1. Introduction

The voice system is one of the most prominent (and most thoroughly investigated) morphosyntactic categories in Austronesian (AN), and particularly in the Philippine-type subset of AN languages (cf. Wouk and Ross 2002). The descriptive properties of this typologically unusual system are generally agreed upon: one argument in a clause has a special, "pivotal" role; depending on the semantic role of that argument, this special role is overtly marked on the verb (Chung and Polinsky 2009; Blust 2013). The "special" argument bears a morphological and syntactic marking that mark it as prototypical subject: it surfaces in subject position (clause-finally in VOS languages), can be marked for nominative case, can be extracted (under the Subject Only restriction), etc. A typical Philippine-type language can have up to five different voices. An example from Tagalog (data from Blust 2013:441-4) illustrates a typical voice system, with active voice (AV), passive voice (PV), locative voice (LV), benefactive voice (BV), and instrumental voice (IV). The promoted argument surfaces in subject position and is marked for nominative case, while the verb in initial position carries a mark specifying the argument's semantic role.

The example in (1a) shows the agent surfacing in subject position, marked for nominative case, while the verb is marked for active voice. If the verb is marked for passive voice, it is the patient of the clause that surfaces in the subject position with nominative marking. This alternation resembles the traditional active-passive distinction; the sentence in (1b) can also be translated as "The car was bought by the man." Unlike the passive in traditional voice systems, however, the AN passive voice requires an obligatory by-phrase: both active and passive verbs are obligatorily transitive. Additionally, both active and passive voice are morphologically marked, meaning that neither can be analyzed as morphologically basic; these facts have led some scholars to label the Philippine-type system as a *symmetrical voice system* (Himmelmann 2005a:112).

(1) a. bum-nil-nay kote naa laalake buy-AV GEN man NOM man
The man bought a car.

b. b-in-nil naa laalake kote buy-PV-PF GEN man NOM car
A man bought the car.

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References

1. Various terms for this phenomenon have been proposed in the literature, the most common being "voice" and "focus"; alternative terms include "trigger" or "case." I will use the term voice throughout this paper, in keeping with the majority of the literature (for a thorough overview and statistical breakdown of each term used in the literature, see Blust 2013).

2. The passive to external argument thus roughly follows the thematic hierarchy: Agent > Patient > Instrument > Locative (cf. Baker 1998; Donohue and Donohue 2004).
The body of this paper is structured as follows: in the first part, I present the reconstructed PAN voice system (from Wolff 1973) as well as descriptive facts from six AN languages that are particularly informative for reconstruction of the proto-system as well as its earlier stages: Maynmar Atayal, Tagalog, Ilokano, Saixiat, Tondano, and Chamorro. In section 3, I discuss previous accounts of the development of the AN voice system and point to their weaknesses. Section 4 discussed methodology, section 5 presents my new proposal on the origins of PAN voice system, while section 6 outlines the synchronic implications of this new explanation. Section 7 concludes the paper.

2 The Data

In this section, I present the data that will serve as the basis for establishing how the voice system in PAN developed. I start by offering some descriptive facts on the reconstructed system (primarily based on Wolff 1973 and Blust 2013), focusing on the reconstructed affixes and the functions that they had in the proto-language. The most prominent feature of the PAN voice marking affixes is that most of them had a nominalizing function in addition to their voice-marking function. I then present descriptive facts on the voice systems of six languages that offer crucial data for modeling the diachronic development of the modern-day AN voice system. I also point to some developments that occurred later in the daughter languages that reveal tendencies in the development of the voice system.

2.1 Proto-Austronesian

Wolff (1973) reconstructs four morphologically distinct voices for Proto-Austronesian: active voice, passive, locative, and instrumental voice. 3. However, the instrumental voice, which was also a morphologically undifferentiated voice with the same prefix, is probably a slightly different function: benefactive for animate subjects vs. instrumental for inanimate subjects (Blust 2013:438).

2.1.1 The Active Voice

The active voice is marked on verbs by the infix *-um-. Although the main function of this affix in AN languages is to mark active voice, it also shows several other more or less productive functions. However, the affix *-um- is most likely a later innovation and introduces a variety of voice-marking affixes in several crucial respects. Unlike the other affixes, *-um- does not have a nominalizing function. This fact was already observed in Blust (2013:385): “the reflex of *-um- nearly always has exclusively verbal functions.” Thus, deriving a nominal from a verb with the *-um-inflect requires the use of a special nominalizing marker (Blust 2013:385). This is an important observation that has not received sufficient explanation in accounts on the development of AN voice thus far, and will follow naturally from the new proposal presented in this paper.

Two other functions bear by *-um- have also been noted in the literature, but no adequate explanation has yet been proposed for their origins. As Blust (2013:385) notes, PAN reconstructions with *-um- are “almost always intransitive” consider *k-um-“to eat” from *laen ‘eating’ or *C-um-gis ‘weep, cry’ from *Cugis ‘weeping, crying.’ This function is even more prominent in languages that innovate active voice morphology and introduce prefixes such as *ma-* to their system that predominantly appear on transitive verbs. The strong tendency of *-um- to appear on intransitive verbs suggests that, at some stage of development, *-um- had intransitive-marking function.

The third function of *-um- is even more unexpected: data show that reflexes of *-um- produce an inchoative reading. The infix is preserved as an inchoative marker in Western Malayo-Polynesian, for instance 4. The following examples illustrate this function: Bonito bikus ‘energetic’ vs. -um-bikus ‘he is becoming energetic’, Tagalog salit ‘pain’ vs. -um-salit ‘become painful’, Tidinal Duna gese ‘beg’ vs. g-um-aye ‘become big’, Mukah gadaug ‘green’ vs. ma-gadaug ‘become green; make something green’ (from Blust 2013:383). The inchoative function, too, has not been sufficiently explained in the literature on the origins of the PAN voice system.

Besides *-um-, there are two other affixes in AN languages that commonly function as active voice markers; *map- and *ma-. The two prefixes are most likely a later innovation and their voice marking function cannot be reconstructed for PAN. Nevertheless, they offer important insight into the development of the voice system. Unlike reconstructions with *-um-, reconstructions with *map- are generally transitive, although this function frequently gets blurred by further developments. For instance, where *map- is attested (outside the Formosan group in Tagalog, Malagasy, and Chamorro; Blust 2013:378; 383), we find variation between the infix *um- and the prefix *map-* or *ma-* with no clear distinction in transitivity. In some languages, such as Malagasy, *map- even replaces *um- to the degree that the latter surfaces only in a few verbs and its distribution is simply lexical (Blust 2013:383). Occasionally, however, both these prefixes do exhibit a pattern of complementary distribution according to verbal transitivity. One such system occurs in Kelabit, where the prefix *map-* and the infix *-um-* surface with transitive and intransitive forms, respectively, even within the same verb. Thus, we have unaffixed kila ‘bend, curve, as a path or river’ vs. gila (with the prefix *map-) ‘bend something, as a wire’ vs. kuma (with the infix *-um-) ‘wind, meander, as a path or a river’ (Blust 2013:383). Examples like this show that the infix

3. Wolff (1973) terms the voice “active,” “direct passive,” “instrumental passive,” and “local passive.” Various other terminology has been employed in the literature: agentive/locative vs. vocative locative voice. While terminology differs across the literature, the facts behind the terms are mostly agreed upon: when the agent is in the external argument, we have active voice; when the patient is in the external argument, we have passive voice; when the location is the external argument, we have locative voice, etc.

4. It is not entirely clear whether this function can be reconstructed for the proto-language as well. There are two possibilities: (a) to assume that *-um- functioned as an inchoative voice function only in Western Malayo-Polynesian; or (b) to assume that the infix developed the function of forming inchoatives in all Western Malayo-Polynesian. The first option seems more plausible, as it would be difficult to imagine a development from voice marking to inchoative marking. For more discussion, see below.
Formosan Atayal, Bunun, Paiwan, as well as in extra-Formosan Itbayaten, Ilokano, Bontok, Pangasinan, Tagalog, Bikol, and Cebuano (Blust 2013:381).

One way to explain the existence of the two prefixes is to assume that one had a benefactive function and the other an instrument function. Evidence for such an analysis comes from a systematic gap that we observe for *(S)in-. Specifically, the *(S)in-prefix never marks the benefactive voice, whereas *(S)marks both instrumental and benefactive, as well as some other relationships (Blust 2013:381). This distributional pattern suggest a stage in the development of PAN in which *(S)marked instrumental and *(S)bene-
factive, following which the *(S)-prefix spread to the instrumental function and became the productive prefix for this function in some branches (Blust 2013:381). Blust (2013:381) proposes a possible trajectory for this development: following Wolff (1973), he assumes that instrumental and benefactive voice go back to the same affix, which showed complementary distribution based on function: for animate arguments, it marked instrumental function, and for inanimate arguments, benefactive function. There is at least one language where reflexes of both affixes are perhaps attested: within the magical texts of the Antemoro dialect of Malagasy (see Dahl 1986:27-31, 39).

Like the *-on and *-an suffixes, *(S)m- also probably had the function of forming instrumental denominatives. Although the evidence is sparse, we have some examples attested that clearly point to the nominalizing function: Fijian sele-va ‘to cut’ vs. i-sele ‘knife’ Blust (2013:381).

Note also that, unlike suffixes, prefixes are much more numerous and well-attested in Austronesian. Blust (2013:371) lists at least eleven different affixes for PAN with even more different functions. The table below summarizes the reconstructed PAN non-past voice affixes (Blust 2013:438).

<table>
<thead>
<tr>
<th>Voice</th>
<th>Affix</th>
<th>Future-general</th>
</tr>
</thead>
<tbody>
<tr>
<td>active</td>
<td>-um-</td>
<td>*RED,-en</td>
</tr>
<tr>
<td>passive</td>
<td>*-en</td>
<td></td>
</tr>
<tr>
<td>locative</td>
<td>*-an</td>
<td>*RED,-an</td>
</tr>
<tr>
<td>instrumental</td>
<td>*(S)m-</td>
<td></td>
</tr>
</tbody>
</table>

2.1.6 Other paradigms

Besides non-past and past forms, there were three other paradigms of voice-marking affixes in PAN: future-general action, dependent, and subjunctive. These formations are, however, less well-attested and will not play a crucial role in establishing the development of the voice system. Reconstruction of these categories is often unreliable; due to sparse data in the languages in question, the reconstructed paradigms are incomplete, often with only a subset of voice forms reconstructed. Nevertheless, some aspects of these paradigms will offer additional arguments in favor of the new explanation, as will be shown in the discussion below.

The formation of the future-general voice paradigm follows the same basic pattern as the formation of the non-past voice paradigm with the addition of reduplication. The data in the daughter languages, however, allow only reconstruction of passive and locative voice. For example, in Samat-Leyte Visayan, the verb pa-palit forms the future-general passive pa-palit-an and the locative instrumental pa-palit-an, corresponding to the present passive and locative voice (Wolff 1973:90). The table below summarizes the future-general voice paradigm (Wolff 1973, Blust 2013:438).

<table>
<thead>
<tr>
<th>Voice</th>
<th>Future-general</th>
</tr>
</thead>
<tbody>
<tr>
<td>active</td>
<td>*-an</td>
</tr>
<tr>
<td>passive</td>
<td>*-an</td>
</tr>
<tr>
<td>locative</td>
<td>*-an</td>
</tr>
<tr>
<td>instrumental</td>
<td>*-an</td>
</tr>
</tbody>
</table>
2.2 Mayrinax Atayal

Mayrinax Atayal, as a Formosan language, belongs to the most archaic layer of AN; in this capacity, it offers a particularly revealing continuation of the reconstructed PAN voice system. Although the system developed some secondary distinctions in the voice paradigm and introduced some affixes (see Huang 2000), the main affixes and functions in Atayal remain the same as in PAN. In Atayal, the instrumental can take the benefactive function, but there is no formal difference between the two uses. The declarative/realis paradigm of the Mayrinax Atayal voice system is given in the table below (data from Blust 2013; Huang 2000; Huang 2001).

<table>
<thead>
<tr>
<th>Voice</th>
<th>Affix</th>
</tr>
</thead>
<tbody>
<tr>
<td>active</td>
<td>-um-, ma-/</td>
</tr>
<tr>
<td>passive</td>
<td>-an</td>
</tr>
<tr>
<td>locative</td>
<td>-an</td>
</tr>
<tr>
<td>instrumental</td>
<td>si-</td>
</tr>
<tr>
<td>benefactive</td>
<td>si-</td>
</tr>
</tbody>
</table>

As expected, the active voice is marked with the infix -um- (or prefix ma-), which goes back to PAN *-um-. We also find the ma-/ prefix goes back to the PAN prefix *ma- used for marking statives. The prefix and its passive function, illustrated by the following example from Tagalog (Blust 2013:376), are well-attested across the AN family: bigidi ‘weight’ vs. ma-bigidi ‘heaviness’.

Traces of ma-’s stative-marking function are still present in Mayrinax Atayal. As was shown in Huang (2000:369), the ma- is more likely to appear on verbs that designate less action. The stative function of ma- is more directly continued in some other Formosan languages, including Paiwan and Saisiyat, where verbs with meanings such as ‘take care’ and ‘cry’, ‘threaten will take the -um-/m-; whereas verbs meaning ‘drunk’, ‘big’, ‘kind’, ‘afraid’, etc. will take the ma-/ prefix. The more intriguing aspect of languages such as Mayrinax Atayal, Paiwan and Saisiyat (Huang 2000), however, is that the stative-marking prefix ma- enters the voice-marking paradigm, indicating active voice. Over the course of this development, the original stative-marking function of the affix pair becomes gradually less prominent. This is precisely the case in the three Formosan languages above: in Paiwan and Saisiyat, the stative function is still prominent and the distribution is more predictable, whereas ma- in Mayrinax Atayal has lost the prominence of its stative function and its distribution is more of a tendency than a rule; the new main function of this prefix is the marking of active voice. This shows that various different verbal markers can enter the voice-marking paradigm: as we will see below, a similar development occurs in the pre-history of the PAN-active-voice-marking affix; the Mayrinax Atayal example provides a valuable parallel to the development in PAN.

Although languages in the Formosan group innovated the active-voice-marking affixes described above, they did not introduce the prefix ma- into the system. No traces of this prefix are attested in Mayrinax Atayal or in any other Formosan language (Blust 2013).

2.3 Tagalog

As in the Formosan languages, the voice marking in Tagalog is archaic, closely reflecting the reconstructed PAN system. Innovation in Tagalog paralleled that of Mayrinax Atayal in targeting active voice markers; in Tagalog, however, the innovative prefixes are map- and mag-. Consider the table below with data from Blust (2013:441), based on Foley (1976):

<table>
<thead>
<tr>
<th>Voice</th>
<th>Affix</th>
</tr>
</thead>
<tbody>
<tr>
<td>active</td>
<td>-um-, ma-/</td>
</tr>
<tr>
<td>passive</td>
<td>-an</td>
</tr>
<tr>
<td>locative</td>
<td>-an</td>
</tr>
<tr>
<td>instrumental</td>
<td>i-</td>
</tr>
<tr>
<td>benefactive</td>
<td>i-</td>
</tr>
</tbody>
</table>

The process that causes reflexes of the map- prefix to become part of the voice-marking paradigm was not limited to Tagalog, but is found in many Philippine languages, as well as in Malayase, Palaun and Chamorro (Blust 2013:378). Here, too, the new active voice marker probably goes back to an affix with a different original function: as already discussed above (2.1.1), the most likely function of *map- is to mark proto-stages as transitive/receptive marker and a causative/verbalizer. In Tagalog, these functions are preserved only in traces, as the choice of affix has become almost completely lexicalized. Himmelmann (2000:58: 365), however, identifies some tendencies: map- is the least frequent of the three affixes and tends to express intensive/repeated action; mag-, in turn, expresses greater frequency or intensity than -um- (e.g. -um- ‘read’ vs. map- ‘base’ ‘study’). mag- in Tagalog also denotes a transitive verb, while intransitive verbs are marked by -um-. This distinction holds primarily for verbs of motion and verbs denoting qualities: t-am-ayi? ‘stand up’ vs. nag-taboy ‘‘become hot’ vs. mag-init ‘heat’. Elsewhere, the choice of affix becomes lexicalized and the original distribution is lost.

2.4 Ilokano

Ilokano preserves all of the voice-marking affixes of PAN while also introducing several new affixes and categories of its own, yielding one of the richest voice systems in the AN family — and therefore one of the most informative systems for establishing how voice systems develop and what innovations are common within the voice-marking paradigms. Reflecting similar observations we have made for Tagalog and several other languages, the greatest locus of innovation within the Ilokano voice system occurs within the active voice category. Similar to Tagalog, Ilokano features the inherited um- and innovated map-. It also, however, introduces a very peculiar new affix into the voice paradigm: ag-a; e.g. ag-katina ‘to laugh’. This same prefix is also used to mark reciprocity (N-ag-salviso-niva ‘they missed each other’) but has ceased to be productive in this function and is now predominantly used with inherently reciprocal verbs (Rubino 2005: 337, 343). As most likely goes back to the affix *an- which functioned as a reflexive or middle marker in the proto-language and can ultimately be connected to the a in mun (see discussion below). ag- often surfaces in combination with other affixes, e.g. Sedeg t-ag-a-kon ‘to hide oneself’ vs. (with *-um-) a-um- ‘to hide’ (Kaufman 2009: 7). It is perhaps surprising for a reflexive marker to develop a voice-marking function, but the situation in Ilokano clearly shows that this is possible. I argue below that exactly this shift took place at an earlier stage of PAN development.

Ilokano not only innovated in the active voice, but also introduced two new distinct voices into its system, the so-called “lesser voices”: comitative and instrumental (Rubino 2005:336). The first is marked by the prefix ka- (e.g. ka-tagda) and the latter by the prefix pag- (e.g. pag-iba ‘to slice with’). Consider the table below (from Rubino 2005:336):

<table>
<thead>
<tr>
<th>Voice</th>
<th>Affix</th>
</tr>
</thead>
<tbody>
<tr>
<td>active</td>
<td>-an</td>
</tr>
<tr>
<td>directional</td>
<td>-an</td>
</tr>
<tr>
<td>conveyance</td>
<td>i-</td>
</tr>
<tr>
<td>benefactive</td>
<td>i-</td>
</tr>
<tr>
<td>comitative</td>
<td>ka-</td>
</tr>
<tr>
<td>instrumental</td>
<td>pag-</td>
</tr>
</tbody>
</table>

2.5 Saisiyat and Tondano

The affixes in Tondano’s voice system are canonical and reveal no major changes in the development from PAN. There are no traces of the active voice prefix *map- or *ma-. Consider the data in the following table (Blust 2013:445; based on Sneddon 1970:13):

<table>
<thead>
<tr>
<th>Voice</th>
<th>Affix</th>
</tr>
</thead>
<tbody>
<tr>
<td>active</td>
<td>-um-</td>
</tr>
<tr>
<td>passive</td>
<td>-an</td>
</tr>
<tr>
<td>locative</td>
<td>-an</td>
</tr>
<tr>
<td>instrumental</td>
<td>i-</td>
</tr>
</tbody>
</table>

The more intriguing aspect of voice marking in Tondano is the interplay of voice morphology and case/preposition marking. DPs are marked for active voice, object, instrument, and referent (Blust 2013:445); however, they remain unmarked when promoted to focus (or subject) position. In example (3) below, the preposition wo ‘with’ surfaces with its DP when the verb is in active, passive, or referent voice; however, when the verb is in instrumental voice, the preposition does not appear.

(3) a. ni tuama kum-eog roda wo tali waki pasar
   “The man will pull the cart with the rope to market.”
   "The child was looking at the dog.”
   "The man will pull the cart with the rope to market.”
   b. tali i-leog ni tuama roda waki pasar
   “The man will pull the cart with the rope to market.”
   "The man will pull the cart with the rope to market.”
   c. korkoring k-em-i-kita ka ‘arboe’
   “The child was looking at the dog.”

2.6 Chamorro

The system in Chamorro has undergone a considerable amount of change on the way from PAN. It shows both affixes, *um- and *ma-, for the active voice. More significant for our discussion, however, are changes in the locative and benefactive voice: the PAN locative suffix *-an is replaced by Chamorro -i and the PAN instrumental prefix *-i/ is replaced by Chamorro -yi. Consider the following table, summarizing the data from Blust (2013:445).
3 Previous Accounts

In this section I will briefly discuss previous accounts of the development of the AN voice system. There are basically two proposals in the literature, which differ crucially in their assumptions concerning which of the affixal functions presented above was original. I will identify the weak points of both explanations and propose a new account that reconstructs both functions to the proto-language. To my knowledge, such an explanation has not yet been proposed in the literature.

3.1 Voice Hypothesis

The explanation of the development of the AN voice system argued that voice affixes were present already in the proto-language, whereas the nominalizing morphemes either developed from the voice system or had different sources. Dahal (1973; 121) argues that the AN voice affixes do not completely correspond to nominalizers/case markers, which he takes to mean that the nominalizing function must either have developed independently or had a different origin. Neither of these two possibilities are discussed any further. No models are given for how this could have happened, nor does the author consider any other possible sources.

Dahal (1973; 121) even admits the lack of evidence by saying that "[o]nly a broad comparative study can be decisive."

Note that the development of nominalizing affixes from voice morphemes would be very unusual — indeed, to my knowledge, unprecedented. Also, the existence of almost exact correspondences between the voice morphemes and the nominalizing affixes excludes the possibility of different origins.

3.2 Nominalizing Hypothesis

A much more thorough treatment of the origins of the Austronesian voice system is presented in Starosta et al. (1981, 1982). The authors argue that the affixes discussed above originally had only the nominalizing function, from which the voice system developed. They base their proposal on four descriptive facts about Austronesian: (a) the affixes show the nominalizing function across Austronesian languages, indicating that function was original; (b) the marker for genitive case and by-phrase are the same; (c) the affixes can surface as prefixes, suffixes, and infixes, pointing to the fact that they had different origins; and (d) the fact that the alternative explanation fails to explain the phenomenon of why and how the nominalizing function could have developed from the voice system (Starosta et al. 1981:338F, 1982).

It is true that the alternative (voice-first) explanation has serious disadvantages and is poorly motivated, but this does not mean that the opposite account (nominalization-first) is necessarily correct. Moreover, the fact that affixes are heterogenous and therefore come from various different sources does not mean that the actual source has to be the nominalizing affixes. There is no reason to believe that heterogeneity in the daughter languages implies nominalization as the original source.

Note also that the argument in (b) is not very convincing. It is not uncommon for by-phrase to be associated with the genitive case marker, even in languages where the voice system does not develop from the system of nominalizing affixes. In many languages, the by-phrase marker is also a possessive marker, e.g. German von, French de (Keenan and Dryer 2007:327), Slovenian od. Consider the Slovenian example below, where the by-phrase is marked by the preposition od, which also marks possessive relations.

(5) a. To je avto od moja strica. 
   this is car of my-am uncle 
   "This is my uncle’s car."

b. Greitve je bilo pobrao od nas. 
   grapes was picked by us 
   'The grapes were picked by us.'

There is no reason to believe that the voice system in these languages developed from a system of nominalizing morphemes. In fact, as Keenan and Dryer (2007:327) point out, by-phrases are cross-linguistically “most usually an instrumental, locative, or genitive.”

We are thus left with only one viable argument for the nominalization-first hypothesis, namely that the nominalizing function is attested even outside the Philippine-type languages, which do not have a rich voice system. As already discussed above, this is a valid point, but it does indicate that the nominalizing function developed later. However, this does not necessarily exclude the possibility that the voice function, too, existed in PAN. I will argue below that the voice and nominalizing function of the affix paradigm coexisted in PAN.

My proposal for the development of voice system is in some ways very similar to what has been proposed in Starosta et al. (1981, 1982) and Pawley and Reid (1979) for the development of *-i and -an; these authors claim that these affixes, which later incorporated into the dependent voice-marking paradigm, originally had a “realizingfactor.” By “realizing,” the authors denote a “derivation process which reinterprets a different case relation as Patient” (Starosta et al. 1981). In other words, *-i and -an were “transitive” suffixes that denoted various different potential semantic roles held by a patient. The two affixes are also argued to go back to prepositions. In fact, they probably still functioned as prepositions in the proto-language. The difference between the patient-marking and oblique-(propositional)-marking function can be illustrated by the English contrast I shot the man with a gun vs. I shot the man at a target (Pawley and Reid 1979). The proposed development involves similar things happening in the development of the two systems as well.

In the following discussion, I will propose an account of the development that will crucially rely on the example from Chamorro.

4 Methodology

As already mentioned, this paper offers a case study in methodology of historical treatments of typologically rare morphosyntactic systems. More specifically, I aim to set standards for using internal reconstruction in historical syntax of typologically unusual phenomena. Because the present paper relies heavily on internal evidence in the absence of comparative material, some clarifications on methodology in historical linguistics is in place.

Historical linguistics employs two methods for reconstructing non-existent previous stages: the comparative method (Rankin 2003) and internal reconstruction (Ringe 2003). While comparative method is more powerful and reliable, both methods have proven to be successful. However, both methods are widely employed in historical linguistics. Internal reconstruction is primarily employed in the absence of historical data. Reconstructing unattested stages of a proto-language usually starts with comparative method: reconstructions are made based on the data from attested daughter languages. Comparative method, however, has its limits: once those limits are reached, historical linguists usually turn to internal reconstruction to “reconstruct the proto-reconstruction of the proto-reconstruction of another single language” (in our case the reconstructed proto-language), we can further “recover” its prehistory. As Ringe (2003:244) states: “IR [internal reconstruction] proceeds by making inferences about unobservable stages of a language’s development on the basis of what is known from the observed history of languages.”

The crucial condition for a success in internal reconstruction is thus an existence of a property in the reconstructed proto-language that has frequently been observed in attested linguistic data, has a well-known source, and an established directionalitiy of development.

An important question to raise is what makes internal reconstruction possible and the answer lies precisely in unidirectionality of processes. Because language development usually follows well-established trajectories and change usually operates in one direction for a given target and context, we can redo the change and reconstruct the proto-stage. The one domain of language change that features
5.1 Active voice

The only active voice affix that can be reconstructed to the PAN stage is *-um- and there are two main facts that indicate *-um- had a different origin than other three affixes: it is an infix as opposed to a suffix or prefix, and it usually does not have a noun-italic function.

The data in the languages show that *-um- had three different functions in PAN. On the surface, these functions do not have much in common: (a) active voice marking; (b) intransitivity marking; (c) inchoative marking. If we allow a further step in the reconstruction, the three functions can be reconciled into one single pre-PAN *-um*- that functioned as a reflexive marker. I argue below that the most likely source of an affix that develops inchoative- and intransitive-marking functions is a reflexive marker.

Cross-linguistically, reflexives frequently develop an inchoative-marking function. Consider the following examples from French, Spanish, and Polish, where se functions as an inchoative morpheme (Rivero and Milojevi´c Sheppard 2003: 100; D´echaine and Wiltschko 2012:14).

(6) a. La porte s’est ouverte.

“The door opened”

b. El vaso se rompió.

“The vase broke.”

c. Si/صيانة się wazhła.

Glass REFLEX broke

“The glass broke.”

Similar functions are also found in Bulgarian, Bosnian/Croatian/Serbian, Czech, Slovenian, Macedonian and Slovak (Rivero 2001:170). The inchoative marking of an original reflexive marker, however, is not limited to Romance and Slavic, but is the common pattern cross-linguistically. For example, in Salishan Halkomelem, -ót marks both reflexives and inchoatives (Gerds 1998: itlan-ítót “look after self”, -ót “get big”.

The development from reflexive to intransitive marking is just as straightforward. One function of the reflexive is to remove an internal argument from the predicate; over time, this valency-decreasing function can be realanalyzed as primary, rendering the reflexive a marker of verbal intransitivity. This is a common process and is attested, for example, in Aranda, where the reflexive marker -be develops into the intranativiser -bhe (Heine and Kutve 2002:252). The proposal that *-um- developed from a reflexive thus explains two of this morpheme’s functions that on the surface seemed unrelated: intransitivity and inchoative marking. The most intriguing function of *-um- is its active voice marking, also follows from my proposal. It is likely that, at a pre-PAN stage where the language lacked an elaborate voice system, *-um- simply functioned as an intransitivity marker (a function that is attested still today, although not very productively). When the elaborate voice system with passive, instrumental, and locative voice arose (through the process described below), this intransitivity marker simply continued to surface on (intransitive) verbs. Since the new emergent voice markers (passive, locative, and instrumental) are obligatorily transitive, *-um- began to surface, by default, only in active voice. Intransitivity marking *-um- could thus easily be realanalyzed as an active voice marker under the pressure of other affixes of the new voice-marking paradigm.

The fact that, at some point, *-um- started marking transitive verbs as well poses no problems for the proposal above. Once the affix was realanalyzed as a voice marker, it could start surfacing on transitive verbs. This transition from reflexive to active voice marking on transitive verbs might also have been reinforced by an inter-stage with antipassive marking. Reflexives frequently develop the antipassive function. Consider the Polish example below (from Janic 2013:63):

(7) a. Chłopiec uczył klamkę.

“The boy grasped the door-handle.”

b. Chłopiec uczył się klamkę.

“The boy grasped the door-handle.”

Antipassivization suggests a possible motivator for the spread of *-um- (once a reflexive marker) to active voice marking on transitive verbs. However, this step is not required and we know that *-um- tends to surface more regularly on intransitive verbs even in the attested daughter languages. The proposed development of *-um- is illustrated in (8).

9. There is another conceivable trajectory for the origin of *-um-, i.e. that it functioned as a progressive/incompletive marker in the protolanguage, which would often be alike. The atelic function could then be easily extended to an intransitive marking function: we know that “idle predicates tend to appear in intransitive structures” and this connection is also empirically confirmed (Wagner 2012). There are, however, two problems with postulating such a trajectory: First, to my knowledge, there is no evidence for an atelic function of the infix *-um-, nor is there any typological evidence of such a function from atelic markers entering the voice-marking paradigm at later stages in the development of the AN language family. Second, it would be difficult to derive the inchoative-marking function of *-um- from an atelic-marking function.

The only active voice affix that can be reconstructed to the PAN stage is *-um- and there are two main facts that indicate *-um- had a different origin than other three affixes: it is an infix as opposed to a suffix or prefix, and it usually does not have a noun-italic function.
Any other trajectory of development would be very difficult to justify. For example, it would be very difficult to argue that the active voice marker developed into a reflexive or inchoative marker or that the inchoative marker developed into an active voice or reflexive marker. First, such processes run against the unidirectionality of grammaticalization (since reflexives are less grammatical than voice markers). Second, it is not clear what would motivate such a change. To my knowledge, no examples exist of reflexives developing from inchoatives, whereas the development in the opposite direction is common (as seen above). Likewise, shifts from intransitive markers to reflexives are unattested, while the opposite developments are common (cf. Heine and Kuteva 2002).

There are further facts that speak in favor of *-um- originating as a reflexive marker and developing to a voice-marking affix through a stage of intransitivity marking: the two other affixes that surface as active voice markers in AN languages, *-nap- and *-um-, reveal that it is precisely (in)transitivity markers that tend to be incorporated into the voice-marking paradigm.

Both *-um- and *-nap- have (in)transitivity-marking functions: the former surfaced on transitive verbs, the latter on intransitive verbs. These markers cannot be reconstructed to PAN: they are most likely a later innovation, which means that they originated as transitivity markers and got incorporated into the voice-marking paradigm at a later stage (just as I propose happened with *-am- at an earlier stage of development). The development of these two prefixes thus provides additional support for the proposal that *-um- originates as a reflexive that later developed an intransitivity-marking function.

Beside (in)transitivity marking, *-nap- and *-um- also have other functions that provide crucial insights into their prehistory. *-um- shows traces of a verbalizing function in the daughter languages, e.g. *mug-anak ‘to have children’ from (v)anak ‘child’ (see section 2). Both prefixes also have ‘counterpart’ prefixes without the initial nasal: *-nap- and *-pa-. These two prefixes formed instrumental nouns in Proto-Western-Malayo-Polynesian (Blust 2013: 378-9). In Tagalog, for example, this function is still preserved: pam-bili ‘means for buying’ from bili ‘to buy’ or pang-hampa ‘sth. for hitting’ from hampa ‘to hit’ (Himmelmann 2005b: 373).

The prefixes *-nap-, *-um-, *-pa- and *-pan- thus show a wide variety of functions in the daughter languages. The following table summarizes the functions of these four prefixes:

<table>
<thead>
<tr>
<th>Function</th>
<th>Affix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active voice marker</td>
<td>*-nap-, *-um-</td>
</tr>
<tr>
<td>Intransitives</td>
<td>*-um-</td>
</tr>
<tr>
<td>Transitives/causatives</td>
<td>*-nap-</td>
</tr>
<tr>
<td>Verbalizer</td>
<td>*-um-</td>
</tr>
<tr>
<td>Instrumental</td>
<td>*-pa-</td>
</tr>
</tbody>
</table>

The diverse functional properties, as well as surface phonology, of these prefixes offers crucial insight into their pre-history. First, it is very likely that the four prefixes have a common source (*-nap- and *-pan-) and that the nasal-initial forms arose through a morphophonological operation from *-um-* and *-um-*, respectively (Wolff 1973: 72). Kaufman (2009) points out that *-nap- and *-pan- are further analyzable into the constituent *-pa- plus *o or aN. *-pa- was a causative prefix in PAN (e.g. Kayan pa-tap ‘make someone cry’ from tap ‘cry’). Blust (2013: 379) points out that the functions of *-pa- and *aN are more difficult to reconstruct, as they rarely appear in isolation; the *aN element probably functioned as a reflexive or middle voice marker, and *-pa- as a plural object/pluralfunctional marker (as reconstructed in Kaufman 2009).

The apparent heterogeneity can be accounted for if we assume that the *-nap- prefix goes back to a verbal element with the meaning ‘TAKE’. The development from a verbal form ‘to take’ to a causative marker is common and follows a well-documented grammaticalization trajectory. In Twi, for example, de ‘to take’ develops into a transitive and causative marker (from Heine and Kuteva 2002: 286).

Further evidence for the incorporation of reflexive markers into the voice-marking system comes from a more recent layer of AN development: in Ilokano, *ap- is an innovative prefix that marks active voice. The prefix goes back to *(S)ap- ‘to hit’, which had a reflexive/causative marking function. The reciprocal function is still preserved in Ilokano today, although it has ceased to be productive (e.g. N-aang-sallintostha ‘they missed each other’).

5.2 Non-active voices

In section 2.1 I argued that the active voice affixes most likely had different origins than the other affixes in the voice-marking paradigm. First, other voice marking affixes are suffixes (or prefixes, in the case of *-aN), not infixes. Second, other voice markers all have a well-attested nominalization function, whereas *-um- most likely did not have the nominalization function in the proto-language. Because the Austronesian voice system is morphosyntactically rare, there are almost no typological data to point to the likely origins...
of the AN voice-marking affixes. One case that exhibits some common properties with AN voice is reported in Rude (1991:185) for Nez Perce, Sahaptin, and Klamath. Voice morphology in these languages promotes "non-patient case roles to objects." The affixes here are, however, argued to go back to verbs. Moreover, no promotion to subject occurs (as in AN), which makes this parallel unappealing.

Although the AN system is typologically very rare, we can nevertheless reconstruct the likely origins of the voice system, primarily by capitalizing on historical hints gleaned from the various functions that the affixes have in the daughter languages. Beside their voice-marking function, these affixes always function as nominalizers, too. The semantics of the nominalizing function corresponds to the semantics of the voices they mark: for example, *an forms locative nouns and marks locative voice (e.g. Makassarese antang ‘place where one stands’. Blust 2013: 395). I argue (following, in part, Peterson 1997, 2007) that the most likely origins of the voice-marking and nominalization functions are prepositions that mark direct object, location, and instrument.

The proposal that non-active voice affixes go back to prepositions allows us to easily explain how the affixes developed into voice markers, on the one hand, and prepositions, on the other. For the development from prepositions to nominalizers, I propose a straightforward explanation: that this change occurred through an inter-stage with compounds. Postulating a compound stage aligns this developmental shift with the usual trajectory of grammaticalization. Prepositions frequently form compounds: under the assumption that the meaning of compounds in PRE-PAN was something like ‘having X’, we get precisely the compounds that could serve as the basis for the development from prepositions to nominalizers, e.g. Tagalog *tits ‘cigarette ash → tits-an ‘having ash in’ → ‘ash tray’. From there, the affix can have easily been reanalyzed as a locative nominalizer — precisely what we have attested in the daughter languages today. This analysis holds for other two affixes as well. Peterson (1997, 2007) assumes that the nominalizing function developed from a reanalysis of subordinated verbal forms with voice markers, which is not impossible. However, his account cannot explain why the affixes in question formed not only deverbalities, but also denominals, as is clear from Tagalog *tit-an ‘ash tray’.

I have established in this section that the source of the AN nominalizers was likely the prepositions. To explain the development from prepositions to voice-marking affixes, we have to invoke the broader verbal morphosystemic pattern of PAN. Let’s assume that voice-marking affixes started out as prepositions in PRE-PAN. For a sentence containing one internal and one external argument, we can reconstruct that *an (a direct object marker, or a preposition with this function) surfaced on the internal argument, while the external argument was probably unmarked (as is the case, for example, in today’s Tondano and Saisiat, and was most likely the case in PAN). If a sentence contained adjuncts as well, we can posit that they too were marked by the preposition *an for location (with the meaning ‘in’, ’at’ and ‘(for) something in which ’). The reconstructed surface sentence structure, with arguments, adjuncts, and corresponding prepositions, is schematized in (13).

(13) VERB en-DIRECT.OBJECT (S)-INSTRUMENT an-LOCATION SUBJECT

As already mentioned, the AN voice system is, descriptively speaking, simply a way of marking the ‘prominent’ or ‘prival’ role that one argument has in the clause. Depending on the semantics of this pivotal role, different markers surface. We also know that adpositions are cross-linguistically the common source of preverbs.11 When a preposition moves into the verbal domain and becomes a preverb, the semantics of internal arguments gets incorporated into the verbal semantics and the corresponding argument or adjunct becomes semantically prominent. For example, if the preposition for location, *an, starts functioning as a preverb and incorporates its semantics into the verb, we get the surface structure in (14) (assuming that preverbs, unlike prepositions, get marked on the verb):

(14) VERB en-DIRECT.OBJECT (S)-INSTRUMENT an-LOCATION SUBJECT

Instances of prepositions or adverbs becoming preverbs/applicatives that then surface on verbs are very common cross-linguistically. An example from Kinyarwanda (from Peterson 1997) exemplifies this process synchronically. Applicative constructions arising from preposition incorporation are also reported in Garrett (1990) for a number of language families.

11. One of the reasons that such systems appear rare is that the fact that case relation (voice) is marked on the verb in AN, while head-marking of case is rare (Nichols 1986). In this paper, I show that voice-marking affixes go back to dependent-marked case, which follows the usual and expected distribution. The development to head-marking occurs when prepositions become preverbs. The shift from dependent-marking to head-marking is thus well motivated: we know that ‘instrumental, directional affixes on verbs’ (in our case preverbs) are usually head-marked (Nichols 1986:64).

12. That voice-marking affixes for location and instrument in tag p. 236 to prepositions has been assumed in Peterson (1997, 2007).

13. In fact, the usual trajectory of grammaticalization goes from (a) adverbs to adpositions or preverbs or (b) adpositions to preverbs (Kühlbrecht 2008:139).

In the development from Vedic to Sanskrit, adpositions continue to surface on the noun, but preverbs undergo innovation: they begin surfacing on the verb instead of sentence-initially. Something similar probably happened in PAN: when the prepositions were incorpo-rated into the verbal semantics and became preverbs, they moved and began surfacing on the verb. This proposal also explains why they surface as suffixes in the daughter languages. Vedic, as a head-final language, moved its postpositions into preverbal position as prefixes preceding the verbal head, whereas PAN, as a head-initial language, turned its prepositions into postverbal suffixes. Synchronically, such movement can be described as head-to-head movement from the PP of an adjunct/external argument to the verbal head.

Evidence in favor of the proposed analysis can be found within the AN family itself. In Chamorro and Malay, an adverbial locative marker *t has become a locative voice marker: Malay ma-namam-ku ‘to plant (object)’, and ma-namam- ‘to plant (in location)’ (Blust 2013:447). This development likely occurred precisely through the process of adverb-to-preverb conversion, causing the morpheme in question to enter the voice-marking paradigm. The example from Malay thus confirms that prepositions are the likely origins of voice-marking affixes.

In the following I explain why the promoted ‘pivotal’ argument surfaces as a subject in AN. I also provide a detailed account of how a system of preverbs and prepositions becomes a typologically peculiar voice system. The only device used in explaining the development to voice system is reanalysis, the most common process in historical syntax. We saw that active voice markers go back to (intransitivizing markers and reflexives). These affixes, however, most likely did not play any role in the development of the voice system except that they continued to mark (in)transitivity — and, once the voice system was established, assumed the role of active voice marking. The driving force behind the development of the voice system was most likely the process of incorporating prepositions into the verbal heads (the development to preverbs).

Again, crucially posit that in a typical PAN sentence all arguments were overtly marked except for subjects, a situation that is reflected in today’s Tondano and Saisiat. There also exists strong comparative evidence for this configuration: the reconstructed PAN nominalizer marker is *t-ka (Ross 2006). It is straightforward to posit that *ka- was secondarily introduced (under the pressure of other affixes). The null marker for nominative case indicates that subjects were indeed unmarked in PAN. (17) illustrates a reconstructed surface structure of a sentence with internal argument, external argument, and adjuncts in PAN.

(17) VERB en-DIRECT.OBJECT (S)-INSTRUMENT an-LOCATION SUBJECT

As soon as the preposition became a preverb and incorporated into the verbal semantics, the argument that corresponded to the incorporated semantics became unmarked, due to movement of the former preposition to the verbal head (unmarked arguments underlined).

(18) VERB-an en-DIRECT.OBJECT (S)-INSTRUMENT LOCATION SUBJECT

The only two unmarked arguments now are the subject and the argument previously governed by the raised preposition (underlined in 18). From this position, the argument with the raised preposition comes naturally to be realanalyzed as a subject precisely because it is unmarked: lack of overt case marker was the main characteristic of subjects. The reanalysis was reinforced in cases with hypothetical pro-drop, as in (20). Several AN languages today allow pro-drop (Postdam and Polinsky, forthcoming) and PAN likely allowed pro-drop at least in some cases. (19) shows surface sentence structure after the operation preposition → preverb and pro-drop: (20) shows surface sentence structure after pro-drop, which is the main locus for the reanalysis. This surface structure is in fact the structure that we have in today’s voice system, the only difference is that after the reanalysis the subject was reintroduced with oblique case marking and other case markers developed.

(19) VERB-an en-DIRECT.OBJECT (S)-INSTRUMENT LOCATION SUBJECT

(20) VERB-an en-DIRECT.OBJECT (S)-INSTRUMENT LOCATION SUBJECT

To sum up, when an argument’s semantic role becomes promoted and its former governing preposition is incorporated into the verbal head, that argument gets realanalyzed as the subject of the clause precisely because it ceases to be overtly marked (which was the characteristics of subjects); this process, in turn, gives rise to the peculiar morphosystemic system called Austroasiatic voice system. This argument reanalysis is thus a crucial step in the development: it explains how a system of prepositions and preverbs becomes a typologically peculiar system of voice marking.

Moreover, this analysis crucially unifies two most prominent properties of AN voice system: semantic prominence and promotion to subjects. Semantic prominence is achieved by the operation preposition → preverb and this operation is also the condition for reanalysis of the newly unmarked argument as a subject (promotion to subjects).

This chapter hold over only for *an and also for the other two voice-marking affixes, *en and *(S)-. Note that the latter is a prefix, and thus does not conform directly to the pattern described above, by which prepositions give rise to preverbs that surface as suffixes. This
discrepancy does not, however, pose a problem for our analysis: it is known that one of the standard trajectories of grammaticalization desplaces adverbs and prepositions from verbs. Following Ross (1995:758) and Peterson (2007), I propose that *S(3)- goes back to a verbal element with the meaning ‘have, possess, wear’; these verbal origins are reflected in the fact that *(S)3- surfaces as a prefix. The only other two prefixes in the voice marking paradigm, *m-aug and *ma-um, are of verbal origin too (see above).

Accepting this explanation for *(S)3- produces the following distributional pattern:

<table>
<thead>
<tr>
<th>Origin</th>
<th>Affix</th>
</tr>
</thead>
<tbody>
<tr>
<td>verbal</td>
<td>prefix</td>
</tr>
<tr>
<td></td>
<td>preposition</td>
</tr>
<tr>
<td></td>
<td>reflexive</td>
</tr>
<tr>
<td></td>
<td>suffix</td>
</tr>
</tbody>
</table>

5.3 Subject-only restriction

5.4 Other Affixes

We have now arrived at a coherent explanation for the prehistory of the affixes that constitute the “core” voice-marking paradigm in AN. There are other affixes associated with this voice-marking paradigm as well, including the very commonly attested perfective or past tense marker *-um-. E.g. Atayal m-aqal ‘to take’ vs. m-in-aqal ‘look’ (Blust 2013: 385); see the table below for illustration of the aspectual (perfective) function.

(21) Kelabit (Blust 2013:386)

\[
\begin{array}{ll}
\text{b.} & \text{ma-um} \quad \text{'stolen'} \\
\text{a.} & \text{ma-um} \quad \text{'corpse'} \\
\end{array}
\]

The infix also had a nominalizing function, forming deverbal (and occasionally denotive) nouns, e.g. iokano mulat ‘to die’ vs. m-in-aqal 'corpse' or iokano bahanu ‘to tow’ vs. m-in-aqal ‘towed object’.

This analysis, however, fails to structurally explain the difference in affix placement between transitive and intransitive verbs. A related but slightly different analysis captures the affix ordering even better. On this analysis, we assume that the light verb *m-aug. (in other words, the causative or transitive affix) takes the whole CP or TP as its complement. Since the reconstruction developed above predicts the development of prepositions from transitive verbs, it would make any predictions about their origins. Therefore, we set them aside in the present account.

In this section, I have proposed a new explanation for the development of the Austronesian voice system. I argued that the affixes that constitute this system displayed both the voice and nominalizing functions already in the proto-language, and that they originally developed from a system of prepositions in Pre-Proto-Austronesian. Two different developmental paths were taken by these prepositions: on the one hand, they were morphosyntactically reanalyzed as preverbs, causing the concomitant reanalysis and promotion of their former arguments to subject position; on the other hand, the prepositions grammaticalized into nominalizing affixes, probably via an inter-stage with compounds. I also argued that the active voice prefix and infix probably originated in reflexive markers (and the verbal element *take) that later developed into transitive-, intransitive-, or inchoative-marking morphemes.

6 A Synchronic Analysis

The historical account outlined above bears consequences for the synchronic analysis of Austronesian voice as well. AN voice markers are analyzed in Peterson (2007) as applicatives. In this section, I show how different pre-PAN syntactic structures derived the PAN system of high and low applicatives (for a detailed analysis of applicatives, see Pylkkänen 2000; McGinnis 2001). The crucial element in this development was reanalysis. I argue that the placement of applicatives (specifically, the distinction between high and low applicatives) in today’s system directly reflects the previous synchronic stages.

Let us first reconstruct a syntactic analysis for the earliest stages of PAN. I argued above that the active voice affix *-um- (and later *m-aug, and *ma-um-) functioned as a transitivizer marker. There are two ways to account for the case of transitivizing markers. One is outlined in Collins (2003:19ff.), who assumes that the transitivizer marker in Hu/hounsi and Hsiao, #a, is base-generated as an adjunct to v. Collins’ analysis is illustrated in (23).

(23)

\[
\begin{array}{c}
vP \\
\text{DP} \\
\text{TRANS} \\
\end{array}
\]

Since #a is a suffix, Collins (2003) has to assume movement and adjacency of the verbal head. If we adopt the same analysis for *m-aug. (and *ma-um, and *ma-um-), we get the three affixes adjoined within vP, which correctly predicts that they precede the verbal head (assuming, of course, that no additional movement occurs). The diachronic analysis thus matches well with the synchronic affix placement. The fact that the intransitive marker gets infixed via some morphosyntactic operation could be another indication that the transitivizing marker is base-generated quite late, inside vP. Consider the structure in (24).

(24)

\[
\begin{array}{c}
vP \\
\text{DP} \\
\text{vP} \\
\text{vP} \\
\end{array}
\]

This analysis, however, fails to structurally explain the difference in affix placement between transitive and intransitive verbs. A related but slightly different analysis captures the affix ordering even better. On this analysis, we assume that the light verb *m-aug. (in other words, the causative or transitive affix) takes the whole CP or TP as its complement. Since the reconstruction developed above predicts that *m-aug goes back to a verbal element *take, an analysis in which *m-aug takes CP or TP as a complement aligns very well with this historical analysis. We thus correctly predict the affix to precede the verb.

(25)

\[
\begin{array}{c}
vP \\
\text{DP} \\
\text{vP} \\
\text{vP} \\
\text{vP} \\
\text{vP} \\
\end{array}
\]

On the other hand, we could assume that the intransitive marker *-um- takes only a vP as its complement.

(26)

\[
\begin{array}{c}
vP \\
\text{DP} \\
\text{vP} \\
\text{vP} \\
\text{vP} \\
\end{array}
\]

14. Yeō (2011) proposes a different account of the development from the perfective to nominalizing function of *-ina- through relative clauses: “as a grammaticalization of headless relative clause by the metonymic extension using the property of an entity to refer to the entity.” However, no such complications are necessary under my proposal: the derivation of adjectives/participles from a perfective marker with subsequent nominalization of participles is a common phenomenon.

15. I follow a more traditional formalism for representing syntactic structure, but the trees can be easily adjusted to conform to any theoretical framework.
This analysis incorporates the surface differences between the transitive and intransitive markers into the structure: the intransitivity-marking affixes closely to the verbal head, allowing it to straightforwardly surface as an infix through some morphosyntactic operation, whereas the transitivity-marking affix surfaces further from verbal head and must therefore surface as a prefix. Regardless of which approach we assume, the historical analysis aligns perfectly with the synchronic syntactic theory and correctly predicts affix placement for voice-marking affixes.

Implications of the historical approach are even more significant for the synchronic analysis of other voice-marking affixes. I proposed above that */-en/, */-an/, and */(S)i-/* originated as prepositions. Following the syntactic analysis in section 4, let us assume that prepositions in PP start as complements or adjuncts to VP. The reconstructed surface structure is again given in (27). The vP in this surface structure is shown in (28).

(27) VERB LOCATION-INV SUBJECT

\[
\begin{array}{c}
\text{DP} \\
\text{SUBJECT} \\
\text{V} \\
\text{VP} \\
\text{P} \\
\text{DP} \\
\text{VPP} \\
\text{LOC} \\
\end{array}
\]

Semantic operation then moves VP closer to the verbal head (causing the promotion of the preposition to a preverb, discussed in section 3 above). This means that the P moves to the V through head-to-head movement.

(29) \[
\begin{array}{c}
\text{DP} \\
\text{VP} \\
\text{V} \\
\text{P} \\
\text{DP} \\
\text{P} \\
\end{array}
\]

Crucially, the reconstruction of these historical syntactic structures correctly predicts that affixes that go back to prepositions follow the verbal head. Exactly the same analysis can be used to derive the fact that Sanskrit preverbs precede the verbal head once they move out of P. Sanskrit, unlike PAN, is a head-final language, which explains the different affix placement. That word- order influences placement of affixes was noted already in Starosta et al. (1981, 1982). My proposal offers a structural explanation for this typological phenomenon.

The structure in (30) shows that, in Sanskrit, the affixes precede the verbal head simply by virtue of (i) Sanskrit’s status as a head-final language and (ii) the movement of P to V.

(30) \[
\begin{array}{c}
\text{DP} \\
\text{VP} \\
\text{V} \\
\text{P} \\
\text{PP} \\
\text{P} \\
\text{DP} \\
\end{array}
\]

We have seen so far that this analysis works for all affixes except the instrumental prefix */(S)i-/*-en. However, I have suggested above, following Ross (1995) and Peterson (2007), that */(S)i-/*-en-likely originated as a verbal element. I propose that it developed into a preposition only later, preserving a hint of its verbal nature in the fact that it precedes the verbal head. It would also be feasible to assume that */(S)i-/*at some stage of development functioned as an adverb and was therefore base-generated above V in the structure — this analysis would also explain why */(S)i-/*-en precedes the verb. Note that, when */(S)i-/*-en gets replaced by another affix, the innovative affix follows the verbal head (this occurs, for example, in Chamorro; see section 2.6). This, again, suggest that */(S)i-/* was specially marked for preceding the verbal head, when innovation occurs, new markers follow our predictions and surface after the verbal head.

Historical analysis of the syntactic structures implicated in the development of the PAN voice system correctly predicts the placement of affixes in the daughter languages: the intransitivity marker */-an//* is base-generated within the vP (or takes vP as a complement) and becomes an infix through a morphosyntactic operation, the transitivity marker */-an//*-en takes the whole CP or TP as a complement and precedes the verbal head; other affixes (except for */(S)i-/*) follow the verbal head in a head-initial language because they are base-generated as heads of PP which get moved to V via head-movement.

Above, I outlined a syntactic analysis of the PAN verbal system before realignment of prepositions occurred. At this point, internal arguments and adjuncts were still base-generated in their corresponding positions. However, once the morphologically unmarked arguments of the former prepositions were realigned as verbal subjects, the system developed into a system of applicative heads (for a general discussion of applicative heads, see Pylkkänen 2000). McGinnis (2001) argues that applicative heads can be low or high (or I- and E-applicatives). I assume that the variation between low and high applicatives is not only found across languages (like English vs. Chagga), but also within languages, and propose the following structure for AN voice affixes. The trees in (31) and (32) show the difference in structure between the two types (IO = indirect object and DO = direct object, based on McGinnis 2001).

(31) \[
\begin{array}{c}
\text{App} \\
\text{VP} \\
\text{IO} \\
\text{App} \\
\text{V} \\
\text{ApplP} \\
\text{I} \\
\text{V} \\
\text{DO} \\
\end{array}
\]

(32) \[
\begin{array}{c}
\text{App} \\
\text{VP} \\
\text{IO} \\
\text{ApplP} \\
\text{I} \\
\text{DO} \\
\end{array}
\]

Crucially, the deep syntactic structure of the previous stages is preserved: previous affixes that preceded the verbal head are now base-generated as high applicatives, whereas the ones that followed the verbal head (P heads that moved to V) are now base-generated as low applicatives.

7 Outstanding issues

This paper has offered an account of the origins of AN voice-marking affixes for independent forms, for perfective/past forms and for future-general forms (sections 2.1 and 4). The history and development of the dependent and imperative paradigms has been set aside, obscured by a lack of sufficient comparative data. Problems in the analysis of these paradigms arise already at the reconstruction level. More data and research, however, is needed for more conclusive results.

Some new proposals were put forward after the reconstruction in Wolff (1973), the most prominent being Ross (1995) and Ross (2009) (cf. also Starosta 1995, Aldridge 2015), but clearly more research is needed. Moreover, unlike the affixes discussed above, the affixes of the independent and imperative paradigms do not show multiple side functions, rendering their prehistory even more obscure. Perhaps the most plausible explanation is that these affixes, too, originated in prepositions, and that they underwent a similar development to the one described for their independent voice-marking counterparts. This stance is essentially argued for in Starosta et al. (1981, 1982).

More data and research, however, is needed for more conclusive results.

Another aspect worthy of further research is the prepositional origin of passive, instrumental, and locative voice markers. I have presented strong indirect evidence in this article for the prepositional origins of */-en/*, */-an/*, and */(S)i-/*, but some direct evidence in this direction would strengthen this proposal further. Perhaps the most promising direct evidence in favor of the prepositional origins of the affixes comes from the observation that, in some languages, voice-marking affixes are reported to have a case-marking function. Kaufman (forthcoming) points out that in “Amis, Saisiyat, Seediq, and Rukai, among others, traces of either */-en/* or */-an/* (or even both) are found in a case-marking function on pronouns and animate nouns.” More research and new data in this direction have the potential to bring further evidence to strengthen the proposal above.
8 Conclusion

In this paper, I propose a new explanation for the origins and development of the voice system in Austronesian. I show that this typologically highly unusual morphosyntactic system finds quite typical origins in a transitive-marking system and a series of prepositions. More specifically, I claim that active voice markers developed from reflexives and transitivity markers (which go back to the verbal element *-take). Other voice-marking affixes go back to prepositions. The development from prepositions to the voice system the voice system crucially passed through an intermediate phase where the prepositions moved to VP and were reanalyzed as markers on the verb (a similar process was proposed in a different context and for different suffixes, in Starosta et al. 1981, 1982). Once the DP that was originally governed by the preposition-cope-preverbe becomes morphologically unmarked, reanalysis occurs and the DT starts functioning as an external argument (subject) to the verb. The development from preposition to nominalizing affix is even more straightforward: I argue that this transition took place via an intermediate stage at which prepositions formed compounds. The infix *-in is agreed to go back to a periphrastic aspect marker and its nominalizing function can easily be derived from there.

Several aspects of the AN voice system that were previously difficult to explain follow straightforwardly from my proposal. First, my analysis accounts for asymmetries between the active voice and other voices in the paradigm. Second, promotion of focused arguments to the head of VP involves reanalysis of the verbal head (which is likely semantically motivated) followed by reanalysis on the basis of case marking. Third, my analysis unifies two of most prominent aspects of PAN voice system: promotion to subjects and semantic prominence. Fourth, other less prominent functions of the affixes are easily explained by this analysis: for example, inclusive- and intransitive-marking functions of *-an follow from the affix’s earlier origin as a reflexive marker. Finally, the system proposed above also predicts certain broader tendencies in the development of the voice-marking system. Several later developments are easily explained under my approach, including the replacement of *-an with *-n, the introduction of the prefixes *nun- and *nu-, and the introduction of reflexive marking into the active voice paradigm in Ilokano. I anticipate that future research will reveal even more such tendencies.

One of the goals of this paper has been to show how a historical analysis offers insight into synchronic syntactic structure. Historical analysis makes the right predictions for affix placement: active voice preverbe precede the verb because they originated as light verbs and took C/P/T or P as their complement. Voice-marking prepositions follow the verb in a head-initial language as a result of the movement of P to V and V to P in the development of PAN. This analysis also captures the typological differences between head-final and head-initial languages: in Sanskrit, preverbes precede the verbal head, while in Austronesian, they follow. After reanalysis, the system outlined above directly translates into a system with high and low applicatives, suggesting that the differences between high and low applicatives correspond to earlier stages of development in Austronesian.

I discussed methodology of using internal reconstruction for reconstructing typologically unusual morphosyntactic phenomena. I propose that all attested functions of a given affix should be examined: potential origins of each function are established based on grammaticalization theory. All functions of a single affix are then taken together and the most likely origin is the one that explains the most functions of a given affix.

References


