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UNDERSTANDING PREVIEW-SUBJECT CLAUSE CHAINS IN KAMANO KAFE

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Clause chaining, a phenomenon identified in Papuan languages as involving strings of medial verbs with limited inflection followed by a final verb with full inflectional possibilities, is as common as it is varied in the Papuan languages of New Guinea. This paper details aspects of the clause chaining system in Kamano Kafe, a language of the Eastern Highlands group, in which medial verbs not only show morphological alternations for same vs. different subject between clauses in a clause chain – common in many clause chaining systems – but they also feature a paradigm of preview subject agreement (PSA) markers which inflect for person and number of the subject of a following clause in the clause chain. The interaction between TAM morphology and PSA is explored here in order to make claims about the syntactic structure of clause chains in Kamano Kafe, primarily to argue for a subordination relationship of medial clauses to final verb clauses, and for the functional use of these syntactic structures in establishing complex macro-events.

1. INTRODUCTION. Kamano Kafe,¹ a member of the Goroka or Kamano-Yagaria branch of the Eastern Highlands sub-group of the Trans-New-Guinea languages (Foley 1986; Ford 1993), is a head-final Papuan language which employs an interesting type of switch-reference clause chaining where medial verbs not only mark different subjects between the medial clause and the following clause, but mark agreement in person and number with the subject of the following clause. This paper describes this preview-subject clause chaining system in Kamano Kafe through the temporal and modal relationships between clauses in the clause chain, as well as the syntactic structures which allow for morphological agreement between clauses, ultimately supporting a status of Kamano medial verbs as a type of subordinate clause.

Section 2 defines and identifies Kamano as a tenseless language. Section 3 describes Kamano Kafe's modal and aspectual morphology, both inflectional and derivational. Section 4 describes the medial verb and the preview-subject marker in clause chains. Section 5 offers an argument in favor of a subordination analysis for preview-subject clause chains based on agreement of temporal and modal properties of macro-event constructions. Section 6 addresses a rare but important non-canonical use of the preview-subject marker, raising interesting questions and leading to suggestions for further research.

2. KAMANO KAFE: A TENSELESS LANGUAGE. The argument for subordination of preview-subject marked clauses provided in later sections of this paper relies on an analysis of the temporal and modal relationships between clauses in clause chains. An accurate reading of these temporal relationships, then, relies on the descriptive accuracy of temporal representations in the language. To that end, this section seeks to refine the common understanding of some TAM morphemes found in descriptions of Kamano Kafe and related languages.

In the existing descriptive literature on Kamano Kafe (Drew and Payne 1970) and related languages of the Goroka group of the Trans-New-Guinea languages, including Bena Bena (Young 1971), Fore (Scott 1977), Hua (Haiman 1983), and Yagaria (Renck 1975), descriptions of the grammatical means of encoding temporal meanings into clauses have relied either largely or exclusively on the concept of tense—past, present, and future. Many of these works pre-date the development of more formal semantic schema for the description of tense systems in contrast to aspectual ones, such as those found in Comrie

¹ The data for this study come from a year-long field methods course working with a speaker of Kamano Kafe at the University of Hawai'i at Mānoa. Most of the data, as a result, are in the form of elicited, isolated sentences translated from English. These data will be archived and made accessible through the Kaipuleohone archive hosted by UH Mānoa.

1976, Dahl 1985, or Klein 1994, and therefore may lack in some way a descriptive precision with regard to the exact nature—both semantically and in terms of distribution—of the temporal morphemes and constructions they describe. While this paper can neither confirm nor deny the existence of true tense systems in the other languages of this family group, it can be demonstrated that Kamano Kafe is a tenseless language, defined by Tonhauser (2011:258–59) as a “language without overt grammaticalized expressions that restrict the temporal location of the antecedent reference time.”

To demonstrate this lack of tense in Kamano, for the descriptive purposes of this paper, does not require much more than showing that the verbal morphology previously described with tense terminology like “past,” “present,” and “future” does not in fact restrict the temporal location of the clause. Tense, as defined in Comrie 1976 or Klein 1994, situates the reference time of an event in relationship to the perspective or utterance time of a phrase. Strictly speaking, tense is temporal deixis. Therefore, if those morphemes which are described as past and future tenses in Drew and Payne (1970), and which were described that way by our descriptive team at an earlier stage of fieldwork, do not restrict their constituent events to a temporal location in the past or future, respectively, they should not be analyzed strictly as tense markers. While a more accurate description of these morphemes is given in section 3, the discussion here only refutes their designation as markers of tense.

The verbal suffix *-ne* has been described as a past tense marker, and is in complementary distribution with the verbal prefix (*'ne-*, which Drew and Payne describe as a marker of continuative aspect and which receives a similar analysis here as an imperfective marker in section 2. Some exemplary pairs of this distribution are given below.

- (1) Nāma-mo' ne-hr-i-e
bird-TOP IPFV-fly-3P.SG-IND²
'The bird is flying.'
- (2) Nāma-mo' hre-'n-i-e
bird-TOP fly-PFV-3P.SG-IND
'The bird flew.'
- (3) Figo afu-ra zgo-re' ne-tr-i-e
figo pig-OBJ money-LOC IPFV-sell-3P.SG-IND
'Figo sells pigs for money.'
- (4) Figo afu-ra zgo-re' ätre-'n-i-e
figo pig-OBJ money-LOC sell-PFV-3P.SG-IND
'Figo sold pigs for money.'

In these types of alternations, the closest English gloss or the pragmatic implication suggests that (1) and (3) relate present, ongoing events which coincide with the perspective time of the phrase, and (2) and (4) suggest events which do not overlap with the present. This is generally true of these statements in a

² The glossing abbreviations used in this paper are as follows: ABL 'ablative'; AN 'perfect/nominalizer' (see section 3); APPL 'applicative'; B 'Set B pronominal marking, also called the preview person suffix'; CF 'counterfactual'; DEF 'definite'; DL 'dual'; GRND 'establishes the referential ground for spatial relationships and deixis'; IND 'indicative sentential mood or illocutionary force'; IPFV 'imperfective aspect'; LOC 'locative'; NMLZ 'nominalizer, allows the head to which it affixes to function as an argument of a verb; OBJ 'object marker' (like the topic/subject marker, the distribution for this morpheme is inconclusive, and is simply referred to here as an object marker, although it does not mark all nor only objects); PFV 'perfect aspect'; PL 'plural'; POSS 'possessive'; POT 'potential mood'; REF 'referent'; SG 'singular'; SUB 'subjunctive'; TOP 'topic' (the precise status of this argument marker, which appears primarily on thematic agents but in a not-well-understood distribution, is a matter of dispute, and irrelevant to the present discussion).

pragmatic sense, especially for (2), which cannot be used to mean that the bird is still in the air. However, this same morpheme can be used for events which must co-occur with the perspective time, situating them as inherently present actions.

- (5) Ägona-mofo a-ga-fi mni-‘n-u-e
 mountain-GRND 3P.POSS-leg-IN sit-PFV-1P.SG-IND
 ‘I’m at the base of the mountain.’
- (6) Kra-‘mo-‘a oti-‘n-i-e
 dog-TOP-DEF stand-PFV-3P.SG-IND
 ‘The dog is standing up.’

The events denoted by these phrases must overlap with the perspective present. Although phrases like (5) and (6) can have a reference which may be temporally before the present, the perspective time is still included in the scope of the event, such that the subjects in each must still be in the state accomplished by the “sitting” or “standing” in (5) and (6) respectively. This *-‘ne* marker, then, does not temporally restrict events to times before the present, and there are contexts, as observable through the closest English translations, where a description of present states or actions *requires* the use of this morpheme.

A similar state exists for the *-gah* morpheme, or what Drew and Payne (1970) list as the future tense *gaha*, which is often used to talk about future events but does not restrict events to a location in the temporal future, and therefore is not a tense marker *sensu stricto*. This morpheme has been described as future tense on the basis of phrases like the following.

- (7) Antu’na memonta’ ru-prrobzi-gah-u-e
 that mirror do-break-POT-1P.SG-IND
 ‘I will break that mirror.’
- (8) E-gah-a’-e
 come-POT-DL-IND
 ‘They two will come.’

The events in (7) and (8) might be seen as events situated in the future, exclusive of the present, but the *-gah* suffix can also be used in utterances which clearly denote a present action or state, especially evidenced by co-occurrence with the imperfective aspect marker *ne-*.

- (9) Kabe’ ne-ku’ ne-hu-gah-i-e
 food eat-REF IPFV-do-POT-3P.SG-IND
 ‘He might want to eat.’
- (10) Kainantu ne-bu-gah-i-e
 Kainantu IPFV-go-POT-3P.SG-IND
 ‘He must be going (on his way) to Kainantu.’

Another argument against the tense analysis is that the putative “past” and “future” morphemes can co-occur. No language with a true tense system allows for the co-occurrence of opposing tense markers on a single verb. However, there are instances in which both *-‘ne* and *-gah* can occur on the same verb, as in the examples below. Strictly speaking, this fact alone only shows that one, but not necessarily both, of these morphemes is not a tense marker, but in conjunction with the less tense-like uses for both of them, their co-occurrence suggests that the tense analysis is not the best one.

- (11) Aka-‘za ne-‘ne-gah-i-e
bitter-ARGT eat-PFV-POT-3P.SG-IND
‘He must have eaten something bitter.’
- (12) Nerga ne-ku’ hu-‘ne-gah-i-e
Taro eat-REF do-PFV-POT-3P.SG-IND
‘He must have wanted to eat taro.’

Although many Kamano Kafe sentences which contain verbs marked with *-gah* and *-‘ne* may best be translated into English with definite tense readings as future and past respectively, there is strong evidence against them actually functioning as such in the language. Neither restricts their constituent events from being interpreted in the present, and *-gah* clauses as in (11) and (12) can refer to events situated in the past. Description and analysis of temporal constructions in Kamano Kafe, even where temporal deixis or restriction is pragmatically implied or constructed through temporal adjuncts, must be carried out using categories of aspect rather than tense. This understanding of the temporal semantics of the language is crucial for the subordination argument presented in section 4.

3. ASPECT AND MOOD MORPHOLOGY IN KK. Aspectual and modal morphology in Kamano Kafe occurs in the form of prototypically inflectional affixes on verbs, as well as affixes to verb roots which may be considered more derivational. This section describes the morphology relevant for determining inflectional scope in section 4.

3.1 INFLECTIONAL ASPECT. The two most common aspect markers in Kamano Kafe have already been referenced in section 2: the prefix *ne-* and the suffix *-‘ne*. The suffix *-‘ne* views the event to which it refers as both complete—it cannot co-occur with the *ne-* which marks a progressive, continuative imperfect—and sometimes also (but not always) as completed. The distinction between complete and completed is important in the typological literature (see Comrie 1976: 57), as completed suggests that the event has concluded prior to the reference time, but as discussed in section 2, this morpheme does not restrict or point to any particular time of event in relation to reference time, and lacks an inherent tense meaning. Its use corresponds in some respects with the “perfect of result” (Comrie 1976:56), and indeed when verbs like *mni* ‘sit’ take the *-‘ne* marker for present states or actions, as in (14) below, the Kamano could just as accurately be translated as ‘has sat down’, using the English perfect. However, the perfect as a typological construct often is seen as having both tense and aspectual meanings, while *-‘ne* in Kamano is distinctly aspectual and does not infer tense. It is most accurately described as a marker of perfectivity.

- (13) Nāma-mo’ hre-‘n-i-e³
bird-ART fly-PFV-3P.SG-IND
‘The bird flew.’
- (14) Ägona-mofo a-ga-fi mni-‘n-u-e
mountain-GRND 3P.POSS-leg-IN sit-PFV-1P.SG-IND
‘I’m at the base of the mountain.’

Although labeled continuative by Drew and Payne, the prefix (*‘ne-* is described here as being imperfective—a term which, as described by Comrie (1976), denotes an aspect wherein events extend through and beyond reference time, and which encapsulates both of the more specific terms “habitual” and “con-

³ Lexical aspect and the broader semantic value of the verb root /hre/ are of importance here. The same word is used for ‘shaving’, and its semantic value is probably more generally something related to separation of one entity from another. Flying, then, is rendered as a bird’s separation from the ground, and is inherently telic, while ‘fly’ in English is generally more atelic.

tinuative.” Using this more general term is helpful for Kamano constructions like (15), where the imperfective marker obtains readings of either ‘he is eating pig right now’ and ‘he eats pig; he is a pig eater’, dependent upon context.

- (15) Äfu ‘ne-n-i-e
pig IPFV-eat-3P.SG-IND
‘He eats pig.’

While the function of these two morphemes is rather clear and consistent across their many usages, there is another possible aspect morpheme whose use is not as well understood, the suffix *-an*. It is included here in this discussion of inflectional aspect morphemes because of its alternation with *-ne*. When used in final verbs, our consultant claims absolutely no differences in meaning between forms with *-ne* and forms with *-an*. Because of an uncertainty described further below, *-an* is glossed simply as AN.

- (16) Nä-ga ne-re-‘na n-u-an-e.⁴
1P.POSS-leg IPFV-do-B.1P.SG eat-1P.SG-AN-IND
‘I ate while running.’
- (17) Nä-ga ne-re-‘na ne-‘n-u-e.
1P.POSS-leg IPFV-do-B.1P.SG eat-PFV-1.SG-IND
‘I ate while running.’
- (18) Ne-bu-no’ h-i-an-e
IPFV-go-B.3P.SG do-3P.SG-AN-IND
‘He did it while walking.’
- (19) Ne-bu-no’ hu-‘n-i-e
IPFV-go-B.3P.SG do-PFV-3P.SG-IND
‘He did it while walking.’

Were this the only use of the *-an* suffix, it might suffice to simply call it a perfective marker and look further for semantic or usage differences between the two perfective markers. However, the final verb perfective usage is actually fairly infrequent, and this *-an* morpheme is used much more often, and more predictably, in subordinate non-medial clause constructions, and even co-occurs with the perfect *-ne* on the same verb.

- (20) Kri e-ri-‘n-an-an-ki kuma-te’ mni=o.
sick come-take-PFV-2P.SG-AN-CF place-LOC sit=IMP
‘You are sick, so stay home.’
- (21) Osi-‘ama mni-‘n-an-an-a kabe-ra bäga-re-gah-i-e
little-THIS sit-PFV-2P.SG-AN-SUB food-ART finish-do-POT-3P.SG-IND
‘If you wait a little bit, the food will be finished.’

⁴ The verb root *re* is glossed here simply as ‘do’ to indicate the fact that its meaning cannot be independently defined. Its meaning is always indicated by the arguments or verbal adjuncts that it takes. The verb root *hu* has a similar general purpose use, but does in fact occur in isolation to mean something like English ‘do’, as in (18) or ‘say’, as in (53).

- (22) Nā-gesa nth-u-an-a nerga ne-gri-gah-i-e
 1P.POSS-ear hear-1P.SG-AN-SUB taro IPFV-plant-POT-3P.SG-IND
 ‘I think he plants taro.’ Lit ‘I’ve heard he maybe plants taro.’
- (23) Ne-b-i-an-a-gi bu-gah-u-e
 IPFV-go-3P.SG-AN-SUB-CF go-POT-1P.SG-IND
 ‘Even though he is going, I will go.’

These examples of *-an* could be analyzed as a piece of the clause coordinating structure, perhaps even a type of subjunctive marker, although this would make this morpheme a modal rather than aspectual marker. As the exact function of this AN morpheme does not end up having major implications for the assertions made by this paper in section 4, it will not be discussed further, but it is important that this morpheme be explored further and its function, either semantically or syntactically, be understood in greater detail.

3.2 MODAL MORPHOLOGY AND MODAL CONSTRUCTIONS. This section, describing modal constructions, is divided into three subsections: the first on sentential mood markers which are a requisite part of verbal morphology on all non-preview-person-marking verbs, the second on modal morphemes which attach only to verbal roots, and the third on constructions whose semantic expression could be considered modal, but which operate using syntactic constructions which apply to other pieces of the grammar, and also which have different implications for the interpretation of irrealis modality within the preview-subject clause chains discussed in section 4.

3.2.1 SENTENTIAL MOOD. This first modal category includes single vowel, verb-final markers which affix to final verbs and non-final verbs which do not take Set B markers. These include the *-e* indicative marker, the *-o* interrogative marker, the *-a* subordinating marker used for some types of subordinate and relative clauses in complex sentences (almost always the subordinate “if” clause of conditional statements), and the *=o* imperative clitic⁵. An example of each is given below, with the *-a* and *-e* suffixes in (24), the imperative in (24), and the interrogative in (26).

- (24) Bu-‘na-ku’-ma h-i-sin-a äbre-‘na bu-gah-u-e
 go-ART-REF-ARG do-3P.SG-SHOULD-SUB take-B.1P.SG go-POT-1P.SG-IND
 ‘If he wanted to go, I should have taken him.’
- (25) Mofraven-tmi-‘mo-‘za non-te-ga bi-h=0
 child-MANY-ART-PL house-LOC-ABL go-PL-IMP
 ‘The children must go home.’
- (26) Kainantu b-an-an-o?
 kainantu go-2P.SG-AN-Q
 Did you go to Kainantu?

These morphemes, based on their semantic value and structural position, align well with the notion of illocutionary force or sentential mood. In the terms of generative syntax, these morphemes fit well into the head of C, or the clausal head, position, which is the prototypical position for sentential mood markers like (non-) interrogative and imperative, as well as complementizers, to which the subordinating *-a* is comparable.

⁵ The designation of the imperative marker as a clitic rather than suffix is made primarily on prosodic grounds, and perhaps to help distinguish it from the interrogative marker which has the same underlying form.

3.2.2 THE -GAH AND -SI SUFFIXES. Kamano Kafe has two inflectional modal markers which pattern together and confer various types of epistemic and deontic modality, as opposed to the sentential mood markers described above. The first of these markers, *-gah* was discussed in section 1, where it is established that although this morpheme is used in constructions which are often best *translated to English* using the future tense, its usage in other contexts prohibits such an interpretation globally. Below are a number of different uses of *-gah*.

- (27) Bu-sn-i-an-a bu-gah-u-e
 go-SHOULD-3P.SG-AN-SUB go-POT-1P.SG-IND
 ‘If he goes, I will go.’
- (28) Kza-hu-gah-u-e
 help-do-POT-3P.SG-IND
 ‘I will help you.’
- (29) Nä-gesa nth-u-an-a nerga ne-gri-gah-i-e
 1P.POSS-ear hear-1P.SG-AN-SUB taro IPFV-plant-POT-3P.SG-IND
 ‘I think he plants taro.’
- (30) Nerga ne-ku’ hu-‘ne-gah-i-e
 taro eat-REF do-PFV-POT-3P.SG-IND
 ‘He must have wanted to eat taro.’

This marker *-gah*, then, has a number of uses: positing future events (28), predicating outcomes of conditional circumstances (27), and making assumptive hypotheses about present and past actions (29 and 30). The common theme of all of these usages is that they establish that the speaker is postulating some event or state, but is fairly certain of its truth value or likelihood. The future, hypothetical conditional situations, and assumptions about unconfirmed events all fall into this category. I propose, as is reflected in the glossing in this paper, that this *-gah* is a type of epistemic modality, referred to here as the *potential mood*. The potential mood suggests that there is a strong likelihood of the marked event, but no confirmation of its truth value in the real observable world—conditions which apply in each of the aforementioned categories of use of the *-gah* morpheme. Specifically, the word “potential” is used as opposed to something like “hypothetical,” as when *-gah* is used to make suppositions about non-observed present and past events, it does not appear to signal mere reflection on the possibility of a situation, rather that there is deductive reasoning or evidence suggesting the likelihood of the truth of the statement.

The other important piece of truly modal morphology appears as *-si* or *-sin*; it is unclear if the final nasal is always part of the morpheme or not. Therefore the analysis of the form is not entirely complete, but we can clearly indicate the morpheme when it appears. The following are some examples of its use, both in final and non-final clauses (in the gloss this morpheme is marked as SHOULD, for reasons to be discussed below).

- (31) E-ri-‘za e-ri-ku’ h-a-sin-e
 come-take-ARG come-take-REF do-2P.SG-SHOULD-IND
 ‘You should want to work.’
- (32) Nofi’-ma hu-nt-a-sin-a b-u-sin-e.
 rope-ART do-1P.APPL-2P.SG-SHOULD-SUB go-1P.SG-SHOULD-IND
 ‘If you had called me, I would go.’

- (33) Äfu-‘mo’zma zm-ge’kona-ma hu-zm-te-r-a-sin-a
 pig-ART-PL 3P.PL.POSS-wing-ART do-PL-have-do-3P-SHOULD-SUB
 ... hr-aza-sin-e
 fly-3P.PL-SHOULD-IND
 ‘If pigs had wings, they should fly.’
- (34) Ran-kri-ma e-ri-sin-a fr-unte-sini-e
 big-sick-ART come-take-SHOULD-SUB die-1P.PL-SHOULD-IND
 ‘If he was sick, we would have all died.’
- (35) ‘-he-fr-i-sin-e
 3P.OBJ-hit-die-3P.SG-SHOULD-IND
 ‘You should kill him.’

The glossing approach used here, SHOULD, reflects the fact that many translations of these sentences, especially the translations provided by our consultant, used the English word ‘should’ to capture the meaning expressed by *-si*. Determining a useful term with cross-linguistic applicability is a bit difficult. Clearly, the meaning is of a type of irrealis modality, always dealing with hypothetical situations, but it is hard to determine whether the use of this morpheme expresses primarily deontic or epistemic modality. The English ‘should’ reflects the same ambiguous semantics: the sentence “the paper should be finished by now” can either imply deontic modality, that the paper writer has some obligation to have finished the paper, or epistemic modality—that it is likely based on the circumstances that the paper is finished. Phrases like (31) and (35) clearly represent deontic modality, (34) seems to reflect an epistemic modality, and (32) and (33) can really be understood either way. Because of the ambiguity/ambivalence of this morpheme, there is no decision made regarding an appropriate terminology, as such a term for this morpheme should account for both the epistemic and deontic readings it gives. What is important, however, especially for the discussion in section 4, is that this morpheme is unquestionably a type of irrealis modality, and furthermore a bound verbal inflection of irrealis modality.

3.2.3 DESIDERATIVE AND NECESSITATIVE CONSTRUCTIONS. The final category of constructions which might be considered modal includes phrases which give desiderative and necessitative meanings. These modal structure are achieved through derivational morphology, *-(na)ku’* and *-‘za*, respectively. Some of the free translations of these expressions may show ambiguity between *-(na)ku’* and *-‘za*, but this is an effect of the free translations given by our consultant. Generally, as the terminology used reflects, the difference is that *-(na)ku’* is used for desires in contrast to the more immediate and unavoidable needs expressed by *-‘za*. For example, we have the alternation below.

- (36) Pse-(na)-ku ne-h-u-e⁶
 sleep-ART-REF IPFV-do-1P.SG-IND
 ‘I want to go to sleep (*but I’ll get by without it*).’
- (37) Pse-‘za-‘ne-h-u-e
 sleep-ARG-IPFV-do-1P.SG-IND
 ‘I need to go to sleep (*I’m about to collapse*).’

⁶ This sentence was given both with and without the *-na* affix. It is unclear whether or not this is a simplification allowed for in free variation of the phonetic form, or if the presence of the dative suffix *-na* changes the syntactic structure of the phrase.

Although semantically these reflect a type of modality, the morphosyntax of these constructions in Kamano Kafe is primarily derivational rather than inflectional, as is the case with those morphemes in section 3.1. In fact, the morphology for the desiderative and necessitative constructions is not strictly verbal morphology—that is, it can affix to non-verbal stems and appear outside of the context of verb complexes. For example, the *-na-ku* in the desiderative construction is composed of *-na* which can affix to nouns to create a dative meaning, and *-ku*, which is referred to here as the referent (REF) marker, as it is referred to in Drew and Payne (1970). This *-ku* can be used with a similar meaning to ‘about’ in English, and can also function as a type of source marker, as in the examples below.

(38) Eso'-ma ne-gr-on-an-ku hu-gah-u-e
 frog-ART IPFV-cook-1P.PL-AN-REF do-POT-1P.SG-IND
 ‘I will talk about how we cook frogs.’

(39) Noelin-ku nä-si ne-bzi-e
 noel-REF 1P.SG-anger IPFV-gather.3P.PL-IND
 ‘Noel makes me angry (lit. ‘my anger gathers because of Noel’)

Similarly, the *-za* morpheme for the necessitative construction is affixed to non-verbal roots. We gloss it here as an “argumentizer” (ARG) to reflect that its function is to make stems into acceptable arguments of the verb, either by taking nouns and making them converbs, as in (40), where the word for ‘hunting’ is derived from ‘tree kangaroo’, or by taking verbal adjuncts and making them nominal arguments, as in (39), which takes nominalizes the verbal adjunct for ‘roll’ into ‘truck’, literally ‘rolling thing’.

(40) Zga-‘za hu-‘n-on-e
 tree.kangaroo-ARG do-PFV-1P.PL-IND
 ‘We went hunting.’ (Lit. ‘We went tree-kangaroo-ing.’)

(41) Zhe-‘za ke-‘n-u-e
 roll-ARG see-PFV-1P.SG-IND
 ‘I saw a truck.’

Although constructions like those in (40) and (41) might be understood as having desiderative or necessitative mood, at least by way of their English translations, they are not part of the modal/aspectual *inflectional* paradigm associated with verbs. Cross-linguistically speaking, desiderative and necessitative moods fall under the broad category of irrealis, and irrealis readings are critical to the discussion in section 4. However, although it is possible to *gloss* some uses of *-za* and *-na-ku* as conferring these modal meanings, it does not appear that they actually carry these modal features in Kamano Kafe. In other words, based on the broader use of the derivational morphology involved, the grammatical means of expressing wants and needs in Kamano Kafe do not confer any kind of irrealis mood, as would be the case in many other languages, and therefore they should not be used in determining the modal alignment of clauses with respect to one another.

4. PREVIEW-SUBJECT MARKERS IN THE CLAUSE-CHAINING CONTEXT. A key distinguishing feature of the Kamano Kafe clause-chaining system is the set of preview subject markers, what Drew and Payne (1970) call “preview person suffixes.” Because this set of pronominal markers has a possible secondary use discussed in section 6, we refer to this agreement paradigm as “Set B” pronominal markers, in contrast to the “Set A” markers, which mark subject clause-internally (in the interlinear glossing scheme for this paper, “Set A” is unmarked, while the “Set B” markers are marked as “B”). A basic and clear example of medial verb agreement using Set B markers is given below:

- (42) Nägra tr-o-ge-nka, kägra tr-an-ke-no’,
 i leave-1P.SG-SR-B.2P.SG you leave-2P.SG-SR-B.3P.SG
- ägra tre-‘n-i-e
 he leave-PFV-3P.SG-IND

‘I left, then you left, then he left.’

The medial verb in Kamano Kafe is in fact defined by the Set B preview-subject marker in the rightmost position. Not all non-final verbs—that is, verbs not in the rightmost position of complex clauses—are medial verbs. This has already been shown in section 2.2.1 in the use of the *-a* sentential mood marker, which marks subordinate complement clauses like conditional clauses and relative clauses. In (43) and (44) below, the bolded verbs are not medial verbs in clause chains, but rather more like final verbs of complement clauses.

- (43) Osi’ama **nni-‘n-an-an-a** kabera buga re-gah-i-e
 little sit-PFV-2P.SG-AN-SUB food finish do-POT-3P.SG-IND
 ‘If you wait a little, the food will be finished.’
- (44) Noeli’-ma **n-mi-‘n-i-a** kra-mo’-a
 noel-ART 1P.SG.OBJ-give-pfv-3P.SG-SUB dog-TOP-ART
- ke-a no-nth-i-e
 ear-OBJ NEG-listen-3P.SG-IND

‘The dog that Noel gave me doesn’t listen.’

	Singular	Dual	Plural
1 st Person	-‘na	-ta’	-ta’
2 nd Person	-nka	-tna	-tma
3 rd Person	-no’	-ke	-‘za

FIGURE 1: Full listing of Set B “preview-subject” suffixes.

	Singular	Dual	Plural
1 st Person	-o/-u	-an	-i
2 nd Person	-o’/-u’	-a’	-a’
3 rd Person	-on/-un	-az	-az

FIGURE 2: Set A agreement in final verbs and DS medial verbs

Medial verbs also are marked for switch reference, and Kamano Kafe follows a trend in Papuan switch-reference languages, where same-subject clauses (henceforth SS), which do not change subject from medial to following clause, have morphological differences with different subject clauses (henceforth DS), where the subject of the medial clause is different than that of the following clause (Haiman 1983). Both SS and DS medial verbs have Set B markers, which have to agree with the following clause subject, but SS medial verbs lack Set A agreement and appear with verb roots followed directly by Set B markers, as in (45). DS medial verbs do have Set A which agrees with the subject of the medial verb

clause, as well as Set B agreement which agrees with the following-clause subject, and a switch reference (SR) marker *-ge* between them, as in (46).

- (45) Zota-mo-‘a **nä-tre-no’** tim-pi ne-b-i-e
 stick-TOP-DEF 1P.SG.OBJ-flee-B.3.SG water-IN IPFV-go-3P.SG-IND
 “The stick is floating away from me.”
- (46) Ran-kan-te-ga **ne-b-u-ge-no’** ko’ ru-‘n-i-e
 big-road-LOC-AND IPFV-go-1P.SG-SR-B.3P.SG rain fall-PFV-3P.SG-IND
 “I was heading to the highway when it rained.”

4.1 INFLECTIONAL SCOPE IN KAMANO KAFE CLAUSE CHAINS. Many attempts to understand clause chains in Papuan languages have used the interpretation and alignment of inflectional properties like tense, aspect, mood, and illocutionary force in linked clauses to determine their structural relationships (Diebler 1976; Farr 1993; Foley 2010). The marking of inflectional properties on the final verbs having scope over the medial verbs which precede them is attested across a number of Papuan languages. In this section, Kamano Kafe clause chains are given the same treatment, but with an added analytical tool which refers to event structure. The conclusion often found in the literature on clause-chains, that the temporal and modal operators marked on final verbs have scope over medial verbs, aligns well with the concept in Bohnemeyer et al. 2010 of the Macro-Event Property (MEP), which the authors describe as follows:

An event-denoting construction has the MEP if it combines only with those time positional or durational operators that have scope over all sub-events it entails.

Bohnemeyer et al. discuss the great cross-linguistic variation in the ways languages construct and analyze events which are compositional, specifically in their paper with regard to causal chains. For example, in English, we can make the sentence “I pushed the bowl, breaking it,” describing an event with two component pieces: 1. pushing the bowl, and 2. the bowl breaking. In this English example, ‘pushed’ has the MEP, as it carries a past tense marker which has scope over ‘breaking’.

In Kamano Kafe, the same singular event is similarly constructed in two parts.

- (47) Zuampa re-tuf-o-ge-no’ probbzi-‘n-i-e.
 bowl do-push-1P.SG-SR-B.3P.SG break-PFV-3P.SG-IND
 “I pushed the bowl, breaking it.”

The claim made about a Kamano Kafe sentence like (47) is that the perfect aspect assigned by *-ne* in the final verb has scope over not only the breaking of the bowl, but also the action of pushing. Thus the entirety of the related actions structured by the clause chain is marked in the perfect aspect, as an event which has happened, and not simply the breaking of the bowl.

Following Bohnemeyer et al., the totality of the event can be described as the *macro-event*, composed of its constituent *sub-events*. Cross-linguistic morphosyntactic variation yields a variety of ways in which the relationships between sub-events and the overarching macro-event are realized in the world’s grammars, and lexical variation yields differences in which types of macro-events will be broken down in sub-events. For instance, English has a lexical verb ‘bring’, the meaning of which in Kamano Kafe must be achieved at the macro-event level through the combination of constituent sub-events, as Kamano has no lexical verb root or converb which independently means ‘bring’. Kamano Kafe uses a combination of lexical verbs and lexical serial verb compounds under the coordination of the macro-event to represent the action of bringing, but with a literal meaning of ‘grab and come’.

- (48) Äfu e-ri-nka e-‘n-an-ke-ta ne-ga-h-un-e
 pig come-take-B.2P.SG come-PFV-2P.SG-SR-B.1P.PL eat-POT-DO-1P.PL-IND
 ‘You bring the pig and we will eat.’

In (48) above, the entire series of actions including bringing the pig and eating it is conceived of structurally as a single macro-event, governed by the final verb ‘eat’, which has the MEP, meaning that it carries the inflectional properties of aspect and mood by which those medial verbs in the chain must be understood. While the medial verb ‘come’, the second verb in this chain, is marked for perfect aspect, this is only in relation to the final verb ‘eat’. Topic time for the verb ‘come’ is established as the time of the eating sub-event, by which time the ‘coming’ in the second medial verb must have been achieved. The modal marking on the final MEP verb, however, is a global property projected to all sub-events. The “potential” meaning marked by the *-gah* morpheme is not limited in its scope to the verb ‘eat’, but rather to the entire chain.

The modal constraints on sub-events, that is, the fact that modal marking for the macro-event occurs only on the final verb, and refers to the entire macro-event, is best evidenced when trying to elicit sequential actions where an epistemic irrealis quality only refers, in English, to one of the constituent sub-events of the multi-part macro-event. In trying to elicit a phrase like ‘he must have planted taro before he planted sweet potatoes’, where it is known that the subject has planted sweet potato, but only suspected that he previously planted taro, the marking of the potential irrealis mood on the sub-event of planting the taro proves impossible. The modality must be marked for the entire event, as below.

- (49) Nerga kri-te-no' meni-na za'u kri-'ne-gah-i-e
 taro plant-SUC-B.3P.SG now-ART sweet_potato plant-PFV-POT-3P.SG-IND
 ‘He must have planted taro before he planted sweet potatoes.’

Although the concept of the macro-event and the related MEP are helpful notions for understanding the semantic or practical value of clause chains—that they are a syntactic reflection of event structure—it does not fundamentally differ from the observation in Foley 2010 that inflectional operators having scope over the entire clause chain are marked on the final verb and it only leads to a superordinate status of the final verb, and does not limit the possibility of cosubordination or coordination under an inflectional head proposed by some (e.g., in Foley and VanValin 1984). There are, however, important qualities of the temporal inflection which lead to the conclusion that not only do final verbs have inflectional scope over the medial verbs in a clause chain, but also that medial verbs have inflectional scope over other medial verbs to the left, as can be seen in chains like (48), where the perfect aspect of the second medial verb has to have scope over the one to the left. Furthermore, the successive marker in (49) can only be determined in relation to the closest rightward clause in the chain and not the final verb with the MEP. The specificity of rightward-clause feature marking in the form of preview subject agreement, especially in Kamano, which takes a full person/number paradigm for this set, also exhibits some dependency to the nearest rightward clause and not strictly to the final verb.

5. THE PERFECT PROBLEM. The argument made up to this point has been that medial verbs are subordinate to the inflectional properties of aspect and mood specified on the final verb. Furthermore, the Set B markers fill the same structural position in medial verbs that the sentential mood markers do in final verbs (section 3.2.1). These data suggest a simple subordination relationship between medial and final verbs, albeit subordination of a different structural and semantic type than the subordination that occurs with the *-a* class sentential mood found with relative clauses and conditionals: *-a* class clauses are more traditional complement clauses, while medial verbs are perhaps more like adjuncts.

There are, however, two outstanding questions which could present problems for this analysis: the use of medial verbs and Set B markers in discourse, and what I call the perfect problem. A more complete discussion of the discourse functionality of medial verbs in Kamano Kafe is generally outside of the scope of the present paper, a product of the type of data collected from our consultant. However, while our data are mostly isolated translations of English sentences, our field methods team did collect ten or so short stories, and the uses of medial verbs therein by and large appear to fit within canonical usage described and analyzed in previous sections. Those which do not, instances where medial verbs of some form appear in isolation or a final position, are similar in function to non-canonical medial verbs described in

some other Papuan languages: ellipsis, elaboration, tail-head linkage, emphasis, and hesitation (deVries 2005; Berghäll 2010; Sarvasy 2015).

These types of non-canonical medial verbs do not appear to pose much of a problem for the subordination analysis given in this paper. The other atypical use for Set B markers, however, potentially does. As discussed in section 3, the perfective aspect marker *-ne* is so labeled primarily because of certain verbs which by way of lexical specification or lexical aspect must take perfective inflection when referring to present (achieved) states. This of course raises the question of how Kamano Kafe speakers express these states once they no longer—holdin other words, how to express the difference between “I have sat down (and am still sitting)” and “I was sitting (but no longer am).” This line of inquiry yielded constructions like the following:

- (50) Oki mni-‘ne-no’-e
yesterday sit-PFV-B.3P.SG-IND
‘Yesterday, he sat down.’
- (51) Oki-na ne-bse-‘na-e
yesterday IPFV-sleep-B.1P.SG-IND
‘I was sleeping yesterday.’
- (52) Non-te-ga bu-‘ne-‘na-e
house-LOC-ABL go-PFV-B.1P.SG-IND
‘I went to the house.’
- (53) Ama nom-pi bse~bse-no’-e
this house-IN sleep.HAB-B.3P.SG-IND
‘He used to sleep in this house.’

These verbs are morphologically a combination of SS medial and final verb, having Set B but not Set A pronominal agreement, but also taking the *-e* indicative sentential mood marker. This construction appears to view the event or state in question as completed (not merely complete), and being distinct from reference time. Descriptions from other distantly (perhaps questionably) related Papuan languages show a similar non-canonical usage of isolated or postposed medial verbs, described as either completive or perfect constructions—in the Sepik language Manambu (Aikhenvald 2008), the Madang language Mauwake (Berghäll 2010), and the Finnistierre-Huon language Nungon (Sarvasy 2015). As labels like perfect or completive tend to indicate, the Kamano examples suggest both aspectual and tense-like values for this construction. However, unlike the standard perfect (as in Comrie 1976; Dahl 1985), which tends to reflect the relevance of a completed event to the reference time, the Kamano use of these non-medial Set B markers shows the explicit lack or continued relevance of the action or state to the perspective present. Furthermore, although these Kamano examples are used for past actions from the perspective present, Berghäll (2010) and Sarvasy (2015) both indicate the possibility of using these completive isolated medial verbs for events completed before some perspective/prospective future time—we simply don’t have enough data to say that this does not also happen in Kamano. Thus, while these forms are somehow more sensitive to tense, it still is not given that they explicitly restrict or deictically point to a particular event time, and does not contradict the claim of tenselessness in the language.

This perfect or completive construction has never been noted in the literature on Kamano Kafe or nearby related languages of the Eastern Highlands Group, does not occur in any of the texts produced by our consultant, and the only examples in the elicitation data from some eighteight months of fieldwork come from instances where a completive meaning or this exact perfect construction was being sought out (after its discovery). Similar constructions with similar meanings being reported in other distantly related Papuan languages, however, suggests that this phenomenon may in fact be widespread across Papuan lan-

guages, and its inclusion in the analysis here is likely significant. There are two logically possible ways to deal with this minority use of Set B agreement markers: incorporate them into the present analysis, as in sections 3 and 4, and reconcile the different uses, or treat the perfect use and medial verb use as distinct grammaticalizations of the Set B markers not in need of synchronic unification.

Because of the diversity of languages of the region in which completive isolated medial verbs are reported, it is preferable to come up with a unifying account of the different uses of medial verbs, specifically Set B markers in Kamano. By “unifying account,” I mean a description of the semantic/functional/structural behavior of Set B markers in clause chains that simultaneously accounts for the completive construction. It is worth noting, however, that in the other Papuan languages with reported completive isolated medial verbs—Nungon, Mauwake, and Manambu—the isolated/postposed medial verbs with a completive meaning were SS verbs, not DS verbs as in Kamano. This is perhaps to be expected since, unlike Kamano, SS medial verbs in these other languages have no person/number marking and are only marked as same subject. DS verbs in Kamano mark two persons, and it therefore makes sense that in the different medial verb structures of these different languages, it would be the one which indexes explicitly one and only one person/number that would be used in isolation. However, Sarvasy 2015 considers the completive reading of isolated DS verbs in Nungon to be natural, given that the changing of subject in clause chains always entails sequential events. This appears to be a sufficient “unifying account” for Nungon, but no such inherent sequentiality occurs for SS verbs in Kamano, even if DS verbs usually do entail sequential action. Therefore, while we can account for the cross-linguistic variation in the type of medial verb used for these completive constructions based on variations in the nature of their person marking morphology, the Kamano example suggests that there is a more general property of medial verbs in clause chains, not dependent on SS or DS types, which should be explored further.

It is hard to see a structural configuration whereby completive constructions fit into the rest of the data. Outside of these isolated completive verbs, Set B markers appear to be in complementary distribution with markers of sentential mood, perhaps filling the same morphological slot. Within the generative tradition, these sentential mood markers—interrogative, subjunctive, declarative, imperative—are often considered clausal heads. Work within both the Government and Binding and later Minimalist framework on switch reference (Finer 1984, 1985; Watanabe 2000) and complementizer agreement (Zwart 1997; Haegeman 2003; Chomsky 2008; Haegeman and Koppen 2012) has dealt with the concept of person/number features being represented on the clausal head. Such a configuration, in these theoretical frameworks, allows for clear agreement pathways between nouns and clausal phenomena like complementizers and switch reference markers which agree with such nouns. This body of work may be relevant to explaining the unique pre-subject-agreement of Kamano, where Set B markers are like person-marked complementizers, except that they agree with the superordinate clause. But the completive construction in Kamano hinders any attempt at such a syntactic explanation medial verbs, in having Set B markers and sentential mood markers on the same verb.

The notion that the same bundle of semantic and functional values associated with the completive construction is also present in medial verbs is perhaps an obtainable analysis, even if it requires problematizing the cross-linguistic terminology related to temporal representation, specifically ‘perfect’ and ‘perfective’.

The perfect—as Sarvasy 2015 calls this construction in Nungon—as a cross-linguistic category of use to typologists and descriptive linguists has not been conclusively defined in the typological (Dahl and Velupillai 2013) or semantics literature (Ritz 2012), and is not only cross-linguistically somewhat ambiguous, but an unstable category diachronically as well (Lindstedt 2000). The primary benefit of the term “perfect” to describe the completive SS verbs is that it captures the tense-like qualities of the construction, but the specificities of this tense-like qualities are dubious—it is nothing like a perfect of result, and not necessarily like an experiential perfect (Comrie 1976).

Perfectivity is a topic of debate as well within semantics and typology, and there appears at present to be no formal model which would account for the disparate uses of Set B markers exhibited in Kamano Kafe. However, less formal and more long-standing notions of perfectivity indicate properties which are shared by medial and completive Set B uses. Klein (1994) divides the characteristics discussed in the lit-

erature for perfectivity (generally in opposition to imperfectivity) between to primary types: 1. A situation as seen as either completed or non-complete/ongoing, or 2. The situation is seen “from outside” or “from inside.” Medial verbs with their Set B marking may not inherently be perfective in the strictly temporal sense of complete or completed, and the inflectional perfective and the completive construction provide separate meaning to (50) and (52) above, but the data in this paper show a number of ways in which they must be “viewed from the outside..” Section 4 shows that the topic time of temporal operators has to be established by the following superordinate verb, and also that some inflectional operators like mood and illocutionary force can only be properties of the final verb—medial verbs rely on these clause-external operators for their interpretation. Additionally, the fact that modal marking does not occur with medial verbs using the Set B markers is also supported by the cross-linguistic observation that languages tend to avoid a co-occurrence of perfectivity and irrealis moods (Klein 1994). This application of the traditional “viewed from the outside” metaphor may not be entirely satisfactory on the grounds of the formal semantic analysis, but it does link together the two seemingly disparate uses of Set B markers. Set B marked verbs are viewed as complete, discrete sub-events within the clause-chain macro-event, interpreted through the aspectual and modal specifications of their superordinate rightward verb. When there is no final verb, this completeness is interpreted as definite in itself, and takes on more discrete temporal connotations.

The appeal to cross-linguistic terminology results in an unfavorable terminology for Kamano, which we could say has one perfective marker, and a set of person markers which are marked for some combination of the perfect and perfective. However, it is clear that a reconciliation of the semantics and functions of medial verbs with their completive uses is desirable, even if it is not easy to account for it within the general cross-linguistic terminology currently available. Viewing preview-subject-agreement only for its syntactic means and the completive medial verbs only for their semantic value would fail to account for a more interesting and important generalization of both.

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