
<tr>
<td>yuhu-ba˜-ge</td>
<td>pa:-puna-se</td>
<td>-pi</td>
</tr>
<tr>
<td>Tariana</td>
<td>(one-CL:TRAIL-LOC)</td>
<td></td>
</tr>
<tr>
<td>‘on, to or from one trail’</td>
<td>‘on, to or from a tree branch’</td>
<td>(cf. Miller 1999: 59–60).</td>
</tr>
</tbody>
</table>

In contrast, Baniwa marks these location types differently, e.g. haiku-naku ‘on (the surface of) a tree’, haiku-žiku ‘inside a tree’, haiku-hre ‘towards a tree’, haiku-zikhiše (underlying form haiku-žiku-hiše ‘from inside the tree’).

The first three columns of table 2 display locative case markers in Baniwa, its close relative Tariana, and Tucano, as a typical representative of an East-Tucanoan system. Tariana cognates for Baniwa locative cases are given in the fourth column. The last column contains cognates for the same morphemes in Piapoco, another closely related Arawak language.

The locative marker -se in Tariana could be cognate with either Baniwa -hre ‘towards’ or -(hi)še ‘from’. Both hr and t in Baniwa correspond to s in Tariana, e.g. Baniwa -hru, Tariana -siu ‘for’; Baniwa -ihri, Tariana -isi ‘seed’; Baniwa -tipi, Tariana -sipi ‘tail’ Baniwa panši, Tariana panisi ‘house’.7 But the Baniwa ablative contains a formative (hi), which ought to have survived in Tariana. It is realized as -iše in Piapoco -ise; note that Baniwa h

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7 The phonological process whereby two phonemes in Baniwa, hr and t, correspond to just one, s, in Tariana, is independent of the simplification of the oblique case system in this language.
### Table 2

Oblique cases in Baniwa, Tariana and Tucano

<table>
<thead>
<tr>
<th>Meanings</th>
<th>Baniwa</th>
<th>Tariana</th>
<th>Tucano</th>
<th>Cognates of Baniwa markers in Tariana</th>
<th>Cognate markers in Piapoco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locative and directional ‘to’</td>
<td>-zi̱ku</td>
<td></td>
<td></td>
<td>-riku ‘derivational suffix’, and a sequencing enclitic -'ka-riku-se ‘while’</td>
<td>-riku ‘inside’ (Klumpp 1990: 47)</td>
</tr>
<tr>
<td>Locative and directional ‘on or to the surface of’</td>
<td>-naku</td>
<td>-se</td>
<td>-pi</td>
<td>-naku, -nuku ‘topical nonsubject’</td>
<td>None</td>
</tr>
<tr>
<td>Directional allative ‘towards’</td>
<td>-hte</td>
<td></td>
<td></td>
<td>-se ‘locative’</td>
<td>-te/le ‘to’ (Klumpp 1995: 45)</td>
</tr>
<tr>
<td>Ablative</td>
<td>-(h)te</td>
<td></td>
<td></td>
<td>None</td>
<td>-ise ‘from’ (Klumpp 1995: 176)</td>
</tr>
<tr>
<td>Perative ‘along’</td>
<td>-wa</td>
<td>None</td>
<td></td>
<td>-wa ‘derivational suffix’ in kada-wa ‘get dark’ only</td>
<td>None</td>
</tr>
</tbody>
</table>
corresponds to ø in Piapoco. Baniwa \( h \) corresponds to Tariana \( h \), and Baniwa \( i \) regularly corresponds to Tariana \( i \). This can be illustrated with such correspondences as Baniwa, Tariana \(-hima\) ‘hear, feel, think’ or \(-hiwi\) ‘classifier for long thin things’. Baniwa \( t \) corresponds to Piapoco \( s \), e.g. Baniwa \(-tipi\), Piapoco \(-sipi\) ‘tail’; Baniwa \(-ti\), Piapoco \(-si\) ‘marker of a nonspecific owner’; and Baniwa \( hr \) corresponds to Piapoco \( l \), as in Baniwa \(-hriu\) ‘for’, Piapoco \(-li\) ‘for, to’ (Klumpp 1990: 1777) (cf. Tariana \(-siu\) ‘for’). That is, the regular correspondent of Baniwa \(-hi\) in Tariana is expected to be \(*-hise\), and not \( -se \). The Tariana case-marker \( -se \) is thus cognate with Baniwa \(-hre\) ‘allative’.

Tariana has lost all other locative case morphemes in their original locational meanings (most of which are found in other Arawak languages north of the Amazon, see Aikhenvald 1999a). The cognate of Baniwa \(-ziku\) ‘locative, directional (towards)’, Piapoco \(-ricu\) ‘inside’ and Resigaró \(-giko\) ‘in’ (Allin 1975: 276) is found in a locative derivational suffix \(-riku\) in Tariana, as in \( -wari\) (the place on the Vaupés river; lit. peccary’s place). This morpheme is also found in enclitic \(-ka-riku-se\) ‘while’. Baniwa, Warekena, Bare \(-wa\) ‘perlative (i.e. along something); transformative (i.e. becoming something)’ survives in Tariana in just one word, \( kada-wa \) (black, dark-DER) ‘become dark’.

We have thus seen that reanalysis with reinterpretation was employed to evolve an East-Tucanoan-type case system in Tariana, out of material from previously existing slots in the noun structure. The elaborate set of locative distinctions typical for North Arawak languages has been neutralized, mirroring the East-Tucanoan system. A core case – marking definite, topical and referential nonsubject constituents, identical to its functional counterpart in East-Tucanoan languages – has been developed in Tariana as the result of reanalysis and reinterpretation of one of the locative cases, meaning ‘on or to the surface’, found in the closely related Baniwa. The allative case, which survives in this function in Baniwa and Piapoco, has become a catch-all locative, matching the East-Tucanoan pattern. The reinterpretation of this case morpheme resulted in a considerable extension of its meaning. At the same time, the previously existing set of locative oppositions has been lost (the corresponding affixes survived in other, newly developed, meanings). In other words, Tariana has ‘imported’ the abstract feature system of East-Tucanoan cases – with one, catch-all, locative – losing most of the original locative distinctions and extending the sphere of the original suffix. This reinterpretation involves reanalysis of a feature system together with a reanalysis of the system of realization for these features. A similar phenomenon

[8] In Bare (Aikhenvald 1995), an extinct Arawak language spoken in the Upper Rio Negro area not far from the Vaupés, the ablative contains two morphemes: \(-i\) and the directional \(-te\) (related to the morphemes in Baniwa, Tariana and Piapoco discussed here).

[9] \( g \) in Resigaró regularly corresponds to \( r \) in other Arawak languages.
has been reported in the literature as ‘loanshifts’ (Haugen 1969: 403), e.g. the shift of correr ‘run’ in American Portuguese to mean ‘run for office’, under the influence of English run. No grammaticalization is involved, simply because grammatical means for case marking were supplied by a previously existing Arawak structure.

4. ASPECT AND AKTIONSART: GRAMMATICALIZATION

The contact-induced development of aspects and aktionsarten in Tariana is rather different from the ways in which the system of cases evolved.

Unlike other North Arawak languages of the area, Tariana has incipient verb compounding. In most Arawak languages north of the Amazon, verbs of motion, finishing and beginning tend to grammaticalize as aspect markers in serial verb structures; in Tariana, these coexist with verb-compounding. The main difference between serial verbs and verb-compounding lies in the status of their components: the components of serial verbs are independent grammatical words while the components of a verb-compounded structure form part of one grammatical word (see Aikhenvald 2000b). In East-Tucanoan languages, verb compounding is very productive. Compounded verbs express aspect and aktionsart meanings (describing the manner or the time of the action). Verb serialization in East-Tucanoan languages is almost nonexistent (Aikhenvald 2000b).

The processes of developing aspect and aktionsart categories in Tariana – absent from Arawak but widespread in East-Tucanoan languages – have resulted in grammaticalization of independent verbs. Such grammaticalization is illustrated below with the stative verb kawhi ‘wake up, be early in the morning’: it is used as a full verb in (5) and as an enclitic in (7). Parallel structures in Tucano are given in (6) and in (8). Other verbs grammaticalized as aktionsart markers include those meaning ‘be unstuck’ (from the verb meaning ‘unstick; scratch off’); ‘slip’ (from the verb meaning ‘slip; pop up’); ‘slide’ (from the verb meaning ‘slide; move up with sliding movement’), etc.

(5) kawhi-tha phia Tariana
    be.awake-VIS.PAST.INTER you

(6) wâ’ka-ti mi’i Tucano (Ramirez 1997, vol. II: 210)
    be.awake-INTER you
    ‘Are you awake?’ (a morning greeting)

(7) pethe du-wheta-kawhi-naka Tariana
    manioc.bread 3SG.F-put-BE.EARLY-PRES.VIS

[10] I use ‘aspect’ in a fairly narrow sense, to refer to the temporal composition or completion of an event. The term ‘aktionsart’ is used to refer to other characteristics of actions and states, e.g. do repeatedly, do quickly (see also Aikhenvald 2000b).
Grammaticalization of the verb -sita ‘finish’ as a perfective aspect marker is another example of developing a category to ‘match’ an East-Tucanoan-type structure. Examples (9)–(11) illustrate a striking semantic isomorphism of structures involving Tucano toha, Desano -tuŋa ‘terminate, finish; do already; have done already’ and Tariana -sita ‘perfective’ (the Tucano example is from Ramirez (1997, vol. I: 97); the Desano example comes from Miller (1999: 78–79). When used as an aspect marker, the Tariana morpheme -sita undergoes optional reduction, and is pronounced as -sta (see discussion in chapter 2 of Aikhenvald forthcoming-a). Phonological reduction of this sort is typically attested in grammaticalization, and is consistent with the Parallel Reduction Hypothesis, which suggests that ‘form and meaning covary’ in grammaticalization, and that therefore one should expect a certain amount of phonological reduction when a lexical item gets grammaticalized (Bybee, Perkins & Pagliuca 1994: 19–21).

That is, grammaticalization of lexical items (verbal roots) is a way of developing new morphology for which no pre-existing structural slot was available in Tariana. Grammaticalization involves changing the verbal structure by introducing an additional slot for a new grammatical category (see figure 1 in section 5.1 below).

5. Developing the Tense-Evidentiality System: Combination of Strategies

In East-Tucanoan languages, every sentence must indicate how the information was acquired by the speaker – whether they saw the event happen or just heard it, or know about it because somebody else told them, etc. This is achieved through a set of evidential markers fused with tense (see Barnes 1984, 1999; Malone 1988). These same distinctions have developed in Tariana, under pressure from East-Tucanoan languages. That is, in Tariana or in any East-Tucanoan language one cannot just say ‘a dog stole the fish’. There are four ways of saying this, depending on the source of information.
If one saw the dog drag the fish from a smoking grid, (12) (Tucano) and (13) (Tariana) would be appropriate, involving the visual evidential (which is fused with recent past tense and with person in Tucano).

(12) dia̱yi wa’i-re yahá-ami Tucano
dog fish-TOP.NON.A/S steal-REC.P.VIS + 3SG.NF

(13) tʃinu kuphe-nuku di-nitu-ka Tariana
dog fish-TOP.NON.A/S 3SG.NF-steal-REC.P.VIS
‘The dog stole the fish (I saw it).’

If one heard the sound of a dog messing around with the smoking grid, or of the fish falling down, one would use a nonvisual evidential, as in (14) and (15).

(14) dia̱yi wa’i-re yahá-asĩ Tucano
dog fish-TOP.NON.A/S steal-REC.P.NONVIS + 3SG.NF

(15) tʃinu kuphe-nuku di-nitu-mahka Tariana
dog fish-TOP.NON.A/S 3SG.NF-steal-REC.P.NONVIS
‘The dog stole the fish (I heard it).’

If the owner of the fish comes into the kitchen area and sees that the fish is gone, there are bones scattered around and the dog looks happy, the inferred evidential is appropriate:

(16) dia̱yi wa’i-re yahá-apĩ Tucano
dog fish-TOP.NON.A/S steal-REC.P.INFR + 3SG.NF

(17) tʃinu kuphe-nuku di-nitu-sika Tariana
dog fish-TOP.NON.A/S 3SG.NF-steal-REC.P.INFR
‘The dog stole the fish (I inferred it).’

And if one learnt the information from someone else, the reported evidential is the only choice:

(18) dia̱yi wa’i-re yahá-api’ Tucano
dog fish-TOP.NON.A/S steal-REC.P.REP + 3SG.NF

(19) tʃinu kuphe-nuku di-nitu-pidaka Tariana
dog fish-TOP.NON.A/S 3SG.NF-steal-REC.P.REP
‘The dog stole the fish (I have learnt it from someone else).’

I first outline the marking of evidentials in Tariana and in East-Tucanoan languages, in section 5.1. In section 5.2, I look at evidentiality in North Arawak languages and, in section 5.3, I suggest a scenario for the historical development of the Tariana system. A summary of the mechanisms employed is given in section 5.4.
Tense-evidentiality in East-Tucanoan languages and in Tariana

East-Tucanoan languages and Tariana distinguish three tenses in evidentials: present, recent past and remote past. The tenses refer to the time when the information was acquired (further details on the Tariana system and on the typology of evidentials can be found in Aikhenvald forthcoming-b, c). Table 3 contains a comparison of evidentiality distinctions in Tariana and in Tucano, as a typical representative of East-Tucanoan languages.

East-Tucanoan languages mark tense, evidentiality and person with portmanteau suffixes, which are only partly analyzable. In contrast, Tariana marks person with prefixes, and tense-evidentiality with enclitics. These enclitics in Tariana are analyzable: -ka marks recent past, and -na marks remote past (see section 5.3).

Table 4 contains person, gender and number prefixes in Tariana. These person markers are used only with transitive and active intransitive verbs; no
markers occur on prefixless stative verbs, in agreement with the general active-
stative profile of the language inherited from Proto-Arawak (see section 2).

Tariana prefixes distinguish four persons, two numbers and two genders in
third person singular. In East-Tucanoan languages, the person system is based
on an opposition between third person animate – which further distinguishes
non-feminine animate singular, feminine animate singular, and plural – and
the rest (covering other persons and numbers plus third person inanimate).
Thus, in Tucano $apé-a-pi$ (play-REC.P.VIS-n3.person) may mean ‘I played’,
or ‘you (singular or plural) played’, or ‘we (exclusive or inclusive) played’. In
contrast, $apé-a-mi$ (play-REC.P.VIS-3sg.nf) means ‘he played’ and $apé-a-mo$
(play-REC.P.VIS-3sg.f) means ‘she played’ and $apé-a-ma$ (play-REC.P.VIS-
3pl) means ‘they played’ (see also Barnes 1999). One of the contact-induced
changes in Tariana and in some East-Tucanoan languages involves a tendency
to bridge these differences in person marking; this is discussed in Aikhenvald
(forthcoming-d) and will not be considered here.

Evidentials in Tariana and in East-Tucanoan languages share most of their
epistemic and other extensions. For instance, visual evidentials are employed
for timeless statements whose validity is common knowledge, e.g. ‘it is hot in
summer’. The nonvisual evidential can be employed to indicate that the
speaker did not control the action, e.g. ‘I broke a plate by chance’. The use of a
visual evidential, in contrast, would imply controlled action, e.g. ‘I broke a
plate on purpose (because I was angry)’. (The uses of present tense and of the
recent and remote past in Tariana show remarkable parallelism, as discussed
in chapter 5 of Aikhenvald forthcoming-a; an important difference is men-
tioned in footnote 12 below.)

The tense-evidentiality enclitics in Tariana occupy a fixed slot in the
structure of the verb shown in Figure 1. Slot 15, which is reserved for evi-
dentiality fused with tense, is in bold. The tense-evidentiality specification is
obligatory in every main declarative clause with nonfuture reference.\textsuperscript{11}

East-Tucanoan languages and Tariana display striking structural simi-
larities in their evidential systems. For instance, neither has a present inferred

\begin{table}
\begin{center}
\begin{tabular}{lll}
1sg & $nu$- & 1pl & $wa$- \\
2sg & $pi$- & 2pl & $i$- \\
3sg.nf & $di$- & 3pl & $na$- \\
3sg.f & $du$- & — & — \\
Impersonal & $pa$- & & \\
\end{tabular}
\end{center}
\caption{Person, gender and number prefixes in Tariana}
\end{table}

\textsuperscript{11} There are no independent tense-evidentiality specifications in subordinate clauses; a reduced
system occurs in imperative clauses. Further details can be found in Aikhenvald & Dixon
(1998), and in Aikhenvald (forthcoming-a, b); see also Aikhenvald (2001).
specification. But there are a few differences. Unlike East-Tucanoan languages, Tariana tense-evidentiality morphemes are enclitics, and not suffixes. They are more transparent, that is, easier to analyze into tense and evidentiality morphemes than their East-Tucanoan equivalents. This suggests a more recent origin in Tariana. Finally, Tariana has a three-tense distinction in reported evidentiality which is absent from East-Tucanoan. We return to this in section 5.3.2.

5.2 Reported evidentiality in North Arawak languages

Most North Arawak languages are unlike Tariana in that they typically have just one optional evidentiality specification: reported. This is typically used in traditional tales and sometimes in quotations.
Reported evidentiality is a well-established areal feature of Northern Amazonian languages (see discussion in Aikhenvald & Dixon 1998 and Aikhenvald 1999b). The marker – an enclitic occurring on the predicate – is not obligatory in each clause; it should be included at least once in each transcription paragraph. Table 5 illustrates reported markers in the Arawak languages of the area. Note that some languages, such as Warekena or Bare (Aikhenvald 1998, 1995), do not have any evidentiality markers.

Of the morphemes used in the five languages in table 5, Piapoco -sa and Resigaro -tsa are cognates. Bahwana -bi could be cognate with Baniwa -pida (the little information available on Bahwana, from Ramirez 1992, indicates that Baniwa and Tariana d before a non-high vowel usually corresponds to ə in Bahwana).

The reported evidentiality enclitic occupies a fixed position in the enclitic sequence which follows the predicate; for instance, in Baniwa the reported enclitic follows the declarative enclitic but precedes the person-marking suffix, as in li-uma-ka-pida-ni (3sg.nf-look.for-DECL-REP-3sg.nf.O) ‘he was said to be looking for him’.

The presence of an evidentiality specification, albeit optional, in North Arawak languages – especially in Baniwa and Piapoco – presupposes the existence of a slot for an evidentiality clitic in the verb structure in proto-Baniwa-Tariana-Piapoco. This is drastically different from such categories as aspect and aktionsart discussed in section 4, where no such slot was available. We would then expect a different scenario to account for the historical development of the Tariana evidential paradigm.

5.3 The historical development of Tariana tense-evidentiality

We start with the development of tense in Tariana (section 5.3.1) and then discuss the sources for each of the evidentiality terms in the system (sections 5.3.2–5.3.6). The last section, 5.3.7, provides a summary.

5.3.1 The development of tense

To trace the history of Tariana evidentials, we first look at how tense is marked. As shown in table 3, evidentials in Tariana are analyzable. The
marker -ka appears to mark recent past, as in -mahka or its variant -mha-ka ‘nonvisual-recent past’; in -si-ka ‘inferred-recent past’; and in -pida-ka ‘reported-recent past’. The alternation -mahka, -mha-ka is the result of a regular process of aspiration floating characteristic of Tariana enclitics: if two enclitics are positioned together and one contains an aspirated consonant and the other a simple stop, either consonant can be optionally realized as aspirated; see chapter 1 of Aikhenvald (forthcoming-b) for further examples and details.

The morpheme -ka is cognate with the declarative -ka found in Baniwa, with Piapoco -ka ‘positive assertion’ (Klumpp 1990: 176), with Bare -ka ‘declarative’ (Aikhenvald 1995: 32–33) and with Warekena -ka ‘thematic suffix’ (Aikhenvald 1998: 348). This same morpheme is attested in Piapoco -ka-wa ‘present; uncompleted action’ (Klumpp 1990: 172) (-wa as a marker of incomplete action is found in Baniwa and Warekena; in Piapoco -wa marks future). The meaning of the declarative in Baniwa and Bare involves focus on a recent action still relevant for the present rather than on the process, e.g. Baniwa li-uma-ka (3sg.nf-look.for-DECL) ‘he has been looking (for something) (and still is)’. A semantic shift from resultative to recent past is typologically plausible (compare the grammaticalization path from resultative to anterior and then to simple past discussed by Bybee et al. 1994: 61–86).

The marker -na indicates remote past, as in -mha-na ‘nonvisual-remote past’; -sa-na ‘inferred-remote past’; and -pida-na ‘reported-remote past’. This marker is cognate with Baniwa -na and its variant -nina ‘remote past’ (also mentioned in Anonymous, c. 1957), and with Bare -na ‘perfective’.

Present tense evidentials are zero-marked, e.g. -mha ‘present nonvisual’ and -pida ‘present reported’. (See section 5.3.5 below for further discussion.)

In all the Arawak languages north of the Amazon, tense and aspect marking are optional. An unmarked verb is employed once the tense reference of the whole transcription paragraph, or even the whole text, has been established. It can thus acquire a present or past or even future reading, depending on the context. However, since there is no specific marker for present (unlike past and future), it is only natural that zero-marked forms in Tariana were reinterpreted as indicating present.

5.3.2 The development of the reported evidential

The last row of table 3 shows the morpheme -pida(-) as the reported evidentiality marker in Tariana. This is cognate with Baniwa -pida in table 5. The reported specification in Baniwa is optional (see section 5.2 above), while in Tariana it forms part of an obligatory evidentiality paradigm. And in Tariana, but not in Baniwa, the reported evidentiality distinguishes three tenses. Present tense reported is used to transmit information which was acquired very soon before the moment of speech. For instance, if one person says di-nu-ka (3sg.nf-come-REC.P.VIS) ‘he is coming (I have just seen him come)’,
another participant – who cannot see the person coming – would repeat this piece of information to a third party, saying: *di-nu-pida* (3sg.nf-come-PRES.REP) ‘it has just been said he is coming’. Recent past reported would be used if the information was acquired up to a couple of days prior to the moment of speech; while remote past reported implies that the information was learnt a long time ago, from a week to a couple of years.

A comparison between Tucano and Tariana evidentials in table 3 shows that the main difference between the two lies in the three-fold tense distinction in the reported evidential. East-Tucanoan languages do not distinguish any present tense reported, while Tariana does. The present reported is a Tariana innovation, which makes the paradigm of evidentials in Tariana more symmetrical than in East-Tucanoan.

Fitting the form *-pida* into the full evidentiality paradigm probably involved reanalyzing the form with no tense reference as a zero-marked present tense form. This ‘regularizing’ effect is an additional piece of evidence in favor of the claim that the Tariana system is ‘younger’ than the one in East-Tucanoan.

### 5.3.3 The development of the inferred evidential

Reanalysis probably played a role in developing inferred evidentials in Tariana. Its recent past tense form, *-sika*, is cognate with Piapoco *-si-ka* ‘dubitative, speculation’ (Klumpp 1990: 174). In Piapoco, this morpheme has an inclusive form *-si-kué*, which contains the plural morpheme *-kué*, e.g. *pi-wàwa-sika* (2sg-want-DUB.SG) ‘do you perhaps want?’ and *pi-wàwa-si-kué* (2sg-want-DUB-pl) ‘do you all perhaps want?’. The existence of a pair *-si-ka* ‘dubitative singular’ and *-si-kué* ‘dubitative-inclusive’ allows us to postulate the existence of a separate morpheme *-si* ‘dubitative’ in Piapoco. Tariana could have inherited a morpheme *-si-ka*, cognate with Piapoco *-si-ka*, from the proto-language, then reanalyzed it as *-si-ka*, reinterpreting *-ka* as a marker of recent past, and then, by extension, added an analogical formation *-si-na*, where *-na* is a marker of remote past (just like in *-pida-ka* and *-pida-na* discussed above). Or Tariana could have inherited just the morpheme *-si* ‘dubitative’, reanalyzed it as an inferred marker and added the tense specifications *-ka* for recent past and *-na* for remote past. Whatever the exact

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[12] East-Tucanoan languages would use recent past reported where Tariana would use present reported and recent past reported.


Piapoco *s* corresponds to Tariana and Baniwa *tf*, as in Tariana *tfiári*, Baniwa *atfiári*. Piapoco *asíali* ‘man’; there are also examples of Piapoco *s* corresponding to Tariana *s* where no cognates in Baniwa are available, e.g. Tariana *sáwali*, Piapoco *sáwáli* ‘thread’;
scenario, the development of the inferred evidential appears to involve a combination of two paths of reanalysis: that of a dubitative marker and that of tense markers.

The reanalysis of -si- and -pida, and their inclusion into the evidential paradigm, presumably took place after the reanalysis of -ka as a tense marker; the suffix -na already had an established past tense reference.

So far, we have seen that the development of tense and of reported evidentiality involved reanalysis and reinterpretation of pre-existing tense, mood (including ‘dubitative’) and optional evidentiality distinctions, at the same time making them obligatory. These changes can be considered system-altering since they involve introducing new obligatory grammatical categories. We will now look at the development of the nonvisual evidential, which appears to have followed a different path.

5.3.4 The development of the nonvisual evidential

The enclitic -mha in Tariana, which appears in the set of nonvisual markers in table 3, could go back to the full verb -hima ‘hear, think, feel, seem, perceive’ (which goes back to Proto-Arawak *kema ‘hear, understand’: see Payne 1991: 407). Grammaticalization of an enclitic here involves phonological reduction of the first vowel: -hima to -hma. Consonant sequences h-nasal are prohibited in Tariana; this explains the change from -hma to -mha. Phonological reduction in grammaticalization of a compounded verb is also found for the verb -sita ‘finish’; recall, from section 4 above, that -sita ‘perfective’ can be pronounced as -sta.

Compounded verbs with the broad semantics ‘seem, be perceived, feel’ often participate in developing nonvisual evidentiality in East-Tucanoan languages. For instance, Desano uses a compounded verb kari (accompanied by tense and person markers homophonous with those for visual evidentials) to indicate ‘that the speaker obtained his information from senses other than the visual’ (Miller 1999: 65). This verb is glossed as ‘seem’; see example (20), and its Tariana equivalent in (21).

(20) yi-sã ñå-ro iâ-biri-kari-bi
    I-too good-ADV see-NEG-‘seem’-PAST.TENSE + N3.P

(21) nuha-misini ma-ña ma-ka-kade-mha-ka
    I-too good-ADV NEG-see-NEG-NONVIS (from ‘hear, feel, seem’)-REC.P
    ‘I also didn’t see it very well (it was night).’

Tariana syawa, Piapoco sîyâi ‘fire’; Tariana -sîwa ‘oneself’; Piapoco -sîwa ‘emphatic; intensifier’.
In contrast to Tariana, the grammaticalization of the verb ‘seem’ in Desano as a marker for nonvisual evidentiality is not complete: *kari* can also be used as an independent verb, with the same sort of meaning (although this is less frequent than the bound form, Miller 1999: 65–66\[14\]). This is shown in (22). The Tariana equivalent is (23); here -*mha* ‘nonvisual’ is a bound morpheme.

(22) poe paa-gi kari-bi Desano
    field hit-MASC seem-PRES + 3SG.NF
  ‘He is cutting down his field (I can hear an axe chopping).’

(23) hinipuku di-ña-mha Tariana
    field 3SG.NF-hit-PRES.NONVIS
  ‘He is cutting his field (I can hear it, but not see it).’

The cognate of Desano *kari* has been fully incorporated as part of the Tucano nonvisual evidential paradigm and reanalyzed as remote past nonvisual (see table 3). The Tucano marker *kåtti*, which contains a cognate of the Desano marker -*kari*, is illustrated in (24). Note that the morpheme -*kåtti* cannot be used as a lexical verb in Tucano (unlike *kari* in Desano).

(24) yi’i ayû-ro i’ya-ti-kåtti Tucano
    I good-ADV see-NEG-REM.P.NONVIS + N3.P
  ‘I did not see it well.’

Along similar lines, Malone (1988: 132) suggests that the marker -*ga* in the nonvisual evidential paradigm in Tuyuca ‘probably has evolved from a relic auxiliary verb meaning “seem” or “be perceived”’.

If my hypothesis of a verbal origin for the marker -*mha* in the nonvisual evidential paradigm in Tariana is correct, its development involves an East-Tucanoan-type grammaticalization of a compounded verb, similar to the technique discussed in section 4 above. What Tariana also seems to share with its East-Tucanoan neighbours is the grammaticalization path of the verb itself: in both, a verb of nonvisual perception becomes a marker of nonvisual evidentiality. A cognitive or functional explanation for this shared path of grammaticalization requires a detailed investigation of the origin paths for nonvisual evidentiality markers; this is a matter for future research. The grammaticalization of the verb of perception in Tariana must have occurred after the system of obligatory tense marking – involving -*ka* as recent past, -*na* as remote past and *ø* as a present tense marker – was already in place.

\[14\] According to Túlio, López & Miller (2000: 124), ‘the verb *cari* [sic – AYA] is always used with another verb’. (Consequently, this verb is not included in the dictionary of Desano as a separate entry.) The frequency of use of this verb requires further investigation.
5.3.5 The development of the visual evidential

Of the four evidentiality specifications in Tariana, visual appears to be formally unmarked in recent past and remote past: -\(\text{ka}\) is the visual recent past evidential, and it also appears as the recent past marker in other evidentials; and -\(\text{na}\) is the visual remote past, as well as the remote past marker in other evidentials. Evidence in favor of the visual choice being formally less marked comes from East-Tucanoan languages. Table 3 shows that the present tense visual markers (-\(\text{mi}\), -\(\text{mo}\) and -\(\text{ma}\)) also occur in the present tense nonvisual forms in Tucano. And in Desano, visual markers appear simply as person markers in the paradigm of the ‘assumed’ evidential (e.g. present visual 3sg.f -\(\text{bo}\), present assumed 3sg.f -\(\text{yu}\)-\(\text{bō}\); present visual 3sg.nf -\(\text{bī}\), present assumed 3sg.nf -\(\text{yu}\)-\(\text{bī}\), etc.; Miller 1999: 64). While the full system of evidentiality marking in East-Tucanoan languages needs to be analyzed before a fully reliable reconstruction can be proposed, it appears that there is a definite tendency to have visual evidential as the formally unmarked term in the system.

A cross-linguistic study of evidentiality confirms this. Cross-linguistically, the visual evidential is the only term that can be formally unmarked in large systems (see Aikhenvald forthcoming-c). This is the case in four-term systems in Tsafiki (Barbacoa; Dickinson 2000), Wichita (Caddoan: Rood 1976, 1996) and Pawnee (Caddoan: Parks 1972), and in three-term systems in Qiang (Tibeto-Burman: LaPolla forthcoming) and Koreguaje (West-Tucanoan: Cook & Criswell 1993). In Hixkaryana (Carib: Derbyshire 1985: 255), the absence of any verificational particle, which would express some evidentiality-related meaning, specifically marks ‘eyewitness’, as opposed to ‘hearsay’, for example.

The origin of the visual present -\(\text{naka}\) (archaic variant -\(\text{nuka}\)) remains a puzzle. A possible hypothesis is to trace the archaic form -\(\text{nuka}\) back to a grammaticalized first person form of the verb ‘see’, -\(\text{ka}\), which is nu-\(\text{ka}‘I see’.

The development of the four-term evidentiality and three-term tense system in Tariana is an example of completed change (in the sense of Tsitsipis 1998: 34). An additional term, the ‘assumed’ evidential, is currently being developed as an instance of ongoing change. This term frequently appears in the speech of innovative and younger speakers. Its development involves mechanisms which are distinct from those discussed above.

[15] This variant is used by the older speakers of Tariana (aged 60–80), and in the Tariana dialect of Periquitos, which is somewhat more archaic than the dialect on which the present discussion is based. See appendix in Aikhenvald (forthcoming-b). The Tariana spoken by representatives of the younger generation (age under 60) has a tendency to apply vowel assimilation in enclitics: thus -\(\text{nuku}\) ‘topical nonsubject’ becomes -\(\text{nu}\_\text{ku}\, \text{and} -\(\text{nuka}\) ‘present visual’ becomes -\(\text{naka}\).
Modern Tariana is in the process of developing a further ‘assumed’ evidential, matching a corresponding structure in Tucano, a language which is rapidly gaining ground as a lingua franca of the whole Brazilian Vaupe’s region.

Tucano has an additional set of evidentials used when the speaker’s statement is based on having seen the result of the action and not necessarily the actual thing happening. In contrast, an ‘inferred’ evidential is used for statements based on a logical conclusion, as in (16) and (17) above (there, inference is based on general knowledge about how dogs behave). The assumed evidential construction involves a nominalization (often marked with ø or a suprasegmental) and the auxiliary nii ‘do’, which takes the appropriate visual evidential specification (see West 1980: 75–76; Ramirez 1997, vol. I: 140–141, 291–292):

(25) Pêduru uı´ niıˆ-mi Tucano
Pedro be.afraid + NOM be-PRES.VIS + 3SG.NF
‘Pedro is scared (I assume he is scared because I can see that he is pale).’

A similar construction consisting of a copula and a nominalized verb is used with a similar meaning in most other East-Tucanoan languages (Malone 1988: 137). The form of the copula differs from language to language, e.g. Desano ari, Wanano hi, etc.

Tariana is developing a new assumed evidential specification as the result of reanalysis of an erstwhile combination of the anterior aspect marker -nhi and visual evidentials: -nhika (anterior + recent past visual) and -nhina (anterior + remote past visual). These are used to refer to an action, process or state based on an assumption about or inference from the obvious results; see (26) and its Tucano equivalent, (27).

(26) wa-whe-ri-miki-ri hiwyasi-ne
1PL-grandparent-MASC-NOM.PAST-MASC poison-with
di-ñami-nhina Tariana
3SG.NF-die-ANT + REM.P.VIS
(27) isä yê-ki-mihi nimâ me’ra
we:excl grandparent-MASC-NOM.PAST.MASC poison with
[wêri-’ki nii-wi] Tucano
die-NOM.MASC.PERF be-REM.P.VIS + 3SG.NF
‘Our late grandfather had died through poison (we have assumed this because there are people in the Tariana community who are older than him and who are still alive; that is, there was no natural cause for him to die – he could only have died through poisoning).’

The elements -nhi ‘anterior’ and -nhi- in -nhina and -nhika (with a variant -nikha) are becoming different morphemes. In some narratives, usually produced by younger speakers, -nhi and -nhina can cooccur in the same clause.
with their different meanings, as in (28). Enclitics in Tariana can attach to any constituent provided it is focussed, and it is possible for different enclitics to attach to different constituents. (The ordering of enclitics as outlined in figure 1 is relevant only for enclitics attaching to the same constituent.)

(28) wha-nirri-nuku [ma:t]i-pu-nikhaka
1PL + parent-MASC-REM.P.REP bad-AUG-ANT + REC.P.VIS
na-ni-nhi] Tariana
3PL-do-ANT
‘They have indeed done something bad to our father (we have assumed this on the basis of visual evidence)’. Unlike Tariana, the Tucano nii construction has a present tense, while Tariana does not: -nhi on its own just means ‘anterior’.

Another mechanism at work here is partial grammatical ‘accommodation’. The Tariana morpheme -nhi in Tariana -nihka and -nhina is developing some functional similarity with Tucano nii due to their phonetic similarity. This goes together with the growing interchangeability of unaspirated n and aspirated nh in the speech of younger Tariana, as a characteristic feature of language attrition. A complex predicate containing the copula nii in Tucano is thus ‘calqued’ into Tariana as one grammatical word. The markers -nihka and -nhina are enclitics which obligatorily take a secondary stress; the complex predicate in Tucano is pronounced as one phonological phrase with a stronger stress on the first component and a weaker one on the verb ‘be’. This prosodic similarity is the reason why a complex predicate in Tucano corresponds to one word in Tariana.

The Tucano structure involves a complex predicate containing the copula nii marked with visual evidentials and a nominalization. The Tariana structure does not contain a nominalization; it consists of a verb accompanied by the reanalyzed anterior marker -nhi and past visual evidentials. A connection between anterior and past is clear and well-attested cross-linguistically. The development of the Tariana construction involves (a) calquing of one Tucano construction into one phonological word, with prosodic matching; and (b) almost complete morpheme-per-morpheme equivalence, corroborated by grammatical accommodation, stemming from the chance phonetic similarity between anterior -nhi and the Tucano copula nii. None of these processes occurred in the development of the terms in the established four-term evidentiality system, thus differentiating them from the development of the new assumed evidential with -nhi in Tariana. This is the only instance of an ongoing change within the tense-evidentiality system.

5.3.7 Origins of evidentiality in Tariana: a summary

Table 6 summarizes combinations of strategies employed in the development of the Tariana evidentiality system. The system of evidentials in Tariana is
<table>
<thead>
<tr>
<th>Category</th>
<th>Reanalysis and reinterpretation</th>
<th>Grammaticalization</th>
<th>Grammatical accommodation</th>
<th>Type of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tense: present</td>
<td>Unmarked; reanalyzed as a tense marker</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Tense: recent past</td>
<td>Reanalysis and reinterpretation of declarative -ka</td>
<td>—</td>
<td>—</td>
<td>Completed</td>
</tr>
<tr>
<td>Tense: remote past</td>
<td>Reanalysis of past/perfective -na as an obligatory tense marker</td>
<td>—</td>
<td>—</td>
<td>Completed</td>
</tr>
<tr>
<td>Evidentiality: visual</td>
<td>Recent past and remote past: formally unmarked; Present: unknown; could be grammaticalization of the form nu-ka ‘I see’</td>
<td>?</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Evidentiality: inferred</td>
<td>Reanalysis and reinterpretation of -si- or of -si-ka ‘dubitative’; then combination of -si- with tense markers</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Evidentiality: reported</td>
<td>Reanalysis and reinterpretation of optional reported marker -pida (from Proto-Baniwa–Tariana) as unmarked present; then combination of -pida with tense markers</td>
<td>—</td>
<td>—</td>
<td>Completed</td>
</tr>
<tr>
<td>Evidentiality: nonvisual</td>
<td>Combination of the result of grammaticalization of compounded verb -hima ‘hear, feel, seem, perceive’ with already established tense markers</td>
<td>Grammaticalization of a compounded verb -hima ‘hear, feel, seem, perceive’ as a nonvisual marker (cf. Desano and possibly Tuyuca)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Evidentiality: assumed</td>
<td>Reanalysis and reinterpretation of a combination - nhi ‘anterior’ and past tense visual evidentials as a new evidential</td>
<td>—</td>
<td>Construction arose on the basis of similarity between Tucano nii ‘copula’ and Tariana - nhi ‘anterior’ in prosodically matching structures</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

**Table 6**

Strategies employed in the development of tense-evidentiality system in Tariana
etymologically heterogenous; that is, different specifications come from different sources.

Examples of heterogenous systems abound in the literature. One obvious example is the creation of the Portuguese definite article and the homophonous weak object pronouns out of the Latin demonstrative *ille*, which also provided the base for the distal demonstratives *aquele* ‘that masculine’, *aquela* ‘that feminine’. By contrast, the proximate demonstratives originated in Latin *ipse* ‘self’ (Parkinson 1988: 147). A number of Balto-Finnic case markers go back to the proto-language, but a few have been recently developed out of grammaticalized postpositions; see Laanest (1975: 111). Numerous examples of classifiers coming from heterogenous sources – some from nouns, some from verbs – can be found in Aikhenvald (2000a: 366–367).

6. Conclusions

To say that case, aspect and aktionsart, and evidentiality and tense distinctions were just borrowed or calqued from East-Tucanoan languages into Tariana would be a simplification. A number of mechanisms have been shown to be instrumental in the development of these systems. Reanalysis and reinterpretation of existing categories have been shown to take place when indirect diffusion involves restructuring a pre-existing category for which there is a slot in the structure, such as case (see section 3). A completely new grammatical category with no pre-existing slot may evolve via grammaticalization of a free morpheme; this is how aspect and aktionsart marking was developed (see section 4).

The scenario for historical development of the tense-evidentiality paradigm is more complex (see section 5). Data from related Arawak languages indicate that, before intensive language contact with the East-Tucanoans, Tariana is likely to have had an optional reported evidentiality specification. After Tariana came into contact with East-Tucanoan languages (see Aikhenvald forthcoming-a on the available historical information), the existing optional tense and mood system was reanalyzed as obligatory tense-marking with present as a formally unmarked member. The existing reported specification came to be reanalyzed as unmarked present reference, and the newly evolved tense markers were added to it. The inferred specification arose as the result of reanalysis of a dubitative marker. The nonvisual specification developed as the result of grammaticalization of a verb of nonvisual perception, -*hima* ‘hear, feel, seem, perceive’. The visual specification is formally unmarked. An additional term, the assumed evidential, is currently being developed under the massive impact of the Tucano language. This involves reanalysis of an anterior marker homophonous with a marker of the corresponding construction in Tucano; here, grammatical accommodation goes together with reanalysis and reinterpretation.
The use of several, relatively independent strategies – reanalysis with reinterpretation, grammatical accommodation and grammaticalization – depends on the type of category and its status in the target language. All the changes we have seen in this paper are system-altering, in different ways. To just lump them under an umbrella label of ‘borrowing’ or ‘calquing’ is an oversimplification which obscures the different possible historical scenarios for each case.

We have also seen how language contact can affect grammaticalization and grammatical change within a linguistic area. That language contact is a relevant factor in shared grammaticalization paths is a plausible assumption (see discussion by Heine 1994, and also Matisoff 1991, Bisang 1996, among others). One expects that lexical morphemes with similar meanings may develop into grammatical morphemes with shared meanings in different languages within one area. A striking example comes from shared grammaticalizations of the verb ‘acquire’ in the linguistic area of Southeast Asia (Enfield 2000, 2001). Examples of shared areal grammaticalization patterns from the Vaupés area are the development of a verb meaning ‘finish’ (Tucano toha, Tariana sita) into a perfective marker, of a verb meaning ‘be early in the morning’ into an aktionsart type marker ‘do early in the morning’, and of a verb of nonvisual perception into a nonvisual evidential. These grammaticalization paths are in themselves areal features: they are restricted to the linguistic area of the Vaupés rather than being typologically common changes (see Aikhenvald 1999b, 2000b). Their existence could be an argument in favor of grammaticalization as an independent mechanism of language change.

In summary, I have shown how different mechanisms of morphological change – including reanalysis and reinterpretation of an existing category, and grammaticalization – apply differently, depending on the status of a given category in the languages in contact.

REFERENCES


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