



## CHAPTER 15

.....

# POLYSYNTHETIC STRUCTURES OF LOWLAND AMAZONIA

.....

ALEXANDRA Y. AIKHENVALD

## 15.1 LOWLAND AMAZONIAN LANGUAGES: A BACKDROP

.....

THE Amazon basin is an area of high linguistic diversity (rivalled only by the island of New Guinea). It comprises around 350 languages grouped into over fifteen language families, in addition to a number of isolates. The six major linguistic families of the Amazon basin are as follows.

- The Arawak language family is the largest in South America in terms of its geographical spread, with over forty extant languages between the Caribbean and Argentina. Well-established subgroups include Campa in Peru and a few small North Arawak groupings in Brazil and Venezuela. Arawak languages are spoken in at least ten locations north of the River Amazon, and in at least ten south of it. European languages contain a number of loans from Arawak languages, among them *hammock* and *tobacco*.
- The Tupí language family consists of about seventy languages; nine of its ten branches are spoken exclusively in Amazonia. The largest branch, Tupí-Guaraní, extends beyond the Amazonian Basin into Bolivia and Paraguay. Loans from Tupí-Guaraní languages include *jaguar* and *jacaranda*.
- Carib languages number about twenty five, and are spoken in various locations in Brazil and Venezuela in northern Amazonia, and in the region of the Upper Xingu and adjacent areas of Mato Grosso in Brazil south of the River Amazon. The place name 'Caribbean' and the noun *cannibal* (a version of the ethnonym 'Carib') are a legacy from Carib languages.
- Panoan languages number about thirty, and are spoken on the eastern side of the Andes in Peru and adjacent areas of Brazil.
- The Tucanoan language family spans Brazil, Colombia, Ecuador, and north-eastern Peru, with a total number of about twenty languages.





- Macro-Jê languages are a less well established unit. Its central component are Jê languages with about ten members (the genetic relationship between a further eleven groups, such as *Iatê*, *Maxacalí*, and *Karajá*, is a matter for further work).

Smaller families include *Guahibo*, *Yanomami*, *Jivaroan*, *Bora-Witotoan*, *Kawapanan*, *Zaparo*, *Peba-Yagua*, *Makú*, *Harakmbet*, *Arawá*, *Nambiquara*, *Tacana*, *Katuquina*, and *Chapacura*.<sup>1</sup> National languages of the Amazonian states—Spanish, Portuguese, French, English, and Dutch—and contact languages such as Creoles came into play relatively recently.

The original languages of the Amazonian Basin (or Amazonia proper) share a number of structural features, enough to be considered a large diffusion zone which includes several linguistic areas. Many Amazonian languages have spread beyond the basin of the Amazon, coming in contact with languages of the Andes (including *Quechua* and *Aymara*) and those to the north and to the south of the Amazonian basin. The distribution of synthetic and highly synthetic languages reflects an interplay between contact-induced, and genetically inherited patterns.

More than half of the indigenous languages of Amazonia have become extinct since the European Invasion. As a consequence of constant pressure from major national languages, most indigenous languages of Amazonia are endangered. The remarkable linguistic diversity in Amazonia is on the wane. Language obsolescence affects every aspect of the languages, including their complex morphological structures.

## 15.2 AMAZONIAN LANGUAGES IN TYPOLOGICAL PERSPECTIVE

Most Amazonian languages are agglutinating with some fusion. There are no isolating languages.<sup>2</sup> The majority of Amazonian languages are highly synthetic.<sup>3</sup> A major feature

<sup>1</sup> Various macro-groupings have been suggested, none of them with any scholarly validity. Authors vary in how they refer to some of the families, e.g. *Guahibo* or *Guahiboan*, *Tucano* or *Tucanoan*; these are acceptable variants. There is just one exception: the name *Arawak* (or *Maipuran*) refers to a well-established family of languages, while ‘*Arawakan*’ is a putative subgrouping with no scientific basis to it, and is to be avoided by careful scholars. An up-to-date classification of Amazonian languages, and names for Amazonian families, are in Aikhenvald (2012a: 19–23); further details are in Aikhenvald (2013b). The ‘Amazonian’ linguistic type is contrasted to the ‘Andean’ type in Dixon and Aikhenvald (1999) and Aikhenvald (2012a: 74).

<sup>2</sup> Jê and some Macro-Jê languages have a more analytic profile than other Amazonian languages. Jê languages have little inflectional and derivational morphology. Jê peoples stand apart from Amazonians in their habitat and cultural patterns (see Aikhenvald 2012a: 48–9, 2013a). The centre of dispersal of the Jê languages most likely lay in the savannahs of Central Brazil, outside Amazonia proper. *Chapacura* languages in Bolivia and adjacent regions of Brazil also display strong analytic patterns (see Apontes forthcoming). *Trumai* (an isolate spoken in the Upper Xingu area in Brazil) is mildly synthetic.

<sup>3</sup> In Boas’ (1911a: 74) words, ‘a large number of distinct ideas are amalgamated by grammatical processes and form a single word’. The types of concepts encoded in their grammatical words, and the sheer number of templatic slots and affixes would allow us to categorize them as ‘polysynthetic’ (or highly synthetic: see Dixon 2010: 226–7, Aikhenvald 2007a, 2014c). The typological profile of Amazonian languages, verbal and nominal categories, incorporation, and other features are summarized in Aikhenvald (2012a: 128–36, 179–275).



of highly synthetic languages in Amazonia is extreme internal complexity of grammatical words with numerous templatic slots for bound morphemes, and several morphemes in each slot. The order of bound morphemes—affixes or clitics—may be variable.<sup>4</sup>

In most Amazonian languages, a verb is able to stand alone without additional independent lexical arguments. One or more core arguments can be cross-referenced on the verb.<sup>5</sup> Constituent order varies (in many languages it is determined pragmatically). Most languages have postpositions. Some languages have both prepositions and postpositions (e.g. Palikur, Baniwa, Baré, and Warekena). Grammatical words may contain incorporated nouns, adverbials, postpositions, and several verb stems. Morphological complexity of verbs in Amazonian languages is the topic of §15.3.

In the majority of Amazonian languages nouns (and other non-verbal word classes) can head the predicate of a clause. Nouns in the predicate slot may have most—albeit not all—of the verbal categories. In many Amazonian languages, including Arawak, Tupí, Carib, and Macro-Jê, nouns display further morphological complexity. They can be marked for nominal tense, aspect, evidentiality, modality, and reality status, in addition to multiple number marking, multiple classifiers, and multiple marking of grammatical function in a clause (known as double case). Morphological complexity of nouns is addressed in §15.4.<sup>6</sup>

In §15.5 we turn to the development of highly synthetic structures in Amazonian languages, and the role of areal diffusion. We also address the fate of morphologically complex patterns in language obsolescence and endangered languages. A summary is in §15.6.

### 15.3 MORPHOLOGICAL COMPLEXITY OF THE VERB IN AMAZONIAN LANGUAGES

In all Amazonian languages, a clause can consist of just a verb. Notions which would be expressed with separate lexical items in less synthetic languages are expressed with bound

<sup>4</sup> Difficulties in distinguishing between clitics and affixes are partly due to the presence of different types of clitics, some of which can form independent grammatical words and some cannot; see Aikhenvald (2002b) on the notion of clitic as a scalar concept. Grammarians vary in what criteria they apply to decide if a morpheme is an affix or a clitic. Mihas (2010) considers person markers on verbs and on nouns as proclitics solely based on their polyfunctionality (see Table 15.1), since they are also used as possessor markers on nouns; she notes that they are prefix-like in other respects. Wise (1986), Payne (1981) and many others consider them prefixes. Note that person markers are prefixes throughout the Arawak family. Olawsky (2006), Guillaume (2008), and Aikhenvald (2003a) distinguish enclitics from suffixes based on their capacity to attach to varied hosts depending on pragmatic factors. A comprehensive discussion of affixes versus clitics in Amazonian languages requires further investigation.

<sup>5</sup> Some dependent marking, including cases expressing grammatical relations on nouns, is found in Tupí (especially Tupí-Guarani), Tucanoan, Makú, Witotoan, Tacana, Panoan, Jê, Jivaroan, and a few Arawak languages.

<sup>6</sup> The status of adjectives and adjectival concepts across Amazonia is a separate matter (see a brief discussion in Aikhenvald 2012a: 136–40). In many languages, such as Arawá and Witotoan, adjectives are a small closed class (unlike nouns and verbs which are always open classes). In other languages, adjectives are similar to nouns, or to verbs. Morphological complexity in adjectives is of a different nature than morphological complexity in verbs and in nouns, and will not be addressed here.

morphemes. An example from Piro, an Arawak language of Peru (Matteson 1965: 81), illustrates this.

- (1)  $\emptyset$ -yoxi-xpa-hima-na-t-ka-n'a Piro  
 3person-mash-PASTE-REPORT-TEMP-EP-PASSIVE-PL/DETRIMENTAL  
 'It is said that they were then unfortunately mashed to a paste'

Verbal affixes may not be obligatory for a form to be grammatical. They can be added if the speaker considers it necessary, and may occur once at the beginning of a sentence, or a narrative. The only obligatory suffixal category on a verb in Ashéninca, of the Campa subgroup of Arawak languages in Peru, is the realis/irrealis marker and reflexive/non-reflexive port-manteau morpheme (D. L. Payne 2002: 486). All verbal suffixes in Jarawara, an Arawá language from southern Amazonia in Brazil, are optional. The only obligatory elements within the predicate are the verb root and pronominal prefixal markers referring to core participants (Dixon 2004: 88, 97).<sup>7</sup>

In §15.3.1 we start with an overview of the types of morphemes, and their properties, in Amazonian languages. An overview of cross-referencing of core participants is in §15.3.2. Meanings expressed within a verbal word are addressed in §15.3.3. Then, in §15.3.4, we turn to the patterns of incorporation of nouns, postpositions, and adverbials. Two or more verb roots within one verbal word (or one-word serial verb constructions) are addressed in §15.3.5.

### 15.3.1 Types of morphemes and their properties

The majority of Amazonian languages are predominantly suffixing.<sup>8</sup> There are no clear-cut instances of non-concatenative morphology (but see Dixon 2004, on vowel changes in the formation of possessive forms of nouns in Jarawara).

#### 15.3.1.1 Prefixes and suffixes in Amazonian languages

Languages with both suffixes and prefixes typically have fewer prefix positions than suffix positions. Panoan languages have just one prefix position per verb, and numerous suffix positions, with more than a hundred suffixes (Loos 1999, Fleck 2003 and forthcoming). Urarina, an isolate from north-western Peru, has one prefix slot, and seventeen suffixal slots, followed by seven enclitic slots (Olawsky 2006: 456–7).

<sup>7</sup> This creates difficulties in drawing a line between what is strictly inflectional and what is strictly derivational material (see further discussion by Olawsky 2006: 457).

<sup>8</sup> Tucanoan, Pirahã, Harakmbet, Nambiquará, Yanomami, and Hup and Yuhup (Makú) have no prefixes. Tatuvo, an East Tucanoan language, has one prefix *ka-* which is likely to result from areal diffusion (Metzger 1998); a few fossilized prefixes in Dâw (Makú) may well be indicative of the loss of proto-Makú morphology. Nadëb and Kakuá (putative members of the Makú family) do have prefixes. Jivaroan languages have just one fossilized causative prefix (Overall 2008).

A verb in Ashéninca Campa may contain a subject cross-referencing prefix and an irrealis prefix, followed by verb stem, incorporated noun, and then other incorporated elements (including verbal classifiers). Then come directionals, aspect markers, portmanteau morphemes indicating (again) realis versus irrealis and reflexive versus non-reflexive. These can be followed by up to two object agreement affixes, then plural, then relativizer, then mood, evidentiality, and adverbial subordinators. Some of these affixes can be organized into templatic slots, or zones: see an example of schematic representation of verb structure in Chapter 34, on Tariana.

Applying a strict templatic structure to determine relative positions for semantic groups of morphemes in many Amazonian languages is fraught with difficulties. A single category within the verbal word may be marked twice. Semantically related meanings can be expressed in different slots. Some aspectual meanings in Matses are expressed in slot 2 and others in slot 10. In Matses and in Campa languages the frustrative modality marker occupies a position closer to the verbal root than other modality markers. In contrast, the frustrative in Urarina is an enclitic placed further from the verbal root than modal markers of impossibility (slot 3) and probability (slot 13). In some languages, suffixes may have their own combinatorial properties (§15.3.1.2). The order of morphemes may be variable (§15.3.1.3).<sup>9</sup>

Prefix positions in those languages which have it tend to be occupied by cross-referencing and valency-changing markers. Throughout the Arawak family, prefixes mark the subject (A/S<sub>a</sub>) on verbs. A valency-changing prefix tends to be closer to the verbal root than a person cross-referencing prefix. In (2), from Macushi, a North Carib language (Abbott 1991: 37), the subject person marker precedes the detransitivizer:

- (2) aw-e'-wî-'pî *Macushi*  
 3person-DETRANS-kill-PAST  
 'He killed himself'

Causative prefixes in Campa languages are also closer to the root than person-marking prefixes, as shown in (3), from Ashéninca Perené (Mihas 2010: 129).

- (3) i-v-anii-t-ap-ak-i=na *Ashéninca Perené*  
 3masc.A-CAUS.AGT-walk-EP-DIR-PERF-REAL=1sgO  
 'He took me down' [the son helped the wounded father get off the tree because the father was injured and unable to climb down on his own]

A verb in Arawá languages can contain three prefixes. A cross-referencing prefix is followed by the polysemous prefix *-ka-* 'dual subject, "inside", noun class agreement marker' and then by a valency-changing prefix, as in (4), from Paumarí (Chapman and Derbyshire 1991: 295):

<sup>9</sup> The difficulties to do with applying a templatic structure to the verb for Preandine Arawak languages Piro, Amuesha, and Campa are outlined by Payne (2002: 486), and Wise (1986: 584).



- (5) tu-ke                      tupuju=tu                      iba                      tsajaja-chine                      *Cavineña*  
 3SG-FORMATIVE following=3sg(-FORMATIVE) jaguar+ABS run-REC.PAST  
 ‘The jaguar ran following him’ (i.e. chased him)

Non-inflecting verbs in Cavineña require an auxiliary whose choice depends on whether the verb is intransitive or transitive. Inflecting verbs are an open class, while non-inflecting ones number about a hundred. An intransitive non-inflecting verb, for example *jae* ‘fish with arrow’, requires the auxiliary *ju* - ‘be, AUX.INTR’, which then takes all the suffixes, in (6) (Guillaume 2008: 156).

- (6) tume ekana<sub>S</sub> ... jae                      u-kware                      *Cavineña*  
 then 3PL fish.with.arrow AUX.INTR-REM.PAST  
 ‘Then they went fishing’

A transitive non-inflecting verb, for example *emiwaki* ‘put as bait’ in (7), requires the auxiliary *a-* ‘affect, AUX.TR’ (Guillaume 2008: 157).

- (7) Tu=dya<sub>O</sub>=datse=tuna<sub>A</sub>                      emiwaki                      a-ya                      *Cavineña*  
 3SG(nonfem)=FOC=FRUST=3PL(-ERG) put.as.bait AUX.TR-IMPERFV  
 ‘They were putting (it) as a bait, but that didn’t work’

Some verbal suffixes in Cavineña and in other Tacana languages cannot be immediately followed by inflectional suffixes. They trigger an auxiliary, whose choice depends on the verb’s transitivity. Such ‘auxiliary-triggering’ suffixes include the desiderative modality, in (8). A transitive inflecting verb ‘eat’ triggers the transitive auxiliary *a-* (Guillaume 2008: 323).

- (8) Datse=tu-ke=Ø                      ara-kara                      a-kware                      *Cavineña*  
 FRUST=3SG-FORMATIVE=1SGERG eat-DESID AUX.TR-REM.PAST  
 ‘I wanted to eat (a caiman) but couldn’t’

Verbs in Jarawara and other Arawá languages also divide into inflecting—which can take suffixes and prefixes directly—and non-inflecting ones which require an auxiliary to carry the affixes. Verbal affixes have idiosyncratic features. ‘Normal’ verbal suffixes add directly to a verb, an auxiliary, or another suffix. Auxiliary-bound suffixes are always added to their own auxiliary (like in Cavineña in (8)). The suffix *--haba* ‘do all night’ cannot be added to a verb directly. In (9) it is used with an inflecting verb *-tafa* ‘eat’, and attaches to the auxiliary *-na-*:

- (9) o-tafa                      o-na-haba                      -oke                      *Jarawara*  
 1SG.SUBJ-eat 1SG.SUBJ-AUX-DO.ALL.NIGHT 1SG.SUBJ-DECL.fem  
 ‘I ate all night’

Auxiliary-taking suffixes fall into two subtypes. Prefix-retaining suffixes maintain a pronominal prefix on a preceding inflecting verb or auxiliary and also repeat it on their own

auxiliary. Prefix-poaching suffixes omit a pronominal prefix from the inflecting verb or the auxiliary, but include it on their own auxiliary. The difference between a prefix-retaining suffix *-ibote* ‘soon’ and a prefix-poaching with a similar meaning *-kabote* ‘soon’ is shown in (10) and (11). Both suffixes require the auxiliary *-na-* (see Dixon 2004: 128–37).

(10) o-sawi-**bote**                      o-na-habana                      o-ke                      *Jarawara*  
 1SG.SUBJ-join.in-SOON    1SG.SUBJ-AUX-FUT.fem    1SG.SUBJ-DECLfem  
 ‘I’ll soon join in’

(11) sawi-**kabote**    o-na-habana                      o-ke                      *Jarawara*  
 join.in-SOON    1SG.SUBJ-AUX-FUT.fem    1SG.SUBJ-DECLfem  
 ‘I’ll soon join in’

The resulting complex predicates (or extended verbal words) are strictly contiguous. In both Cavineña and Jarawara, auxiliaries act as ‘support verbs’ for non-inflecting verbs and also for suffixes covering a number of modal, aspectual, manner, and time-related meanings. The structure of the predicate and the distribution of affixes within a verbal word depends on the properties of suffixes and of roots. Morphological complexity, and highly synthetic structures, extend beyond a grammatical word into a predicate complex.

### 15.3.1.3 Variable order of morphemes, and scope effects

In highly synthetic Amazonian languages, some suffixes may occur in different places within the verb structure.<sup>12</sup> However, incorporated nouns and person markers do not generally display variability in their placement. The order of components of one-word serial verbs is usually fixed. In languages with several prefix positions, these always occur in fixed order.

The semantic effect of variable morpheme order in verbs may depend on the scope of an affix (similar examples from Yagua are in D. L. Payne and T. E. Payne 1990: 401–2). The suffix *-aɕ* in Amuesha, an Arawak language from southern Amazonia, means ‘to do in a bad manner’. In (12) it appears before the suffix *-ar* ‘habitual’. Its scope is the verb’s root, and the whole sentence means ‘talk badly’ (that is, joking or using obscene language). This is indicated with square brackets.

(12) [py-ot-aɕ]-eʔt-aʀ-ʔt-eʀn                      *Amuesha*  
 2SG-say-DO.IN.BAD.MANNER-EPENTHETIC-HABITUAL-EPENTHETIC-PROG  
 ‘You are always talking badly’ (i.e. just joking or using obscene language)

In (13), the suffix *-aɕ* follows the habitual *-ar*. Its scope is the combination of *-ot* ‘say’ and *-ar* ‘to say habitually’. The suffix *-aɕ* now implies ‘it would be bad to always say’, and is effectively a negative command, ‘don’t do it’ (Wise 1986: 583):

<sup>12</sup> See Wise (1986), Aikhenvald (2012a: 135–6) on variable affix placement in Amazonian languages; see Rice (2000) and Beck (2008) for parallels in other languages.

- (13) ama-č py-ot-[a'r-eʔt-aɕ]-č-e *Amuesha*  
 NEG-FUT 2SG-say-HABITUAL-EP-DO.IN.BAD.MANNER-EP+3SG-NEG  
 'Don't always be telling him (everything)'

Variable position of the causative suffix *-aka(g)* in Ashéninca correlates with the scope of causation. In (14), the habitual marker *-apiint* follows the causative. The causative, and not the caused action, is within the scope of the habitual. The meaning is 'constantly make cut'.

- (14) pi-n-chek-[aka-apiint]-e-ri *Ashéninca*  
 2person-IRR-cut-CAUS-HAB-IRR-3mascO  
 'You should constantly be making him cut'

In (15), the habitual marker precedes the causative. The caused action ('cut') rather than the causation is 'habitual': the meaning of the form is 'make constantly cut' (D. L. Payne 2002: 492).

- (15) pi-n-[chek-apiint-aka]-e-ri *Ashéninca*  
 2person-IRR-cut-HAB-CAUS-IRR-3mascO  
 'You should make him constantly cut'

Scope effects do not explain all the instances of variable order of affixes. A number of verbal enclitics in Tariana (Chapter 34) allow variable ordering, depending on what facet of the activity is being focussed on.<sup>13</sup>

### 15.3.2 Cross-referencing the core arguments

A morphologically complex verb can cross-reference two arguments, usually an A and an O. In predominantly suffixing languages, such as Kwaza (an isolate from Brazil: Van der Voort 2004: 282, 257), suffixes can cross-reference two arguments: either the A and the O of a transitive verb, as in (16), or the A and the Recipient of a ditransitive verb, as in (17).

- (16) huhui-le'ja-a-xa-ki *Kwaza*  
 kill-2O.FUT-1PL-ASSOCIATED.PERSON-DECL  
 'We are going to kill you'

- (17) wady-etele'tay-a-xi-ki *Kwaza*  
 give-2PL.OBJ.fem-1plA-ASSOCIATED.PERSON-DECL  
 'We gave (it) to you women'

<sup>13</sup> See Wise (1986: 583), on Ashaninca Campa, and Payne (2002: 492) on Ashéninca; Mihás (2015: Chapter 4), on Ashéninca Perené. Five of the seventeen suffix positions in Urarina allow variable order. These include continuous aspect, distributive or plural object, velocity, diminutive and counterexpectation, and plural, without any discernible semantic effect (Olawsky 2006: 523, 472).

In most Arawak languages prefixes cross-reference the subject, and suffixes, or enclitics, cross-reference the object. This was shown in (3), for Ashéninca Perené. A non-core participant can become a core argument as a result of an applicative derivation. It is then cross-referenced on the verb. Example (20), from Nanti (Michael 2013: 164), contains a separative applicative meaning ‘from (something or someone)’; the erstwhile locative oblique ‘from me’ is now a core argument and is cross-referenced on the verb. The O, ‘knife’, is no longer cross-referenced.

- (18) *i-koshi-t-apitsa-ak-i=na* kotsiro Nanti  
 3masc.sgA-steal-EP-APPLIC:SEP-PERF-REAL.1=1SG knife  
 ‘He stole the knife from me’

Some Campa languages allow three arguments to be cross-referenced on the verb. In Nomatsiguenga, both recipient and the object given can be cross-referenced on the verb (Wise 1986: 585; Lawrence 2013). The sentence in (19) is ambiguous—depending on the context, either suffix can refer to what is given or to recipient.

- (19) *i-p-ë-mi-ri* Nomatsiguenga  
 3masc.sgA-give-NONFUTURE-2SG.OBJ-3masc.sgO  
 ‘He gave you to him’ or ‘He gave him (a chicken, for example) to you’

No Amazonian languages cross-reference more than three arguments.<sup>14</sup>

### 15.3.3 What goes into a verb

We now turn to the meanings expressed by bound morphemes within the verb in Amazonian languages.<sup>15</sup>

Numerous causative and applicative derivations are a feature of many highly synthetic languages of Amazonia. Nanti, a Campa language, has five causatives, marked with prefixes: (i) an ‘agent causative’ whose subject is volitional and agentive (see (3), for an example from Ashéninca Perené, a closely related language); (ii) a ‘non-agent causative’ (with an inanimate or non-volitional causee); (iii) a ‘destructive’ causative involving destructive

<sup>14</sup> In some languages a cross-referencing marker can occur together with a full NP, as in Ashéninca Perené (Mihas 2010: 129) and Kwaza (van der Voort 2004: 257). In other languages, including Warekena of Xié and Baniwa of Içana, cross-referencing markers for O and S<sub>o</sub> do occur with a full NP (see Aikhenvald 1995: 160, 180).

<sup>15</sup> The category of ‘person’ in many Amazonian languages has more values than just ‘the speaker’ (or first person, I), ‘the addressee’ (or second person, you) and ‘third person’. A number of languages add to this an inclusive (speaker(s) including the addressee), e.g. Tucano *maré* ‘we including you’, *isá* ‘we excluding you’ (Ramírez 1997: 322). This is a feature of Tucanoan, Bora, Urarina, Kwaza, and Movima, many Tupí-Guaraní and other Tupí languages, and many Macro-Jê languages. Further person values may include indefinite person whereby the identity of a subject or an object is unspecified, meaning ‘someone’ or ‘anyone’, ‘impersonal’ (‘everyone’), as in Kwaza, Arawak, and Tucanoan languages, and a reflexive signalling coreferentiality of an argument within a clause (as in Matses: Fleck 2008) or across clauses, as in Tupí-Guaraní languages (Jensen 1999; Seki 2000: 281–2).

damage to an inanimate or non-volitional causee; (iv) a ‘malefactive’ causative whereby both causer and causee are volitional and the action adversely affects the causee, and (v) an ‘influential’ causative whereby both causer and causee are volitional and no coercion is involved.<sup>16</sup>

Highly synthetic Amazonian languages have numerous applicative derivations whereby an erstwhile oblique becomes the O of a clause to which an applicative derivation is applied (see Aikhenvald 2012a: 243). The major function of applicatives is focusing on the erstwhile oblique, now in the O function (a common feature of applicatives, cross-linguistically: Dixon 2012: 294–342, Mithun 2001). A comitative applicative in Paumari was illustrated in (4). A separative applicative in Nanti was shown in (18).<sup>17</sup> There are typically fewer valency-decreasing derivations than valency-increasing ones. Valency-decreasing devices include passives, antipassive, reflexives, and reciprocals (see Aikhenvald 2012a: 227–34).<sup>18</sup>

Amazonian languages have rich and diverse aspectual systems. Hup, from the putative Makú family, distinguishes dynamic, inchoative, perfective, completive telic, habitual, iterative, and persistent (‘activity still in progress’) (Epps 2008: 522–3). Campa languages have perfective, iterative, repetitive, punctual, incomplete, terminative, perfective, inchoative, habitual, durative, and progressive aspects, in addition to the intransitivizing habitual/customary and stativity markers (Mihas 2010: 104; see also Lawrence 2013, D. I. Payne 1981, 2002). Kwaza has a large array of aspects, including habitual, repetitive, intensive habitual, intensifying, consecutive (‘do something on top of something else’) and procrastinative (to refer to an action postponed until later) (van der Voort 2004: 433–65).

Many Amazonian languages obligatorily mark how one knows things—that is, ‘evidentiality’, or the source of information. Evidentiality systems in Amazonian languages vary (see details in Aikhenvald 2012a: 253–9). Two-term systems typically distinguish first-hand and non-first-hand information, as in Jarawara (Dixon 2004: 203–7), and Mýky, an isolate from southern Amazonia in Brazil (Monserrat and Dixon 2003). Or they may just have one marker for reported information, as do Cavineña, Baniwa of Içana and Nhêngatú (a Tupí-Guaraní language spoken in the Amazonian north). Three-term systems may have visual, non-eyewitness, and reported specifications, as in Bora; or experiential, inferred, and conjecture, as in Matses. Systems with four choices may include direct information source, inferred, assumed, and reported, as in Shipibo-Conibo, a Panoan language from Peru. Five choices, with visual, non-visual, inferred, assumed, and reported, have been described for Tariana, Hup, and some East Tucanoan languages. Mamaindê, a Northern Nambiquara language, distinguishes six evidentials: visual, non-visual, inferred, general knowledge, second-hand report, and third-hand report (see Eberhard 2009; Loos 1999: 275–6 on southern Nambiquara). In a number of languages, a clause can contain two markers of information source, each with its own timeframe (see Fleck 2007, on Matses).

<sup>16</sup> See Michael (2008: 279–85); see also Wise (1986: 593–4; 2002); and a summary in Aikhenvald (2012a: 238–41).

<sup>17</sup> Also see Valenzuela (2011) and Wise (1999: 326–7) on Kawapangan languages from Peruvian Amazonia; see Aikhenvald (2012a: 244) for details and references.

<sup>18</sup> Antipassive derivations with no option of including the erstwhile O have been described for a number of Jê languages, Aguaruna (Jivaroan), Karitiana (Arikém branch of Tupí), Matses, and Cavineña (Overall 2008, Fleck 2006b, Guillaume 2008). Katukina-Kanamari, from the small and poorly documented Katuquina family, appears to have an antipassive derivation which allows the inclusion of the erstwhile O (Aikhenvald 2012a: 427).

Modal meanings are a further area of morphological wealth in Amazonian languages. These may include obligation, speculation, supposition, and counterexpectation, as in Puinave (Girón 2008). Kwaza has purposive, volitional, preventive, and desiderative modalities. A special Amazonian feature is a 'frustrative' modality meaning 'in vain'. This is a feature of Panoan, Jivaroan, Tupí-Guaraní, Arawak, Makú, Puinave, Bora, Guahibo, and a few other languages. Many languages have an array of markers of interrogative and of imperative moods.<sup>19</sup>

Direction, time, manner, and extent are typically expressed with an array of bound morphemes in the highly synthetic languages of Amazonia. These are often described as 'adverbial' suffixes (e.g. Thiesen and Weber 2012, on Bora).<sup>20</sup> Directional suffixes in Ashéninca Perené include *-ap* 'directional goal: towards', *-an* 'directional source: from', and *-av* 'directional O-oriented goal' (Mihas 2010: 104). Nanti (Michael 2008: 256–62) has a regressive marker *ah* 'back to a salient point of origin', returnative *-ut* 'motion there and back', a translocative 'far from deictic centre' (with different forms for perfective and for imperfective), an ablative *-an* 'from, and an adlative *apah* 'towards the deictic centre'. Directional suffixes may have completive overtones and overlap with aspectual categories, for example Bora *-iñu* 'go after VERBing', *-he* 'come after VERBing' (Thiesen and Weber 2012: 118). Directional suffixes with non-motion verbs in Ashéninca Perené acquire aspectual overtones: *-an* 'towards' > 'inceptive, change of state'; *-ap* 'away from' > 'endpoint of an activity' (Mihas 2015; also see J. K. Payne 1982 for the same phenomenon in another Ashéninca variety).

Jarawara has numerous miscellaneous suffixes with directional and elevational meanings, for example, *-tima* 'upstream', *-(i)misa* 'up', *-risa* 'down(hill)', *-ki* 'coming', *-ma* 'back, return', *-riwaha* 'across', *-basa* 'to/on the edge', *-ijoma* 'passing through gap (including entering a house through a door)'. Further verbal suffixes relate to environmental locations, for example *-fara* 'clear space', *-ri* 'raised surface, edge', *-ifi* 'relating to water' (Dixon 2004: 138–49). Directional suffixes in Jarawara acquire 'metaphorical' meanings: *-risa* 'down(hill)' > 'not fully satisfactory'; *-(i)misa* 'up' > 'better'; *-ki* 'coming' > 'getting to be' (change of state); *-ma* 'back, return' > 'return to a state; to full health' (Dixon 2004: 141–4 and p.c.).

Paumari, another Arawá language, has twenty-six directional suffixes, for example *-misi/-misaha* 'from mid-water towards the shore, from shore towards the jungle, from open ground into the jungle' or 'bring two vertical objects together', *-nai/-najaha* 'coming from the jungle towards water; going from shore to the middle of a lake or river', *-mai/-majaha* 'parallel to water or edge or from one house to another', *-mi/-maha* 'movement within a defined area', *-onani/-onahana* 'coming from within a defined area', *-thima/-thimaha* 'upriver', *-mari/-maraha* 'downriver', *-baoni/-baonaha* 'along shoreline', *-bakosi/-bakosaha* 'along shoreline by water'. A further set of suffixes indicates location and position, for example *-ma'o* 'on the ground, horizontal plane', *-rakosi* 'down outside of container', *-nakosi* 'front of canoe', *-saga* 'fixed at one extremity', and *-rivana* 'hanging downwards in hammock' (Chapman and Derbyshire 1991: 312–16).

Verbal suffixes may refer to specific time frames and to time sequence. Examples include Ashéninca Perené *-aman* 'early' (Mihas 2010: 104), Paumari *-kajoma* 'early next morning',

<sup>19</sup> See Overall (2017), for an overview of the frustrative; Aikhenvald (2012a: 183–4) for a brief summary; see Aikhenvald (2008) on the numerous imperative markers in Tariana and Tucanoan languages.

<sup>20</sup> Cf. the notion of 'heavy' suffixes in Chapter 7, this volume.

-*biinini* ‘first time’, -*maina* ‘next’, -*jora* ‘ahead of time’ (Chapman and Derbyshire 1991: 321), Jarawara -*mina* ‘in the morning, tomorrow’, -*iba(ha)* ‘do first’, -*mata* ‘short time’ (Dixon 2004: 151–4, 185). Verbal suffixes may refer to manner, for example Amuesha -*aε* ‘to do in a bad manner’ ((12)-(13)), Jarawara -*kosa* ‘something happens clearly and cleanly, do once’, speed, for example Urarina -*uri* ‘quickly’, with overtones of politeness. Many languages have special markers expressing ‘degree’ of action, for example Nanti -*uma* ‘undesirable extremal’ and *asano* ‘desirable extremal’ (Michael 2008: 263–4), Bora -*pi* ‘excessive’ (Thiesen and Weber 2012: 117), Puinave -*tenoĵ* ‘verbal diminutive: a little bit’, -*jeu* ‘somewhat’, -*pāi* ‘high degree of completion of activity’, -*nomjei* ‘very high degree of completion of activity’ (Girón 2008: 305–6) (see also Chapter 34, on Tariana).

Verbal affixes can have evaluative meanings, for example Ashaninca Campa -*aseint* ‘be incorrect in doing something’, Nomatsiguenga -*memeg* ‘pretend to do something’ (Wise 1986: 588). The suffix -*tsy* in Kwaza expresses resignation, indifference, or general lack of involvement by the speaker (van der Voort 2004: 429). Urarina has an enclitic =*tau* expressing ‘reassurance’, an enclitic =*naate* ‘fear’, and a number of other attitudinal markers (Olawsky 2006: 503, 508). The suffix -*jari/-wana* in Cavineña (Guillaume 2008: 241–2) expresses a wide range of negative emotions including anger, disgust, resentment, and regret. Verbal suffixes expressing attitude in Puinave include ‘compulsive’, ‘serious attitude’, and ‘pity’ (Girón 2008: 289–91).

Many highly synthetic Amazonian languages have elaborate systems of classifiers on verbs. Classifiers categorize the noun, typically, in S or O function, in terms of its shape, dimensionality, and other inherent properties. Palikur has eleven verbal classifiers (which are different from classifiers of other types). The classifier -*buk-* indicates that the object of the verb ‘untie’ is linear, and serves to classify a more specific object like *mawru* ‘cotton, string’, for example *nah watak-buk-e (ini mawru)* (I untie-VERBAL.CL:LINEAR-COMPLETELY this:neuter cotton/string) ‘I untied (a linear object, that is, this string) completely’. The same set of classifiers may appear in multiple environments—with number words, verbs, possessive constructions, adjectives, demonstratives, and on nouns themselves in many North Arawak and Campa languages. Classifiers often originate in incorporated nouns, as a consequence of reinterpretation of classificatory noun incorporation (see §15.3.4.1).<sup>21</sup>

Some applicative markers can be traced to incorporated postpositions. Markers of direction and position may go back to grammaticalized verbs: see §15.5.

### 15.3.4 Incorporation

In many Amazonian languages a noun (§15.3.4.1), a postposition, or an adverb (§15.3.4.2) can be incorporated into a verb. The resulting form remains a verb and forms one single grammatical word. Incorporation can be rather versatile. It may affect the verb’s valency. Or it may help organize the flow of discourse, foregrounding what is important and backgrounding

<sup>21</sup> Multiple classifier systems are also found in Ignaciano, Terêna (both Arawak), and Tucanoan, Yagua, Bora, Witotoan, Guahibo, and some Tupí languages. See Aikhenvald and Green (2011) on classifiers in Palikur; Aikhenvald (2000: 149–71, 204–40; 2012a: 292–8) on verbal classifiers and multiple classifier systems, especially in Amazonia.

what is not.<sup>22</sup> In §15.3.4.3, we focus on morphemes which are reminiscent of noun incorporation, but cannot be considered noun incorporation synchronically: body-part prefixes in Panoan languages and instrumental prefixes in Bora.

#### 15.3.4.1 *Noun incorporation*

Noun incorporation is a feature of a number of highly synthetic languages in Amazonia. It is found in many South Arawak and a few North Arawak (e.g. Palikur), in Carib, Tupí, Tacana, and Movima (an isolate), in Carib, Yanomami, and Bora. Nadëb, from northern Amazonia, displays most unusual incorporation patterns.<sup>23</sup> Arawá languages, Kwaza, Jivaroan, and Urarina have no productive incorporation of any sort.

The simplest kind of noun-incorporation is lexical compounding. A noun and a verb form a new lexical item, and the process applies to just a handful of nouns and of verbs. The semantics of a compound is often non-compositional, and may not be productive. Urarina has a few noun-verb compounds with rather idiosyncratic meanings, e.g. *suuhu-tía* (heart-give) ‘consult, advise’, *suna-bía* (afternoon-announce) ‘make a sound to announce the afternoon (as done by a cricket)’ (Olawsky 2006: 429).

A more regular and productive incorporation may have a syntactic effect, changing the roles of the participants. This is what Mithun (1984b) calls ‘the manipulation of case’. In many Tupí-Guaraní languages, incorporating a noun makes the transitive verb become intransitive. A transitive sentence in (20), from Paraguayan Guaraní, a Tupí-Guaraní language, has an object expressed with a noun, ‘thing’:

- |      |   |                          |                           |
|------|---|--------------------------|---------------------------|
| (20) | A-jogua-t<br>1ACTIVE-buy-FUTURE<br>‘I will buy something’ | petei mba'e<br>one thing | <i>Paraguayan Guaraní</i> |
|------|---|--------------------------|---------------------------|

An object can be incorporated into the verb. Then the verb becomes intransitive. The combination ‘thing-buy’ now refers to a unitary activity, ‘shopping’ in general (Velazquez-Castillo 1996: 107).

- |      |   |                             |                           |
|------|---|-----------------------------|---------------------------|
| (21) | A-mba'e-jogua-ta<br>1ACTIVE-thing-buy-FUTURE<br>‘I’ll go shopping this afternoon’ | ko-ka'aru<br>this-afternoon | <i>Paraguayan Guaraní</i> |
|------|---|-----------------------------|---------------------------|

The exact meaning of incorporation may depend on the type of noun. In Kamaiurá, a Tupí-Guaraní language from the Xingu area in southern Amazonia, incorporating a noun which is not obligatorily possessed results in creating an intransitive verb with a lexicalized

<sup>22</sup> I follow the typological principles of the analysis of noun incorporation established by Mithun (1984b); see Aikhenvald (2012a: 192–9) on incorporation in Amazonian languages.

<sup>23</sup> Juxtaposed noun-plus-verb constructions in which the noun has a generic reference but both noun and verb remain independent phonological and perhaps grammatical words are analysed as instances of noun incorporation for Wanano by Stenzel (2013: 242–3). This approach to Wanano and other East Tucanoan languages in north-west Amazonia is controversial.



In agreement with the universal tendencies, S and the O are the constituents which are typically incorporated. In the majority of Amazonian languages, only obligatorily possessed nouns can be incorporated.<sup>24</sup> In Nadëb, nouns divide into (a) obligatorily possessed, (b) optionally possessed, and (c) non-possessable ones (which include fish species, and natural objects).<sup>25</sup> Only possessable nouns (groups (a) and (b)) can be incorporated (Weir 1990: 324).

If the Possessor of the incorporated noun is coreferential with the subject of an intransitive verb (A), the verb becomes intransitive (Michael 2008: 328–30; 2013: 162–3). In (27), the subject (S) is syntactically intransitive: the erstwhile possessor cannot be cross-referenced on the verb with an object enclitic (as was the case in (25) where the A and the Possessor were not coreferential).

- (27) no-tot-a-bori-t-ak-i Nanti  
 1SG.SUBJ-cut-EP-leg-EP-PERF-REAL<sub>1</sub>  
 ‘I cut my leg’

That is, incorporation has different syntactic effects depending on the relationships between the A and the Possessor of the possessed noun.

A number of Amazonian languages have classificatory noun incorporation (Mithun 1984a). A noun with a generic reference is incorporated into a verb (in O or S function). The verb may be accompanied by a specific noun. In (28), from Apurinã, an Arawak language from southern Amazonia, the classificatory noun *-pe* ‘pulp of’ delimits the semantic field of the object, classifying it as belonging to pulped items. The object itself, *komuru-pe* (manioc-pulp.of), can be overtly mentioned (Facundes 2000: 338).

- (28) ata komuru-pe usonãka-pe-ta-ka  
 1PL manioc-pulp.of dry-PULP.OF-VERBALIZER-CAUS  
 ‘We put the manioc pulp to dry’

The incorporated classificatory *-pe* ‘pulp of’ does not have to be repeated on the object ‘manioc’:

- (29) ata komuru usonãka-pe-ta-ka Apurinã  
 1PL manioc dry-PULP.OF-VERBALIZER-CAUS  
 ‘We put the manioc pulp to dry’

A classificatory incorporand can be used without an accompanying noun. In (30), the classificatory noun *xiti* ‘earth of’ is incorporated into the verb, to anaphorically refer to the noun *kiko* ‘field’ previously mentioned in the text:

<sup>24</sup> Also see Guillaume (2008: 144–7) on Cavineña, Emkow (2007) on Araona, T. E. Payne and D. L. Payne (2013) on Panare, and Carlin (2004) on Trio.

<sup>25</sup> Similarly to other Amazonian languages: see Aikhenvald (2012a: 172–4).



2013: 331–2; T. E. Payne 1995: 300–2, on Panaré, and Derbyshire 1999 on other languages including Waiwai). In Panaré, only body parts can be incorporated. The possessor of a body part becomes the O. The difference between a clause with and without body part incorporation lies in the ‘degree’ of affectedness of the O. In (34), the person’s head received a cut:

- (34) *y-pu-n*                      *y-Ø-kʰtë-ñe*                      *amën*                      *Panaré*  
 3-head-POSS    TRANSITIVIZER-DI-cut-NONPERF:TR    2SG  
 ‘You cut its head/protruding part’ (a participant receives a cut on the head)

In (35) the ‘head’ is incorporated into the verb. The meaning is now quite different from that in (34): the head was completely cut off from the body:

- (35) *y-pu-i tiñe*                      *amën*                      *Panaré*  
 3-head-cut-NONPERF:TR    2SG  
 ‘You cut off its head’ (the head was severed from the body)

Noun incorporation in Nadëb is highly productive. The participant which acquires the O function is the one affected by the action. Unlike any other Amazonian languages, Nadëb allows incorporation of multiple nouns into the same verb, each involving possessor ascension. In the examples given by Weir (1990: 331–2) up to three nouns can get incorporated into a verb. They form one grammatical word (hyphens added by the author, to reflect this). In (36), ‘you’ (the object) is more affected by the action than any other participant:

- (36) *õm*                      *kad*                      [*hoonh-tób-nooh-ga-juu*                      *dúk*]                      *Nadëb*  
 you.SG.O    uncle<sub>A</sub>    grandmother-house-mouth-THEME-close    be.suspended  
 ‘Uncle closed the door of your grandmother’s house on you’ (lit. uncle grandmother-house-mouth-closed you)

In most Amazonian languages verbs with incorporated nouns can get lexicalized and become semantically non-compositional. Examples include Panaré *y-o-n-kitë* (3-eye-POSS-cut) ‘open eyes of (a) newborn’ (D. L. Payne and T. E. Payne 2013: 179), Trio *-ere-kuika-* (liver-swallow) ‘be extremely angry’ (Carlin 2004: 263), Palikur *kamax-duka* (grab-CHEST+REFL) ‘He had a quick snack’ (lit. he grabbed his own chest), *nah barew-wok* (1sg clean-HAND) ‘I am poor, destitute’ (lit. I am clean-handed) (Aikhenvald and Green 2011; also see Weir 1990: 336, for further examples from Nadëb).

#### 15.3.4.2 Incorporating adverbs and postpositions

In many Amazonian languages adverbs, adjectives, and postpositions can be incorporated. The iterative suffix *-bakhia* ‘repeatedly, frequently’ in Paumarí appears as a free form in *‘afobakhia* (ADVERBIALIZER-repeatedly) ‘frequently’. A number of adjectives and adverbs can occur as verbal suffixes of manner and time, for example *‘bo’da* ‘old (adjective), long ago (adverb)’ in (37) (Chapman and Derbyshire 1991: 280, 320).

- (37) va-ka-'ojomo'i-ha-'bo'da-'i-ki Paumari  
 3PL-TRANSITIVIZER-teach-DUR-LONG.AGO-ASP-NONTHEME  
 'They taught a long time ago'

Incorporating a postposition may add a direct object to the verb: in other words, an NP marked by a postposition becomes the verb's object, and the intransitive verb becomes transitive. The valency-increasing applicative suffix *-ta/-tya* in Yagua (Peba-Yagua: Wise 2002: 332) indicates that a location, an instrument, or a comitative oblique has become the direct object. In (38) 'knife' is an oblique with instrumental meaning, and is marked with the cliticized *=tya*.

- (38) si-ichité-rya javanu quiichi=tya Yagua  
 3SG-poke-INANIMATE.OBJECT meat knife=INST  
 'He poked the meat with a/the knife'

In (39), 'knife' is the direct object, and *=tya* is incorporated in the verb.

- (39) si-ichité-tya-ra quiichi Yagua  
 3SG-poke-INST-INANIMATE.OBJECT knife  
 'He poked something with the knife'

There appears to be a requirement that this new direct object has to be definite to warrant incorporation of a postposition.<sup>27</sup> Incorporating a postposition appears to have a pragmatic effect.

Nadëb has a rich system of noun incorporation (see Weir 1990, and §15.3.4.1 of this chapter). Postpositions can also be incorporated, with a syntactic outcome. If a verb is intransitive, the noun marked by the postposition becomes O, and the S becomes A (Weir 1990: 326ff). The clause in (40) is intransitive.

- (40) éé a-hing hxóóh go Nadëb  
 father FORMATIVE-go.downriver canoe in  
 'Father goes downriver in a canoe'

The clause in (41) is transitive. The postposition has been incorporated into the verb (with a changed vowel), and the noun is now the direct object of the verb 'go in' (the form has become *ga-* in this context). The verb and the incorporated postposition are in square brackets.

- (41) hxóóh éé [ga-hing]  
 canoe father in-go.downriver  
 'Father goes downriver in a canoe' (lit. father in-goes downriver a canoe)

<sup>27</sup> See Wise (1986: 340); similar examples from Waurá, an Arawak language of the Xingu area, are in Derbyshire (1986: 531).

If the verb is transitive, the object of the postposition becomes the O, and the old O is demoted to the periphery. ‘With aunt’ is an oblique in (42):

- (42) kalaak dab Subi a-wáth kaat sii *Nadëb*  
 hen meat Subih FORMATIVE-eat aunt with  
 ‘Subih is eating chicken with aunt’

In (43), ‘aunt’ is the O, and the postposition ‘with’ is incorporated.

- (43) kaat Subih sii-wáth kalaak dab hã *Nadëb*  
 aunt Subih with-eat hen meat DAT  
 ‘Subih is eating chicken with aunt’ (lit. Subih is with-eating aunt with respect to hen meat)

Incorporating a postposition affects grammatical relations: an erstwhile oblique becomes an O. *Nadëb* has an ergative-absolutive pivot in clause combining. Only constituents in S or O function can be conjoined or relativized on (Weir 1984, 1990). Incorporation of a postposition can be viewed as ‘feeding’ the syntactic pivot (in the sense of Dixon 1994). Over time, an incorporated postposition may develop into an applicative marker; more on this in §15.5.

### 15.3.4.3 *Beyond noun incorporation*

Some highly synthetic languages of Amazonia display further phenomena reminiscent of noun incorporation but synchronically of a distinct nature.

A special feature of Panoan languages is a large closed set of about thirty monosyllabic productive prefixes which can occur on verbs, adjectives, and nouns. Panoan languages have a large number of suffixes, and typically just one prefix position. These prefixes refer to body parts and their extensions. They bear a resemblance to terms for body parts. For instance, the prefix *bě-* in Matses can refer to ‘face (*bětantete*), forehead (*běshbed*), eye (*ěsshě*), eyebrow (*běššni*) or front, surface’.<sup>28</sup> A body part prefix can provide locational specification with regard to a body part of an S (intransitive subject) or O. In (44), the body-part prefix *ma-* ‘head, top, ground surface’ specifies the body part which is hurting:

- (44) *ma-nën-e-bi* *Matses*  
 HEAD-hurt-NONPAST-1person  
 ‘My head hurts/I have a headache’ (lit. I hurt on the head/with respect to the head)

In (45), the prefix *da-* ‘trunk, stem, outer surface, side’ specifies the part of the trees affected:

<sup>28</sup> See Fleck (2006a) on Matses, Valenzuela (2003) on Shipibo-Conibo; a summary in Aikhenvald (2012a: 134–5).

- (45) kuëte-Ø            da-daëssh-tsek-kid            madu-n            sipi-n            *Matses*  
 dicot.tree-ABS TRUNK-eat.gnawing-DIM.HAB demon-GEN tamarin-ERG  
 ‘Pygmy marmosets gnaw the trunks of dicot trees’ (lit. demon’s tamarins (=pygmy  
 marmosets) gnaw trees on the trunk)

Body part prefixes have some functional similarities with noun incorporation (Fleck 2006a: 86–92). However, synchronically they cannot be considered incorporated nouns, because they have no corresponding free nouns.

A set of seven instrumental prefixes in Bora verbs (Thiesen and Weber 2012: 123–4) may also reflect traces of erstwhile noun incorporation. These are *tò-* ‘do with the hand’, *tì-* ‘do with the teeth’, *t<sup>h</sup>à-* ‘do with the foot’, *k<sup>h</sup>à-* ‘do with something pointed’, *k<sup>h</sup>i-* ‘do with some cutting tool’, *p<sup>h</sup>i-* ‘do with something like a saw’, and *kpà-* ‘do by a series of blows’. These prefixes are not productive, and appear to be restricted to verbs of breaking. For some of these, there are cognate classifiers. Compare *tì-* ‘do with the teeth’ versus *-tì-* ‘a formative in a classifier for something held between the lips or teeth’, *k<sup>h</sup>i-* ‘do with some cutting tool’ versus formative *-k<sup>h</sup>i-* in classifier forms involving ‘cuts’; and *t<sup>h</sup>à-* ‘do with the foot’ versus *-t<sup>h</sup>à-* as a formative in classifiers referring to legs, cf. free noun *thá<sup>x</sup>k<sup>h</sup>i:* ‘leg’ (Thiesen and Weber 2012: 170). It is likely that both the prefixes and the cognate classifiers could have grammaticalized from free-standing nouns.

Body-part prefixes in Panoan languages and instrumental prefixes in Bora can be compared to noun-like ‘lexical affixes’ in Salishan languages which also include body part terms. In all probability, these markers have their origins in noun incorporation or compounding.

### 15.3.5 Two verbs in one word: one-word verb serialization

One-word serial verb constructions consisting of two, and occasionally more, verbal roots is a feature of many synthetic languages of Amazonia. In terms of their composition, one-word serial verb constructions can be asymmetrical—that is, consisting of a ‘minor’ verb from a closed subclass which imparts a directional, aspectual, modal, or another grammatical specification to the whole construction, and another, ‘major’, verb from an open class. Or they can be symmetrical—consisting of two verbs from open classes.<sup>29</sup> The typical meanings of symmetrical construction cover cause–effect or sequence of subactions. A typical asymmetrical one word serial verb construction with directional meaning comes from Mamaindê (Eberhard 2009: 527). Verbs are in bold face.

- (46) **tu-ʔnī**u-ten-lat<sup>h</sup>a-Ø-wa            *Mamaindê*  
 get-return-DESIDERATIVE-S3-PRESENT-DECLARATIVE  
 ‘He will bring it’

<sup>29</sup> Multi-word serial verb constructions are a feature of many Amazonian languages, including highly synthetic ones, e.g. Ashéninca Perené (Mihás 2013). As shown in Chapter 34, Tariana has both. The discussion of different types of serial verb constructions in Amazonian languages and further examples are in Aikhenvald (2012a: 307–8); one-word serial verb constructions are discussed in Aikhenvald (2006a); see further references there.

Symmetrical serial verbs include *mān-to* (burn-die) ‘die of heat’ and *sun-tanāun* (hit-throw) ‘kill’. They can contain up to three verb roots, for example *tu-k-wao-we* (get-SERIAL.CONNECTIVE-come-put) ‘get, come and put; bring and put’. Some are lexicalized, for example *eu-ta-luka-tai* (see-SERIAL.CONNECTIVE-separate-take.out) ‘see and choose’ (Eberhard 2009: 385–7).

A one-word serial verb construction in Puinave can contain up to three verbal roots (Girón 2008: 226). These may refer to manner of action and position of the subject. In (47) ‘run’ refers to the speed of action (quickly, strongly), and ‘sit’ reflects the subject’s sitting position.

- (47) *i-jap-mán-tek-ót* *Puinave*  
 ATR-paddle-run-sit-PL  
 ‘those who were sitting paddling strongly’

Two verbal roots in a one-word serial verb may express subactions in sequence to one another, as in (48):

- (48) *a-ma-u-déu-yuk* *Puinave*  
 1SG-2SG-IMPV-see-come  
 ‘Come see me’<sup>30</sup>

Grammaticalized minor verbs (e.g. verbs of motion and stance) in one-word serial verb construction are a frequent source for verbal suffixes. Contact-induced grammaticalization of verbs in Makú languages and in Tariana has resulted in emergent highly synthetic structures: see §15.5.

## 15.4 MORPHOLOGICAL COMPLEXITY IN NOUNS

In many Amazonian languages nouns and noun phrases can be morphologically complex. A noun phrase can constitute a clause on its own, just like a verb. (49), from Jarawara (Dixon 2004: 307) illustrates this.

- (49) *Wakari-ri-ka* *Jarawara*  
 name(masc)-REM.PAST.EYEWITNESS.MASC-DECL.masc  
 ‘It was (a man called) Wakari’

Jarawara has a large set of verbal affixes (which vary in how they can occur with other affixes and verbs: see examples (10)–(11)). Only nine tense-evidentiality and modal affixes,

<sup>30</sup> One-word serial verb constructions are productive in Bora (Thiesen and Weber 2012: 106–7), Chayahuita and Harakmbet languages (Wise 1999: 325), East-Tucanoan languages and Dâw, Hup, and Yuhup, the Makú languages spoken in the same area (Ramirez 1997: 181; Epps 2008: 412; Martins 2004). In Yagua, one-word serial verbs are restricted to a few intransitive movement verbs (D. L. Payne and T. E. Payne 1990: 413).

and three ‘miscellaneous’ suffixes *-tasa* ‘again’, *-bisa* ‘also’, and *-tee* ‘habitual, customary’ can occur on nouns as predicates. They then provide tense, evidentiality, and aspect specifications for a noun phrase which is independent and different from that of the verb within a clause. In (50), ‘Purús River’ is marked for habitual future, and the clause is cast in far past reported evidentiality (Dixon 2004: 193). This also reflects different time frames and information sources for the noun ‘Purús’ and for the clause itself.

- (50) [Foro-tee-ba]<sub>s</sub>                      wata-re-mete-mone                      ama-ke      *Jarawara*  
 Purús-HABITUAL-FUT    EXIST-NEG-FPnon.eyew.fem-REPFem    EXTENT-DECLFem  
 ‘What was to be the Purús River is said not to have existed long time in the past’

Nominal tense is a prominent feature of South American languages (see Nordlinger and Sadler 2004 on nominal tense in general). Present is usually unmarked. Nominal past and nominal future have been documented for numerous Tupí-Guaraní, Nambiquara, Arawá, and Arawak languages, and also Puinave and Movima.

Nominal affixes can express further modal and aspectual-like meanings, for example Trio (a Carib language) *-sepi* ‘pleasing’, *-pe(ke)* ‘not pleasing’, *-ripí* ‘useless’, *-me* ‘similative’ (being like something)’ (Carlin 2004: 123–36), Mawayana (Arawak) *-ni* ‘similative’, =*kwe* ‘affective’ (expressing a feeling of affection) (Carlin 2006: 325). The structure of a noun in Piro includes seven suffixal slots, with meanings covering nominal tense, aspect, frustrative modality, sequence, repetition, ‘interest’, and ‘calling attention to the head word’ (Matteson 1965: 9–8).<sup>31</sup>

Amazonian languages with several cases on nouns may allow ‘stacking’ of case markers. In some languages, double case reflects double marking of syntactic function of an NP within a main clause and an embedded clause (see Aikhenvald 2003a: 85, 158–63 on Tariana). Or two locative cases can be stacked to specify the location and the direction, for example Baniwa *awakada-ziku-hre* (jungle-LOC:IN-TOWARDS) ‘towards the inside of the jungle’, Baré *nisa-ní-wa-ku* (1sg+canoe-POSS-PERLATIVE-LOC) ‘along (a river) on my canoe’ (Aikhenvald 2002a: 107).

## 15.5 THE RISE AND FALL OF MORPHOLOGICALLY COMPLEX STRUCTURES

Grammaticalization of independent lexical items often results in creating verbal suffixes. In Yagua (Peba-Yagua, Peruvian Amazonia: D. L. Payne 1990: 223–4), verbal suffixes indicating location, direction, and modality come from grammaticalized minor verbs in one-word serial verb constructions (see §15.3.5). The verb root *siiy* ‘run’ occurs as an independent verb root. A related form *-sij* has grammaticalized as a suffix indicating that an action was done upon departure, with perfective overtones, for example *sa-suuta-sij* (3sg-wash-UPON.

<sup>31</sup> Recursive agreement with multiple heads within an NP and double marking of nominal number in Tariana is addressed in Chapter 34 (see also Aikhenvald 2003a: 83–5).

DEPARTURE) ‘he washed upon (or just prior to) leaving’. Along similar lines, the Yagua modal suffix *-ruu* ‘potential’ is etymologically related to the verb *niruu* ‘love, desire’ (see D. L. Payne 1990: 228).

Aspectual suffixes may be transparently related to verbs. The inchoative marker *-htxe-* meaning ‘begin’ in Hixkaryana is transparently related to the transitive verb *-htxe-* ‘begin’. The completive suffix *-tihka-* is related to the transitive verb *-tihka-* ‘finish, complete’ (Derbyshire 1985: 224–5). Evidentiality markers in Hup and Tariana developed from grammaticalized verbs, for example Hup *=ho* ‘nonvisual evidential’ from *hōh* ‘make noise’, Tariana *-mha* ‘non-visual evidential’ from *-hima* ‘hear, feel’ (Epps 2006: 278, Aikhenvald 2002ab).

Most markers of direction, position, and associated motion in Cavineña and in other Tacana languages have recently grammaticalized from minor verbs in asymmetrical one-word serial verb constructions. For instance, the positional affix *-jara* ‘be in lying position’ in Cavineña developed from the verb *jara* ‘lie down’, for example *tawi-jara-* (sleep-LIE:POSITIONAL.AFFIX) ‘sleep lying’ (see Guillaume 2008: 307–30, for a discussion of whether to analyse such markers as serialized verbs or as affixes).

Incorporation of postpositions may result in their grammaticalization as applicative markers. Cognates of postpositions and applicatives suggest a similar grammaticalization path for other languages, for example the comitative applicative *-ta* and the comitative postposition *=ta* in Arabela (Zaparoan: Wise 2002: 331). Applicative and causative markers in Arawak in southern Amazonia can be cognate to postpositions in related languages in northern Amazonia. The ‘presential’ applicative suffix *-imo/-omo* in Campa languages is related to the postposition *(-)m̄iin* ‘towards’ in Guajiro, an Arawak language spoken in the region of the Guajiro peninsula, in Venezuela and Colombia (Wise 1990: 108, 111). Causative prefixes in Baure *i(mo)-*, Ignaciano *imi-/im-*, and associative applicatives Apurina *mi-*, Piro *him-* (Wise 1990: 108, Danielsen 2007: 250 on Baure) are cognate to the adposition *-ima* ‘together with’ in a number of North Arawak languages, including Tariana, Baré, and Warekena of Xié. The separative applicative *-apitsa* in Campa languages (see (18), from Nanti) is cognate to the adposition *-apidza*, *-apiya* in Tariana and in Baniwa varieties.

Noun incorporation is another source for the emergence of affixes. We can recall, from §15.3.4.3, that body-part related prefixes in Panoan languages and instrumental prefixes in Bora may have developed out of incorporated nouns. Classificatory noun incorporation (see (28)–(29), from Apurinã) historically gave rise to verbal classifiers. These typically originate in incorporated body and plant parts. Mundurukú, a Tupí language, has over 120 classifier morphemes which characterize the referent in terms of its shape.<sup>32</sup> Classifiers are used with verbs, demonstratives, modifiers, and on nouns themselves. At least a quarter of the classifier morphemes are transparently related to body parts, for example *-ba<sup>4</sup>* ‘long and rigid objects’ and *ba<sup>4</sup>* ‘arm’.<sup>33</sup> Incorporated nouns can result in other affixes. The reported

<sup>32</sup> See Gonçalves (1987), Crofts (1973), (1985) and Moreira Gomes (2006) (with the data from the closely related Kuruaya), and Haude (2006) on Movima.

<sup>33</sup> Similar developments have been described for North Arawak languages of the Upper Rio Negro region in Aikhenvald (2000) and (2007b); for Palikur in Aikhenvald and Green (2011), and for Nanti in Michael (2008).

evidential *-hima-* in Piro, an Arawak language from Peru, comes from a noun meaning ‘sound’ (Matteson 1965: 127).

Affixes with a fixed position within a verb may come from clitics. This path of development for tense-modal affixes in Jarawara was demonstrated by Dixon (2004: 577–80).

Areal diffusion offers an additional factor in the development of highly synthetic structures. Complex verbal morphology appears to be an areal feature shared by most languages in southern Amazonia, especially in Peruvian Amazonia (Wise 2002: 341). Arawak languages south of the Amazon tend to be more morphologically complex and more synthetic than those to the north. This may be accounted for by past contact with other highly synthetic languages, including Panoan, Harakmbet, and Kawapanan.<sup>34</sup>

Borrowing of forms (or direct diffusion) may constitute a further source for morphological enrichment. Amuesha, a highly synthetic Arawak language, bears traces of extensive language contact with Quechua (Adelaar 2006). Some affixes in Amuesha appear to have been borrowed from Quechua, including *-nʷa* ‘discourse marker’, *-Vnʷ-* ‘desiderative’ and *-V:r-* ‘stative’. Structural similarities in complex expression of negation and double marking of possessor on nouns (see §15.3.1) may be due to indirect diffusion of patterns from Quechua into Amuesha (Adelaar 2006: 308). Contact-induced changes in Mawayana, an endangered Arawak language dominated by Trio and Waiwai (of the Carib family), resulted in the development markers of nominal past, a similative (on nouns), and a verbal frustrative marker, to match Carib patterns (Carlin 2006).

The Vaupés River Basin is the only well-established linguistic area within north-west Amazonia (spanning Brazil and adjacent areas of Colombia: see Aikhenvald 2002b, 2012a: 75–83). The area is characterized by institutionalized multilingualism, and includes speakers of East Tucanoan languages, Tariana (an Arawak language), and also, marginally, a number of Makú languages (Hup, Yuhup, and Dâw).<sup>35</sup> There is a strong cultural inhibition against borrowing forms. However, a long-term interaction between East Tucanoan, Tariana, and Makú has resulted in a rampant areal diffusion of grammatical patterns. Hup and Yuhup developed complex agglutinative morphology involving root and stem compounding and single word serial verb constructions, matching the patterns in Tucanoan languages (see Epps 2006, 2008 on Hup; Silva and Silva 2012 on Yuhup). Examples (51) and (52) illustrate structural parallelism between Hup and Wanano, an East Tucanoan language (Epps 2006: 281):

- (51) ʔam    wæd-túk-uw-ǎn                      d'oʔ-nǎén-ǎéh                      Hup  
       2SG    eat-want-FILLER-NON.A/S            bring/take-come-DECL  
       ‘(We) brought what you wanted to eat’

<sup>34</sup> Cultural contacts between some Arawak-speaking groups (e.g. Piro) and Panoan people have been mentioned in the anthropological work; little is known of their linguistic contacts. A high degree of language loss after the European Invasion in Amazonia, lack of information on ancient patterns of language contact, and limited comparative reconstruction create obstacles in ascertaining patterns of contact-induced change.

<sup>35</sup> Kakua and Nukak are also spoken within the area; their affiliation with the Makú languages is a matter of some controversy.

- (52) ~bu'u chu-dua-re ~da-ta-i Wanano  
 2SG eat-DESID-NON.A/S bring/take-come-VISUAL.PERFECTIVE.1  
 '(We) brought what you wanted to eat'

The desiderative marker in Wanano is a bound morpheme developed out of a one-word serial verb construction. The meanings expressed with bound morphemes in Wanano are mirrored by exponents of one-word serial verbs in Hup. The development of categories such as evidentials and tense, causatives and directionals in Hup through grammaticalization of verbal roots has also been shaped by the Tucanoan model. In Chapter 34, we turn to similar developments of highly synthetic structures in Tariana as a result of contact with East Tucanoan languages in the same area. Arawak languages closely related to Tariana but spoken outside the area have much less complicated verb and noun structure. The development of highly synthetic structures in Arawak and Makú languages of the Vaupés River Basin linguistic area is relatively recent, and is a consequence of predominantly unilateral diffusion (see Aikhenvald 2002b, for further features of the area).

The full array of internal mechanisms behind the development of highly synthetic structures in most Amazonian languages requires further study. Highly synthetic structures in Panoan languages can be traced back to a proto-language (Fleck 2006c). Jarawara, Paumari, and other Arawá languages have over a hundred verbal suffixes each, with fairly specific meanings including directionality, manner, time sequence, and so on; however, 'unlike in other parts of the grammar there are very few cognates between languages' (Dixon 2004: 582). Few if any of suffixes can be shown to originate in independent verbs. It is likely that many of the affixes may have been developed separately in each individual branch.

If a highly synthetic language becomes obsolescent and is on the way out, it is likely to become more simple morphologically. Latundê/Lakondê is a northern Nambiquara language, known to just a few elderly people (Telles 2002). The language is synthetic, with a number of markers of tense, aspect, and evidentiality and noun incorporation. However, it is much simpler than Mamaindê, from the same subgroup (Eberhard 2009), and lacks many of the tense, aspect, manner, and directionality markers found in Mamaindê. Sabanê, another Nambiquara language (Antunes de Araujo 2004), is now spoken by one person. Its system of verbal morphology looks impoverished if compared to Mamaindê: there is no noun incorporation, single verb serial constructions, and just a few tense, aspect, evidentiality, and modality markers.

The results of my own work with the last speaker of Baré in the early 1990s point in a similar direction. The variety of Baré recorded in the 1960s had a much richer morphology than the language I recorded. A variety of aspectual and modal markers (e.g. *-phéi* 'durative' and *-ya* 'dubitative'), and a marker of reported speech *-man* were not in use by Candelário Silva, the last speaker I worked with. Verb forms recorded in the 1960s contain up to five suffixes, whereas Candelário Silva never used more than one suffix on the verb (Aikhenvald 2012b). The disintegration of synthetic structures and the ultimate loss of morphologically complex patterns go together with extreme language endangerment, and may be partly due to the influence of the local varieties of the dominant national language (Portuguese) and other lingua francas with their analytic structures.

## 15.6 TO CONCLUDE

Amazonia is a locus of high linguistic diversity in terms of genetic affiliation of languages and their structural features. The majority of Amazonian languages are highly synthetic, with a dauntingly large inventory of bound morphemes. Verbs and often also nouns can stand alone as independent clauses. Many languages can cross-reference two (rarely three) arguments on the verb. There are fewer prefix positions than suffix positions. Many—but not all—instances of variable suffix ordering can be accounted for by the scope of an affix.

Amazonian languages are rich in valency-changing and valency-rearranging affixes. They often have a large set of morphemes expressing mood, tense, aspect, modality, evidentiality, and reality status. There may be affixes expressing emotional attitude, endearment, direction, time, and manner. In languages with a less synthetic profile such meanings tend to be expressed with independent grammatical words (Fortescue this volume refers to them as semantically ‘heavy’ affixes).

The majority of languages with morphologically complicated word structure are located south of the River Amazon. A number of North Arawak languages (including Palikur, Wapishana, Guajiro, and Tariana), and East Tucanoan languages, Guahibo, Yanomami, Makú, and North Carib languages in northern Amazonia display substantial complexity in their morphological make-up.<sup>36</sup>

Noun incorporation is common among the highly synthetic Arawak languages south of the Amazon, among Tupí-Guaraní, some Tupí, and Carib languages, and also Nadëb. Noun incorporation has numerous effects, including changing or manipulating valency, and organizing discourse flow. In a number of languages, postpositions and adverbs can undergo incorporation, creating applicative-like formations and additional manner markers. Incorporation can result in developing new grammatical markers, and also in the emergence of new lexicalized words. Numerous Amazonian languages have verbal classifiers ultimately developed from grammaticalized body part terms. Similar mechanisms may underlie the development of a special category of ‘body-part’ prefixes in Panoan languages and instrumental prefixes in Bora. Numerous languages have single-word serial verb constructions. Grammaticalization of their components gives rise to additional markers of direction, position, modality, evidentiality, and aspect.

Nouns in Amazonian languages tend to be less morphologically complex than verbs. They often take just a subset of verbal morphology. However, they may have numerous structural slots, and express an array of grammatical categories, including tense, aspect, and evaluative morphology, in addition to patterns of compounding, and stacking of case marking.

Structural similarities between Amazonian languages are likely to come about as a consequence of language contact and areal diffusion. Morphological complexity can be developed, or enhanced, as a result of convergence within a multilateral linguistic area. This is the case

<sup>36</sup> Highly synthetic languages in southern Amazonia include Panoan, Arawá, Kawapanan, Harakmbet, Zaparoan, Tupí, and a number of isolates (e.g. Urarina, Movima, Itonama, and Kwaza). Within the Arawak family, highly synthetic languages in southern Amazonia include Piro, Apurinã, languages from the Campa subgroup, and South Arawak languages Mojo (or Ignaciano), Bauré, and Terêna.

for the Vaupés River Basin linguistic area, and a few other regions with intensive language contact. The morphological complexity in highly endangered Nambiquara and Arawak languages is on the wane, as a consequence of language obsolescence and the influence of more analytic dominant languages.

## ABBREVIATIONS

1,2,3	first, second, third person	INDEF	indefinite
A	subject of a transitive verb	INST	instrument
ABS	absolutive	IRR	irrealis
APPLIC	applicative	LOC	locative
APPLIC:SEP	separative applicative	masc	masculine
ASP	aspect	NEG	negative
ATR	attributive	NON.A/S	non-subject case
AUX	auxiliary	non.eyew	non-eyewitness
AUX.INTR	intransitive auxiliary	nonfem	nonfeminine
AUX.TR	transitive auxiliary	NONPERF.TR	nonperfective transitive
CAUS	causative	O	object of a transitive verb
CAUS.AGT	agentive causative	OBJ	object
CL	classifier	PERF	perfective
DAT	dative	PL	plural
DECL	declarative	POSS	possessive
DEM	demonstrative	PROG	progressive
DESID	desiderative	REAL	realis
DETRANS	dependent! initial	REC.PAST	recent past
DIM.HAB	diminutive habitual	REFL	reflexive
DIR	directional	REL	relational prefix
EP	epenthetic	REM .PAST	remote past
ERG	ergative	REP	reported
fern	feminine	S	subject of an intransitive verb
FOC	focus		
FP	far past	s <sub>a</sub>	subject of an active intransitive verb
FRUST	frustrative		
FUT	future	SG	singular
GEN	genitive	S <sub>0</sub>	subject of a stative intransitive verb
HAB	habitual		
IMPERFV	imperfective	TEMP	temporal
IMPV	imperative		

## ACKNOWLEDGEMENTS

I am indebted to R. M. W. Dixon, for his critical comments. Special thanks go to my teachers of Arawak and East Tucanoan languages of the Upper Rio Negro region (Tariana, Warekena, Baré, Tucano, and Piratapuya). I am grateful to Brigitta Flick for careful proof-reading.