Associated motion in South America: Typological and areal perspectives

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Abstract: This article investigates the recently recognized concept of ASSOCIATED MOTION in 66 South American languages located on the western fringes of the Amazonian basin. In that region, associated motion is a widespread and particularly complex phenomenon. It is instantiated by verbal affixes in 44 languages, of which 22 display complex systems of multiple affixes. Correlations are noticed between the degree of complexity of the systems and the semantic content of the markers. Two implicational scales are proposed: (i) motion of the subject > motion of the object and (ii) prior motion > concurrent motion > subsequent motion. Correlations are also observed between the types of systems and their geographical distribution. These are taken as evidence that diffusion must have played an important role in spreading associated motion in this region and shaping its particular semantic make-up in the different languages.

Keywords: Amazonian languages, associated motion, language contact, linguistic area, morphology, motion, relational alignment, semantics, syntax, temporal relations

1 Introduction

This study represents a crosslinguistic and areal investigation of ASSOCIATED MOTION (henceforth AM) affixes in South American languages. These morphemes express motion, in the specific sense of TRANSLATIONAL MOTION (spatial displacement/change of location). Their function is to associate, in different ways, different kinds of motion to a verb event. Example (1), from the Amazonian language Cavineña, shows five AM suffixes occurring with the verb 'see' (for the full inventory see Section 2.2).

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(1) Cavineña (Takanan; Guillaume 2006, 2008, 2009, 2013b)

ba-	'see'
*ba-**ti***	'go and see'
*ba-**na***	'come and see'
*ba-**aje***	'see while going'
*ba-**be***	'see while coming'
*ba-**kena***	'see and go'

Initially coined by linguists working on the verbal morphology of Aboriginal languages of central Australia, the term "associated motion" has since been taken up by other descriptive linguists in their study of similar morphemes in languages from other parts of the world, in particular from Amazonia in South America, but also elsewhere.

AM markers are very interesting from a theoretical point of view because they show, among other things, that the "fact-of-motion" (Talmy 1985) is not necessarily expressed by lexical verb roots, contrary to what is generally assumed about the expression of motion in most linguistic studies (such as those following Talmy (1985)). Instead, AM markers prove that the "fact-of-motion" can be encoded grammatically, by way of affixes or other grammaticalized elements.

Yet, AM has been poorly studied and to date remains largely unknown in the linguistic literature. There are very few publications that explicitly recognize it in particular languages. Moreover, hardly any methodological or conceptual tools are available to identify and investigate the phenomenon in particular languages or to carry out crosslinguistic studies. To fill this gap, the current article presents the first survey and comparative investigation of the category of AM in a fairly large number of languages (66) belonging to a wide range of genetic groupings (36) located in an extensive geographical region (South America).

The goals of this article are threefold. The first is descriptive. By using the available descriptive material on the languages surveyed, the goal is to identify which languages have affixes of AM and which types of AM systems are found in terms of complexity (number of AM markers per system) and semantic make-up. The study reveals that AM is widespread in that part of the world, instantiated in more than two thirds of the languages surveyed. Furthermore, in several languages, AM is expressed by highly complex systems of six or more distinctions (sometimes up to 13).

The second goal is typological, with the purpose of comparing the semantic make-up of the different systems in terms of two major structuring parameters: the grammatical function of the moving argument and the temporal relation

between the motion and the verb action. It is shown that there is a correlation between the level of complexity and the types of distinctions, in terms of two hierarchical scales:

(i) motion of the subject > motion of the object;
(ii) prior motion > concurrent motion > subsequent motion.

The third and last goal of the article is genetic and areal, consisting in identifying the distribution of the different types of AM systems across distinct genetic groupings and geographic subregions in South America and searching for possible patterns of language contact and diffusion. It is shown that there is a correlation between the most complex and unusual types of AM systems and a particular location, which corresponds to the western margins of the Amazon basin along the eastern foothills of the Andes. Since these unusual types are found in different language families and since they are not found in languages from the same language families outside of this area, diffusion through language contact is most likely to have taken place.

The article is organized as follows. Section 2 provides the background to the category of AM, with information on the original use of the term in the Australianist tradition (Section 2.1) and on how it was later adopted and further refined for the description of languages from other parts of the world, in particular Amazonia (Section 2.2). This section ends with a discussion of a number of theoretical issues surrounding the phenomenon of AM that are taken up in the current article (Section 2.3). Section 3 proposes a working definition of AM and a discussion of what counts and what does not count as AM in the present study. Section 4 gives information about the survey: languages of the study (Section 4.1), methodology (Section 4.2), and research questions (Section 4.3). The results are provided in the next three sections. Section 5 lists the languages with and without AM systems and discusses their distribution. Section 6 addresses levels of complexity (Sections 6.1 and 6.2) and semantic types, in terms of moving argument (Section 6.3) and temporal relation within subject AM forms (Section 6.4) and object AM forms (Section 6.5). Section 7 takes an areal perspective, looking at the geographical distribution of the different types of AM systems within the languages of the survey (Section 7.1) and within the languages of the Arawak family (Section 7.2). The article ends with a summary of the findings and a conclusion (Section 8).

The present study had to face many challenges and as a result is not without its limitations. Most importantly, the label and concept of "associated motion" is not used in most of the descriptive materials of the languages surveyed. Moreover, in a fair amount of these languages the putative AM morphemes are very poorly described and/or illustrated. Therefore, the ideas, methodology, and results

presented here are not intended to be carved in stone. Rather, they must be taken as work in progress aiming to conceptualize and account for an emerging field of investigation. In order to allow for the evaluation and possibly future revision of the proposed ideas and analyses, the article includes an extensive appendix which lists and exemplifies all the AM affixes documented in the survey.

2 Background to the category of ASSOCIATED MOTION

2.1 ASSOCIATED MOTION in Australian languages

The term "associated motion" was coined by Koch (1984) for a verbal category of the Australian Aboriginal language Kaytej (Kaytetye). According to Koch, the function of this category is to "SPECIF[Y] VARIOUS KINDS OF MOTION associated with the activity [of the verb]" and to "distinguish the TIME OF THE MOTION relative to the main activity – whether the motion is PRIOR TO, SUBSEQUENT TO, OR CONCURRENT WITH the time of the main activity" (Koch 1984: 26; emphasis mine). Examples of AM markers illustrating the three temporal relations in Kaytej are given in (2).[1]

(2) Kaytej (Arandic, Pama-Nyungan): motion of subject argument
   a. Prior motion, direction 'away'
      *Atne nte athe-**yene**-ne*.
      shit you.ERG excrete-go.and-IMP
      'You go and shit.' (Koch 1984: 27)
   b. Subsequent motion, direction 'away'
      *Alarre-**layte**-nke nhartepe kwerarte-pe atnwenthe-pe*.
      kill-and.go-PRES that.ACC it.ACC-FOC animal.ACC-FOC
      '[The hawk] kills that animal and goes off.' (Koch 1984: 29)
   c. Concurrent motion, direction 'away'
      *Weye akelyakely alarre-**rapeynte**-ranytye*.
      animal small.RED kill-while.going-PROG
      '[A man hunting larger game] kills small animals as he goes along.' (Koch 1984: 30)

In his characterization of the AM system of Kaytej, which is very elaborate (with 11 forms in paradigmatic opposition), Koch pointed out that "within these

1 Throughout the article, the example glosses are basically presented as in the sources they are cited from, adopting *LT*'s typographic conventions.

relative time categories [prior, subsequent, and concurrent], further distinctions are made as to the DIRECTION OF THE MOTION, whether 'back', 'away', 'toward the speaker', etc." (Koch 1984: 26; emphasis mine). Examples of AM markers illustrating these different DIRECTION OF MOTION distinctions in Kaytej are given in (3), to be compared to the forms in (2).

(3) Kaytej (Arandic, Pama-Nyungan): motion of subject argument
   a. Prior motion, direction 'toward the speaker'
      *Atye kwathe-**yenye**-wethe*
      I.ERG drink-come.and-PURP
      'I'll come and drink.' (Koch 1984: 27)
   b. Subsequent motion, direction 'back'
      *Alarre-**lalpe**-nhe?*
      kill-and.return-PST
      'Did you kill anything before you came back?' (asked of hunter on his return) (Koch 1984: 29)
   c. Concurrent motion, direction 'toward the speaker'
      *Ware ampe-**yernalpe**-rrane mwernart-atheke.*
      fire burn-while.coming-PROG this.way-toward
      'The bushfire is burning in this direction.' (Koch 1984: 30)

AM systems very similar in terms of degree of elaboration and semantic structure have been described in detail, with explicit reference to Koch (1984), in other geographically and genetically close Australian languages, such as Adnyamathanha, with ten AM forms (Tunbridge 1988), and Mparntwe Arrernte, with 14 AM forms (Wilkins 1989, 1991).[2] These studies revealed further types of important semantic distinctions which can play a role in the organization of AM systems. A crucial distinction, brought to light by Wilkins (1989: 293–294, 1991: 218), concerns the GRAMMATICAL FUNCTION OF THE MOVING ENTITY. This parameter distinguishes forms that encode the motion of the SUBJECT of the verb (intransitive S or transitive A) from forms which encode the motion of a NON-SUBJECT argument (transitive O or dative) (Wilkins 1991: 218). Examples of the latter type are provided with the Mparntwe Arrernte form *-ty.inye* 'DO on Z's arrival' in (4) and the Kaytej form *-yayte* 'ON ARRIVAL' in (5).[3]

2 In later publications, the total number of Mparntwe Arrernte AM forms listed by Wilkins is 15 (see, e. g., Wilkins 2006).

3 The presence of an AM form which specifically express the motion of a non-subject argument in Kaytej was not noticed by Koch in his 1984 article, but it is recognized in his more recent work (Koch 2006, 2007).

(4) Mparntwe Arrernte (Arandic, Pama-Nyungan): motion of non-subject argument
*Gabriella ngkwenge karelhe-ke, ngkwenge angke-**ty.inye**-tyeke.*
Gabriella 2SG.DAT wait-PC 2SG.DAT speak-DO.ON.Z'S.arrival-PURP
'Gabriella waited for you so that she could speak to you when you arrived.'
(Wilkins 1991: 237)

(5) Kaytej (Arandic, Pama-Nyungan): motion of non-subject argument
*Pweltye=pe eletnhe-yayne kngwere-le arntarrtye-**yayte**-yayne.*
ball=FOC throw-IPFV.PST other-ERG catch-ON.ARRIVAL-IPFV.PST
'The ball would be thrown and someone else would catch it (when it came to him).' (Koch 2007)

In his analysis of the semantic distinctions needed for classifying the 14 AM forms of Mparntwe Arrernte, Wilkins proposed the following hierarchy of parameters (Wilkins 1991: 219, Diagram 1):

(i) GRAMMATICAL FUNCTION of moving entity: subject vs. non-subject;
(ii) TEMPORAL RELATION of main event and motion event: concurrent vs. non-concurrent (and prior vs. subsequent within the non-concurrent relation);
(iii) MISCELLANEOUS PARAMETERS not put into a hierarchy, such as orientation of the motion (deictically anchored or not, oriented upward/downward, past a point, etc.), shape of motion (straight vs. return), and speed (fast, slow, hurried).

Wilkins (1991) also addressed the theoretical relevance of the AM phenomenon for general linguistics, expanding on thoughts expressed originally by Koch (1984). First, he advocated the idea that AM should be recognized as a "cross-linguistic valid CONCEPTUAL CATEGORY, [...] stand[ing] as a semantic phenomenon that needs to be recognized, explored and labelled", by observing that "morphemes relating a main verb event to a motion event" have been documented in languages from other parts of the world, which are typologically and genetically unrelated to each other (Wilkins 1991: 208–209).[4] Second, Wilkins claimed that AM is also "worthy of recognition as a GRAMMATICAL CATEGORY which can be added to the list of notions such as tense, mood and aspect", by demonstrating that (at least) in some central Australian languages (such as Mparntwe Arrernte), the conceptual category of AM is "treat[ed] in a uniform

4 The languages mentioned by Wilkins are the Central American languages Aztec and Isthmus Zapotec, the African language Hausa, and the North American language Atsugewi (see references in Wilkins's article).

morphosyntactic fashion which is distinct from that of other categories". In Mparntwe Arrernte, for example, AM is expressed by way of forms (analyzed as inflections) which "take up a position in the verb which is distinct from that of other inflections, including aspect and tense" (Wilkins 1991: 209–212).

2.2 Associated Motion in Amazonian languages and beyond

Further empirical support for the claim by Koch and Wilkins that the phenomenon of AM, as manifested in Australian languages, should be recognized as a cross-linguistically valid conceptual and grammatical category came from my field-based description, in the late 1990s and early 2000s, of Cavineña. This Amazonian language from the Takanan family spoken in northern Bolivia has a system of motion affixes which is strikingly similar to the AM systems described by Koch and Wilkins, in terms of its general semantic structure and degree of elaboration. In a preliminary account (Guillaume 2000), followed by in-depth studies of this system (Guillaume 2006, 2008: 212–236, 2009, 2013b), I have been able to document a paradigm of 12 verbal suffixes which form a system of semantic oppositions organized, at the higher level, along the very same parameters of "moving argument" (subject or object) and "temporal relation" (prior, concurrent, subsequent). The system is presented in Table 1. For illustrative examples of each of the suffixes, see the Appendix (Section A17.2). (See also (1) above.)

Systems that are fairly similar in terms of semantic structure and degree of elaboration have also been (explicitly and appropriately[5]) identified in other Takanan languages (Vuillermet 2012, 2013; Guillaume 2013a), as well as in languages from neighbouring families, such as the isolate language Mosetén (Sakel 2004: 272–288) and several languages of the Panoan family (Guillaume 2016). Less complex systems have also been documented in other languages in (Amazonian) South America (Silva 2011: 128; Fabre 2013; Rose 2015), Central America (Zavala Maldonado 2000; O'Connor 2004; Caballero 2008; Romero-Méndez 2008: 293; McFarland 2009: 143), and North America (Dryer 2002, 2007), Australia (Dixon 2002: 201–202), and in a few further languages from other regions of the world, namely Africa (Voisin 2010, 2013; Kawachi 2011; Renaudier 2012: 97), Asia (Jacques 2013; Konnerth 2014: 232, 2015), and Papua New Guinea (Levinson 2006: 197–199).

5 By "explicitly identified", I mean they are called "associated motion" with reference to the pioneering works cited above on AM systems. By "appropriately identified", I mean that I agree with the analysis. As we will see in Section 3, in the description of some South American languages, the term ASSOCIATED MOTION has been applied to markers that I do not consider as manifesting the AM category.

Table 1: Cavineña system of AM (presentation based on Guillaume 2016).

Path	Motion of S/A argument			Motion of O argument
	Prior	Concurrent	Subsequent	
thither	***-ti*** GO.TEMP&DO ***-diru***[a] GO.PERM&DO ~ DO.PFV.GOING.PERM	***-nati*** DO.PFV.GOING.TEMP ***-aje*** DO.IPFV.GOING	—	—
hither	***-na*** COME.TEMP&DO ~ DO.PFV.COMING.TEMP ***-eti*** COME.PERM&DO ~ DO.PFV.COMING.PERM	***-be*** DO.IPFV.COMING.TEMP ***-etibe*** DO.IPFV.COMING.PERM	—	—
other	—	***-(ne)ni*** DO.IPFV.HERE&THERE	***-kena*** DO&GO	***-dadi*** DO.MOVING.AWAY(O) ***-tsa*** DO.APPROACHING(O)

a. The three suffixes *-diru*, *-na*, and *-eti* are polysemous. They can express either prior motion or concurrent motion. In the table, this property is represented by way of two distinct glosses separated by a tilde symbol.

In terms of degree of elaboration, many of these systems are much simpler than those of the Takanan and Australian languages mentioned above, with inventories often limited to just one or two markers.

The term AM has also begun to be used in the study of languages which, unlike those listed above, do not have dedicated AM markers, but markers which normally express other (non-AM) meanings, and only display AM meanings in specific contexts. This situation has been documented by Belkadi (2015) for the descriptive category called "deictic directionals" in several languages from the Afroasiatic (Berber, Chadic, Cushitic), Niger-Congo (Bantu), and Nilo-Saharan (Nilotic) families of Africa, and in the Quechuan family of South America.[6] "Deictic directionals" in these languages consist of markers which primarily operate on motion verbs and (unless they have developed non-spatial meanings) specify the path

6 According to Levinson & Wilkins (2006: 535), the same situation would hold for the "directionals" of certain Mayan languages of Central America.

(deictic orientation) of a motion already encoded by the verb. In this context, they do not contribute a motion component distinct from that of the (motion) verb event. Yet, as shown by Belkadi (2015) and other linguists listed in her study (see in particular Bourdin 2006), there are contexts when the "deictic directionals" can give rise to AM readings similar to those expressed by the dedicated AM markers listed above, as when used with (at least certain) non-motion verbs. From the comparative perspective that is taken in this article such systems are counted as *bona fide* instances of the phenomenon of AM. The following examples provide an illustration with the 'ventive' enclitic *=d* of the Berber language Taqbaylit (Kabyle), with a non-AM reading in (6a), where it specifies the path of a 'jumping' motion encoded by the verb root, and with an AM reading in (6b), where it contributes a separate component of subsequent motion (specified for a 'ventive' path) to the (non-motion) 'reading' event encoded by the verb root.[7]

(6) Taqbaylit (Berber; Algeria)
   a. Non-AM meanings (path only)
      *t-jjlb=**d*** *γr tabla.*
      3SG.F-jump.PFV=VENT to table
      'She jumped on the table (in the direction of the speaker).' (Belkadi 2015: 64)
   b. AM meanings (subsequent motion and path)
      *t-γra=**d*** *taktaf.*
      3SG.F-read.PFV=VENT book
      'She read the book somewhere else and came back (to the location of the speaker).' (Belkadi 2015: 64)

2.3 Associated Motion in theoretical and typological perspectives

Apart from the descriptions cited in the previous sections, studies on AM have remained rather scarce to date and fairly little has been done in the way of

7 As shown by Belkadi (2015: 63), the 'ventive' enclitic *=d* expresses "deictic directional [i. e., non-AM] readings [...] with verbs of motion, as long as they encode an orientation or imply translational motion, verbs of perception and emission of a stimulus, verbs of transfer, degree achievements, inchoative verbs and their causative counterparts. All other activity verbs, statives or motion verbs which describe events not conceptualised as involving traversal of space [...] derive D-AM [i. e., AM] interpretations".

investigating the particular nature and significance of this phenomenon for theoretical and comparative linguistics. Among the ideas put forward which can be taken as starting points for reflection and comparative investigation, is the proposal developed by Wilkins (1991) that AM should be recognized as a crosslinguistically valid conceptual and grammatical category. Here I address a few more suggestions and hypotheses that are further investigated in this article.

The first is that AM can be taken as evidence that the motion component ("fact-of-motion"; Talmy 1985) of a motion event can be encoded grammatically, by way of affixes or other grammaticalized elements, and not lexically, by way of verbal roots, contrary to what is assumed in most linguistic studies of the expression of motion.[8] In Guillaume (2006), with data from the Cavineña system, I showed how this characteristic makes AM systems fall outside of Talmy's motion event typology (verb frame vs. satellite frame distinction) because Talmy only takes into consideration situations where the motion component is expressed by a lexical verb root. A similar view is put forward in the concluding chapter of Levinson & Wilkins (ed.) (2006), when they cite the AM system of Arrernte as a "spectacular example [in support of their claim that] MOTION CAN BE CODED IN MANY LANGUAGES IN FORM CLASSES OTHER THAN THE VERB" (Levinson & Wilkins 2006: 534; emphasis mine).[9]

The second suggestion put forward by Levinson & Wilkins (2006: 534) builds on the first. It consists in the proposal that the parameter of temporal relation between the motion component and the verb event (prior, concurrent, subsequent) possibly lends itself to a typological generalisation in the form of an implicational hierarchy. On the basis of a comparison between the AM system of Arrernte and that of the Papuan language Yélî Dnye (which includes only one AM form meaning 'go and VERB'), they propose the following implicational scale underlying associated motion semantics (Levinson & Wilkins 2006: 534; emphasis mine):

(7) We would need more languages before we felt confident about this, but a tentative suggestion is that there is an implicational scale underlying associated motion semantics: GO THEN/TO VERB > GO WHILE VERBING > VERB THEN GO – that is, it seems more common to have motion with purpose, or motion preceding the verbal action, than vice versa.

8 Note that languages with AM markers also have lexical motion verbs used to express the "fact-of-motion" in the same way as in languages without AM systems. I am not aware of any reported case where a language with an AM system would not have lexical motion verbs at the same time. For a discussion on the differences between AM markers and lexical motion verbs, see, for example, Jacques (2013).

9 Comments going in the same direction have also been formulated by Slobin (2004: 243), Wilkins (2004: 147), and Schultze-Berndt (2007: 223–224).

In the present article, I test this hypothesis with data on South American languages and confirm its validity.

The third suggestion is based on the observation that I made in Guillaume (2006), and which is confirmed by the present study, namely that AM systems operate on a "nominative-accusative" (or subject-object) basis: the same markers that express the motion of S arguments (8a) are also used to express the motion of A arguments (8b) but not the motion of O arguments, which is encoded by distinct markers (5).[10]

(8) Kaytej (Arandic, Pama-Nyungan)
a. Motion of S argument
*Nhartepe artnpe-nke, nhartepe ampwarre-**yene**-nke*.[11]
then run-PRES then die-go.and-PRES
'Then it (the wounded animal) runs off and dies.' (Koch 1984: 27)
b. Motion of A argument
*Arntwe nte eyle-**yene**-ne*.
water you.ERG get-go.and-IPFV
'Go fetch some water.' (Koch 1984: 27)

In the present article, following up on this observation, I suggest that the two types of AM markers, those related to the subject (nominative argument) and those related to the object (accusative argument), also enter into an implicational scale, as follows: MOTION OF THE SUBJECT > MOTION OF THE OBJECT. And I show that the "nominative-accusative" patterning of AM systems is also found in morphologically and/or syntactically ergative languages.

The fourth hypothesis concerns the fields of language contact and areal linguistics and the idea that AM might be a highly diffusible category. The claim was made by several Australianist linguists that the category of AM has diffused extensively among the Aboriginal languages spoken in and around central Australia (Austin 1989; Wilkins 1991; Dixon 2002: 201–202; Koch 2007). Koch (2011) argued that this category has even been replicated in Central Australian

10 In some Australian languages, the markers for the motion of the O can also express the motion of dative-marked arguments. See an example in Mparntwe Arrernte in (4). This phenomenon does not appear to be attested in the languages of this study.

11 Note that in this two-clause sentence, the (same) motion of the S argument is expressed twice, once by the independent verb of motion *artnpe* 'run' in the first clause and once by the AM suffix *-yene* 'go and' in the second clause. This phenomenon of "echo" is another frequent property of AM systems, which reflects their discourse function as foregrounding devices (see more on this phenomenon in Wilkins 1991: 251; Guillaume 2006: 424, 432; Vuillermet 2012: 681–683; Rose 2015: 128–130).

Aboriginal English through the use of English motion verbs and adverbs. In the current article I carefully investigate the genetic and areal distributions of the different types of AM systems in South American languages and propose that in that part of the world as well, diffusion of the AM category must have played a role in its widespread presence and in the types of AM systems found.

3 Working definition of ASSOCIATED MOTION: Delimiting the boundaries

In this study, I conceive of the phenomenon of AM as a COMPARATIVE CONCEPT to be distinguished from any specific DESCRIPTIVE CATEGORY that might be present in a particular language (in the spirit of Haspelmath 2010). According to this view, the following definition is based on minimal necessary and sufficient semantic and formal criteria which are universally applicable and do not need to entirely correspond to (or even be primarily present in) any particular category of individual languages.

(9) An AM marker is a grammatical morpheme that is associated with the verb and that has among its possible functions the coding of translational motion.

According to the formal side of the definition ("grammatical morpheme"), lexical expressions are excluded, such as lexical verbs of motion in multiverbal constructions as in compounding, serialization, subordination, or coordination. For practical reasons, the present study actually restricts the definition to verb affixes only. It is acknowledged that this narrow formal definition might not capture a number of forms which might be functioning as AM markers but are not clearly identifiable as affixes (or other types of grammatical morphemes, such as clitics, particles, or auxiliaries). For instance, in several languages of the survey with V+V compounding constructions (see a list in Section 4.2), there is no really clear-cut division between verb root and verbal affix, which reflects the on-going process of grammaticalization (see, e. g., the discussion in Epps 2008: 149–157). It is therefore possible that in actual fact, the phenomenon of AM in South America be even more widespread than what is reported in this article and that its precise realization in the different languages (in particular those with compounding constructions) be slightly different.

As for the semantic side of the definition ("coding of translational motion"), a morpheme can be recognized as an AM marker as long as it can express spatial

displacement, i. e., change of location, whatever additional semantic category (or feature within that category) might be conflated with the motion component (e. g., categories of path,[12] aspect, modality, etc.). A morpheme that cannot express motion is not recognized as an AM marker.

As an illustration of the consequences that the above definition implies for the identification of AM in particular languages, let us look at different ways in which the motion component might interplay with the semantic component of path and how the different configurations might be interpreted according to the above definition. As illustrated in the preceding section, the motion component of many AM markers is further specified for its path (deictically anchored or not, oriented upward/downward, past a point, etc.). However, this does not always need to be the case: in some languages, one finds morphemes which express motion, but not path. This is the case, for example, with the morpheme *d:uu* in Yélî Dnye, illustrated in the following examples. As discussed by Levinson (2006: 198), the interpretations "away from deictic center" (10a) vs. "towards the deictic center" (10b) are given by the absence vs. presence of the proximal deictic *ala* 'this', and not by the AM marker *d:uu*, which is a separate morpheme.

(10) Yélî Dnye (isolate; Papua New Guinea)
a. *ngomo* ***d:uu*** *kee*
house 3SG/DU/PL.IMMPST.MOTION enter
'He went-and-entered the house.' (Levinson 2006: 198)
b. *ala* *ngomo* ***d:uu*** *kee*
this house 3SG/DU/PL.IMMPST.MOTION enter
'He went-and-entered this house, i.e., he came.' (Levinson 2006: 198)

By the definition given above such morphemes are analyzed as *bona fide* AM markers. This is not the case, however, with morphemes which happen to express particular path notions but no (independent) motion, as with the Adnyamathanha suffix *-na* 'this way' in (11) which, according to Tunbridge (1988: 281, Footnote 3), expresses "direction", but not motion. As we can see from the translations, *-na* expresses a meaning which is quite different from that of the AM marker *d:uu* in (10), specifying that the verb root events, 'descend' (11a) and 'see' (11b), are deictically oriented (in the direction of the speaker), and not that they are associated with a separate (deictically oriented) motion component.

12 From now on I use the term "path" (rather than "orientation") in the sense it has in Talmy's (1985) typological work, in which it refers to "the course followed or site occupied by the Figure object with respect to the Ground object" (Talmy 1985: 61). For more recent typological work on the concept of "path", see Grinevald (2011).

(11) Adnyamathanha (Pama-Nyungan; Australia)
a. *Linei-nga vudi-**na**-rta-ku-wa*.
line-on descend-this.way-DUR-NARR-3SG.NOM
'It was coming down the line.' (Tunbridge 1988: 270)
b. *Naku-angg-athu miru maladi-**na**-ku*.
see-PFV-1SG.ERG man.NOM look.over-this.way-NARR
'I saw a man looking over the hill towards us (in this direction).' (Tunbridge 1988: 270)

To count as an AM marker in these examples, *-na* should have the meaning of something like 'It came this way and descended' (11a) and 'I saw a man coming this way and looking' (11b), i. e., by way of a separate motion component, distinct from the verb events of motion ('descend') or perception ('see').

The exclusion of such types of markers from the category of AM markers does not rule out the possibility of the existence in languages of polysemous markers which express only path in certain contexts and motion (together with path) in others, as with, for example, the 'ventive' enclitic *=d* of Taqbaylit (and other languages) discussed in Section 2.2. Such types of markers are counted as *bona fide* instances of AM.

Here I have used the category of path to illustrate how particular configurations of motion and path are counted or not counted as AM. Obviously the same reasoning applies with other grammatical categories (aspect, mood, modality, etc.) which, like path, are interpreted as conceptually independent of motion, and therefore not criterial within the definition of AM given here.

4 Languages of the survey, methodology, and research questions

In this section, I present, in turn, the languages that were included in the survey, the methodology that was followed in the search for AM markers in these languages, and the research questions.

4.1 Languages of the survey

The present survey includes data on 66 indigenous languages (see list in Table 2) that are located in (or near) the western and southwestern fringes of the Amazonian basin, more or less bordering the eastern foothills of the Andean

Table 2: Languages included in the present survey, with information on genetic classification (isolates are in italics), genetic subgrouping, the sources consulted, and the relevant section of the Appendix.

Family	Subgrouping	Language	Source(s)	Appendix
Andoke		Andoke	Landaburu (1979)	A1
Arawak	Northern	Bare	Aikhenvald (1995)	
		Warekena	Aikhenvald (1998)	A2.10
		Tariana	Aikhenvald (2003)	A2.8
		Resígaro	Allin (1976); Wise (2005)	A2.7
	Campa	Nanti	Michael (2008)	A2.5
		Nomatsiguenga	Shaver & Shaver (1976); Shaver (1996); Lawrence (2013)	A2.6
		Ashéninca	Payne (1982)	A2.2
	Apurinã-Piro	Apurinã	Facundes (2000)	A2.1
		Yine	Hanson (2010)	A2.11
	Southern	Baure	Danielsen (2007)	A2.3
		Mojeño	Rose (2015)	A2.4
		Paresi	Rowan & Burgess (1979); Brandão (2010, 2014)	
		Terêna	Ekdahl & Grimes (1964)	A2.9
Arawan		Kulina	Dienst (2014)	A3.1
Aymaran		Aymara	England (2001); Adelaar & Muysken (2004); Cerrón-Palomino & Carvajal (2009)	A4.1
Bora-Witoto	Bora	Bora	Thiesen & Weber (2012)	A5.1
Carib	Venezuelan	Panare	Cáceres (2010); Payne & Payne (2013)	A6.1
	Guianan	Ye'kwana	Cáceres (2011)	A6.2
Cayuvava		Cayuvava	Key (1967)	
Chapacuran		Wari'	Everett & Kern (1997)	
Chiquitano		Chiquitano	Adam & Henry (1880); Sans (2013)	
Guaycuruan		Pilagá	Vidal (2006)	
Harakmbut		Harakmbut	Helberg Chávez (1990); Tripp (1995)	A7
Itonama		Itonama	Camp & Liccardi (1967); Crevels (2010)	
Jivaroan		Aguaruna	Overall (2007)	
Katukina-Kanamari		Katukina-Kanamari	dos Anjos (2011)	A8
Kwaza		Kwaza	van der Voort (2004)	
Leko		Leko	van de Kerke (2002, 2009)	A9
Macro-Jê	Rikbaktsa	Rikbaktsa	Silva (2011)	A10.1
Mataguayan		Nivacle	Fabre (2013)	A11.1

(*continued*)

Table 2: (*continued*)

Family	Subgrouping	Language	Source(s)	Appendix
Mosetén-Chimane		Mosetén	Sakel (2004)	A12
Movima		Movima	Haude (2006)	
Nadahup (Makú)		Hup	Epps (2008)	A13.1
		Yuhup	Ospina Bozzi (2002, 2009)	
Nasa Yuwe (Páez)		Nasa Yuwe	Rojas Curieux (1998); Jung (2008)	
Panoan[a]	Mayoruna	Matses	Fleck (2003)	A14.4
	Kashibo-Kakataibo	Kashibo-Kakataibo	Zariquiey Biondi (2011)	A14.2
	Bolivian	Chácobo	Prost (1967); Zingg (1998)	A14.1
	Chama	Shipibo-Konibo	Valenzuela (2003)	A14.5
	Headwaters	Kashinawa	Montag (1981)	A14.3
		Yaminahua	Faust & Loos (2002)	A14.6
Pirahã		Pirahã	Everett (1986)	
Quechuan	Central	Huallaga Quechua	Weber (1996)	A15.1
Saliban		Mako	Rosés Labrada (2015)	A16.1
Takanan[a]	Takanik	Araona	Pitman (1980); Emkow (2006)	A17.1
		Reyesano	Guillaume (2012, fieldnotes 2004–2008)	A17.4
		Tacana	Ottaviano (1980); Guillaume (2013c, fieldnotes 2009–2013)	A17.5
	Kavinik	Cavineña	Guillaume (2006, 2008, 2009, 2013b, fieldnotes 1996–2003)	A17.2
	Chamik	Ese Ejja	Vuillermet (2012, 2013)	A17.3
Tikuna		Tikuna	Montes Rodríguez (2004)	A18
Tucanoan	Western	Siona-Secoya	Wheeler (1987); Johnson & Levinsohn (1990); Bruil (2014)	A19.1
	Eastern	Wanano	Stenzel (2004)	
Tupi	Tupari	Mekens	Galucio (2001)	
	Tupi-Guarani	Chiriguano	Rosbottom (1967)	
		Guarayu	Crowhurst (2000)	
		Siriono	Priest & Priest (1967)	
		Yuki	Villafañe (2004)	
Urarina		Urarina	Olawsky (2006)	A20
Uru-Chipaya		Chipaya	Cerrón-Palomino (2009)	A21.1
		Uchumataqu	Muysken & Hannss (2006)	A21.2

(*continued*)

Table 2: (*continued*)

Family	Subgrouping	Language	Source(s)	Appendix
Yagua		Yagua	Payne (1985); Payne & Payne (1990)	A22
Yurakaré		Yurakaré	van Gijn (2006)	
Zamucoan		Ayoreo	Bertinetto (2009)	
		Chamacoco	Ciucci (2013)	
Zaparoan		Iquito	Lai (2009)	A23.1

a. For a detailed comparative study of AM systems in Panoan and Tacanan languages, see Guillaume (2016).

highlands in Bolivia, Peru, and Colombia (see Map 1). These languages represent about 17 % of the ca. 400 South American languages (Adelaar 2013).

These particular languages were included in the study on the grounds of several convergent criteria. A first criterion was to select languages which would have the highest chance *a priori* to manifest AM meanings in their inventories of verbal affixes. For that purpose, it made sense to start the survey with languages which are direct neighbors of the Takanan languages in Bolivia and Peru, where AM systems were first identified (see Section 2.2) and then progressively expand the search with languages located further away. For the same reason of optimizing the chances to find AM systems, I chose to include languages from regions of South America (broadly "Western Amazonia") where languages with verbal affixes expressing "spatial notions" are known to be extremely frequent, in contrast to what happens in other regions of the continent (especially "Eastern Amazonia") (Payne 1990a, 1990b, 2003).[13]

A second criterion was to include as many languages from as many genetic groupings (and subgroupings) as possible in order to investigate the possible role of contact and diffusion in the spatial distribution of the AM systems found. For that purpose, Western Amazonian languages also make a perfect choice, since that region is precisely the one which manifests the highest level of diversity in South America (Anderson & Harrison 2007). Indeed, the 66 languages of the study belong to 36 different genetic groupings, among

13 According to Payne (2003: 18), "DIRECTION affixes especially are found from at least as far north as the border area of Colombia and Panama, south to the Chaco region where Bolivia, Argentina, and Paraguay come together [...]. The POSITION, LOCATION, DIRECTION and MOVEMENT verbal suffixes are still dominantly a western feature, however, as they are hardly attested in the Tupí stock, Carib, or Je families."

Map 1: Geographical distribution of the languages of the survey.

which one finds 16 language isolates (italicized in Table 2). These groupings amount to about 30 % of the ca. 118 genetic groupings found in South America (Kaufman 1990). In addition, for the bigger families (Arawak, Pano, Tupi), languages from different sub-branches and locations within the area surveyed were included.

A third criterion was to give priority to languages for which there are good descriptions available and (if possible) a specialist linguist who could help in providing additional information (see more on this aspect in Section 4.2 below).

On the whole, a fair majority of the languages and language families in the surveyed area are represented in the study. Among the families that are not represented for lack of sufficient information are the Cawapanan family and the isolate Canichana. Some language families are only represented through (some of) their members that are located within the area investigated (Arawak, Arawan, Bora-Witoto, Carib, Chapacuran, Jivaroan, Macro-Jê, Nadahup, Panoan, Tucanoan, Tupi, Zaparoan). Finally, some families are not included at all because they are geographically too peripheral (e. g., Barbacoan, Chibchan, Chocoan, Guajibo, Mapudungun, Mascoyan, Nambicuara, Yanomani).

4.2 Methodology of the survey

My search for AM systems in South American languages abides by the definition formulated in (9), with one restriction, namely that I have only been concerned with AM expressed by affixes, i. e., excluding clitics, particles, or auxiliaries (which are not excluded by the definition, since they also represent grammatical categories). From a crosslinguistic perspective, narrowing the scope of the definition to affixes allowed for a better comparability of the forms under discussion. And from a practical perspective, it made the search for AM markers in the different languages an easier task, since the verb morphology is generally one of the best studied areas of these languages and/or one of the areas easier to locate in descriptive grammars. In actual fact, it turned out that only two of the languages surveyed seem to have AM expressed by particles or auxiliaries and none by clitics. Note, however, that I have not conducted any systematic survey on AM realized by clitics, particles, or auxiliaries. The two examples are reproduced below: the "intentional particle" *kač* of the Arawak language Baure in (12) (expressing prior motion) and the "motion auxiliary" of the Tupi language Guarayu in (13) (expressing concurrent motion).

(12) Baure (Arawak)
*ač ri=im=ro yiti ač **kač** ri=nik*
and 3SG.F=put=3SG.M chili and GO 3SG.F=eat
'And she put chili in it [the food] and she [another woman] went to eat.' (Danielsen 2007: 277)

(13) Guarayu (Tupi)
*Chompa oipia **oiko**.*
Chompa weave 3SG.walk
'S/he is weaving a chompa (sweater) while walking.' (Crowhurst 2000: 23; glosses and English translation mine)

Remember that lexical expressions are also excluded by definition, such as lexical verbs of motion in compounding or serialization constructions (as well as, obviously, in multi-clausal subordination or coordination constructions). In the languages of the survey, AM meanings expressed by V+V compounding constructions were found in the isolate languages Kwaza (van der Voort 2004: 567–573) and Pirahã (Everett 1986: 300–301), the Nadahup language Hup (Epps 2008: 411–416), and the Tucanoan language Wanano (Stenzel 2004: 287–291). As for AM meanings expressed by V V serializing constructions, they were found in the Arawak languages Bare (Aikhenvald 1995: 40–42), Paresi (Brandão 2010: 25–26), and Warekena (Aikhenvald 1998: 386–395) and the isolate language Urarina (Olawsky 2006: 148–149, 629–651). Note that this is not an exhaustive list, as I have not conducted any systematic survey of such constructions.

There are many challenges for the type of investigation that is conducted here. First, the label "associated motion" is not used in most of the descriptive materials of the languages surveyed. This is obviously the case because AM is a new descriptive and comparative concept in general linguistics. When it is used, the term "associated motion" does not systematically correspond to forms that abide by the definition of AM that I am using in this study (see Section 3). This is the case, for example, of the "concurrent motion" suffix *-pe* of the Guaycuruan language Pilagá (Vidal 2006) and the "transferred action suffix" *-ki(ni)* of the Jivaroan language Aguaruna (Overall 2007: 295). As we will see in Section 5, these two South American languages are classified in the list of languages without AM markers.

In the descriptions of individual languages, we frequently find the term "motion" or some closely related terms such as "movement", "displacement", "relocation", etc. These are often used to label, gloss, or classify (in a particular chapter or section of a grammar), what would indeed count as a *bona fide* AM marker. But again finding these terms in a description does not guarantee that it

is always the case. For instance, the two suffixes *-wari* and *-sari* of the isolate language Leko are described by van de Kerke (2002: 244) with the term "motion" ("upward motion" and "downward motion", respectively). However, from the data available (14a,b), they only carry the semantics of path (upward vs. downward orientation), not of motion. Therefore, they are not counted as AM markers.

(14) Leko (isolate)
a. *wotha* *wonon-**wari**-no-te*
hill walk-UP-NOMZ-MAIN.TENSE
'He walks up the hill.' (van de Kerke 2002: 246; original but ungrammatical translation is 'He walks the hill up.')
b. *kawot-rep* *do-to-**sari**-a* *has*
above-ABL 3.OBJ-put-DOWN-IMP below
'Throw it down from above!' (van de Kerke 2002: 245)

Other common descriptive or classificatory labels found that sometimes correspond to AM markers are those of "directional", "directive", "deictic", "centrifugal/centripetal", "ven(i)tive/andative", "cislocative/translocative", "hither/thither", "trajectal", "ablative", "allative", "elative", "adlative", "receptive", "returnative", "regressive", "reversive", "transitory", "anti-directional", etc. These terms are generally used when the marker also expresses semantics of path (typically deictic contrasts). Once more, morphemes labeled or categorized with these terms in the grammars need not express AM meanings (see discussion and illustrative examples in Section 3).

We also find AM meanings hiding under a fairly large range of other terminology, which reflects the wide spectrum of possible conflation with meanings from more familiar semantic domains, such as "aspect", "Aktionsart", or "pluractionality" (e. g., "locative aspect", "durative aspect", "distributive", "departitive", "inceptive", "inchoative"), "modality" (e. g., "potential aspect", "purposive"), mood (e. g., "displacement imperative", "proximate/distal imperative", "directional imperative"), tense ("intentional/future relative to another event"). Finally, quite frequently, AM markers can be found under more semantic-neutral labels such as "formatives", "bound complement-taking verbs", "core verb serialization", "miscellaneous inflectional or derivational categories", "adverb-type markers", etc. (See the Appendix for information on the exact labels used for each AM forms found in individual languages.)

One obvious methodological consequence of the plethora of terms is that one cannot go by these labels to make a decision as to whether a particular morpheme is or is not an AM marker. At best, these terms are useful heuristic clues in the

search for likely candidates in the tables of content, indices, lists of affixes and abbreviations, etc., of the grammatical descriptions. Basically the same comment can be made about the usefulness of prose description, if available, which may or may not give a good indication as to whether a morpheme can be categorized as an AM marker. In this study, I have based my decisions more on illustrative examples, when available and when properly segmented, glossed, and translated. Morphemes which I suspect to express AM but for which no (or no good) example is available are still counted here, but they are marked as "possible AM markers" and indicated within parentheses in the tables when they appear. As an illustration of such kinds of morphemes, there are no examples available for the Chácobo (Panoan) suffix *-ta* 'to go and' in the (tagmemic) grammar of Prost (1967: 336). But in other better described Panoan languages, there are cognates of this suffix for which the 'to go and' (AM) meaning is undisputable, as with the suffix *-tan* of Matses in (15). However, until a better description of the Chácobo suffix *-ta* is available, one cannot be certain that this morpheme expresses AM meanings. Therefore, it is analyzed as "possible AM marker".

(15) Matses (Panoan)
*nes-**tan**-nu*
bathe-go-INTENT
'I'm going to go bathe.' (Fleck 2003: 367) (A49a)[14]

When examples are available for a putative AM marker, what is meant by a good diagnostic example is one that unambiguously shows that motion is only attributable to the semantics of the marker and not to the semantic of the verb event. The best examples are those showing the marker attached to a non-motion verb and translated through expressions such as 'go and V', 'V upon arriving', 'V while going', 'V and go', 'V along the way', etc. Indeed, the majority of the examples of AM markers provided in this article are of that sort (see the Appendix). By contrast, what is meant by a bad diagnostic example is one where motion is not unambiguously attributable to the marker. This is very often the case when the marker is attached to a verb which can have motion readings. As an illustration of such a type of example, let us consider (16) for the Shipibo-Konibo (Panoan) suffix *-kawan* 'going', treated as a "possible AM marker" in this study. As one can see, the suffix is attached to the verb 'turn' and translated through the expression 'towards'. Since 'turn' involves motion, it is unclear whether *-kawan* contributes any distinct motion component, besides the path specification 'towards'.

14 The examples reproduced from the Appendix are indicated at the end of the translation line by the number they have in the Appendix (i. e., preceded by the capital letter A).

(16) Shipibo-Konibo (Panoan)
*Bechiake-**kawan**-xon nokon rayos yoiy-a iki…*
turn-going-PSSA 1SG.POSS son.in.law.ABS tell-PP2 AUX
'Then turning towards (the man) she told my son-in-law…' (Valenzuela 2003: 272)

In eight languages, we find morphemes attached to non-motion verbs and translated through expressions which lack a motion expression, such as 'V (over) there/here', 'V in a different place', or 'V up(river)/down(river)', suggesting that they encode static location, rather than dynamic motion. In other words, such markers should possibly not be counted as AM. Two examples are provided below, with the Tariana suffix *-kada* in (17) (see the first reading in the translation) and the Andoke prefix *yi-* in (18).

(17) Tariana (Arawak)
*ima-**kada** ihya amaku-pe-se*
2PL.sleep-DIST.IMP you hammock-PL-LOC
'You sleep (over there) in your hammocks.' (Aikhenvald 2003: 373, ex. 16.9)/'Go and sleep over there in your hammocks.' (Aikhenvald 2003: 652, ex. T3.9) (A16b)

(18) Andoke (isolate)
***yi-**báʌ-ʌ baya*
DIR-work-D3 ASS.NOMCL31
'He works upriver (from here).' (Landaburu 1979: 198) (A1d)

The other markers of the survey which appear to express static location, and which can be seen in the Appendix, are the Andoke prefix *si-* (A1c), the Nanti suffixes *-aki* 'adlative' (A11b) and *-aa* (A11c), the Aymara suffix *-qa* (A22), the Katukina-Kanamari suffixes *-na* (A31a, A32a) and *-dik ~ -ji* (A31b, A32b), the Araona suffix *-ti* (A61a), the Chipaya suffix *-zhki* (A83), and the Yagua suffix *-imu* (A85d).

In the available descriptions, however, the same markers happen to be regularly translated through expressions which indicate that they can as well express dynamic motion. This can be seen, for example, in the second reading of (17), where *-kada* is translated by the expression 'go and V'. (See the Appendix for similar alternative readings provided for the other putative "static location" markers.[15]) For the sake of this study, I decided to count all such morphemes as AM markers.

15 There are four markers for which I have not found such alternative translations: Andoke *si-* and *yi-*, Aymara *-qa*, and Chipaya *-zhki*. This suggests that, possibly, these four morphemes

A second major challenge of the present study is that the putative AM morphemes are very often poorly described and/or illustrated. For a fair number of languages, the only grammatical material available consists of pedagogically-oriented grammars with non-segmented and non-glossed examples. This meant that I had to do the segmentation and glossing myself (when clear lexical and grammatical information on the different morphemes could be easily recovered) or with the help of a specialist of the language (see the full list in the Acknowledgements). An obvious conclusion of all these limitations is that for the time being, no sophisticated comparative study of AM in South America (as in probably many other places in the world) is possible and the results presented here are therefore to some degree impressionistic, providing a trend rather than exact figures.

4.3 Research questions

While surveying the AM systems in these languages, I have tried to address six basic issues, in the following order:

(i) Which and how many languages have AM systems? What is the genetic and areal distribution of these languages? (Section 5)
(ii) How complex are the AM systems (how many morphemes per system)? How do the levels of complexity correlate with the genetic and areal distribution of the languages? (Section 6.2)
(iii) What do complex AM systems look like in terms of the first higher-level structuring parameter of "moving argument"? How do subject and object motion markers distribute genetically and geographically? (Section 6.3)
(iv) What do the complex AM systems look like in terms of the second higher-level structuring parameter of "temporal relation"? How do subject and object markers for prior motion, concurrent motion, and subsequent motion distribute genetically and geographically? (Sections 6.4 and 6.5)
(v) Can one find correlations (on an implicational scale) between the level of complexity of the systems and the type of distinctions at play (according to those from the two higher-level structuring parameters)?

should not count as AM markers. Note however, that in all four cases, the available descriptions provide very few illustrative examples.

(vi) Can one find correlations between the level of complexity of the systems, the type of distinctions at play (according to those from the two higher-level parameters), and their geographical distribution?

5 Languages with and without ASSOCIATED MOTION systems

The results concerning the first question (How many languages of the survey have AM systems?) are given in Tables 3, 4, and 5. Table 3 lists all the languages of the survey which have at least one AM marker and Table 4 those that do not have any. Table 5 summarizes the results in terms of percentages. All the AM affixes that were identified in the languages are listed, described, and exemplified in the Appendix.

Table 3: List of languages with AM systems.

Family	Language	Family	Language
Andoke	Andoke	Panoan	Chácobo, Kashibo-Kakataibo, Matses, Shipibo-Konibo, Kashinawa, Yaminahua
Arawak	Warekena, Tariana, Resígaro, Nanti, Nomatsiguenga, Ashéninca, Apurinã, Yine Baure, Mojeño, Terêna		
Arawan	Kulina	Quechuan	Quechua
Aymaran	Aymara	Saliban	Mako
Bora-Witoto	Bora	Takanan	Araona, Reyesano, Tacana, Cavineña, Ese Ejja
Carib	Panare, Ye'kwana		
Harakmbut	Harakmbut		
Katukina-Kanamari	Katukina-Kanamari	*Tikuna*	Tikuna
Leko	Leko	Tucanoan	Siona-Secoya
Mataguayan	Nivacle	*Urarina*	Urarina
Mosetén-Chimane	Mosetén	Uru-Chipaya	Chipaya, Uchumataqu
Macro-Jê	Rikbaktsa	*Yagua*	Yagua
Nadahup (Makú)	Hup	Zaparoan	Iquito

As Table 5 shows, 67% of the languages investigated have an AM system (44 languages out of 66) while 33% do not (22 languages out of 66). In terms of genetic distribution, the 44 languages with AM systems correspond to 23 distinct families (including eight isolates) which represent 64% of the total number of 36 genetic groupings. In other words, one can say that AM is a widespread

Table 4: List of languages without AM systems.

Family	Languages	Family	Languages
Arawak	Bare, Paresi	Nadahup	Yuhup
Chapacuran	Wari'	*Nasa Yuwe (Páez)*	Nasa Yuwe (Páez)
Kwaza	Kwaza	*Pirahã*	Pirahã
Cayuvava	Cayuvava	Tucanoan	Wanano
Chiquitano	Chiquitano	Tupi	Mekens, Chiriguano,
Guaycuruan	Pilagá		Guarayu, Siriono, Yuki
Itonama	Itonama	*Yurakaré*	Yurakaré
Jivaroan	Aguaruna	Zamucoan	Ayoreo, Chamacoco
Movima	Movima		

Table 5: Number of languages with and without AM systems.

	Number of languages (out of 66)	Percentage	Number of genetic groupings
1 or more AM marker	44	67 %	23
0 AM marker	22	33 %	16

phenomenon in that part of South America, instantiated in two thirds of both languages and language families of the survey. Note that three genetic groupings contain languages with and languages without AM markers (Arawak, Nadahup, and Tucanoan).

The geographical distribution of the languages with and without AM systems is shown in Map 2. As one can see, the majority of languages with AM systems form a large area of neighboring languages which roughly corresponds to the northern, western, and southern fringes of the Amazon basin. Languages without AM systems form a smaller area of neighboring languages located to the southeast of the AM area, in a region which corresponds to the southern edge of the Amazon basin and the northern edge of the Chaco area. Others are located in individual spots, in different places at the margins of the AM area.

6 Levels of complexity and types of distinctions

6.1 Introduction

In this section, I take a closer look at the 44 languages that have AM systems and explore their levels of complexity and the types of semantic distinctions,

Map 2: Geographical distribution of the languages with AM markers.

according to the two parameters of moving entity and temporal relation. The results are provided in Table 6. In each column, the number of attested forms is provided for each language. The last column provides the total number of AM forms. Under each column, I provide the total number of languages which have at least one form per parameter. The results are summarized and commented on in the next subsections.

The parameter of MOVING ENTITY only distinguishes between subject (S/A) and object (O) motion forms. No polysemous forms have been found expressing any of the following configurational possibilities: motion of S, A, or O

Table 6: Number and types of AM markers in the languages of the survey.

Family	Language	S/A motion					O motion	Total
		Prior	Prior or concurrent	Concurrent	Concurrent or subsequent	Subsequent		
Andoke	Andoke	4	—	—	—	—	—	4
Arawak	Warekena	—	—	1	—	—	—	1
	Tariana	2	—	—	—	—	—	2
	Resígaro	3	—	—	—	1	—	4
	Nanti	4	—	(+2)	—	—	—	4 (+2)
	Nomatsiguenga	3	—	—	—	—	1	4
	Asháninca	1	—	—	1	—	1	3
	Apurinã	—	—	2	—	—	—	2
	Yine	1	—	—	—	—	—	1
	Baure	2	—	—	—	1	—	3
	Mojeño	1	—	2	—	1	—	4
	Terêna	1	—	—	—	—	—	1
Arawan	Kulina	—	—	1	—	—	—	1
Aymaran	Aymara	1 (+1)	—	2	—	—	—	3 (+1)
Bora-Witoto	Bora	2	—	—	—	2	(+1)	4 (+1)
Carib	Panare	2	—	—	—	—	—	2
	Ye'kwana	1	—	—	—	—	—	1
Harakmbut	Harakmbut	1	—	1	—	—	—	2
Katukina	Katukina-Kanamari	2	—	—	—	—	—	2
Leko	Leko	2	—	—	—	—	—	2
Macro-Jê	Rikbaktsa	1	—	—	—	—	—	1
Mataguayan	Nivacle	—	—	—	—	—	3	3
Mosetén	Mosetén	2	—	4	—	—	—	6
Nadahup (Makú)	Hup	1	—	—	—	—	—	1
Panoan	Chácobo	(+1)	—	2	—	—	—	2 (+1)
	Kashibo-Kakataibo	1	—	6	2	—	—	9
	Kashinawa	1	—	1	2	—	—	4
	Matses	4	—	5	—	—	—	9
	Shipibo-Konibo	1	—	4 (+1)	2	—	—	7 (+1)
	Yaminahua	3	—	3 (+1)	2	—	—	8 (+1)
Quechuan	Quechua	1	—	—	—	—	—	1
Saliban	Mako	1	—	—	—	—	—	1
Takanan	Araona	4 (+1)	—	2 (+1)	—	—	—	6 (+2)
	Cavineña	1	3	5	—	1	2	12
	Ese Ejja	3	—	4	—	2	1 (+1)	10 (+1)
	Reyesano	1	—	1	—	—	—	2
	Tacana	4	—	7	—	—	2	13
Tikuna	Tikuna	1 (+1)	—	—	—	—	—	1 (+1)

(*continued*)

Table 6: (*continued*)

Family	Language	S/A motion					O motion	Total
		Prior	Prior or concurrent	Concurrent	Concurrent or subsequent	Subsequent		
Tucanoan	Siona-Secoya	1	—	—	—	—	—	1
Urarina	Urarina	1	—	—	—	—	—	1
Uru-Chipaya	Chipaya	1	—	—	—	—	—	1
	Uchumataqu	—	—	1	—	—	—	1
Yagua	Yagua	4	—	4	—	1	—	9
Zaparoan	Iquito	3	—	1	—	1	—	5
23 families	44 lgs	38 (+1) lgs	1 lg	21 (+1) lgs	5 lgs	8 lgs	6 (+1) lgs	44 lgs

Key: — marker not attested; ( ) possible additional AM markers or languages with AM markers (see discussion in Section 4.2).

(i. e., S=A=O); motion of S or O, but not motion of A, or motion of A, but not motion of S or O (i. e., S=O≠A); motion of O or motion of some other non-S/A argument such as a dative (as found in some Australian languages; see discussion in Section 2.1).

The parameter of TEMPORAL RELATION is only presented for subject forms in this table. (Its role with object forms, which are extremely rare, is dealt with separately; see Section 6.5.) In addition to listing forms dedicated to the expression of prior motion, concurrent motion, and subsequent motion, I have also included two additional subcategories of polysemous forms which can express prior-or-concurrent motion and concurrent-or-subsequent motion, since such forms do occur in at least some of the languages of the survey.

6.2 Levels of complexity

As a measure for the different levels of complexity manifested by the AM systems of the languages surveyed (i. e., question (ii) in Section 4.3), I have counted the total number of AM morphemes per inventory (see the "Total" column in Table 6) and sorted out the systems into three distinct categories: SIMPLE (one or two forms), COMPLEX (three to five forms), and VERY COMPLEX (six or more forms). Note that the measure of complexity that is used here does not take into account the number of allomorphs or the degree of homogeneity of the AM systems in terms of, for example, the productivity of the AM morphemes or their position in the verb structure.

The following examples illustrate the simple (two-morpheme) system of Leko (19), the complex (five-morpheme) system of Iquito (20), and the very complex (nine-morpheme) system of Yagua (21).

(19) Leko (isolate): simple system
*do-woy-**di**-a sok'och men-cha-no-te k'o-**har**-ai*
3.OBJ-call-INCP-IMP food cool-DUR-NOMZ-MAIN.TENSE eat-COME-IMP
'Go and call him, the food is getting cold, he must come to eat (it)' (van de Kerke 2002: 247) (A33)

(20) Iquito (Zaparoan): complex system
a. *Ariicua-**cuaa** naami!*
sing-DEI2.PFV downriver
'Go sing downriver!' (Lai 2009: 370) (A88a)
b. *Najuu-**huii** iina carta!*
write-DEI1.PFV DET letter
'Come write the letter (here)!' (Lai 2009: 369) (A88b)
c. *Cu=asa-**sahuii**-quiaqui paapaaja.*
1SG=eat-ALL.PFV-DPST.NIP fish
'I ate fish upon arrival (it was already prepared).' (Lai 2009: 376) (A88c)
d. *Cuhuasi-**maa** tíira=ji!*
talk-REM.PFV there=from
'Come talking from there!' (Lai 2009: 248) (A89)
e. *Nu=tasii-**yaarii**-Ø quiaaja.*
3SG=wait-ABL.PFV-EC you
'He waited for you and left.' (Lai 2009: 384) (A90)

(21) Yagua (isolate): very complex system
a. *Naanu-suuta-**nuvee** rą́rǫǫ-tąąsá-rà sújay.*
3DU-wash-on.arrival.there up.river-middle-INAN clothes
'Upon arrival upriver she washed the clothes.' (Payne 1985: 257) (A85a)
b. *Juntú-tąąsá sa-jụvay-**nuvi̱i̱**-núúy-janu.*
post-middle 3SG-hit-ARR1-IPFV-PST-3
'Upon arrival here he hit/was hitting on the post.' (Payne & Payne 1990: 397) (A85b)
c. *sa-suuta-**sa**-jąą*
3SG-wash-upwards-ITERMVMT
'He goes up-river to wash every once in a while.' (Payne 1985: 267) (A85c)

d. *sa-suuta-**imu**-muuy-maa*
3SG-wash-downwards-COMPL-PFV
'He has finished washing down-river' (Payne 1985: 267) (A85d)

e. *vụụy-mááy-**rịị**-janu tąąriy*
1INC-sleep-en.route-PST3 before
'Long ago we slept en route.' (Payne & Payne 1990: 398) (A86a)

f. *ray-maay-**títyiiy**-jancha*
1SG-sleep-going.directly-CONT
'I sleep while going along [as in a car].' (Payne 1985: 254) (A86b)

g. *sa-jụ́nááy-rụ́ụ́y-**nayąą***
3SG-cry-POT-going.aimlessly
'He wants to cry while going all over the place' (Payne & Payne 1990: 396) (A86c)

h. *ray-maay-**ja**-jáy*
1SG-sleep-across-PROX2
'Yesterday I slept across (water or land).' (Payne 1985: 268) (A86d)

i. *naada-suuta-**chiy**-núúy-jáy*
3DU-wash-DEPARTING-IPFV-PROX2
'As the last thing before leaving, she washed yesterday.' (Payne 1985: 257) (A87)

A summary of the results, including percentages, is provided in Table 7. A striking result of the count is the fairly high percentage of complex and very complex systems – 27 % for complex systems (12 languages out of 44) and 23 % for very complex systems (10 languages out of 44). Altogether, complex and very complex systems make up 50 % of the languages (22 languages out of 44).

Table 7: Number of languages with AM markers per levels of complexity.

Complexity level	Number of AM markers	Number of languages (out of 44)	Percentage	Number of genetic groupings
Simple	1 or 2	22	50 %	16
Complex	3 to 5	12	27 %	7
Very complex	6 or more	10	23 %	4

In terms of genetic affiliation, the distribution of complex and very complex systems is fairly diverse, cutting across seven families for complex systems and four families for very complex system. Altogether, complex and very complex systems are found in a total number of ten families (Arawak, Aymaran, Bora-Witoto, Harakmbut, Mataguayan, Mosetén-Chimane, Panoan, Takanan, Yagua, Zaparoan). Looking at

the most complex cases, one finds several languages with systems containing up to nine AM forms in the Panoan family (Matses and Kashibo-Kakataibo) and isolate Yagua (illustrated in (21)), and up to 13 markers in one language of the Takanan family (Tacana). Note, however, that in some cases there is a lot of family-internal variation in AM systems complexity (see discussion in Section 7).

The geographical distribution of languages with simple, complex, and very complex systems, shown in Map 3, reveals a core-periphery pattern. This pattern has two loci of maximal complexity: northern Bolivia (Mosetén-Chimane, Takanan, Panoan) and northeastern Peru (Panoan, Yagua). Languages with complex systems

Map 3: Geographical distribution of languages with simple, complex, and very complex AM systems.

are contiguous to the very complex ones, in between the two loci in southeastern (lowland) Peru (Andoke, Arawak, Panoan), to the north of the loci near the border of Peru and Colombia (Arawak, Bora-Witoto, Zaparoan), to the east of the loci in eastern (lowland) Bolivia (Arawak), to the west of the loci in western (highland) Bolivia (Aymaran), and to the south of the loci in Paraguay (Mataguayan). If one lumps the very complex and the complex systems and leaves aside the systems of Mataguayan Nivacle and Baure, one ends up with a large continuous area which corresponds to the southwestern fringe of the Amazon basin in northern Bolivia and eastern and northern Peru. Languages with simple systems are scattered in the periphery, with a fairly important concentration in what corresponds to the northwestern fringe of the Amazon basin in Colombia and Venezuela.

6.3 Moving argument

I now investigate the internal make-up of the AM systems of the languages surveyed in terms of the two parameters of moving argument and temporal relation between the motion and the verb event. The first parameter is discussed here while the second is discussed in the following section. Examples of subject AM forms in Leko, Iquito, and Yagua can be seen in (19), (20), and (21) above. Examples of object AM forms in Cavineña are given in (22).

(22) Cavineña (Takanan)
a. *Peadya ekwita=tuke=Ø ba-**dadi**-wa…*
one person=3SG=1SG see-GO(O)-PFV
'I saw a man going away from me.' (Guillaume 2008: 234) (A69a)
b. *Tume=pa=taa=tuja=tu ba-**tsa**-ya ekwita…*
then=REP=EMPH=3SG.DAT=3SG see-COME(O)-IPFV person
'Then he$_i$ saw a man coming towards him$_i$.' (Guillaume 2008: 234) (A69b)

Table 8 provides the number (and percentage) of languages which have markers for the subject (cf. column "S/A motion" in Table 6) and those which have markers for the object (cf. column "O motion" in Table 6). As one can see, all but one language (Mataguayan Nivacle) have at least one marker for the motion of the

Table 8: Number of languages with AM markers for the SUBJECT and for the OBJECT.

	Number of languages (out of 44)	Percentage	Number of genetic groupings
Motion of subject (S/A)	43	98 %	22
Motion of object (O)	6 (+1)	14 (+2)%	3 (+1)

subject. By contrast, only a handful have markers for the motion of the object (14–16%, i.e., six or seven languages out of 44). One can also observe that the languages with object AM markers are only found in three (possibly four) distinct genetic groupings, namely the Arawak, Mataguayan, and Takanan (and possibly Bora-Witoto) families. Finally, if one looks back at Table 6, one can note that the inventories of object AM markers are very reduced, with a maximum of three members in the Mataguayan language Nivacle, illustrated in (23). For the other languages with object AM systems, these consist of two markers in the Takanan languages (as in Cavineña illustrated above) and a single one in the Arawak languages (as well as in the Bora-Witoto language).

(23) Nivacle (Mataguayan)
  a. *c'a-'van-**ch'e***
     1A(→2P)-see-AM:IT
     'I see/saw you leaving.' (Fabre 2013: 11) (A35a)
  b. *c'a-'van-**julh***
     1A(→2P)-see-AM:VENT
     'I see/saw you coming.' (Fabre 2013: 11) (A35b)
  c. *j-ovalh-**c'oya***
     1A(→3P)-watch-AM:ANTVENT
     'I watch(ed), waiting for him/her/they [sic] to come.' (Fabre 2013: 11) (A36)

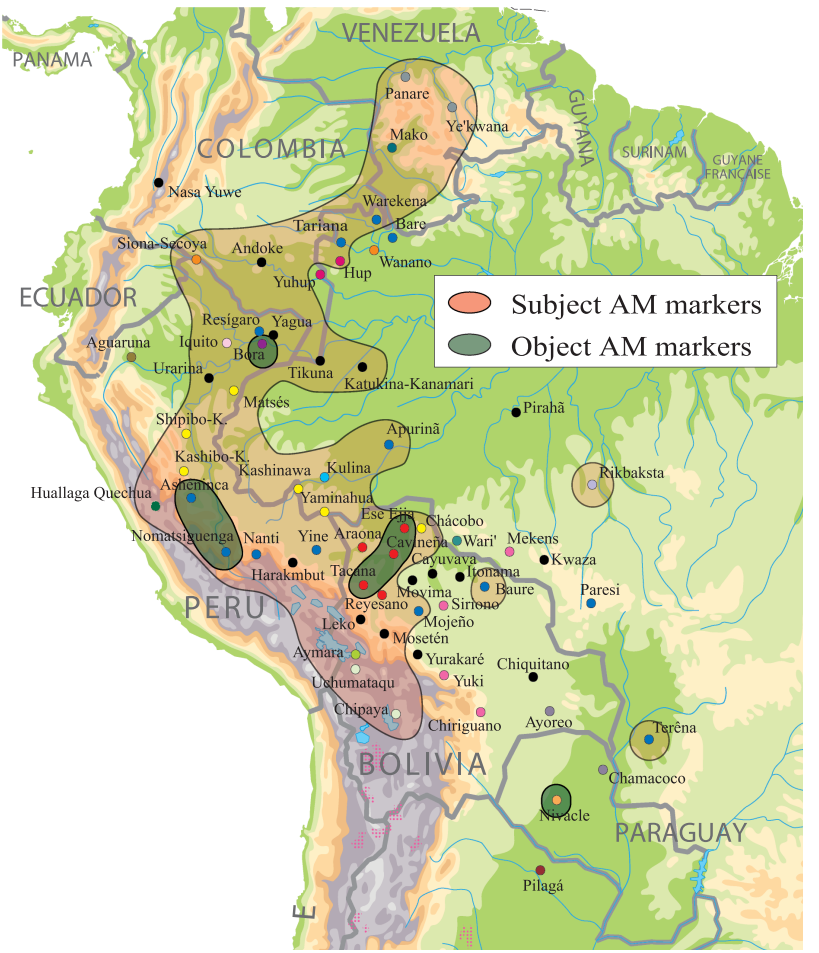
These facts suggest that the subcategory of object AM is a very marked (typologically rare) one, as opposed to the subcategory of subject AM, which is normally present when a language has an AM system and which is frequently expressed by much more elaborated inventories of markers. These facts therefore support the hypothesis of the implicational scale MOTION OF THE SUBJECT > MOTION OF THE OBJECT formulated in Section 2.3, which states that if a language has an object AM, it normally has a subject AM as well. The Nivacle system of AM presents a counter-example to the scale, since its markers only express motion of the object.

Now, still looking at Table 6, we can observe that most of the languages with object AM forms have complex to very complex subject AM systems. The only exceptions are the Arawak language Ashéninca, which has two subject AM forms, and the Mataguayan language Nivacle, which has no subject AM forms. These facts suggest that a restriction needs to be placed on the implicational scale, namely that the subject AM inventory must be complex (in terms of number of AM morphemes). Adding this restriction yields the following revised implicational scale: MOTION OF THE SUBJECT (COMPLEX INVENTORY) > MOTION OF THE OBJECT.

It is also worth noting that the "nominative-accusative" patterning that characterizes all the AM forms does not show any necessary correlation with the type of

alignment manifested in the morphological encoding or syntactic behavior of the arguments in the languages. Indeed, the languages of the survey with AM systems display various alignments, including ergative-absolutive at the morphological level, as in most languages of the Takanan and Panoan families (Guillaume 2010; Fleck 2010; Valenzuela 2010), and ergative-absolutive at both morphological and syntactic levels, as in the isolate language Katukina-Kanamari (Queixalós 2010).

The geographical distribution of languages with subject and object AM forms is represented in Map 4. The location of languages with subject AM simply matches that of the languages with AM systems, with the exception of one



Map 4: Geographical distribution of languages with subject and object AM markers.

language (Nivacle). As for the languages with object AM systems, these are found in a few separate locations, either alone (Bora, Nivacle) or in groups which only involve languages of the same genetic affiliation (Arawak, Takanan).

6.4 Temporal relation (subject ASSOCIATED MOTION forms)

Here I investigate the distribution of the three subcomponents of the temporal relation parameter (prior motion, concurrent motion, and subsequent motion) for the 43 subject AM forms. (The temporal relations involved with object AM forms is discussed in Section 6.5). As indicated above, the languages surveyed manifest three subcategories: dedicated markers for prior motion, concurrent motion, and subsequent motion and polysemous markers for prior-or-concurrent motion and concurrent-or-subsequent motion. Examples of dedicated prior motion markers can be seen in Leko (19), Iquito (20a–c), and Yagua (21a–d). Examples of dedicated concurrent markers can be seen in Iquito (20d) and Yagua in (21e–h). And examples of dedicated subsequent markers can be seen in Iquito (20e) and Yagua in (20i). Finally, an illustration of a polysemous prior-or-concurrent motion marker in Cavineña is provided in (24) and of a polysemous concurrent-or-subsequent motion marker in Shipibo-Konibo in (25).

(24) Cavineña (Takanan)
a. Prior motion
*... bakwa=ja kapana armario dyake iya-**eti**-kware...*
viper=GEN bell cupboard ON put-COME.PERM-REMPST
'... arriving (home,) he put the rattle [lit., bell] of the rattlesnake [lit., viper] on top of a cupboard.' (Guillaume 2008: 222) (A66a)
b. Concurrent motion
*Tudya ekatse tawi-**eti**-kware e-diji patyapatya.*
then 3DU sleep-COME.PERM-REMPST NPF-path IN.MIDDLE.OF
'They slept midway along the path.' (Guillaume 2008: 222) (A66b)

(25) Shipibo-Konibo (Panoan): concurrent-or-subsequent
*E-n-ra bake-bo kena-**bain**-ke.*
1-ERG-EV child-PL.ABS call-AND2-COMPL
'I called the children while going.'/'I called the children and left.' (Valenzuela 2003: 159) (A53)

In this study, as in previous descriptive work on AM, the subcategory of concurrent motion encompasses a range of different situations. The verb event

and the motion can be temporally coextensive, whether the event is realized continuously or reiterated multiple times, as with the Matses suffix *-cho* in (26a). Or the verb event and the motion can be temporally non-coextensive, as when the verb event is realized punctually somewhere between the source and the target of the motion, as with the Matses suffix *-cuëtsen* in (26b).

(26) Matses (Panoan)
a. *onque-**cho**-o-sh*
talk-while.coming.INTR-PST-3
'He talked the whole way here.'/'He kept stopping to talk on his way here.' (Fleck 2003: 371) (A50d)
b. *onque-**cuëtsen**-o-sh*
talk-come.do.come-PST-3
'He stopped (once) to talk on his way here.' (Fleck 2003: 371) (A50b)

In all these situations, when the verb event takes place, the motion can be interrupted, as in the second reading of (26a) and in (26b), or it can be non-interrupted, as in the first reading of (26a) and with the Cavineña suffix *-diru* in (27).

(27) Cavineña (Takanan)
*Mercede=ekwana ba-**diru**-kware.*
Las.Mercedes=1PL see-GO.PERM-REMPST
'On our way (flying) back (home), we saw the community of Las Mercedes.' (Guillaume 2008: 221) (A65b)

In about a dozen languages, we find prior AM markers which appear to entail a subsequent return motion to the initial location. This situation is illustrated with the Mojeño suffix *-pono ~ -jn* in (28) and the Huallaga Quechua suffix *-mu* in (29a).

(28) Mojeño (Arawak)
*p-ni-**jn**-a*
2SG-eat-REVMOT-IRR
'Come and eat (and go away again)!' (Rose 2015: 119) (A8)

(29) Huallaga Quechua (Quechuan)
a. *Tanta-ta ranti-rI-**mu**-y*
bread-OBJ buy-PUNCTUAL-FAR-2.IMP
'Go buy bread (and return soon)!' (Weber 1996: 199; translation in English mine) (A59)

b. *mikU-**mu**-šun*
eat-FAR-1INC.IMP
'Let's go to eat (there).' (Weber 1996: 67; translation in English mine)

The other markers of the survey which instantiate this situation, and which can be seen in the Appendix, are the Nanti suffix *-ut* (A11d), the Nomatsiguenga suffix *-iN* (A12c), the Aymara suffix *-ni* (A21b), the Hup suffix *-ʔay* (A39), the cross-Panoan suffix *-tan* in Kashinawa (A45), Matses (A49a), Shibibo-Konibo (A51), and Yaminahua (A55a), the Araona suffix *-ti* (A61a), and the Siona-Secoya suffix *-jaí* (A81).

Unfortunately, from the available descriptions it is most often unclear whether the subsequent return motion is really part of the core semantics of the markers or whether it is merely implied.[16] For example, in the translations of ALL the available examples, the subsequent return motion is not indicated systematically, as in (29b). Besides, when it is indicated, the subsequent return motion is most often presented in parentheses, as in (28) and (29a). From a typological point of view, such forms could arguably be interpreted in a range of different ways. They could represent a new subcategory of temporal relation (prior-and-subsequent-return motion). Or they could be categorized under one of the already established subcategories, such as concurrent motion (prior and subsequent return motion construed as a single "circular" motion) or prior motion (subsequent return motion merely implied). For the sake of the present study, I opted for the latter analysis, classifying all these forms under the subcategory of prior motion, which seems to be their primary meaning.

Table 9 gives the number (and percentage) of languages which have markers for prior motion, concurrent motion, (polysemous) prior-or-concurrent motion, subsequent motion, and (polysemous) concurrent-or-subsequent motion. Markers for prior motion are found in an overwhelming majority of the languages

16 In the context of my own descriptive work on similar forms in Cavineña (Guillaume 2008: 216–217, 230–232; 2009: 191–192, 196), I argued that what is encoded by the markers is the "stability of the targeted location", which operates as follows (Guillaume 2008: 216; emphasis mine):

> With the three suffixes *-ti*, *-nati* and *-na* [see (A63), (A67a), and (A64)] the motion leads to "unstable" (temporary) locations. This means that the S/A argument will perform the verb stem event at the location indicated by the suffix but will not stay there; the next event the S/A argument will be involved in should take place at some other location (OFTEN, ALTHOUGH NOT ALWAYS, THE ORIGINAL LOCATION). By contrast, with the two suffixes *-diru* and *-eti* [see (A65) and (A66)], the motion leads to "stable" (permanent) locations. This means that the S/A argument will remain at the location indicated by the suffix, and the next event(s) the S/A argument will be involved in (if any) will take place at that location.

Table 9: Number of languages with and without PRIOR, PRIOR-OR-CONCURRENT, CONCURRENT, CONCURRENT-OR-SUBSEQUENT AND SUBSEQUENT AM markers (subject-motion forms only).

	Number of languages (out of 43)	Percentage	Number of genetic groupings
With prior motion	38 (+1)	88 (+3)%	20
Without prior motion	4 (+1)	9 (+3)%	4
With concurrent motion	21 (+1)	49 (+2)%	10
Without concurrent motion	22 (–1)	51 (–2)%	13
With prior or concurrent motion	1	2%	1
Without prior or concurrent motion	42	98%	20
With subsequent motion	8	19%	5
Without subsequent motion	35	81%	17
With concurrent or subsequent motion	5	12%	2
Without concurrent or subsequent motion	38	88%	21

(88–91%, i. e., 38 to 39 languages out of 43) and families of the survey, which amount to 20; only one family does not have a language with that type of AM marker (Arawan, represented by Kulina, which only has a concurrent AM marker).[17]

Concurrent AM markers are also quite numerous, although in a smaller proportion than those with prior AM markers (49–51%, i. e., 21 to 22 languages out of 43). The contrast with prior AM markers is increased when one considers their genetic distribution, which shows that the number of families with concurrent AM markers (ten families) is half as high as that of families with prior AM markers (20 families). If we count the polysemous forms which can mark either prior or concurrent motion, the figures are not modified, since these are absent in all but one language of the survey, Cavineña (Takanan).

As for subsequent markers, they are found in a much smaller proportion of the languages (19%, i. e., eight languages out of 43) and families (five families: Arawak, Bora-Witoto, Takanan, Yagua, and Zaparoan). If we add the five languages which have concurrent-or-subsequent motion polysemous forms, the proportion of languages with subsequent markers increases slightly (30%, i. e., 13 languages out of 43), but still remains far below the proportion of languages with prior or concurrent markers. And in terms of language families, these five languages only add one family (Panoan). Finally, it is worth noting that the inventories of subsequent or

17 Note, however, that the survey only includes one language of this family (which contains a total of six languages) (See Section 4.1).

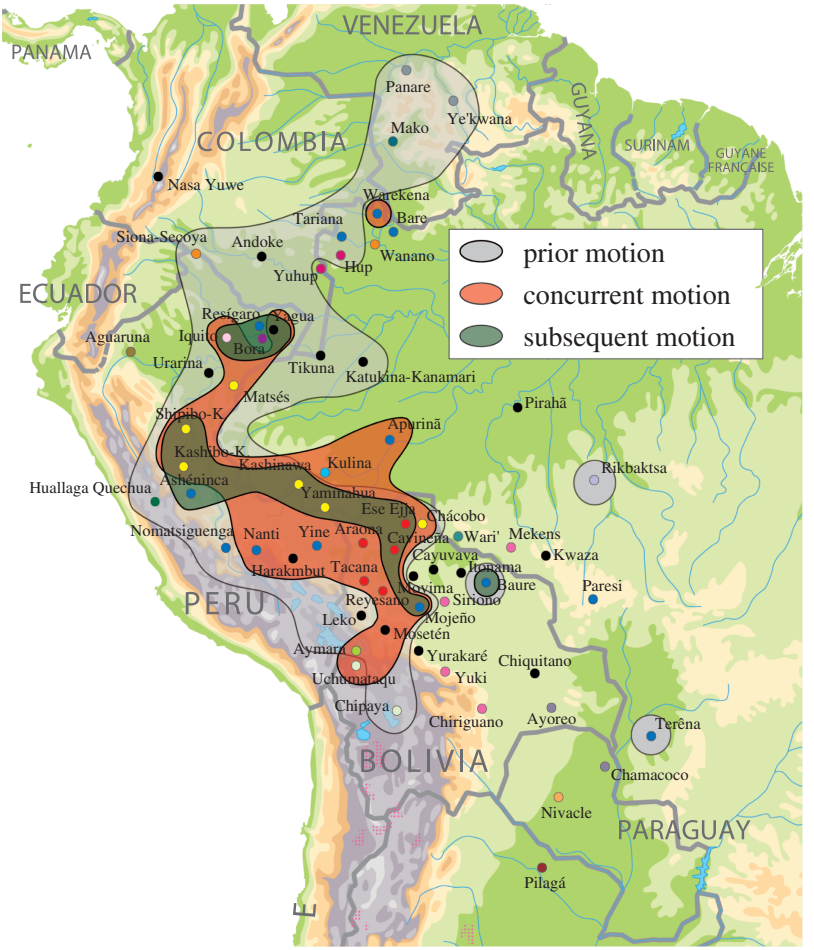
concurrent-or-subsequent markers in individual languages are very reduced, never exceeding two markers, unlike what is found with inventories of prior or concurrent motion markers, where one commonly finds systems with three or four markers (up to seven concurrent markers in Tacana).

These figures suggest that, within the category of subject AM markers, the different subcategories of prior motion, concurrent motion, and subsequent motion have different degrees of markedness, with prior motion at one end (least marked), subsequent motion at the other end (most marked), and concurrent motion in the middle. As such, the data on AM in South American languages that are presented in this survey confirms the implicational scale PRIOR MOTION > CONCURRENT MOTION > SUBSEQUENT MOTION proposed by Levinson & Wilkins (2006: 534) that was introduced in (7). The scale predicts that if a language has a marker for subsequent motion, it also has a marker for prior and/or concurrent motion, and if it has a marker for concurrent motion, it also has a marker for prior motion. In the data, the prediction is exceptionless when it concerns the distribution of subsequent markers with respect to that of prior and/or concurrent markers: all the languages with a subsequent marker also have a prior and/or concurrent marker. However, the prediction is not exceptionless with respect to the distribution of concurrent markers as compared to that of prior markers. There are four counterexamples – Kulina, Warekena, Apurinã, and Uchumataqu – which have concurrent AM markers but no prior AM markers. Nevertheless, at 10% (or four out of 43 languages), the number of such counterexamples remains small enough to consider the proposed scale a robust statistical tendency.

The geographical distribution of the three temporal relations, represented in Map 5, reveals another core-periphery pattern. The distribution of languages with prior motion markers basically matches that of languages with AM markers (Map 2) since prior motion markers are found in almost all languages with AM systems. Concurrent motion markers tend to cluster in the languages located in the center of the area investigated, in the lowlands of Peru, northern Bolivia, and adjacent western Brazil. As for subsequent motion markers, they appear to be concentrated in the middle of the zone occupied by concurrent markers.

6.5 Temporal relation (object ASSOCIATED MOTION forms)

This section investigates the distribution of the three subcomponents of the temporal relation parameter for the seven languages with object AM forms. As indicated above, we find dedicated object AM markers for each of the subcomponents of prior, concurrent, and subsequent motion. Examples of dedicated object AM markers for concurrent motion can be seen in (23a,b) from Nivacle.



Map 5: Geographical distribution of languages with AM markers for prior motion, concurrent motion and subsequent motion.

Examples of dedicated object AM markers for prior motion and subsequent motion are given from Tacana in (30a,b). (See also (23c) for another example of a dedicated object AM marker for subsequent motion in Nivacle.)

(30) Tacana (Takanan)

a. Motion of object argument, prior motion

*Miwa-**tsu**-ta-iti-a* *mesa* *kupari.*

feed-COME(O)-3.A-PFV-PST 3SG.GEN compadre

'He$_i$ fed his$_i$ compadre$_j$ after he$_j$ arrived.' (own fieldnotes) (A78)

b. Motion of object argument; subsequent motion
*Miwa-**use**-ta-iti-a* *mesa* *kupari.*
feed-GO(O)-3.A-PFV-PST 3SG.GEN compadre
'He$_i$ fed his$_i$ compadre$_j$ before he$_j$ left.' (own fieldnotes) (A79)

We also find examples of polysemous AM markers which appear to express both prior-or-concurrent meanings, as with those of Cavineña in (22). No forms were found expressing other logically possible relations (e. g., concurrent-or-subsequent, prior-or-subsequent).

The numbers of forms per subcategory in each of the languages are given in Table 10. With such a limited amount of data on object AM forms and on languages that have them, it is obviously not possible to draw robust conclusions. Nevertheless, we see tendencies that seem to confirm the predictions that were formulated for subject AM forms and that are therefore worth further investigation in the future.

Table 10: Numbers of languages with and without PRIOR, PRIOR-OR-CONCURRENT, CONCURRENT and SUBSEQUENT AM markers (O-motion forms only).

Family	Language	O motion				Total
		prior	prior or concurrent	concurrent	subsequent	
Arawak	Nomatsiguenga		1			1
	Asháninca		1			1
Bora-Witoto	Bora		(+1)			(+1)
Mataguayan	Nivacle			2	1	3
Takanan	Cavineña		2			2
	Ese Ejja	1			(+1)	1 (+1)
	Tacana	1			1	2
3 (+1) families	6 (7) languages	2	3 (+1)	1	2 (+1)	6 (+1) languages

First, the parameter of temporal relation is relevant for object AM forms since we find distinct markers, within the same language or across different languages, expressing specifically each of its three subcomponents of prior, concurrent, and subsequent motion. Notice, however, that we find four (possibly five) polysemous markers which can express either prior or concurrent motion. This is a surprising fact, considering that such prior-or-concurrent forms were almost absent from subject AM markers (Section 6.4). This could suggest that the parameter of temporal relation is not as important for object AM forms as it is for subject AM forms.

Second, although no obvious differences in terms of markedness emerge between the different subcomponents (in terms of relative frequency), their distribution in the different languages appears not to be random. Rather it seems to abide by (or at least not disconfirm) the same implicational scale (PRIOR MOTION > CONCURRENT MOTION > SUBSEQUENT MOTION) as set up above for subject AM forms. In particular, as predicted by the lower portion of the scale, the two or three languages which have a subsequent marker (Nivacle, Tacana, and Ese Ejja) also have a prior marker (Tacana and Ese Ejja) or a concurrent marker (Nivacle). As for the higher portion of the scale, one can note that there is only one exception (Nivacle) to the implicational scale prediction that if a language has a marker for concurrent motion, it also has a marker for prior motion. In all the other languages with markers for concurrent motion the same markers are polysemous and can express prior motion as well (Nomatsiguenga, Ashéninca, Bora, and Cavineña).

7 Areal perspective

In Section 2.3 I mentioned the claim made by Australianist linguists that the category of AM has diffused extensively among the central Australian Aboriginal languages and Central Australian Aboriginal English. In this last section, I provide evidence that the same phenomenon occurred in some places in the South American areas surveyed in this study and therefore played an important part in shaping the actual spread of AM, in particular of complex AM systems. In doing so, I first summarize and further comment on the observations made above about the geographical distribution of AM systems in the South American regions investigated (Section 7.1), and then I look at the distribution of AM systems in languages of specific genetic groupings, in particular those of the Arawak family, which has the highest number of languages represented in the survey and is the geographically most widespread family of the sample (Section 7.2).

7.1 Geographic distribution of ASSOCIATED MOTION in South America

In the preceding sections, I first showed that languages with and without AM systems, whatever their genetic affiliation, distribute according to two distinct areas of contiguous language locations (Map 2). This is in itself a good indication that AM was probably diffused and that it is unlikely that some or most of the actual markers of AM in the individual languages can be reconstructed to the proto-languages of the corresponding linguistic families. In the case of the

Takanan family, for example, I was only able to reconstruct four AM markers, despite the fact that these languages have the most elaborate AM systems found in the region (with up to 13 markers); as for the AM markers that are not reconstructible to proto-Takanan, I showed that several of them are transparently related to independent lexical verbs of motion which have become AM affixes in more recent times (Guillaume 2013a).

I then observed a number of areal correlations in the distribution of different types of AM systems in terms of their level of complexity (Map 3) showing a core-periphery pattern, with very complex systems (six or more markers) broadly located in the middle of complex systems (three to five markers), themselves located in the middle of simple systems (one or two markers). Since this particular distribution concerns many different genetic groupings, it is another argument in favor of diffusion effects.

Turning to the distribution of the different subcategories of AM markers, I looked at the distribution of subject and object AM markers and then the distribution of different temporal relations of the subject AM markers. With regards to object AM markers (Map 4), we observed that they do not show any pattern that would suggest a non-genetic areal correlation, since they occur in a very limited number of languages which are found in separate locations, either alone (Bora, Nivacle) or in groups which only involve languages of the same genetic affiliation (Arawak, Takanan). However, with regard to the temporal relation of subject AM markers (prior, concurrent, subsequent motion) (Map 5), the situation is quite different. Here we saw that the geographic distribution of the markers for the three different temporal relations do form clusters of contiguous languages which are genetically either related or not related, a pattern that suggests diffusion.

7.2 Geographic distribution of ASSOCIATED MOTION in Arawak and other language families

There is another strong argument in favor of the claim for linguistic diffusion, which lies in the distribution of AM systems in the languages of the Arawak family, represented by 13 members in this study. Unlike most other language families with AM systems in the survey, Arawak languages are found in many different locations in the area investigated (as in many other places in South America–with 40 languages, the Arawak family is the biggest genetic grouping in South America; Aikhenvald 1999: 65). Very interestingly, the distribution of AM systems across the Arawak languages included in this study reflects in many ways the diffusion scenario that has been evoked above.

First, the Arawak languages that have no AM systems (i. e., Bare and Paresi) are located at the margins of the area and in the vicinity of languages from other families which do not have AM either (Map 2). Second, the Arawak languages with simple AM systems (Apurinã, Tariana, Warekena, Terêna) are also found at the margins of the area (with one exception, Yine, which is encircled by complex or very complex AM systems; see Map 3). By contrast, all those with complex systems (Ashéninca, Baure, Mojeño, Nanti, Nomatsiguenga, Resígaro) are without exception located inside the core region of complex and very complex systems. Finally, the occurrence of subject markers for prior motion, concurrent motion, and subsequent motion in Arawak languages is also correlated with the presence of such types of markers in nearby languages (Map 5). As an illustration we can take the case of subsequent markers, which are the most marked of the three temporal relations, found in only four Arawak languages (Ashéninca, Baure, Mojeño, Resígaro). Remarkably, as can be seen in Map 5, all but one language (Baure) have (near) immediate neighbors which also have subsequent markers: Kashibo-Kakataibo (Panoan) for Ashéninca, Cavineña (Takanan) for Mojeño, and Bora (Bora-Witoto), Iquito (Zaparoan), and Yagua (isolate) for Resígaro. Baure has no immediate non-Arawak neighbor with subsequent AM markers, but it remains geographically quite close to Cavineña and it is a near neighbor of Mojeño.

I have not studied AM in the Arawak languages outside of the area concerned by the survey, such as the languages located further to the north (Caribbean branch, Palikur, Wapishana, etc.) or further to the east (Pareci-Xingu area). Yet I anticipate that these might not show much difference from the Arawak languages with simple (or no) systems of AM located at the margins of the surveyed area. In her survey of Arawak languages, for example, Aikhenvald (1999: 94) notes that "directionals are rarer in North Arawak languages [than in Arawak languages from the south or from Peru]".

Besides Arawak, this study deals with three other large language families with a wide extension in South America: Carib, Macro-Jê, and Tupi. For the purpose of evaluating diffusion effects, these families are less interesting than Arawak because in the area surveyed they are only represented by very few members, which are all located in the periphery. In these languages, the types of AM systems found conform to the distribution patterns observed above: they have either simple AM systems (Carib Panare and Ye'kwana, Macro-Jê Rikbaktsa) or no AM systems (Tupi Mekens, Chiriguano, Guarayu, Siriono, and Yuki). As with Arawak languages, I have not expanded my investigations into languages of these families located further away from the regions of the survey. But *a priori*, it is likely that these would not differ significantly from those surveyed in this study. From what is known about these languages in the general literature, affixes relating to motion (or space in general) are not a

known property of their verbal morphology, whatever their geographical locations in South America (for typological surveys of these language families, see Derbyshire (1999) for Carib; Rodrigues (1999b) for Macro-Jê; and Rodrigues (1999a) and Jensen (1999) for Tupi/Tupi-Guarani). In the specific case of Carib languages, this is confirmed by a survey by Cáceres (2010) on motion affixes (in the precise sense of AM) in 11 languages from all the regions where Carib languages are found.[18] She shows that these languages all have, if any, simple systems of one or two AM markers, which are realized by way of essentially cognate forms.

8 Summary and conclusions

This article has presented a survey of AM affixes in South American languages. The first part provided a background introduction (Section 2) and a working definition (Section 3) of this newly recognized crosslinguistic concept. The term "associated motion" was originally used in the description of the verbal morphology of some Australian languages and subsequently taken up in the description of functionally similar morphemes in languages from other parts of the world, in particular from Amazonia in South America. As defined in this article, an AM marker is a grammatical morpheme associated with the verb that has among its possible functions the coding of translational motion. AM systems are primarily structured according to two parameters: grammatical function of the moving entity (subject vs. non-subject) and temporal relation between the motion component and the verb event (prior, concurrent, subsequent).

The second part presented the languages of the survey, the methodology, and the research questions (Section 4). The study investigated 66 languages which belong to 36 distinct genetic groupings. All of the languages are located in (or near) the western and southwestern fringes of the Amazonian basin. This area displays the highest level of genetic diversity in South America. It is also where languages with verbal affixes expressing "spatial notions" are the most frequent and, crucially, where AM systems were first identified. The methodology was to search for AM affixes in these languages and identify their semantic make-up through the consultation of grammatical descriptions, sometimes with the help of a language specialist. The research

18 The languages are Apalaí, Carib, Ikpeng (Arara), Karihona, Kuikuro, Macushi, Panare, Tiriyó, Wai wai, Ye'kwana, and Yukpa.

questions concerned the number of AM markers per system, the semantic content of the AM, and the typological and areal correlations between the level of complexity, the types of AM systems, and their genetic and geographic distribution.

The third part provided the results (Sections 5, 6, and 7). In the area investigated, AM is a widespread phenomenon, instantiated in 44 languages, which represent 67% of the total languages surveyed, and 23 linguistic families, which represent 64% of the total number of genetic groupings. AM is also typically manifested by complex systems of 3 or more markers, found in 21 languages, representing 50% of the languages with AM systems.

A number of typological correlations were identified between the number of AM markers per system and the types of semantic values found in the systems. These correlations, which are found across a wide range of languages and language families, suggest the following two implicational scales:

(i) MOTION OF THE SUBJECT (COMPLEX INVENTORY) > MOTION OF THE OBJECT;
(ii) PRIOR MOTION > CONCURRENT MOTION > SUBSEQUENT MOTION.

The second scale is in agreement with the implicational scale proposed by Levinson & Wilkins (2006: 534).

A number of (non-genetic) correlations were also noticed, which suggest that the above generalizations are not independent of areal effects. Languages with AM systems tend to be neighbors to each other, forming a macro-area that stretches along the northern, western, and southern fringes of the Amazon basin. Within that macro-area, the languages with complex systems form a number of continuous subareas in northern Bolivia and eastern and northern Peru and represent distinct language families. Additionally, the more marked types of AM morphemes, such as those for concurrent and subsequent motion of the subject, also form clusters of contiguous languages, which may or may not be genetically related. Finally, looking at the languages of a single language family, Arawak, spread across many different locations in the area investigated, one finds that their types of AM systems (level of complexity and semantic make-up) are correlated with their geographical location.

These results add strong support to the claim, initially made in the Australian context (Section 2.3), that AM is a HIGHLY DIFFUSIBLE CATEGORY. The category of AM, especially when manifested by complex systems, should therefore be taken seriously into account in studies on language contact and linguistic areas in South America and elsewhere.

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Abbreviations: 1/2/3 = 1st/2nd/3rd person; A = subject/agent of transitive verb; ABL = ablative; ABS = absolutive; ACC = accusative; ALL = allative; AM = associated motion; AND2 = andative nonsingular, singular transitive; ANTVENT = anticipated ventive; ARR1 = arrive 1; ASS = assertive; AUX = auxiliary; COMPL = completive; CONT = continuous; D3 = desinence cross-referencing subjects of class 3; D-AM = associated motion marked by deictic directionals; DAT = dative; DEI1 = deictic 1 (upriver or in the proximity of the speaker); DEI2 = deictic 2 (downriver or away from the speaker); DET = determiner/demonstrative; DIR = directional; DIST = distal; DO = do the verb event; DPST = distant past tense; DU = dual; DUR = durative; EC = extended current tense; EMPH = emphatic; ERG = ergative; EV = direct evidential; F = feminine;

FAR = action realized in a distinct location (translocative); FOC = focus; GEN = genitive; IMMPST = immediate past; IMP = imperative; INAN = inanimate; INC = inclusive; INCP = inceptive; INTENT = intention; INTR = intransitive; IPFV = imperfective; IRR = irrealis; IT = itive; ITERMVMT = iterative movement; LOC = locative; M = masculine; MOT = motion; NARR = narrative; NIP = non-imperfective aspect; NOM = nominative; NOMCL31 = nominal class no. 31; NOMZ = nominalizer; NPF = noun prefix; O = object/patient of transitive verb; OBJ = object; P = patient/object of transitive verb; PC = past completive; PERM = permanently; PFV = perfective; PL = plural; POSS = possessor; POT = potential; PP2 = completive participle; PRES = present; PROG = progressive; PROX2 = proximate 2 tense (yesterday or future); PSSA = previous event, same-subject, A-orientation; PST = past; PURP = purposive; RED = reduplicative; REM = remote; REMPST = remote past; REP = reportative; REVMOT = reversive motion; S = single argument of intransitive verb; SG = singular; SUBJ = subject; VENT = ventive; Z = object or dative-marked core argument; → = acting on. Abbreviations in the Appendix are shown as in their respective sources.

Appendix: Documentation of ASSOCIATED MOTION forms

This appendix gives an exhaustive list of the data on AM affixes that were identified in the languages of the survey together with a fair amount of additional information. It is intended to provide the empirical basis on which this study has been conducted.

The languages are sorted by language families. Both languages and language families are listed alphabetically (see also Table 2). For each language the following information is provided (whenever relevant and/or available): the name of the particular dialect; the source of the data; the form(s) of the affixes; the prose description of the affixes that is given in the source; an illustrative clause (or predicate or multiclausal sentence) which is segmented and glossed and provided with a free translation (in which the elements that refer to the verb event and the separate component of motion are underlined); the categorization labels that are used in the sources; additional notes (within square brackets).

The prose descriptions, glosses, free translations, and categorization labels are reproduced in full accordance with the original, in terms of language (English, French, Portuguese, or Spanish), spelling conventions, and formalisms. Translation in English of French, Portuguese, or Spanish is only provided for the free translation, which matters most for the recognition of the morphemes as AM markers (see methodology in Section 4.2).

The affixes are classified according to their types in terms of the two parameters of grammatical function of the moving argument (subject vs. object; see Section 6.3) and – within the subject and object motion categories – temporal relation (prior motion, prior-or-concurrent motion, concurrent motion, concurrent-or-subsequent motion, or subsequent motion; see Sections 6.4 and 6.5). The number of morphemes which I suspect express AM (because of their description in the sources or some other reasons; see Section 4.2) but for which no (or no good) example is available are preceded by the adverb *possibly*.

A1 Andoke (isolate)

Motion of subject: prior; four markers:
na- "indique que le procès exprimé par la base est lié à un déplacement centripète (vers la déixis, vers le locuteur)" (Landaburu 1979: 188), (A1a)
ni- "indique que le procès est lié à un déplacement centrifuge (loin de la déixis, loin du locuteur)" (Landaburu 1979: 188), (A1b)
si- "En règle générale *si-* est associé à l'idée de bas" (Landaburu 1979: 197), (A1c)
yi- "En règle générale *yi-* est associé à l'idée de haut" (Landaburu 1979: 197), (A1d)

(A1) a. ***na****-báʌ-ʌ* *baya*
depl.1-travailler-d3 Ass.31
'il est venu travailler' (Landaburu 1979: 198; segmentation and glosses mine) ['He came to work.']
b. ***ni****-báʌ-ʌ* *baya*
depl.2-travailler-d3 Ass.31
'il est parti travailler' (Landaburu 1979: 199; segmentation and glosses mine) ['He went to work.']
c. ***si-****báʌ-ʌ* *baya*
dir-travailler-d3 Ass.31
'il travaille en aval (d'ici)' (Landaburu 1979: 198; segmentation and glosses mine) ['He works downriver (from here).']
d. ***yi-****báʌ-ʌ* *baya*
dir-travailler-d3 Ass.31
'il travaille en amont (d'ici)' (Landaburu 1979: 198; segmentation and glosses mine) ['He works upriver (from here).']

[The description and translation of *si-* and *yi-* suggest that these two suffixes might not express dynamic motion but static location; see discussion in Section 4.2.]

Author's categorization: ***na-, ni-*** "détermination verbale de déplacement" (Landaburu 1979: 187); ***si-, yi-*** "détermination verbale de direction" (Landaburu 1979: 197)

A2 Arawak family

A2.1 Apurinã

Motion of subject: concurrent; two markers:
-poko "distributive event/directional marking: [it] indicate[s] that the participants of an event move in one direction or another [...] in which case it works as a sort of directional marker, or to mark an event as consisting of distributed action, i. e., as discontinuous or intermittent actions" (Facundes 2000: 309), (A2a)
-ãpo "random marker: [it] is used to mark events that take place randomly or sort of aimlessly. [It] can be conceived as a 'anti-directional', since it specifies that an action or process occurs without any systematic direction (or goal, for that matter)." (Facundes 2000: 315), (A2b)

(A2) a. *u-nuta-**poko**-ta-i*
3M-search-DISTR-VBLZ-2O
'He is searching around for you.' (Facundes 2000: 310)
b. *hãkiti akatsa-**ãpo**-ta-ru*
jaguar bite-RANDOM-VBLZ-3M.O
'The jaguar ran around biting it/him aimlessly.' (Facundes 2000: 315)

Author's categorization: "bound verbal formatives" (Facundes 2000: 308)

A2.2 Asheninca: Pichis dialect

Motion of subject: prior; 1 marker: ***-apa*** "motion toward a certain point or the subject's arrival" (Payne 1982: 325); "the subject of that verb has arrived or is arriving at a certain specific location as the action occurs" (Payne 1982: 326)

(A3) *a-makorya-**apa**-ak-e*
1PL.S-rest-DIR-PERV-REAL
'we rested when we had arrived' (Payne 1982: 326; glossed with help of Elena Mihas)

Motion of subject: concurrent-or-subsequent; 1 marker: ***-an*** "motion away, leaving or response" (Payne 1982: 325); "departure or continuing away from a certain location. This is the sense when the suffix occurs with verbs which express actions which take place on or before a journey (like cook, see, meet, guide, etc.)" (Payne 1982: 328)

(A4) *no-saik-**an**-ak-e*
1SG.S-sit-DIR-PERV-REAL
'I sat before leaving, before continuing on' (Payne 1982: 328; glossed with help of Elena Mihas)

Motion of the object: prior-or-concurrent; 1 marker: ***-aw*** "the subject is receiving the object" (Payne 1982: 325); "receiving an object or person. [...] occurs only with transitive verbs" (Payne 1982: 329); "always moves the object toward the subject" (Payne 1982: 330) [no clear indication whether the motion is prior or concurrent: both readings seem possible in the available examples]

(A5) *h-ow-aw-**ak**-a-ri*
3M.A-eat-DIR-PERV-REAL-3M.O
'he ate what was given to him' (Payne 1982: 329; glossed with help of Elena Mihas)

Author's categorization: "directional suffixes"
[The same examples would translate differently in the Perene dialect (Elena Mihas, personal communication).]

A2.3 Baure

Motion of subject: prior; 2 markers:
-pa "intentional suffix", "future relative to another event", "generally the suffix [...] implies a movement away from the hearer" (Danielsen 2007: 264), (A6a)
-pik "directional, motion towards, means that the subject is moving towards the speaker or another place of reference while doing something" (Danielsen 2007: 265), (A6b)

(A6) a. *ri=sapiko-**pa**=ro*
3SGf=poke-GO=3SGm
'she went to poke him' (Danielsen 2007: 75)
b. *ni=karow-a-**pik** ne' pi=sori-ye*
1SG=study-LK-COME here 2SG=village-LOC
'I came to study here in your village.' (Danielsen 2007: 265)

Motion of subject: subsequent; 1 marker: ***-wana*** "departitive, something was done before departing or while departing" (Danielsen 2007: 257)

(A7) *ri=sapiko-**wana**=ro*
3SGf=poke-DEP=3SGm
'she poked him and left' (Danielsen 2007: 75)

Author's categorization: ***-pa*** "aspectual/intentional suffix/future relative to another event" (Danielsen 2007: 264); ***-pik*** "aspectual/directional suffix" (Danielsen 2007: 265); ***-wana*** "aspectual/departitive suffix" (Danielsen 2007: 257)

A2.4 Mojeño: Trinitario dialect

Motion of subject: prior; 1 marker: ***-pono***[19] "go do and come back/come do and go back, interrupted motion, reversive" [The description and translation of this suffix suggest that it might express both prior and subsequent return motion; see discussion in Section 6.4; Rose (2015) considers it to represent a distinct temporal relation which she names "reversive interrupted motion".]

(A8) *p-ni-**jn**-a*
2SG-eat-REV.MOT-IRR
'Come and eat (and go away again)!' (Rose 2015: 119)

Motion of subject: concurrent; 2 markers:
-poripo "do while going/coming, concurrent motion, perfective aspect" (A9a)
-pori'i "do all along, concurrent motion, imperfective aspect" (A9b)

(A9) a. *vi-okpoj-ko-**pripo** eto sipa*
1PL-meet-ACT-PFV.MOT NH rhea
'While going we met a rhea (ostrich sp.).' (Rose 2015: 136)
b. *n-ni-k-**poo'i***
1SG-eat-ACT-IPFV.MOT
'I ate (as I was) coming.' (Rose 2015: 119)

19 In (A8) *-jn* is one of several possible allomorphs of *-pono*; *-pripo* in (A9a), *-poo'i* in (A9b), and *-num* in (A10) are allomorphs of *-poripo*, *-pori'i*, and *-numo*, repectively. For details, see Rose (2015: 135).

Motion of subject: subsequent; 1 marker: ***-numo*** "do before going/coming, subsequent motion" [rare, no spontaneous examples but several elicited (otherwise meaning: do an action before another)]

(A10) *p-ni-k-**num**-a*
2SG-eat-ACT-SUBS.MOT-IRR
'Eat before you go.' (Rose 2015: 119)

Author's categorization: all of them: "associated motion"

A2.5 Nanti

Motion of subject: prior; 4 markers:
-apah "adlative, upon arriving" (Michael 2008: 262), (A11a)
-aki "translocative perfective", "the action expressed by the verb is realized at a point distal to the deictic center" (Michael 2008: 259), (A11b)
-aa "translocative imperfective", "identical spatial meaning [as *-aki*]", "the two morphemes contrast only in their aspectual meanings [perfective vs. imperfective]" (Michael 2008: 259), (A11c) [The description and translation of *-aki* and *-aa* suggest that these two suffixes might not express dynamic motion but static location; however, Lev Michael (personal communication) confirmed to me that both suffixes actually have dynamic motion readings, despite the translations that he provided in the above examples; see discussion in Section 4.2.]
-ut "returnative", "indicates motion from some initial point to a distal point, and subsequently back to the initial point, without a significant lapse of time between the outbound trajectory to the distal point and the return trajectory back to the initial point" (Michael 2008: 258), (A11d) [The description and translation of this suffix suggest that it might express both prior and subsequent return motion; see discussion in Section 6.4.]

(A11) a. *no=neh-**apah**-Ø-i=ri*
1S=see-TEMP.ADL-IMPF-REAL.I=3mO
'I saw him upon arriving.' (Michael 2008: 362)
b. *no=kamoso-**aki**-i=ri*
1S=visit-TRNLOC.PERF-REAL.I=3mO
'I visited him over there.' (Michael 2008: 259)
c. *no=neh-**aa**-i=ri*
1S=see-TRNLOC.IMPF-REAL.I=3mO
'I saw him over there.' (Michael 2008: 259)

d. *i=p-**ut**-i=ri*
3mS=give-RET-REAL.I=3mO
'He gave it to him (going to him, giving it to him, then returning)' (Michael 2008: 258)

Motion of subject: concurrent; possibly 2 markers:
-apanaa "in passing" and ***-apanu*** "in passing (round-trip trajectory)" [No examples available for any of these two suffixes; they are said to be "extremely rare in Nanti – but [...] frequently used and productive in other Kampa languages, and in Matsigenka in particular. Used very infrequently, only with particular verb roots, and with particular individuals." (Michael 2008: 266). The description of *-apanu* suggests that this suffix might express both prior and subsequent return motion; see discussion in Section 6.4.]

Author's categorization: ***-apah*** "directional" (Michael 2008: 261); ***-aki, -aa, -ut*** "aspect, trajectal, and translocative" (Michael 2008: 255); ***-apanaa, -apanu*** [no categorization, listed under "rare morphemes"] (Michael 2008: 266)

A2.6 Nomatsiguenga

Motion of subject: prior; 3 markers:
-ap "allative", "the meaning is that the action is completed on the arrival of the subject" (Lawrence 2013: 88), (A12a)
-aj "regressive", "gives the meaning that the subject of the verb returned to the site of the action in order to perform the action another time" (Lawrence 2013: 96), (A12b)
-iN "translocative", "gives the meaning that the subject will physically go to another location in order to do something when they arrive – it also implies that they will return to their starting location later." (Lawrence 2013: 98), (A12c) [The description (although not the translation) of this suffix suggests that it might express both prior and subsequent return motion; see discussion in Section 6.4.]

(A12) a. *p=oga-og-**ap**-ima-ri=ni* *p-ikongiri...*
2sS=CAUS-drink-ALL-IRREAL.A-3mS=IPFV.ANIM 2sP-uncle
'Come and drink with your uncle... ' (Shaver & Shaver 1976: 13, cited and analyzed by Lawrence 2013: 88, who mistakenly attributes it to Shaver 1996: 13)

b. *po=p-aíg-**aj**-i=ni*
2sS=give-PL-REG-REAL.I=IPFV.ANIM
'You are returning to give (it) again.' (Lawrence 2013: 97)
c. *omagaro i=aág-**iN**-i kintori*
all 3mS=eat-TRNSLOC-REAL.I fish
'They all went to eat fish.' (Lawrence 2013: 98)

Motion of object: prior-or-concurrent; 1 marker: ***-ob*** "receptive", "used to indicate that the action is carried out as the object referent moves toward the subject referent" (Lawrence 2013: 89) [no clear indication whether the motion is prior or concurrent; both readings seem possible in the available examples]

(A13) *na=nij-**ob**-i-ri*
1sS=see-RCPV-REAL.I-3mO
'I saw him when he arrived.' (Lawrence 2013: 89)

Author's categorization: ***-an***, ***-ob*** "directional suffixes" (Lawrence 2013: 87); ***-aj***, ***-iN*** "aspect suffixes" (Lawrence 2013: 90)

A2.7 Resígaro

Motion of subject: prior; 3 markers:
-keé verbal directional suffix "to go to" (A14a)
-ní directional "go and..." [imperative only] (A14b)
-ʔkú directional "come and..." [imperative only] (A14c)

(A14) a. *no-khoni-**keé***
1-laugh-GO.TO.DO
'I go to laugh.' (Allin 1976: 133; segmentation and glosses mine)
b. *p-aʔmítee-**ní***
2-eat-GO.AND
'Go and eat!' (Allin 1976: 147; Wise 2005: 226)
c. *p-aʔmítee-**ʔkú***
2-eat-COME.AND
'Come and eat!' (Allin 1976: 146; segmentation and glosses mine)

Motion of subject: subsequent; 1 marker: ***-kí*** verbal directional suffix "to come from"

(A15) *no-ʔmite-**kí***
1-eat-COME.FROM
'I come from eating.' (Allin 1976: 134; Wise 2005: 227)

Author's categorization: ***-keé, -kí*** "directional [suffixes]" (Allin 1976: 133–136); ***-ní***, ***-ʔkú*** "directional imperative[s]" (Allin 1976: 145–149)

A2.8 Tariana

Motion of subject: prior; 2 markers:
-se "proximate imperative", "do (something) close to the speaker", "used if the addressee is commanded to come close to the speaker" (Aikhenvald 2003: 372), (A16a)
-kada "distal imperative", "away from the speaker" (Aikhenvald 2003: 373), (A16b)

(A16) a. *pi-ñha-**see***
2sg-eat-PROX.IMPV
'Come and eat!!!!' (Aikhenvald 2003: 372)
b. *ima-**kada*** *ihya amaku-pe-se*
2pl+sleep-DIST.IMP you hammock-PL-LOC
'You sleep (over there) in your hammocks.' (Aikhenvald 2003: 373, ex. 16.9), 'Go and sleep over there in your hammocks.' (Aikhenvald 2003: 652, ex. T3.9)

Author's categorization: "proximate & distal imperatives" (Aikhenvald 2003: 372–373)

A2.9 Terêna

Motion of subject: prior; 1 marker: ***-opon*** (with variants *-op*, *-po*, and *-pono*) "purposive", "indicates that the doer goes elsewhere with the purpose of performing the action named in the stem" (Ekdahl & Grimes 1964: 267)

(A17) *yutó-š-**opon**-o-a*
root-thematic-purposive-transitivizer-3O
'he went to write it' (Ekdahl & Grimes 1964: 267; glosses mine)

Author's categorization: part of a list of "miscellaneous inflectional categories" (Ekdahl & Grimes 1964: 266)

A2.10 Warekena

Motion of subject: concurrent; 1 marker: ***-dekana*** "going back and forth"

(A18) *yu-patata-hã neyawa yu-kulua-**dekana** kalibe*
3sgf-work-PAUSAL woman 3sgf-drink-BACK.AND.FORTH manioc.liquid
'The woman is working, she is drinking manioc liquid going back and forth.' (Aikhenvald 1998: 346)

Author's categorization: "aspectual suffix" (Aikhenvald 1998: 336)

A2.11 Yine

Motion of subject: prior; 1 marker: ***-pa*** "elative, movement from one location, state, or temporal setting to another, movement away from the deictic centre", "motion suffix" (Hanson 2010: 250)

(A19) *Ø-hnɨnro hima kʃana hiçha-**pa**-tka*
3-wife.of QUOT herb search.for-ELV-PFV
'His wife went to search for herbs.' (Hanson 2010: 227)

Author's categorization: no general categorization (sorted under "Suffix zone 1: motion and mood"; Hanson 2010: 226–239)

A3 Arawan family

A3.1 Kulina

Motion of subject: concurrent; 1 marker: ***-^{Ø}zanapo*** "along the way"

(A20) *hori-hori Ø-na-**^{Ø}zanapo**-mana-hari*
play.*hohori*-REDUP 3-AUX-ALONG.THE.WAY-NSG-NAR.m
'They were playing the hohori (earthen wind instrument) along the way.' (Dienst 2014: 124)

Author's categorization: "Aktionsart" suffix (Dienst 2014: 123–124)

A4 Aymaran

A4.1 Aymara

Motion of subject: prior; 1 marker, possibly 2:
-ni "ventive (hither)", "combines the apparently complementary functions of 'motion towards the speaker' and 'action in some other place'" (Adelaar & Muysken 2004: 280); "cis/translocativo", "tiene doble valor, dependiendo de la naturaleza del verbo, pues con verbos de movimiento señala una orientación hacia el hablante (=valor cislocativo) y con otro indica que el proceso se realiza fuera del lugar que ocupa aquél (=valor translocativo)" (Cerrón-Palomino & Carvajal 2009: 199) [The translation in (A21b) suggests that *-ni* might express both prior and subsequent return motion; see discussion in Section 6.4.]

(A21) a. *iki-**ni***-
dormir-TRANSLOCATIVO-
'ir a dormir en otro lugar'(Cerrón-Palomino & Carvajal 2009: 199; glosses mine) ['go to sleep in a different place']

b. *awki-ha-n(a) ut(a)-pa-n(a) manq'a-**n(i)**-t^{h}a*
father-1POSS-GEN house-3POSS-LOC eat-HITH-1SUBJ
'I went and had dinner at my father's house'/'I am just coming back from having dinner at my father's house.' (Adelaar & Muysken 2004: 280)

-qa "para abajo" (England 2001: 101) [There is only one example available with AM meaning; the other more productive meanings do not express AM, but path or non-spatial meanings. The translation of this suffix suggests that it might not express dynamic motion but static location; see discussion in Section 4.2.]

(A22) *iki-**qa**-ña*
dormir-PARA.ABAJO-NOMINALIZADOR
'dormir en otra parte' (England 2001: 101; glosses mine) ['sleep in a different place']

Motion of subject: concurrent; 2 markers:
-wa(ya) "indicates a separation, or action performed in passing" (Adelaar & Muysken 2004: 280), (A23a)
-ni-wa(ya) "the combination of *-ni-* and *-waya-* can express circular motion" (Adelaar & Muysken 2004: 280), (A23b)

(A23) a. *iskwila-r(u) sar(a)-ka-sa-χ(a) ihli:ša-ru-w(a) manta-**way(a)**-ta*
school-ALL go-ANTICOMPL-SUB-TOP church-ALL-AFFIRM.EVID enter-DIST-1SUBJ
'On my way to school I entered the church for a moment.' (Adelaar & Muysken 2004: 280)

b. *uma-mp(i) wayu-**ni-waya**:-ta*
water-COORD carry.with.handle-HITH-DIST-2SUBJ.FUT
'You will also bring water on your way back.' (Adelaar & Muysken 2004: 280)

Author's categorization: ***-qa*** "sufijo verbal derivacional" (England 2001: 97), "directional suffix" (Adelaar & Muysken 2004: 278); ***-ni, -wa(ya), -ni-wa(ya)*** [no categorization]

A5 Bora-Witoto

A5.1 Bora

Motion of subject: prior; 2 markers:
-t^{h}ɛ (-te) "go to do" (A24a) and ***-βa (va)*** "come to do" (A24b)

(A24) a. *má^{x}ʧ^{h}ò-**thé**-:pɛ̀*
eat-go.do-SgM
'He went to eat.' (Thiesen & Weber 2012: 119)

b. *mà^{x}ʧ^{h}ó-**ßà**-:pɛ̀*
eat-come.do-SgM
'He comes to eat.' (Thiesen & Weber 2012: 119)

Motion of subject: subsequent; 2 markers:
-ìŋɯ (-iñu) "go after doing" (A25a) and ***-hɛ (-je)*** "come after doing" (A25b)

(A25) a. *ò-k^{h}ɛ̀ mé:nú-**ɨ́ɲù**-:pɛ̀*
1-objAn hit-do.go-SgM
'He hit me and then left.' (Thiesen & Weber 2012: 119)

b. *ó k^{h}úkpà-**hé**-ʔì* O=*tɪ́*^{G}*ʔ h^{j}á-ɾì*
I sleep-do.come-t your house-sou
'I return from sleeping in your house.' (Thiesen & Weber 2012: 119)

Motion of object: prior-or-concurrent; possibly 1 marker: ***-p^{h}ɛ^{x}ts^{h}o (-pejtso)*** "do upon encountering" [Motion of O suggested by the description and gloss, the

free translation, and the fact that all examples available are with transitive verbs. However, in all these examples, the A argument is possibly moving as well, which could imply that the suffix could as well mark the motion of A or the motion of both A and O.]

(A26) *ò-k^{h}ɛ̀ mɛ́:nú-**p^{h}ɛ́^{x}ts^{h}ò-**ópè*
1-objAn hit-meet-SgM
'Upon encountering me, he hit me.' (Thiesen & Weber 2012: 117)

Author's categorization: all of them: "affixal 'verbs'/bound complement-taking verbs" (Thiesen & Weber 2012: 116)

A6 Carib

A6.1 Panare

Motion of subject: prior; 2 markers:
-ta' "adds the notion of displacement in space (translational movement) to the imperative sense of the predication" (Payne & Payne 2013: 368), (A27a)
-ñe "displacement in space" (Payne & Payne 2013: 226), (A27b)

(A27) a. *A-mokayin-**tya'** yu-tyipi-ya.*
NEU-work-IMP.MVMT 1SG-garden-LOC
'Go work in my garden.' (Payne & Payne 2013: 368)
b. *At-achima-**ñe** këj kamonton.*
DTR-dance-DISPL AN.PROX 3PL
'They are going over there to dance.' (Payne & Payne 2013: 225)

Author's categorization: ***-ta'*** "plain imperative" (Payne & Payne 2013: 364), "displaced (movement) imperative" (Payne & Payne 2013: 368); ***-ñe*** "non-past aspect construction" (Payne & Payne 2013: 211–257), "non-past perfective suffix" (Payne & Payne 2013: 212), "displacement" (Payne & Payne 2013: 226–227)

A6.2 Ye'kwana

Motion of subject: prior; 1 marker: ***-ta***(SG)/***-tan***(PL) "suffixe allatif", "implique que la commande exprimée doit être exécutée ailleurs qu'à l'endroit où se déroule l'acte de parole, il s'agit donc d'un marqueur de mouvement centrifuge",

"apparaît uniquement avec les trois marqueurs de modalité impérative non négatifs" (Cáceres 2011: 234)

(A28) *möötö ei-tö-kö-'de nña n-ene-**ta**-'ñojo*
là-bas COP-COLL-IMP-FUT 1+3 3/3-voir-ALL-PERMIS
'Restez là, nous on va aller voir.' (Cáceres 2011: 234) ['Stay here, we will go and see.']

Author's categorization: "morphèmes spécifiques aux modes impératifs" (Cáceres 2011: 234–236)

A7 Harakmbut (isolate): Amarakaeri dialect

Motion of subject: prior; 1 marker: ***-ato'*** "acción al llegar a un sitio" (Tripp 1995: 221)

(A29) *Hua-tay-te o'-hued-**ato'***
NMLZ-sleep-LOC 3SG(>3).IND-lie.down-MOVE&DO
'Al llegar él se echó en la cama.' (Tripp 1995: 36; glosses from An van Linden, personal communication) ['He lay down on the bed when arriving.']

Motion of subject: concurrent; 1 marker: ***-ankadyak*** "acciones que suceden durante un viaje" (Tripp 1995: 221)

(A30) *o'-wek-**ankadnyak***
3SG(>3).IND-shoot.with.arrow-MOVE.WHILE.DOING.SEVERAL.TIMES
'While he is walking (away from/towards the speaker), he is shooting with bow and arrow.' (An van Linden, personal communication)

Author's categorization: "sufijos de aspecto" (Tripp 1995: 220–221)

A8 Katukina-Kanamari (isolate): Katukina and Kanamari dialects

Motion of subject: prior; 2 markers:
-na "centrífugo, assinala o distanciamento em relação ao falante" (dos Anjos 2011: 180), (A31a), (A32a)
-dik*/*-ji "centrípeto, indica a aproximação em relação ao falante" (dos Anjos 2011: 180), (A32)

[The descriptions and translations of *-na* and *-dik/-ji* in (A31) suggest that in the Katukina dialect these two suffixes might not express dynamic motion but static location; by contrast, the translations of these suffixes in (A32) indicate that in the Kanamari dialect they can express dynamic motion; see discussion in Section 4.2.]

(A31) Katukina dialect
a. *waik-buk-**na** Kamo*
canto-fazer-CTRF Kamo
'Kamo cantou para lá.' (dos Anjos 2011: 180) ['Kamo sang over there.']
b. *tyuku-**dik** tyopuna*
morrer-CTRP peixe-boi
'O peixe-boi morreu para cá.' (dos Anjos 2011: 150) ['The bull-fish died over here.']

(A32) Kanamari dialect
a. *watahi 'o-**na** adu wa*
water drink-away 1sg FUT2
'I'll go and drink water.' (Stefan Dienst, personal communication)
b. *natsi hu-**ji** itso!*
maize get-hither IMP
'Come and get maize!' (Stefan Dienst, personal communication)

Author's categorization: "sufixos dêiticos 'centrífugo' y 'centrípeto'" (dos Anjos 2011: 180)

A9 Leko (isolate)

Motion of subject: prior; 2 markers:
-ri/-di "inceptive" (van de Kerke 2002: 246), "incoativo, implica que hay algún movimiento antes de una ocurrencia" (van de Kerke 2009: 309)
-har/-handa "again, to come to, motion prior to action" (van de Kerke 2002: 247), "implica movimiento hacia el hablante o en cuentos la ubicación de 'venir a'" (van de Kerke 2009: 310)

(A33) *do-woy-**di**-a sok'och men-cha-no-te k'o-**har**-ai*
3OB-call-INC-IMP food cool-DUR-NOM-MAIN.TENSE eat-COME-IMP
'Go and call him, the food is getting cold, he must come to eat (it).' (van de Kerke 2002: 247)

Author's categorization: "motion modifiers" (van de Kerke 2002: 244–248)

A10 Macro-Jê

A10.1 Rikbaktsa

Motion of subject: prior; 1 marker: ***n-/ɽ-*** "marque également [outre sa valeur directionnelle et deictique] la valeur de 'mouvement concomitant' (associated motions [*sic*]), c'est-à-dire qu'elle marque l'association d'un évènement exprimé par le verbe avec un mouvement, le mouvement étant antérieur à l'évènement dans le temps" (Silva 2011: 128)

(A34) *tʃĩ-k-**na**-moɾo*
2SUJ-PAS-DIR-se.baigner
'tu es allé te baigner' (Silva 2011: 119) ['You went to bathe.']

Author's categorization: "préfixe de direction" (Silva 2011: 126–131)

A11 Mataguayan

A11.1 Nivacle

Motion of object: concurrent motion; 2 markers:
-ch'e/-qu'e "simultaneous motion away from the S/A" "itive", (A35a)
-julh "simultaneous motion towards the S/A, associated actor visible", (A35b)

(A35) a. *c'a-'van-**ch'e***
1A(>2P)-see-AM.IT
'I see/saw you leaving.' (Fabre 2013: 11)
b. *c'a-'van-**julh***
1A(>2P)-see-AM.VENT
'I see/saw you coming.' (Fabre 2013: 11)

Motion of object: subsequent motion; 1 marker: ***-c'oya*** "anticipated ventive" "temporarily postponed or expected motion towards the S/A, associated actor invisible at the time of event"

(A36) *j-ovalh-**c'oya***
1A(>3P)-watch-AM.ANT.VENT
'I watch(ed), waiting for him/her/they [sic] to come.' (Fabre 2013: 11)

Author's categorization: "associated motion" suffixes (Fabre 2013)

A12 Mosetén-Chimane (isolate): Mosetén dialect

Motion of subject: prior; 2 markers:
-ki "movement away from the deictic center to perform an action" (Sakel 2004: 273), (A37a)
-ti/-sh "come (to the deictic center) to do an action" (Sakel 2004: 276), (A37b) [The two forms *-ti* and *-sh* are allomorphs. The factors that condition their distribution are the other markers that appear in the verb (cross-reference, derivations, aspect).]

(A37) a. *Ayo'* *käw-ë-**k**-te-in*.
president see-VI-DK-3M.O-P
'They went (there) to see the president.' (Sakel 2004: 274)
b. *Iits Santi'* *jeb-e-**sh**-aj-te* *tyärä*.
DE.M Santiago eat-VI-DS-again-3M.O maize
'This Santiago has come back to eat maize.' (Sakel 2004: 279)

Motion of subject: concurrent; 4 markers:
-min-jo and ***-min-chhi*** "with verbs, [*-min-* 'interrupted movement marker'] expresses the interruption of a movement in order to do an action. It appears in relation to the associated motion markers *-jo-* and *-chhi-*, which express that an action is carried out while moving towards or away from the deictic center." (Sakel 2004: 283), (A38a, b)
-j-kho "movement away from the deictic center in relation to an action done 'on the way'" (Sakel 2004: 280), (A38c)
-j-chhi "to perform on the way here" (Sakel 2004: 272), "to move toward the deictic center in connection with carrying out an action" (Sakel 2004: 281), (A38d)
[Sakel (2004) analyses *-min*, *-j*, *-jo/-kho*, and *-chhi* as separate/independent morphemes.]

(A38) a. *Saeks-e-**min-jo**-'*.
eat-VI-ITR-DJ-F.S
'She went (there), ate and went away (after eating).' (Sakel 2004: 284)
b. *Khösh-**mïn-chhï***.
sleep-VI.ITR-DC.M.S
'He came here (interrupting his movement here to sleep).' (Sakel 2004: 284)
c. *"tëtëi" ye-**j-kho**-ja'*.
ON say-DIR-DJ-1PI.S
'..."tetei", we will say (moving on).' (Sakel 2004: 280)

d. *jiij-ke-**j-chhi**-ban* *kinakdye'-in*.
roar-VK-DIR-DC-again.M.S jaguar-P
'... he <u>came</u> back <u>making noise</u>, <u>roaring</u>, the jaguar.' (Sakel 2004: 282)

Author's categorization: "associated motion" markers (Sakel 2004: 272–284)

A13 Nadahup (Makú)

A13.1 Hup

Motion of subject: prior; 1 marker: ***-ʔay*** "venitive suffix", "indicates that the activity involves a change of spatial location", "in most uses [it] indicates a full circuit – the actor has gone somewhere, performed the activity, and returned" (Epps 2008: 558–559) [The description and translation of this suffix suggest that it might express both prior and subsequent return motion; see discussion in Section 6.4.]

(A39) *j'ɔm-**ʔáy**-áy* *ʔə̃h-ə̃́h*
bathe-VENT-DYNM 1sg-DECL
'I've <u>gone</u> to <u>bathe</u> (and returned).' (Epps 2008: 559)

Author's categorization: "aspectual marker" (Epps 2008: 558–561), "directional-type formative" (Epps 2008: 561)

A14 Panoan

A14.1 Chácobo

Motion of subject: prior; possibly 1 marker: ***-ta*** "to go and" (Prost 1967: 336) [no illustrative examples available; see discussion in Section 4.2]

Motion of subject: concurrent; 2 markers:
-kana/-bona[20] "motion away" (Prost 1967: 335), (A40a)
-hona/-bɨna "motion returning" (Prost 1967: 335), (A40b)

20 The forms separated by a slash '/' in the Panoan languages are allomorphs conditioned by the transitivity of the verb stem and (in some languages) the number (singular vs. plural) of the intransitive subject referent.

(A40) a. *quëquë-**cana**-quë*
cantar-ir(itr)-compl
'se fue cantando' (Zingg 1998: 10; segmentation and glosses mine) ['He went singing.']

b. *pi-**bëna**-qui*
comer-venir(tr)-incompl
'él viene, comiendo algo' (Zingg 1998: 10; segmentation and glosses mine) ['He comes, eating something.']

[The graphemes *c*, *h*, and *i̇* in Prost 1967 respectively correspond to *k*, *j*, and *ë* in Zingg 1998.]

Author's categorization: ***-ta*** "motion suffix" (Prost 1967: 336)*;* ***-kana/-bona***, ***-hona/-bi̇na*** "direction suffixes" (Prost 1967: 335)

A14.2 Kashibo-Kakataibo: Lower Aguaytía dialect

Motion of subject: prior; 1 marker: ***-tan*** "go to do", "imperative", "presupposes that the speaker and the addressee are in the same location and that the addressee will go to another place in order to accomplish the command" (Zariquiey Biondi 2011: 498–499)

(A41) *ka 'ux-**tan***
NAR sleep-go.to.IMP
'Go to sleep!' (Zariquiey Biondi 2011: 358)

Motion of subject: concurrent; 6 markers:
-kwain/-buin "passing by" (A42a)
-bu "continuously in one direction" (A42b)
-akët ~ -(a)rakët/-at ~ -(a)rat "curved trajectory" (A42c)
-bëkin "iterative in different places" (A42d)
-ru "upward" (A42e)
-but/-pat "downward" (A42f)

(A42) a. *... ain tita ñuxan-rá ain maë*
3sg.GEN mother old(fem)-DIM.ABS 3sg.GEN burned.garden.ABS
*matsun-uku-**buin**-ia=bi...*
sweep-ITER-passing.TRA-S/A>O(SE)=same
'(... he beat) her very old mother who was passing by sweeping her burned garden.' (Zariquiey Biondi 2011: 415–416)

b. *auto=nu kana ʻux-**bu**-a-n*
car=LOC NAR.1sg sleep-CONTI(one.direction)-PERF-1/2p
'I was sleeping continuously (going) in the car.' (Zariquiey Biondi 2011: 400)

c. *a=n ka pi-**arat**-i-a*
3sg=A NAR.3p eat-curve-IMPF-non.prox
'(S)he eats following a curved trajectory.' (Zariquiey Biondi 2011: 407)

d. *... achushi uni Isa Kuna ka-kë a=n ain manë xo=n*
one man Isa.Kuna say-NOM 3sg=ERG 3sg.GEN metal stick=INS
*cháxki-**bëkin**-kin...*
poke-ITER.different.places-S/A>A(SE)
'... a man called Isa Kunabu (named all the rivers and creeks) poking his metal stick here and there.' (Zariquiey Biondi 2011: 399)

e. *... a uni=n baka kamabi xëxá ʻimainun rara=n*
that man=ERG river all current and ancestor=GEN
*papa=kama anë-**ru**-akë-x-a.*
big=PLU name-up-REM.PAST-3p-non.prox
'... coming from the downside to the upside, a man (called Isa Kunabu) named all the rivers and creeks, even the big ones, (poking his metal stick here and there).' (Zariquiey Biondi 2011: 399)

f. *... kaisa ukairi a tënka-**pat**-akë-x-ín...*
NAR.REP.3p ladder that.O cut.making.noise-down(TRA)-REM.PAST-3p-prox
'... he cut the ladder making noises, coming down... ' (Zariquiey Biondi 2011: 398)

Motion of subject: concurrent-or-subsequent; 2 markers:
-kian/-bian "going" (A43) and ***-kwatsin/-bëtsin*** "coming" (A44)

(A43) a. Concurrent motion
*ʻa-**bian**-tëkën-i-a*
do-going(TRAN)-again-IMPF-non.prox
'(S)he does it while going, again.' (Zariquiey Biondi 2011: 188)

b. Subsequent motion
*... ain të-xakat maxax=nu rakan-**bian**-akë-x-ín*
3sg.GEN neck-skin.ABS stone=LOC lay.down-going(TRA)-REM.PAST-3p-prox
'... (they) laid down its neck skin on a stone and thus went.' (Zariquiey Biondi 2011: 412)

(A44) a. Concurrent motion
tanu *kana* *bits-**bëtsin**-a-n*
palm.worm.ABS NAR.1sg pick.up-coming(TRA)-PAST1-1/2p
'I came gathering palms [*sic*] worms.' (Zariquiey Biondi 2011: 415)
b. Subsequent motion
*bukun-**bëtsin**-i* *kana* *u-ru-pun-i-n*
gather-coming(TRAN)-S/A>S(SE) NAR.1sg come-up-PAST(hours)-IMPF-1/2p
'After gathering (it), I came up the river.' (Zariquiey Biondi 2011: 414)

Author's categorization: ***-tan*** "register distinction in the imperative mood/space and imperatives" (Zariquiey Biondi 2011: 492); other AM markers: "directional suffixes" (Zariquiey Biondi 2011: 395–417)

A14.3 Kashinawa: Peruvian Kashinawa dialect[21]

Motion of subject: prior; 1 marker: ***-tan*** "ir para hacer la acción y regresar" [The description (although not the translation) of this suffix suggests that it might express both prior and subsequent return motion; see discussion in Section 6.4.]

(A45) *Javada* *a-**tan**-ven*.
algo matar-ir.y.regresar-imp
'Ve y mata algo.' (Montag 1981: 605) ['Go and kill something!']

Motion of subject: concurrent; 1 marker: ***-kaoan/-baon*** "yendo, viniendo en círculos o alrededor de algo; pasando, yendo por todas partes habitualmente"

(A46) *Yuinaka* *bena-**baun**-kin* *nu-n*
animales buscando-yendo.por.todas.partes-suj.identico nosotros-nom
tsaka-mis-ki.
matar-habituativo-asertivo
'Siempre matamos animales cuando los buscamos yendo por todas partes.' (Montag 1981: 586) ['We always kill animals when we search for them everywhere.']

Motion of subject: concurrent-or-subsequent; 2 markers:
-kain/-bain "yendo, yendo hacia fuera" (A47) and ***-kidan/-bidan*** "viniendo" (A48). [The difference of use between the forms *-bain* and *-kain* in

21 Source: Montag (1981); segmentations and glossing realized with help of Eliane Camargo.

A47 and *-bidan* and *-kidan* in A48 is conditioned by the transitivity of the verb stem; see Footnote 20].

(A47) a. Concurrent motion
*Yava ichapatun baxava bimi pi-**bain**-kan-xu-ki.*
huangana muchas machinga fruto comer-yendo-pl-concluido-asertivo
'Muchas huanganas comían frutos de machinga (árbol) cuando estaban yendo.' (Montag 1981: 574) ['Many peccaries were eating machinga fruits as they were going.']

b. Subsequent motion
Piaya ka-i-dan, e-n nupe e-n
cazar ir-pres-focalizador yo-pos cuchillo yo-nom
*tsiusuku-**kain**-xu-ki.*
insertarse.algo.en.cinturón-yendo-concluido-asertivo
'Al ir a cazar, inserté un cuchillo en mi cinturón.' (Montag 1981: 381) ['When going hunting, I latched a knife to my belt upon taking off.']

(A48) a. Concurrent motion
*Ava e-n tsaka-**bidan**-xu-ki.*
sachavaca yo-nom cazar-viniendo-concluido-asertivo
'Cacé una sachavaca viniendo (a casa) hoy.' (Montag 1981: 575) ['I killed a tapir while coming home today.']

b. Subsequent motion
*Kaman nexe-a peke-**kidan**-xu-ki.*
Perro amarrado-completo soltar-viniendo-concluido-asertivo
'El perro que estaba amarrado desató la soga al venir (a casa) hoy.' (Montag 1981: 575) ['The dog that was tied up unleashed itself to get home today.']
[The difference of use between the forms *-bain* and *-kain* in A47 and *-bidan* and *-kidan* in A48 is conditioned by the transitivity of the verb stem; see Footnote 20]

Author's categorization: "sufijos de dirección" (Montag 1981: 574–577)

A14.4 Matses

Motion of subject: prior; 4 markers:
-tan "go (and come back)", "indicates that the subject moves away from the speech act location to a location where the activity will be carried out" (Fleck

2003: 367), (A49a) [The description (although not the translation) of this suffix suggests that it might express both prior and subsequent return motion; see discussion in Section 6.4.]
-uan "come (and go back)", "essentially the converse of *-tan*: the speaker must move toward the deictic center to perform the action" (Fleck 2003: 368), (A49b) [The description (although not the translation) of this suffix suggests that it might express both prior and subsequent return motion; see discussion in Section 6.4.]
-yo "come/go imperative (archaic)", "implies locomotion either toward or away from the subject" (Fleck 2003: 369), (A49c)
-tuid "do verb upon arrival/stop to do verb", "stop and perform an action, or to perform an action upon arrival at one's destination" (Fleck 2003: 372), (A49d)

(A49) a. *nes-**tan**-nu*
bathe-go-Intent
'I'm going to go bathe.' (Fleck 2003: 367)
b. *nëid* *bed-**uan**-Ø*
this.one get-come-Imper
'Come get/fetch this.' (Fleck 2003: 368)
c. *bed-**yo***
get-come/go:Imper
'Come get this!' (could also mean 'Go get it!') (Fleck 2003: 369)
d. *ad-shun* *Ø* *Ø* *tsadun-**tuid**-quid*
do.thus-after:S/A>A 3Erg 3Abs put.down.vertically-upon.arrival-Hab
'After doing that, they [Matses] set it [the tanac leaf bundle] down upon arrival.' (Fleck 2003: 245)

Motion of subject: concurrent; 5 markers:
-cuidan/-bidan "go, stop, do verb, and continue going", "similar to *-tan*, except they further specify that after the action is performed, the subject continues to move away from the deictic center" (Fleck 2003: 370), (A50a)
-cuëtsen/-bëtsen "come, stop, do verb, and continue coming", "converses of *-cuidan* and *-bidan*, and are similar to *-uan* in that they specify a path where the subject is moving toward the deictic center, but in this case, the subject stops to perform an action before reaching the deictic center and then continues on toward the deictic center" (Fleck 2003: 370), (A50b)
-nid/-ban "do verb while going", "the subject did not stop, or [...] the subject stopped continuously while [...] going (deictic center is origin)" (Fleck 2003: 371), (A50c)
-cho/-bë "do verb while coming", "the subject did not stop, or [...] the subject stopped continuously while coming (deictic center is endpoint)" (Fleck 2003: 371), (A50d)
-cuen/-ben "[do verb] while passing (by/though)" (A50e)

(A50) a. *isun-**cuidan**-o-sh*
urinate-go.do.go-Past-3
'He stopped to urinate while going.' (Fleck 2003: 370)
b. *onque-**cuëtsen**-o-sh*
talk-come.do.come-Past-3
'He stopped (once) to talk on his way here.' (Fleck 2003: 371)
c. *pe-**ban**-o-mbi*
eat-while.going:Tr-Past-1A
'I ate as I went.' (Fleck 2003: 837)
d. *onque-**cho**-o-sh*
talk-while.coming:Intr-Past-3
'He talked the whole way here.'/'He kept stopping to talk on his way here.' (Fleck 2003: 371)
e. *pe-quio-**ben**-o-sh*
eat-Emph-while.passing-Past-3
'He ate a lot as he passed by.' (Fleck 2003: 381)

Author's categorization: "directional suffixes" (Fleck 2003: 364–376)

A14.5 Shipibo-Konibo

Motion of subject: prior; 1 marker: ***-tan*** "go do sth. (and return)" [The description (although not the translation) of this suffix suggests that it might express both prior and subsequent return motion; see discussion in Section 6.4.]

(A51) *E-a* *isin-ai-tian-ra* *nokon* *wetsa-n* *e-a*
1-ABS be.sick-S-DS-EV POS1 same.sex.sibling-ERG 1-ABS
*tee-**tan**-xon-ke*.
work-go.do.and.return-*xon*[22]-CMPL
'Since I was sick, my brother went to work for me.' (Valenzuela 2003: 690)

Motion of subject: concurrent; 4 markers, possibly 5:
-be "coming" (A52a)
-bo "going" (A52b)
-ina(t) "going up (the river)" (A52c)
-pake(t) "going down (the river)" (A52d)

22 Applicative marker, which here "indicate[s] that the subject performs an action in place of the object to which *-xon* refers" (Valenzuela 2003: 690).

-kawan "going" [no good illustrative example available; see discussion in Section 4.2]

(A52) a. … *tsaka tsaka-**be**-i jo-i*.
drive drive-coming-SSSS come-SSSS
'(… he saw a little person…) who approached him driving (the fish)…'
(Valenzuela 2003: 272–273)
b. *No-n oin-patan-**bo**-a-bi*…
1p-ERG see-at.intervals-going-PP2-EM
'We see continuously (when visiting the villages)…' (Valenzuela 2003: 509)
c. *Sani-ra bewa-**inat**-ai*.
Sani:ABS-EV sing-going.up-INC
'Sani is going up the river singing.' (Valenzuela 2003: 269)
d. … *jato yoi yoi-**paket**-i*.
3p:ABS tell tell-going.down-SSSS
'… they went down the river inviting the people (to the *Ani Xeati ceremony*).' (Valenzuela 2003: 593)

Motion of subject: concurrent-or-subsequent; 2 markers:
-kain/-bain "andative" (A53) and***-kiran/-beiran*** "venitive" (A54)

(A53) Concurrent-or-subsequent
*E-n-ra bake-bo kena-**bain**-ke*.
1-ERG-EV child-PL:ABS call-AND2-CMPL
'I called the children while going.'/ 'I called the children and left.'
(Valenzuela 2003: 159)

(A54) a. Concurrent motion
… *jatíribi-bo ransa ransa-**beiran**-i*…
some-PL:ABS dance dance-VEN2-SSSS
'… some came dancing and dancing… ' (Valenzuela 2003: 337)
b. Subsequent motion
*Jato-ronki keshan-**beiran**-kan-ke*.
3p:ABS-HSY inform-VEN2-PL-CMPL
'S/he said that they told them and came.' (Valenzuela 2003: 275)

Author's categorization: ***-bo***, ***-be***, ***-pake(t)***, ***-ina(t)*** "deictive-directive markers: core verb serialization" (Valenzuela 2003: 267); ***-tan*** "adverb-type marker" (Valenzuela 2003: 279); ***-kawan***, ***-kain/-bain, -kiran/-beiran*** [no categorization, listed under "andatives and venitives"] (Valenzuela 2003: 273)

A14.6 Yaminahua

Motion of subject: prior; 3 markers:
-ta(n) "distancia[,] indica que el sujeto hace la acción en otra parte y después vuelve al punto de referencia" (Faust & Loos 2002: 134), (A55a) [The description and translation of this suffix suggest that it might express both prior and subsequent return motion; see discussion in Section 6.4.]
-fa(n) "venir e ir[,] indica que el sujeto viene a hacer la acción e irá otra vez" (Faust & Loos 2002: 134), (A55b) [The description (although not the translation) of this suffix suggests that it might express both prior and subsequent return motion; see discussion in Section 6.4.]
-toshi ~ -tisho "al llegar[,] indica que el sujeto hace la acción al llegar al punto de referencia" (Faust & Loos 2002: 134), (A55c)

(A55) a. *Mã pi-**tan**-a.*
ya comer-dist-comp
'Ya fue a comer (y ha vuelto).' (Faust & Loos 2002: 134) ['He went to eat (and returned).']
b. *Mẽxotaima faka aya-**fan**-i.*
siempre agua tomar-venir.ir-prog
'Siempre viene a tomar agua.' (Faust & Loos 2002: 134) ['He's always coming to drink water.']
c. *Mẽ o-i, fa-**tisho**-ita.*
ya-yo venir-prog decir-llegar-ayer
'Ya he venido, dijo al llegar.' (Faust & Loos 2002: 134) ['I have arrived, he said when he arrived.']

Motion of subject: concurrent; 3 markers, possibly 4:
-fo "mientras va[,] indica que el sujeto hace la acción mientras va hacia el punto de referencia" (Faust & Loos 2002: 132), (A56a)
-fe "mientras viene[,] indica que el sujeto hace la acción mientras viene hacia el punto de referencia" (Faust & Loos 2002: 132), (A56b)
-ini "arriba, subiendo"[,] indica una dirección hacia arriba, subiendo del punto de referencia (Faust & Loos 2002: 133), (A56c)
-pake "bajando[,] tiene el sentido de hacer la acción al ir bajando en el espacio desde el punto de referencia" (Faust & Loos 2002: 132), [no good illustrative example available of AM use; the idea that *-pake* might express AM meanings comes from the fact that AM meanings can be expressed by its antonym suffix *-ini*]

(A56) a. *Fakẽ yoa pi-**fo**-i-ka-i.*
niño yuca comer-yendo-a-ir-prog
'El niño come yuca mientras va. (El niño va comiendo yuca.)' (Faust & Loos 2002: 132) ['The child is eating yucca while going.']
b. *Oa fake-tii fanãi-**fe**-kan-i.*
eso niño-varios cantar-al.venir-pl-prog
'Todos los niños vienen cantando.' (Faust & Loos 2002: 132) ['All the children are coming singing.']
c. *Oia-**ini**-i-ka-i.*
llorar-arriba-a-ir-prog
'Sube llorando.' (Faust & Loos 2002: 133) ['He is going up crying.']

Motion of subject: concurrent-or-subsequent; 2 markers:
-kain/-fain "yendo, partiendo, acción del verbo occurre cuando el sujeto se aparta del punto de referencia" (Faust & Loos 2002: 130)

(A57) a. Concurrent motion
*Fakẽ yoa pi-**fain**-i-ka-i.*
niño-(erg) yuca comer-yendo-a-ir-prog
'El niño comió yuca (yendo del punto de referencia).' (Faust & Loos 2002: 131) ['The child ate yucca (while going away from reference point).']
b. Subsequent motion
*Iko-kĩ-**fain**-a.*
abrazar-acomp-yendo-comp
'Se abrazó con el otro al salir.' (Faust & Loos 2002: 106) ['S/he kissed the other one while leaving.']

-kera(n)/-fera(n) "viniendo, acción del verbo se lleva a cabo mientras el sujeto viene hacia el punto de referencia" (Faust & Loos 2002: 131) [no example available of subsequent motion meaning; the idea that *-kera(n)/-fera(n)* might express subsequent motion meanings comes from the fact that this meaning is possible for its antonym suffix *-kain/-fain*]

(A58) Concurrent motion
*Mẽ na-**kera**-keran-a.*
ya-yo morir-vin-incept-comp
'Casi me morí mientras venía.' (Faust & Loos 2002: 129) ['I almost died while coming.']

Author's categorization: "sufijos adverbiales de movimiento" (Faust & Loos 2002: 130–136)

A15 Quechuan

A15.1 Huallaga Quechua

Motion of subject: prior; 1 marker: ***-mu*** "con verbos que no expresan movimiento significa aproximadamente 'acción realizada en un lugar distante' [o] puede significar 'ir y hacer (implicando el regreso del sujeto)'" (Weber 1996: 197) [The description and translation of this suffix suggest that it might express both prior and subsequent return motion; see discussion in Section 6.4.]

(A59) *Tanta-ta ranti-rI-**mu**-y.*
pan-OBJ comprar-PUNTUAL-LEJ-2IMP
'Anda compra pan (y regresa pronto).' (Weber 1996: 199) ['Go buy bread (and return soon).']

Author's categorization: "sufijo pretransicional" (Weber 1996: 179–242)

A16 Saliban

A16.1 Mako

Motion of subject: prior; 1 marker: ***-ah*** "denotes that there is a movement associated with the action (usually away from the speaker giving the command)" (Rosés Labrada 2015: 321) [apparently only used in imperative mood]

(A60) *p^{h}uts-**ah**-i*
clean-MOT-IMP
'go clean it!' (Rosés Labrada 2015: 321)

Author's categorization: no categorization, listed under "derivational affixes" (Rosés Labrada 2015: 320–323)

A17 Takanan

A17.1 Araona

Motion of subject: prior; 4 markers, possibly 5:
-ti "indica que el evento implica el ir al otro lugar y el volver. Indica que el evento ocurre en otro lugar que el del hablante" (Pitman 1980: 47), (A61a) [The description (although not the translation) of this suffix suggests that it might

express both prior and subsequent return motion; see discussion in Section 6.4. Furthermore, the translation (although not the description) of this suffix suggests that it might not express dynamic motion but static location; see discussion in Section 4.2.]

-jajo "a otro lugar o después de llegar a otro lugar" (Pitman 1980: 48), (A61b)

-shao "aquí de otro lugar para un corto tiempo" (Pitman 1980: 48), (A61c)

-jao "aquí de otro lugar (para pocas horas)" (Pitman 1980: 49), (A61d) [Pitman (1980: 48–49) lists *-jao* as a morpheme distinct from *-shao*. However, there is only one illustrative example available of *-jao*, which does not clearly show any meaning differences with *-shao* (such as a distinction between 'short time' vs. 'a few hours'). Considering that the two suffixes are formally very similar, it is not impossible that they correspond to two variants of the same morpheme. The translation of this suffix suggests that it might not express dynamic motion but static location; see discussion in Section 4.2.]

-iña (or ***-jainya***?) "en o después de llegar al lugar del hablante o participante principal" (Pitman 1980: 48), (A61e)

(A61) a. *Ema pa-hui-**ti**.*
yo inten-orinar-otro.lugar
'Voy a orinar allá.' (Pitman 1980: 47; segmentation mine) ['I will urinate there.']

b. *Chacobo-cana do-odi neti-cha ba-**jajo**-a*
Chácobo-pl allá-solo parar-pl ver-otro.lugar-pasado
'Al llegar ví que los Chácobos estaban exclusivamente allá parados.' (Pitman 1980: 118; segmentation mine) ['When I arrived I saw that the Chácobos were all standing there.']

c. *Becata yama pia tí-**shao**-bo-ani.*
más.tarde yo flecha afirm.dar-venir.y.volver-signif-fut
'Más tarde vendré otra vez y le daré la flecha.' (Pitman 1980: 93; segmentation mine) ['Later today I will come and give him the arrow.']

d. *Pisa-**jao**-tapo tso que-dia?*
cazar-aquí-3[a]-pron.relativo enfq interrog-comer
'¿Comió lo que cazó aquí?' (Pitman 1980: 49; segmentation mine) ['Did he eat what he hunted here?']

e. *Yama cuahuea pa-ti-**ja-iña**-ibo.*
yo yuca inten-dar-duradero-llegar-signif
'Le daré yuca cuando llegue.' (Pitman 1980: 48; segmentation mine) ['I will give him yucca when I arrive.']

Motion of subject: concurrent; 2 markers, possibly 3:
-shana "a un punto en el camino o cerca del camino" (Pitman 1980: 48), (A62a)
e-…-yoa "progresivo (caminando-dirección indefinido)" (Pitman 1980: 33–34), (A62b)
e-…-bo "progresivo (dirección afuera, corta distancia)" (Pitman 1980: 34), (A62c)
[no fully clear example available of AM use; the idea that *e-…-bo* might express concurrent AM meanings comes from the fact that this meaning is expressed by its cognate affixes in Reyesano (A75) and Tacana (A77e)]

(A62) a. *Ano-a cuama cuahuea ti-**shana**-ta-iqui*.
abuela-nom nosotros yuca dar-a.medio.camino-3[a]-pasado
'A medio camino (al pasar) la abuela nos dió la yuca.' (Pitman 1980: 48; segmentation mine) ['Half way on the path, while passing, the grandmother gave us yucca.']
b. *Huada jana dí-ta-**yoa***.
él comida afirm.comer-3[a]-prog
'Está comiendo al caminar.' (Pitman 1980: 34; segmentation mine) ['He is eating while walking around.']
c. *Huabocana apamo cuáde-ta-**bo***.
chancho-pl mucho afirm.perseguir-3[a]-prog.afuera
'A los chanchos están persiguiendo.' (Pitman 1980: 34; segmentation mine) ['They are chasing the wild pigs.']

[In front of multisyllabic consonant-initial verb stems, the prefix *e-* of the circumfixes *e-…-yoa* and *e-…-bo* is regularly deleted and replaced by a stress on the first syllable of the stem; see Pitman 1980: 32]

Author's categorization: ***-ti, -jajo***, ***-shao, -jao***, ***-iña***, ***-shana*** "aspectos temporales o locativos" (Pitman 1980: 46–49); ***e-…-yoa, e-…-bo*** "sufijos de tiempo y aspecto" (Pitman 1980: 33–34)

A17.2 Cavineña

Motion of subject: prior; 1 marker: ***-ti*** "go temporarily"

(A63) *Tudya=ekwana ba-**ti**-kware takure*.
then=1PL see-GO.TEMP-REM.PAST chicken
'So we went to see the chicken (in the back of the bus).' (Guillaume 2008: 212)

Motion of subject: prior-or-concurrent; 3 markers:
-na "come temporarily" (A64), ***-diru*** "go permanently" (A65), and ***-eti*** "come permanently" (A66)

(A64) a. Prior motion
*Ija iye-**na**-kwe!*
porcupine kill-COME.TEMP-IMP.SG
'Come kill the porcupine!' (Guillaume 2008: 220)

b. Concurrent motion
*Tuwa=tukwe ekana ka-shana-ti-**na**-kware etawiki=kwana.*
there=CONT.EVID 3PL REF-leave-REF-COME.TEMP-REM.PAST bed=PL
'There, they left their beddings, on their way (coming to our village fiesta).' (Guillaume 2008: 220; translation slightly modified)

(A65) a. Prior motion
*Tuja e-wane=ke=tu ina-mere-**diru**-kware.*
3SG.GEN 3-wife=3=3SG grab-CAUS-GO.PERM-REM.PAST
'Arriving (home,) he handed it (the fish) (lit. made it grab) to his wife.' (Guillaume 2008: 293; translation slightly modified)

b. Concurrent motion
*Mercede=ekwana ba-**diru**-kware.*
Las.Mercedes=1PL see-GO.PERM-REM.PAST
'On our way (flying) back (home), we saw the community of Las Mercedes.' (Guillaume 2008: 221; translation slightly modified)

(A66) a. Prior motion
*... bakwa=ja kapana armario dyake iya-**eti**-kware...*
viper=GEN bell cupboard ON put-COME.PERM-REM.PAST
'... arriving (home,) he put the rattle (lit. bell) of the rattlesnake (lit. viper) on top of a cupboard.' (Guillaume 2008: 222)

b. Concurrent motion
*Tudya ekatse tawi-**eti**-kware e-diji patyapatya.*
then 3DL sleep-COME.PERM-REM.PAST NPF-path IN.MIDDLE.OF
'They slept midway along the path.' (Guillaume 2008: 222)

Motion of subject: concurrent; 5 markers:
-nati "go temporarily" (A67a)
-aje "go distributively" (A67b)
-be "come temporarily, distributively" (A67c)
-etibe "come permanently, distributively" (A67d)

-(ne)ni "randomly" (A67e)

(A67) a. *Jukuri turu ebari=tuke=Ø mee=ju ba-**nati**-kware.*
coati big.male big=3SG=1SG saltlick=LOC see-GO.TEMP-REM.PAST
'I saw a big male coati in a saltlick on my way (to visit my family).' (Guillaume 2008: 218; translation slightly modified)

b. *Tume=pa juje kiketere-**aje**-kware.*
then=REP duck scream-DO.IPFV.GOING-REM.PAST
'The duck went screaming.' (Guillaume 2013a: 133)

c. *Jadya=tu amena ara-**be**-kware era.*
thus=3SG BM eat-COME.TEMP.DISTR-REM.PAST 1SG.ERG
'So I was coming and eating (motacú nuts) along the way.' (Guillaume 2008: 229)

d. *E-diji=ju ike jara-**etibe**-chine.*
NPF-path=LOC 1SG lie-COME.PERM.DISTR-REC.PAST
'I lay on the path many times on my way back home (because I had a strong fever).' (Guillaume 2008: 230)

e. *Tuna=tsewe ike ju-**neni**-kware.*
3PL=ASSOC 1SG be-RANDOM-REM.PAST
'(At that time,) I would wander around (lit. be in various places) with them (my uncle and his family).' (Guillaume 2016)

Motion of subject: subsequent; 1 marker: ***-kena*** "leave"

(A68) *Refresco=kamadya=tuke=Ø iji-**kena**-wa.*
soft.drink=RESTR=3SG=1SG drink-LEAVE-PERF
'I just had a soft-drink before I left (my house).' (Guillaume 2008: 223; translation slightly modified)

Motion of object: prior-or-concurrent; 2 markers:
-dadi "go (O)" (A69a) and ***-tsa*** "come (O)" (A69b) [for both markers, no clear indication whether the motion is prior or concurrent: both readings seem possible in the available examples]

(A69) a. *Peadya ekwita=tuke=Ø ba-**dadi**-wa…*
one person=3SG=1SG see-GO(O)-PERF
'I saw a man going away from me.' (Guillaume 2008: 234)

b. *Tume=pa=taa=tuja=tu ba-**tsa**-ya ekwita…*
Then=REP=EMPH=3SG.DAT=3SG see-COME(O)-IPFV person
'Then he$_i$ saw a man coming towards him$_i$.' (Guillaume 2008: 234)

Author's categorization: "Aktionsart suffixes of motion", "associated motion" (Guillaume 2008: 212)

A17.3 Ese Ejja: Portachualo dialect (Bolivia)

Motion of subject: prior; 3 markers:
-ki "go to do" (A70a), ***-wa*** "come to do" (A70b), and ***-ña*** "do arriving" (A70c)

(A70) a. *Eyaya xaxasiye-yobo saja-**ki**-naje.*
1SG.ERG palm_sp-bud cut-GO_TO_DO-PAS
'I went to cut buds of *xaxasiye* (*Chonta* palm).' (Vuillermet 2012: 667)
b. *Jamaxeya jikyakwa kawi-**wa**-naje.*
therefore here sleep-COME_TO_DO-PAS
'Therefore I came to sleep here.' (Vuillermet 2012: 667)
c. *Ekwana taxa-taxa-**ña**-'yo-ani.*
1EXCL.ABS wash-RED-DO_ARRIVING-TEL-PRS
'When we arrive (at the spring), we do our laundry.' (Vuillermet 2012: 655)

Motion of subject: concurrent; 4 markers:
-poki "do going, the motion happens simultaneously with the event" (A71a)
-jebe "do returning, the motion happens simultaneously with the event" (A71b)
-ñaki "transitional, a motion precedes the action and a second motion follows it, come and do" (A71c)
-'aeki "do here and there" (A71d)

(A71) a. *Camioneta=jo poki-je=a ishi-ka-**poki**-ani chicha,*
truck=LOC go-FUT=ERG drink-3A-DO_GOING-PRS alcoholic_drink(Sp)
ena.
water
'Those who go (to Riberalta) in trucks drink chicha, water, during the journey away from home.' (Vuillermet 2012: 663)
b. *Camioneta=jo pwe-je-'yo=a ishi-ka-**jebe**-'yo-ani*
truck=LOC come-FUT-TEL=ERG drink-3A-DO_RETURNING-TEL-PRS
trini.
local.soda
'Those who come/return (from Riberalta) in trucks drink trini, on their way coming back.' (Vuillermet 2012: 663)

c. *Ekwe='ai eyaya ba-**ñaki**-naje*.
1SG.GEN=elder_sister 1SG.ERG see-COME_TRS&DO-PAS
'I saw my elder sister when I arrived (before going again)' (Vuillermet 2012: 660)

d. *Jama=ka ebyo nei eseja=baba=kwana*
so=CTRS first VERY 1EXCL.GEN=ancestors=PL
*po-ka-**'aeki**-neki=apwa*.
be-3S-DO.HERE&THERE-stand/HAB=RPAS
'But that is how our ancestors used to travel (lit. be here and there).' (Vuillermet 2012: 665)

Motion of subject: subsequent; 2 markers:
-na "do and return" (A72a) and ***-nana*** "do and leave" (A72b)

(A72) a. ... *esiye ekwaa ixya-**na**-'yo-añaa kya-shwe-axejojo*.
papaya 1EXCL.ERG eat-DO&RETURN-TEL-PRS APF-hungry-REASONAS
'... we eat papaya before going home because we are hungry.' (Vuillermet 2012: 662)

b. *Ewanase=pa jama a-ka-**nana**-ani-naje ba'a "poki=amo*
wife=REP so say-3A-DO&LEAVE-IPFV-PAS SEE go=1SG.ABS
kekwa-a!".
hunt-MOT.PURP
'Before going/leaving, he used to say to his wife: "I am going hunting!"' (Vuillermet 2012: 661)

Motion of object: prior; 1 marker, possibly 2:
-xeki "come (O)" (A73a)
-jya "go (O)" [no good illustrative example available] (A73b)

(A73) a. *Inotawa=a aná kwakwa-ka-**xeki**-ani*.
María=ERG anteater pluck-3A-COME(O)-PRS
'María cooks the anteater that was brought.' (Vuillermet 2012: 670)

b. *Jya-'okya-**jya**-ka-ani ekweiwe=asixe*.
leave-put.down-?GO(O)-3A-PRS ravine=ALL
'He throws (the child) down into the ravine.' (Vuillermet 2012: 671)

Author's categorization: "associated motion" (Vuillermet 2012: 655)

A17.4 Reyesano

Motion of subject: prior; 1 marker: ***-ti*** "ir"

(A74) *M-(a-)adeade-**ti**-a, m-a-tsunetia(-a) te wabutrupa.*
1SG-PAS-cazar-IR-PAS 1SG-PAS-encontrar-PAS SEP chancho.de.tropa
'Me fui a cazar. Los encontré a los chanchos de tropa.' (Guillaume 2012: 224, ex. T4) ['I went to hunt. I met the white-lipped peccaries.']

Motion of subject: concurrent; 1 marker: ***e-...-bu*** "imperfectivo"

(A75) *Ana **e-**betsa-betsa-**bu** =chenu.*
oso.hormiguero IPFV5-nadar-RED-IPFV5 =EMP
'El oso hormiguero ya estaba de ida nadando.' (Guillaume 2012: 210) ['The giant anteater was going swimming.']

Author's categorization: ***-ti*** "afijo 'adverbial'" (Guillaume 2012: 209); ***e-...-bu*** "afijo de aspecto" (Guillaume 2012: 206–207)

A17.5 Tacana: Tumupasa dialect[23]

Motion of subject: prior; 4 markers:
-ti "ir" (A76a), ***-seu*** "llegar allá" (A76b), ***-jeu*** "venir" (A76c), and ***-sena*** "llegar aquí" (A76d)

(A76) a. *Enekita beu ba-**ti**-ta-ana.*
en.verdad PERF ver-IR-3A-PAS.REC
'Y ya fue a verlo.' ['And he went to see him.']
b. *Yanana kema, te=su tawi-**seu**-iti-a.*
niño 1SG.DAT chao=LOC dormir-LLEGAR.ALLÁ-PFV-PAS
'Mi huahua llegó al chaco a dormir.' ['My baby slept when arriving (there) at the garden.']
c. *Jana=chidi dia-**jeu**-ke!*
comida=DIM comer-VENIR-IMP
'¡La comida vení a comer!' ['Come eat the food!']

23 Unless explicitely mentioned, the Tacana examples are from my own fieldnotes (2009–2013).

d. *Tawi-**sena**-iti-a.*
dormir-LLEGAR.AQUI-PFV-PAS
'Llegó a dormir.' ['He slept when he arrived here.']

Motion of subject: concurrent; 7 markers:
-na "ir" (A77a)
-be "venir" (A77b)
-wanana "pasar" (A77c)
-niuneti(a) "deambular" (A77d)
e-...-u "la acción del verbo se desarrolla mientrás el sujeto está yéndose" (A77e)
e-...-siu "la acción del verbo se desarrolla mientrás el sujeto está acercándose" (A77f)
e-...-buyu "la acción del verbo se desarrolla mientrás el sujeto está alejándose, de regreso/vuelta" (A77g)

(A77) a. *E-waniba-**na** mida yama tije.*
FUT-oler-IR 2SG 1SG.ERG atrás
'Te voy a ir oliendo atrás.' ['I'm going to go smelling you from behind.']
b. *E-tsiatsia-**be**-yu ema.*
IMPFV-gritar-VENIR-REITR 1SG
'Vengo gritando.' (Ottaviano 1980: 14) ['I'm coming shouting.']
c. *Ema da nubi-**wanana**-iti-a aicha e-tia=puji.*
1SG TOP entrar-PASAR-PFV-PAS carne IMPFV-regalar=META
'Al paso entré viniendo, a darles carne (a mis padres).' ['While passing, I entered to give meat (to my parents).']
d. *Daja beu pu-**niuneti**-(i)dha jida iba*
así PERF ser/estar-HACER.DEAMBULANDO-PAS.REM ese tigre
pamapa ete=je te=je.
todos casa=PERL chaco=PERL
'Así andaba (lit. estaba en varios lugares) ese tigre por todas las casas y los chacos.' ['So did this jaguar walk around (lit. be in various places) in all the houses and gardens.']
e. ***E**-watsi-chaku-ta-**u** pa.*
IMPFV-pie-buscar-3A-IMPFV.YENDO REP
'(Por el camino, el hombre) iba buscando la huella de su pie (de su mujer).' ['He was going searching for the footprints (of his wife).']
f. *... ema kema ewane **e**-chaku-**siu** e-dia=puji.*
1SG 1SG.GEN esposa IMPFV-buscar-IMPFV.VINIENDO IMPFV-comer=META
'... vengo buscando (a mi mujer), para comerla.' ['... I'm coming searching (for my wife) in order to eat her.']

g. ***E**-pa-**buyu**.*
IMPFV-llorar-IMPFV.YENDO
'está de ida/va llorando' ['He is going crying.']

Motion of object: prior; 1 marker: ***-tsu*** "venir (O)"

(A78) *Miwa-**tsu**-ta-iti-a mesa kupari.*
dar.de.comer-VENIR(O)-3A-PFV-PAST 3SG.GEN compadre
'Lo recibió con comida a su compadre.' ['He$_i$ received his$_i$ compadre$_j$ with food.'/'He$_i$ fed his$_i$ compadre$_j$ after he$_j$ arrived.']

Motion of object: subsequent; 1 marker: ***-use*** "ir (O)"

(A79) *Miwa-**use**-ta-iti-a mesa kupari.*
dar.de.comer-IR(O)-3A-PFV-PAST 3SG.GEN compadre
'Le dio que comer a su compadre, se fue.' ['He$_i$ fed his$_i$ compadre$_j$ before he$_j$ left.']

Author's categorization: ***-ti, -seu, -jeu, -sena, -na, -be, -wanana, -niuneti(a), -tsu, -use*** "sufijos 'adverbiales' de movimiento associado"; ***e-...-u, e-...-siu, e-...-buyu*** "afijos de aspecto imperfectivo y de movimiento" (Guillaume 2013c)

A18 Tikuna (isolate)

Motion of subject: prior; 1 marker, possibly 2:
-ya/-a "direccional verbal", "puede indicar movimiento físico y desplazamiento asociado al verbo" (Montes Rodríguez 2004: 82) [Three forms are discussed under the rubric of "verbal directional": *-na*, *-ya*, and *-a*, said to express two distinct directional meanings, an "endocentric" one and an "exocentric" one. Unfortunately, not enough information and exemplification is available to ascertain the existence of two morphemes (and not just one), and which meanings corresponds to which form(s).]

(A80) *kù-ànè-wá pé-**á**-beé-gü*
tu-chagra-loc ustedes-dir.vb-cosechar-pl
'en tu chacra vais a cosechar' (Montes Rodríguez 2004: 82) ['Go to harvest in your garden!']

Author's categorization: "direccional verbal" (Montes Rodríguez 2004: 82)

A19 Tucanoan

A19.1 Siona-Secoya: Putumayo Siona dialect

Motion of subject: prior; 1 marker: ***-jaí*** "indica que el evento está para realizarse. Se usa en lugar del tiempo futuro que se encuentra en español." (Wheeler 1987: 149) [The translation (although not the description) of this suffix suggests that it might express both prior and subsequent return motion; see discussion in Section 6.4.]

(A81) *Ja'nso-re rutá-**ja**-ní raë-'ë.*
yuca-cd arrancar-pot-sec.ms venir-t.pas.pl
'Fueron con la intención de arrancar yuca y vinieron.' (Wheeler 1987: 149)
['They went (there) with the intention of harvesting yucca and they came back.']

Author's categorization: "aspecto potencial" (Wheeler 1987: 149)

A20 Urarina (isolate)

Motion of subject: prior; 1 marker: ***-ni*** "expresses a directional meaning, implying that the intended activity will not take place at the present position of both speaker and listener" (Olawsky 2006: 571) [only used in imperative/hortative moods]

(A82) *ka=kajnanaj m~~u~~k~~u~~-**ni**-~~u~~=ra*
1sg=older.sister catch-DSTL-IMP=EMF
'Go catch my older sister!' (Olawsky 2006: 572)

Author's categorization: "distal form" (Olawsky 2006: 571–572)

A21 Uru-Chipaya

A21.1 Chipaya

Motion of subject: prior; 1 marker: ***-zhki*** "cislocativo (en dirección del hablante), cuando aquél es de movimiento, y translocativo (fuera del lugar que ocupa el hablante) cuando lo es de quietud" (Cerrón-Palomino 2009: 63–64) [The description and translation of *-zhki* suggest that this suffix might not express dynamic motion but static location; see Section 4.2]

(A83) *cher-as-**zhki***-
ver-RECIPROCO-CIS-
'verse allá' (Cerrón-Palomino 2009: 64) ['to see each other there']

Author's categorization: "direccional" (Cerrón-Palomino 2009: 63–64)

A21.2 Uchumataqu

Motion of subject: concurrent; 1 marker: ***-okw*** "go"

(A84) *tuk'-**okw**-a*
be.silent-go-IMP
'Go with your mouth shut.' (Muysken and Hannss 2006: 226)

Author's categorization: "derivational morpheme/verbal compound" (Muysken & Hannss 2006: 226)

A22 Yagua (isolate)

Motion of subject: prior; 4 markers:
-nu-wee "action done upon arrival at some location away from the currently activated scene" (Payne & Payne 1990: 397), (A85a)
-nu-wįį "action done upon arrival at the currently activated scene" (Payne & Payne 1990: 397), (A85b)
-sa "action done 'upward' from the speaker's point of reference and is most neutrally taken to mean 'upriver'" (Payne 1985: 267), (A85c)
-imu "action done 'downward' from the point of reference and is most neutrally taken to mean 'downriver'" (Payne 1985: 267), (A85d) [The description and translation of *-imu* suggest that this suffix might not express dynamic motion but static location; note, however, that the translation of its antonym morpheme, *-sa*, does indicate the expression of dynamic motion, which suggests that dynamic motion might as well be a possible reading for *-imu*; see discussion in Section 4.2.]

(A85) a. *Naanu-suuta-**nuvee*** *ɾą́ɾǫǫ-tąąsá-rà* *sújay*.
3DL-wash-on:arrival:there up:river-middle-INAN clothes
'Upon arrival upriver she washed the clothes.' (Payne 1985: 257)
b. *Juntú-tąąsá* *sa-jụvay-**nuvįį**-núúy-janu*.
post-middle 3SG-hit-ARR1-IMPERF-PAST-3
'Upon arrival here he hit/was hitting on the post.' (Payne & Payne 1990: 397)

c. *sa-suuta-**sa**-jąą*
3SG-wash-upwards-ITER:MVMT
'He goes up-river to wash every once in a while.' (Payne 1985: 267)
d. *sa-suuta-**imu**-muuy-maa*
3SG-wash-downwards-COMPLT-PERF
'He has finished washing down-river.' (Payne 1985: 267)

Motion of subject: concurrent; 4 markers:
-rįį "indicates action done 'en route' and punctuates a movement trajectory" (Payne & Payne 1990: 397), (A86a)
-títyiiy "action [...] done while going along directly to some destination" (Payne & Payne 1990: 396), (A86b)
-nayąą "action [...] done while wandering more of less aimlessly" (Payne & Payne 1990: 396), (A86c)
-ha "action done [...] 'across from' the locational point of reference. That is, either across water (river or lake) or across land" (Payne 1985: 267), (A86d)

(A86) a. *vųųy-mááy-**rįį**-janu tąąriy*
1INCL-sleep-en:route-PAST3 before
'Long ago we slept en route.' (Payne & Payne 1990: 398)
b. *ray-maay-**títyiiy**-jancha*
1SG-sleep-going:directly-CONT
'I sleep while going along (as in a car).' (Payne 1985: 254)
c. *sa-jų́nááy-rų́ų́y-**nayąą***
3SG-cry-POT-going:aimlessly
'He wants to cry while going all over the place.' (Payne & Payne 1990: 396)
d. *ray-maay-**ja**-jáy*
1SG-sleep-across-PROX2
'Yesterday I slept across (water or land).' (Payne 1985: 268)

Motion of subject: subsequent; 1 marker: ***-siy*** "indicates action done upon departure" (Payne & Payne 1990: 397), "action done in preparation for, or upon departure" (Payne 1985: 257)

(A87) *naada-suuta-**chiy**-núúy-jáy*
3DL-wash-DEPARTING-IMPF-PROX2
'As the last thing before leaving, she washed yesterday.' (Payne 1985: 257)

Author's categorization: all: movement formatives/suffixes; ***-títyiiy, -nayąą*** "unbounded movement" (Payne & Payne 1990: 396); ***-nu-wee, -nu-wįį, -siy,***

-rịị "bounded movement" (Payne & Payne 1990: 397); ***-sa, -imu, -ja*** "locational suffixes" (Payne 1985: 411)

A23 Zaparoan

A23.1 Iquito

Motion of subject: prior; 3 markers:
-cuaa "deictic perfective aspect 2", "used to order a person to realize an event at a distance from the speaker, in terms of radial deixis, or in some place with downriver orientation, in terms of river-oriented deixis" (Lai 2009: 345), (A88a) [AM meaning only clear in imperative contexts – otherwise rather static locative 'there' meaning; in Lai (2009), – cuaa in (A88a) is mistakenly glossed DEI1 instead of DEI2.]
-cu(huii)[24] "deictic perfective aspect 1", "used to order a person to move towards the speaker or upriver, then to realize an event in the proximity of the speaker or in some place with an upriver orientation" (Lai 2009: 345), (A88b) [AM meaning only clear in imperative contexts – otherwise rather locative 'here' meaning]
-sahuii "allative perfective aspect", "realization of the event upon arrival at a location", "spans a closed event [...] with a preliminary stage indicating the agent's motion from some unspecified place to the location of the referred event. The agent realized or will realize the event upon arrival" (Lai 2009: 372), (A88c)

(A88) a. *Ariicua-**cuaa** naami!*
sing-DEI2.PFV downriver
'Go sing downriver!' (Lai 2009: 370)
b. *Najuu-**huii** iina carta!*
write-DEI1.PFV DET letter
'Come write the letter (here)!' (Lai 2009: 369)
c. *Cu=asa-**sahuii**-quiaqui paapaaja.*
1S=eat-ALL.PFV-DPST.NIP fish
'I ate fish upon arrival (it was already prepared).' (Lai 2009: 376)

Motion of subject: concurrent; 1 marker: ***-maa*** "remote perfective aspect", "when [...] used in imperatives, the addressee is expected to realize the action

24 In Lai (2009), the Iquito high central unrounded vowel *ɨ* is represented by a plus sign (+).

with movement, either approaching the speaker or moving away from the speaker" (Lai 2009: 246)

(A89) *Cuhuasi-**maa** tíira=ji!*
talk-REM.PFV there=from
'Come talking from there!' (Lai 2009: 248)

Motion of subject: subsequent; 1 marker: ***-(y)aarii*** "ablative perfective aspect", "departure from a location upon realization of the event", "conveys a closed event [...] with a post-stage indicating the motion of going away from the location of the event" (Lai 2009: 382)

(A90) *Nu=tasii-**yaarii**-Ø quiaaja.*
3S=wait-ABL.PFV-EC you
'He waited for you and left.' (Lai 2009: 384)

Author's categorization: ***-cuaa, -cu(huii)*** "deictic perfective aspects" (Lai 2009: 345); ***-sahuii, -(y)aarii*** "allative and ablative perfective aspects" (Lai 2009: 372); ***-maa*** "remote perfective aspect" (Lai 2009: 327)

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