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1. Introduction

This paper gives a descriptive account of the typologically unusual behaviour of switch-reference (henceforth abbreviated ‘S/R’) marking in the Papuan language Mian by explaining this behaviour in the light of the origin of the S/R markers. I will argue that these derive from tense, aspect, and mood (TAM) markers occurring elsewhere in the language. This process of functional change is typologically not well documented.

Mian is a Papuan language of the Ok family (Healey 1964), which itself is part of the larger Trans-New Guinea (TNG) family (cf. Pawley 2005, Ross 2005, Wurm 1982). Mian is spoken in Telefomin district of Sandaun province in Papua New Guinea. The Eastern dialect of Mian (Fedden 2007) has about 1,500 speakers. Mian speakers up into their mid-seventies also speak the Papua New Guinea-variety of Neo-Melanesian Pidgin, Tok Pisin, and some of the older men (about 50 years and older) also speak or at least understand the neighbouring, closely related Ok language Telefol. All Mian data presented in this paper were obtained by the author during a total of eleven months in the field. Examples from the spontaneous corpus are listed with a source reference. Examples without a source reference have been elicited by the author.

The formal and functional features of S/R systems have received considerable attention in the literature (cf. Haiman and Munro 1983, Roberts 1997, Stirling 1993). S/R is usually described as a discourse tracking device, whose main function is to monitor the subject, i.e. to indicate through verbal morphology whether the subject of some other clause is the same (SS) or different (DS). In Papuan languages, S/R typically occurs in clause chaining constructions (Longacre 1972, Stirling 1993: 16), and S/R is typically calculated with respect to the subject of the succeeding clause (Foley 1986, Foley 2000, Foley and Van Valin 1984). I will use the term ‘marked clause’ for the medial clause in which the verb is marked for S/R and the term ‘reference clause’ for the succeeding medial or final clause in reference to which S/R is marked. In adopting this terminology I follow Munro (1980). The marked clause is marked for co-/disjoint reference of the subject with respect to the reference clause.

2. S/R systems in Trans-New Guinea eastern Highlands languages

In most TNG of the eastern Highlands languages, we find a robust, grammaticalized S/R system. There is a difference in morphological complexity of medial verbs compared to

sentence-final verbs, which appear as the predicate of the last clause in a clause chain. See Roberts (1997) for a typological survey of S/R systems in New Guinea based on a sample of 169 languages, 122 of which have such a system.

The simplest case is a medial verb only marked for co-reference of subject, but not for tense or person/number of the subject. The following example is from Usan (Numugenan family, Madang Province):

- (1) Usan (Reesink 1983: 217 and pers. comm.)
ye nam su-ab is-omei
 I tree cut-ss go_down-1SG.FPST
 'I cut the tree and (I) went down.'

Often the marker has additional temporal or aspectual meaning, which is fused into the same formative, e.g. sequentiality or simultaneity of events. This is the case in Fasu (West Kutubuan family, Southern Highlands Province; cf. Loeweke and May 1980) and Kalam (Kalam family, Madang Province; described in Pawley 1966, Pawley 1987, Pawley 1993):

- (2) Kalam (Pawley 1993: 101)
kwt d-y nwp pk-p-yn
 stick hold-SS.PRIOR him hit-PFV-2SG
 'You hit him with a stick.' (lit. 'You took a stick and hit him')

DS-forms of medial verbs are usually more complex than SS-forms. They can carry a subject marker, which indicates DS while the SS form is zero, e.g. in Fore (Gorokan family, Eastern Highlands; cf. Scott 1978), or they can have an anticipatory subject marker which indicates person and number of the following subject, as in Hua (Gorokan family, Eastern Highlands; cf. Haiman 1980).

In other languages, one finds portmanteau DS markers, for example in Kobon (Davies 1981) and Usan, where the DS marker also contains information on subject person and number without these categories being segmentable as distinct morphemes:

- (3) Usan (Reesink 1983: 218 and pers. comm.)
ye nam su-ine is-orei
 I tree cut-1SG.DS go_down-3SG.FPST
 'I cut the tree (and it went) down.'

Medial verbs can have separate suffixes for disjoint reference and for subject person and number, as in (4):

- (4) Kalam (Pawley 1993: 94)
an ag-e-k g-a-k?
 who say-DS.PRIOR-3SG do-3SG-PST
 'Who told him to do it?' (lit. 'Who said and he did it?')

So in these typical examples of S/R systems in TNG languages medial verbs are different from final verbs in several respects: not all medial verbs are marked for subject person and/or subject number (e.g. SS medial verbs often occur without an affix cross-referencing the subject); they often cannot be marked for various categories such as irrealis mood or absolute tense, i.e. a tense category which has the moment of speaking as its deictic centre (cf. Comrie 1985); and the formatives that medial and final verbs allow are formally and functionally distinct.

3. Switch-reference in Mian

Like the TNG languages spoken in the eastern Highlands, Mian makes very frequent use of clause chaining in discourse, but here the situation is different in that medial verbs resemble final verbs much more than in the languages discussed above. Mian has a less grammaticalized S/R system, which is characteristic of languages of the West Papuan Highlands, e.g. Dani (Bromley 1981) and Kapauku, also known as Ekagi (William Foley pers. comm.). There are differences between medial and final verbs in Mian, but these are few: medial verbs cannot be marked for negative polarity nor the modal categories irrealis and hortative. But apart from these restrictions, all medial verbs

- always index the subject and any additional argument (i.e. the object), depending on the argument structure of the verb, in the same way as if the verb occurred in an independent sentence or the final clause of a clause chain;
- take a range of markers which convey temporal and S/R information; these latter suffixes occur in the slot before the subject suffix and are homophonous with TAM suffixes found in the same slot in final verbs;
- can be marked for several tense categories to locate an event at different points in the past.

The basic affix slot template for final and medial verbs in Mian is given in (5):

(5) (OBJECT-) V_{stem} -SR/TAM-SUBJECT(-TENSE)=CLITIC

Objects are only indexed for a subset of verbs. Whether a verb indexes its object is lexically determined. Tense suffixes in the post-subject slot are optional. Final verbs have an enclitic indicating illocutionary force, such as =*be* ‘declarative’, =*bo* ‘quotative’, or =*e* ‘interrogative’, while medial verbs invariably end in a conjunctive suffix =(t)a.

The template given in (5) is illustrated for a final verb in (6) and a medial verb in (7):

(6) *afin bi-n-ib-bio=be*
 friend be_there-REAL-2/3AN.PL-GPST=DECL
 ‘they were friends’ [Mianmin and Telefomin]

- (7) *máam=e a-nâ'-n-i=a*
 mosquito=SG.M 3SG.M.O-kill.PFV-SS.SEQ-1SG.SBJ=MED
 'I killed a mosquito and then I ...'

The S/R suffixes indicate co-reference or disjoint reference and always provide information about the temporal structure of events as well (namely whether they occur sequentially or simultaneously). These are:

- n '(SS,) Sequential'
- s 'DS, sequential, close link'
- ∅ 'DS, sequential'
- b 'DS, simultaneous'

Although not the focus of this paper, I will also mention the auxiliary *biaan* here, which is used to express the fourth logical possibility, namely 'SS, simultaneous'. The suffix *-n* is more complicated because it only unequivocally indicates SS if the subject of the marked clause is first person singular. Hence, I will deal with it in some detail below. The other S/R markers are more straightforward and are introduced in the following sections.

3.1. -s 'DS, sequential, close link' and -∅ 'DS, sequential'

The DS markers *-s* and *-∅*, both 'DS, sequential', require the subject in the reference clause to have disjoint reference. While *-∅* only indicates DS and event sequentiality, *-s* also highlights that the event in the marked clause is a necessary condition for the event in the reference clause to take place, or that the two events occur in close temporal succession, hence 'close link' in the gloss for *-s*. This contrast between *-∅* and *-s* is illustrated in the following example (8):

- (8) *e₁ tob-kimà-∅-i=a*
 3SG.LONG.O-put_in_fire.PFV-DS.SEQ-1SG.SBJ=MED
- e₂ haangān-s-e=a*
 get_dry-DS.SEQ.CL-SG.N1.SBJ=MED
- e₃ hā-n-i=a*
 break.PFV-SS.SEQ-1SG.SBJ=MED
 'I put it (the tobacco leaf) in the fire, as it gets dry, I break it, and then I ...'
 [Rolling smokes]

There are three events (*e₁* to *e₃*), all of which occur sequentially. In the clauses describing *e₁* and *e₃*, the subject is the speaker (hence, 1st singular subject marking on the verb). The second medial clause (*e₂*) has a different subject from the rest of this text excerpt, namely the tobacco leaf. This referent has been introduced at the beginning of the text from

which (8) was taken and has already been referred to anaphorically in the first clause of (8) with the object prefix *tob-* ‘3rd singular long object’. In e_2 a necessary condition is specified for the event in the succeeding clause to take place, namely the tobacco having dried (in e_2) is a necessary prerequisite for the speaker to break it (in e_3). In general, *-s*, rather than $-\emptyset$, is used if the speaker wants to highlight the fact that the event in the marked clause is necessary for the event in the reference clause to take place or that the two events are closely linked temporally. Compare also the subtle difference in meaning in the following two elicited examples:

(9) *kōbō* *te-s-eb=ta*
 you.SG.M come.PFV-DS.SEQ.CL-2SG.SBJ=MED

okok *ke-n-omab-bio=be*
 work do-AUX.PFV-IRR.PL.AN.SBJ-1PL.SBJ=DECL
 ‘Only when you come, will we work (i.e. the speaker cannot do the work alone).’

(10) *kōbō* *tl-∅-eb=ta*
 you.SG.M come.PFV-DS.SEQ-2SG.SBJ=MED

okok *ke-n-omab-bio=be*
 work do-AUX.PFV-IRR.PL.AN.SBJ-1PL.SBJ=DECL
 ‘When you come we’ll work.’

In (9), *-s*-marking indicates that the arrival of the hearer expressed in a medial clause is a necessary condition for the event expressed in the following clause to take place. In (10), where the medial verb is zero-marked, the relation between the events is purely sequential.

3.2. *-b* ‘DS, simultaneous’

The marker *-b* ‘DS, simultaneous’ is used to describe situations in which the event in the marked clause is on-going when the event of the reference clause commences. Subject reference is disjoint. The reference clause event can be a bounded event which is properly contained within the event described by the marked clause, as in (11):

(11) *ngaan-b-e=a*
 call.IPFV-DS.SIM-3SG.M.SBJ=MED

naka=i *wentê-n-ib=a*
 man=PL.AN hear.PFV-SEQ-2/3PL.AN.SBJ=MED
 ‘While he was calling, the men heard (him), and then ...’ [Dafinau]

The suffix *-b* ‘DS, simultaneous’ is also used to describe a situation in which the event in the first reference clause (e_2) is itself unbounded and not or not necessarily properly contained within (e_1), as in (12):

(12) e₁ *tóm=e* *fuó fuó ga-b-ib=a*
 stone=SG.N1 blow blow say.IPFV-DS.SIM-2/3PL.AN.SBJ=MED

e₂ *ya-temê'-b-e=a*
 PL.AN.O-see.IPFV-DS.SIM-3SG.M.SBJ=MED

e₃ *tóm=e* *belâ-s-e=ta*
 stone=SG.N1 break.PFV-DS.SEQ.CL-SG.N1.SBJ=MED
 ‘While they were blowing (at) the stone,¹ he was watching them and the stone
 opened (and then they...)’ [Danenok]

If both e₁ and e₂ are expressed by medial verbs inflected with *-b*, as in (12), the only restrictions regarding the temporal interpretation of the events with respect to each other is that e₂ must not commence before e₁ does. In that sense, even a sequence of two medial clauses with simultaneous events is iconic. Events can be temporally co-extensive but they do not have to be.

3.3. *biaan* ‘SS, simultaneous’

Simultaneity of events without a switch in subject reference is expressed by employing a special verb stem *biaan* in the marked clause. This stem belongs to the paradigm of the existential verb *bi*. Example (13) illustrates the use of *biaan* as an independent verb. It is used as an auxiliary in serialization with a main verb in (14):

(13) *yē* *biaan-o=ta*
 there stay.SS.SIM-3SG.F.SBJ=MED

miantén=i *yē* *yoma-n-o=ta*
 Mian_people=PL.AN there create-SEQ-3SG.F.SBJ=MED
 ‘While staying there, she created the Mian people there and then...’ [Genesis of the Mianmin people]

(14) “*ulenene ulenene!*” *ga-biaan-ib=a*
 (ritual_language) say.IPFV-AUX.SS.SIM-2/3PL.AN.SBJ=MED

yē *kekewân* *ol-ò-n-ib=a*
 there stinging_nettle PL.RESID.O-take.PFV-SEQ-2/3PL.AN.SBJ=MED
 ‘While they were saying “Ulenene ulenene!”, they took stinging nettles and then...’
 [Ala ritual]

4. *-n* ‘(SS,) sequential’

Having discussed the S/R forms *-s*, *-∅*, *-b*, and *biaan*, I will now turn to the unusual behaviour of *-n*. There is an interesting typological quirk in the Mian S/R system. The suffix *-n* only unequivocally marks SS and event sequentiality if the subject is first person singular. Consider (15):

(15) *nē memālo fūt=e tob-ò-n-i=a*
 I now tobacco=N1.SG 3SG.LONG.O-take.PFV-SS.SEQ-1SG.SBJ=MED

futâan=o om-ò-na-n-i=a
 tobacco_paper=N2 3SG.FEM.O-take.PFV-do_too-SS.SEQ-1SG.SBJ=MED
 ‘Now I take the tobacco, I also take the cigarette paper, and then I...’
 [Rolling smokes]

In (15), the substitution of *-n* ‘SS, sequential’ in *tob-ò-n-i=a* with any of the DS markers, viz. *-s* ‘DS, sequential, close link’ or *-∅* ‘DS, sequential’, i.e. *tob-ò-s-i=a* or *tob-ò-∅-i=a*, yields ungrammatical results. On the other hand, *-n* functions just as an indicator of event sequentiality in all other person-number combinations regardless of the reference of the subject in the reference clause. Except in first person singular, *-n* does not provide S/R information.

In the following, I will illustrate this point further with several elicited examples. The phenomenon under discussion is attested in the spontaneous corpus, but I choose to use elicited sentential minimal pairs here to make the point clear. In a clause chain with co-referent non-first-singular subjects, marking with the suffix *-n* is what one would expect given the behaviour of *-n* with first person singular subjects. Thus:

(16) *mēn=e do-fâ-n-o=a*
 child=SG.M 3SG.MASC.O-put.PFV-SEQ-3SG.F.SBJ=MED

me-b-o=be
 cry.IPFV-IPFV-3SG.F.SBJ=DECL
 ‘She_k gave birth to a boy and she_k is crying.’

But the following utterance is equally acceptable. In example (17), *-n* can be used although the subject of the marked clause and that of the reference clause are disjoint in reference:

(17) *mēn=e do-fâ-n-o=a*
 child=SG.M 3SG.MASC.O-put.PFV-SEQ-3SG.M.SBJ=MED

me-b-e=be
 cry.IPFV-IPFV-3SG.M.SBJ=DECL
 ‘She gave birth to a boy and he is crying.’

The bracketed medial clause in (20) has a different subject from the surrounding clauses but because *teng* ‘tiredness’ is low in topicality, it would be plausible to assume that *-n* is used in (20a) with respect to the re-occurring topic in (20c).

However, Mian also allows *-n* before clauses providing background information, even if the topic of the first clause is never mentioned again in the rest of the text (the backgrounded temporal clause is enclosed in square brackets):

(21) *yoma-n-e=ta*
 beget.PFV-SEQ-3SG.M.SBJ=MED

[*naka=i utl-Ø-ib=o*]
 man=PL.AN come_up.PFV-REAL-2/3PL.AN.SBJ=ADV

ī ninín=o dl-â-n-ib=a
 they name=N2 PL.FEM.O-put.PFV-SEQ-2/3PL.AN.SBJ=MED
 ‘he begot (children), when the people grew up, they assumed names and then...’
 [Genesis of the Mianmin people]

In this text excerpt the subject of the first medial clause *yoma-n-e=ta* ‘he begot (children) and then ...’ is the male protagonist and it would be plausible to assume that the bracketed adverbial clause *naka=i utl-Ø-ib=o* ‘when the people grew up’ was skipped and SS marking was interpreted with respect to the clause following this adverbial, if the man re-occurred as the topic. Yet, the begetting of children was the last action he performed in this story. He drops out as a topic and is never mentioned again. Nonetheless, the suffix *-n* is possible in the first medial clause. This variable behaviour of *-n* indicates that S/R meaning in Mian is less strongly grammaticalized compared to Usan or Kalam (cf. Section 2 above). The suffix *-n* in medial verbs is a more general marker of sequentiality except where the subject of the marked clause is first person singular. In this case, *-n* unequivocally indicates event sequentiality and SS.

Prima facie, this situation creates a functional paradox because “[switch reference] is redundant where either subject [i.e. in the marked or the reference clause – SF] is first or second person, and necessary where both subjects are third person. We may therefore expect to find languages in which switch-reference is limited to the third person.” (Haiman and Munro 1983: ix).² In the third person, on the other hand, one would expect full functionality of the S/R system because here the system is crucial for referent identification.

These expectation, which derive from the function of S/R systems as reference trackers, are not fulfilled in Mian. However, the language can “afford” such a quirk because it marks gender in the third person cross-referencing affixes. As all medial verbs have suffixes cross-referencing the subject, this helps disambiguating in many cases (as in example [22] repeated from [17] above, subject-indexing suffixes appear in boldface):

(22) *mēn=e do-fâ-n-o=a*
 child=SG.M 3SG.MASC.O-put.PFV-SEQ-3SG.F.SBJ=MED

me-b-e=be
 cry.IPFV-IPFV-**3SG.M.SBJ**=DECL
 ‘She gave birth to a boy and he is crying.’

In (23), a disjoint reading is forced due to the gender difference in the subject suffixes. The next example illustrates the same point but is from the spontaneous corpus (subject-indexing suffixes again in boldface):

(23) *wat-n-e=a* *al=baka* *yē*
 across-SEQ-**3SG.M.SBJ**=MED colon=with there

klaa-(û)b'-a-n-ang *gena-b-o=ta*
 rot-give.PFV-**3SG.M.D-REAL-IMM.SG** say-DS.SIM-**3SG.F.SBJ**=MED
 ‘it (a wound) went across, it (his belly) was about to rot with his colon while ...’
 [Pineapples]

In cases where subject reference is to be disjoint but gender is the same, marking with *-n* is nonetheless allowed but here the disjoint-reference interpretation is only available if an overt noun phrase is used in the reference clause, e.g.:

(24) *mēn=e* *do-fâ-n-o=a*
 child=SG.M 3SG.MASC.O-put.PFV-SEQ-3SG.F.SBJ=MED

unáng *mak=o* *me-b-o=be*
 woman another=SG.F cry.IPFV-IPFV-3SG.F.SBJ=DECL
 ‘She gave birth to a boy and another woman is crying.’

In example (24), the overt noun phrase *unáng mako* ‘another woman’ makes it obvious that subject reference is disjoint. Without such an overt noun phrase, subjects are invariably interpreted as co-referent:

(25) *mēn=e* *do-fâ-n-o=a*
 child=SG.M 3SG.MASC.O-put.PFV-SEQ-3SG.F.SBJ=MED

me-b-o=be
 cry.IPFV-IPFV-3SG.F.SBJ=DECL
 ‘She gave birth to a boy and is crying.’
 BUT: *‘She_j gave birth to a boy and she_k is crying.’

To sum up this section, Mian S/R markers combine a S/R-related meaning with information on the temporal structure of events. The marker *-n* only unequivocally means sequentiality of events *and same subject* if the subject is first person singular. In all other cases, *-n* just signals event sequentiality.

Table 1: Function of Mian S/R formatives

	Sequential		Simultaneous
	If SBJ is 1SG	If SBJ is not 1SG	
SS	<i>-n</i>	<i>-n</i>	<i>biaan</i>
DS		<i>-n</i>	<i>-b</i>
		<i>-s</i>	
		<i>-∅</i>	

As Mian obligatorily indexes all subjects in final and medial verbs with markers indicating person, number, and (in the third person) gender, the subject reference issue is in most cases resolved in a straightforward way.

5. Homophonous TAM formatives in final verbs

Mian S/R markers in medial verbs are homophonous with TAM markers found in final verbs and I will propose in this section that the former have been derived from the latter. Table 2 juxtaposes S/R and TAM formatives and their respective meanings. Both sets occur in the same slot in the verb, namely immediately before the subject marker slot. On the apparent semantic mismatch of *-∅* as a mood marker and as a S/R marker, see below.

Table 2: S/R markers in medial verbs and TAM markers in final verbs

Medial verb		Final verb	
S/R markers	Meaning	TAM markers	Meaning
<i>-n</i>	(SS,) sequential	<i>-n ~ -∅</i>	Realis
<i>-b</i>	DS, simultaneous	<i>-b</i>	Imperfective
<i>-s</i>	DS, sequential, close link	<i>-s</i>	Remote past
<i>-∅</i>	DS, sequential		

S/R markers having their origin in the TAM morphology of a language does not seem to be a very common development in Papuan languages. Existing theories of the origin of S/R markers in Papuan languages trace them back either to gapping under identity, which gives rise to zero marking for SS (Haiman 1983), or to a pronominal or deictic origin (Givón 1983). In general, homophony between TAM and S/R markers does not seem to be well attested typologically, but see Jacobson (1983) on some formal similarities of S/R and aspectual morphology in languages of North America. Yet, the formal parallels between the Mian TAM markers in final verbs and S/R markers in medial verbs are too striking to be mere coincidence, especially as the semantics of the former make them a very likely historical source for the latter. I will explore this in some detail in the following sections.

5.1. *-n* ~ \emptyset ‘realis’ and *-n* ‘(SS,) sequential’

The suffix *-n* ‘realis’ signals that an event has been actualized. There is a strong correlation between realis mood marking and past time reference. Realis forms have a default temporal interpretation of ‘immediate past’, e.g:

- (26) *ilem=e* *te=ta* *na-(û)t’-ne-n-e=be*
blood=SG.N1 come=MED do-give.PFV-1SG.D-REAL-SG.N1.SBJ=DECL
‘(Some) Blood has come and does (this) to me.’ [Afoksitgabaam fruit]

One also finds realis forms interspersed in discourse about various stages of the past. The event described in (27) happened more than half a century ago:

- (27) *yē* *ya-l-∅-io=be*
there AN.PL.O-kill.PFV-REAL-2/3AN.PL=DECL
‘they killed them there’ [Mianmin and Telefomin]

The S/R marker *-n* ‘(SS,) sequential’ originates in the homophonous realis mood marker. So what it does is simply to mark the real mood or status (cf. Foley and Van Valin 1984) of an event. It indicates that an event has actually taken place and remains noncommittal with respect to conjoint or disjoint subject reference in the verb of the reference clause, which can be either SS or DS, with the added twist that *-n* indeed functions as a fully developed S/R marker if the subject is first person singular.

Because of the strong correlation between realis mood and past time reference (actualized events typically lie in the past), the temporal meaning of *-n* in medial verbs is ‘sequential’. In final verbs, *-n* ‘realis’ alternates with \emptyset mainly for phonological reasons³. In medial verbs, \emptyset does not mean ‘(SS,) sequential’ like *-n* but rather ‘DS, sequential’. However, like *-n* ‘(SS,) sequential’, \emptyset ‘DS, sequential’ always indicates event sequentiality, which is not surprising given that their common origin is the realis marker *-n* ~ \emptyset .

5.2. *-b* ‘imperfective’ and *-b* ‘DS, simultaneous’

The suffix *-b* ‘imperfective’ has a default temporal interpretation of ‘present’ but can also be used for events in the past, as for instance in the following excerpt from an account of traditional initiation rituals:

- (28) *met* *te* *yomin-am=o*
upriver come.PFV initiation-house=N2

gen-b-io=be
build.IPFV-IPFV-2/3PL.AN.SBJ=DECL
‘They came upriver and were building the initiation house.’ [Initiation rituals]

In medial verbs, *-b* means ‘DS, simultaneous’ and in final verbs ‘imperfective’. Apart from the homophony there is also an obvious semantic connection to be found here. In final verbs, marking for imperfective aspect with *-b* normally indicates that the action is on-going at the moment of speaking. In medial verbs, *-b* indicates that an action is on-going when the next takes place, in other words, that the two actions are overlapping and at least partially simultaneous. Looking at it from the other end, an action or event which is marked as simultaneous with the one described in the following clause is very likely to be temporally extended. There is a strong association between imperfective aspect and simultaneity of events. Longacre (1983) formulates a ‘naturalness assumption’, which is essentially a converse pair of implicatures. This assumption says that: “[...] we can normally expect that actions in succession are performed by the same person, while actions that overlap are performed by different people” (p. 198).

In the Tucanoan language Guanano, for instance, on which Longacre based his argument, information on temporal structure is more basic than information on S/R. Referential information is derived from temporal information by a (cancellable) implicature based on the assumption that the use of the marker indicating sequentiality or simultaneity of actions implicates that these actions are performed by the same or a different individual, respectively. However, subjects in Guanano can be disjoint in reference even though events take place sequentially or co-referent even though events occur simultaneously.

If simultaneous actions are expected to be performed by different individuals, it is not surprising that the marker *-b* in Mian has DS as an additional meaning in medial verbs. The suffix *-n*, on the other hand, which derives from the homophonous realis marker, generally only signals sequentiality of events but *if* it indicates a S/R-related meaning, i.e. with first person singular subjects, it will always be SS. Hence, the behaviour of *-n* is also consistent with the prediction of Longacre’s naturalness assumption.

Apparently, Mian exemplifies a development from temporal information (sequential vs. simultaneous) to referential information (SS vs. DS) in medial verbs. However, the referential system is only fully explicit in the first person singular. Why this is the case remains unclear.

5.3. *-s* ‘remote past’ and *-s* ‘DS, sequential’

The suffix *-s* ‘remote past’ locates events in the remote or ancient past, i.e. many decades ago or in mythical times. Therefore, it is mainly found in myths and actual historical accounts, e.g.:

- (29) *yōle éil=e a-nâ'-s-ib=e?*
 well pig=SG.M 3SG.M.O-kill.PFV-RPST-2/3PL.AN.SBJ=INT
 ‘Well, did they kill the pig?’ [History of Mianmin and Telefomin]

As the marker *-s* is derived from a deictic tense category, namely ‘remote past’, the temporal meaning is expected to be sequential. However, it might at first seem counterintuitive that a S/R marker meaning ‘DS, sequential’ should be derived from the remote past tense suffix. After all, *-s* in medial verbs does not have ‘remote past’ as a

meaning component but rather has an additional meaning of temporal closeness or necessary condition apart from ‘DS, sequential’, which is indeed quite unrelated to the notion ‘remote past’. However, the only TAM suffix occurring in final verbs that is not also used in medial verbs is *-b* ‘non-hodiernal past’. It is used for events in the past excluding the day containing the moment of speaking. This form is segmentally homophonous with *-b* ‘imperfective’ in final verbs and would – if chosen – also be homophonous with *-b* ‘DS, simultaneous’ in medial verbs.⁴ Hence, if one assumes that the language filled out its S/R paradigm by deriving forms from the TAM suffixes used in final verbs, it seems that *-s* was chosen in the absence of a better option.

5.4. Further indications for a lesser degree of grammaticalization of S/R in Mian

Above I have pointed out that the variable behaviour of *-n* suggests that S/R meaning is not as strongly grammaticalized in Mian as it is for example in Usan or Kalam. Further evidence for this comes from the fact that for all other S/R markers in medial verbs we find instances, albeit very rarely, where the S/R specification in the marked clause is apparently violated, i.e. we get same subject and sequentiality with *-s* and $-\emptyset$, same subject and simultaneity with *-b*, and also different subject and simultaneity with *biaan*, in other words, S/R marking in the marked clause and actual subject reference in the succeeding clause can be at variance as long as the basic temporal structure, i.e. sequentiality or simultaneity, indicated by the markers is consistent. In that respect, the Mian system is more reminiscent of Guanano than of Usan.

Two selected examples from the spontaneous Mian corpus are given below to illustrate this further. Although the male protagonist is the actor and subject in all three clauses in (30), the verb in the first marked clause is *onsea* inflected with *-s* ‘(DS,) sequential, close link’:

(30) *amgolim ut on-s-e=a*
 roof up(on) go.PFV-(DS.)SEQ.CL-3SG.M.SBJ=MED

dei-(û)b'-a-n-e=a
 leave-give.PFV-SG.N1.D-SEQ-3SG.M.SBJ=MED

daak-te-n-e=a
 down-come.PFV-SEQ-3SG.M.SBJ=MED
 ‘he went up onto the roof and left it (a bag) there and came down and then ...’
 [The flood]

In example (31), S/R is calculated with respect to the verb *gabeta*, which follows the embedded question *nakai unīta tlaaibe?* ‘Who’s about to come?’ (enclosed in square brackets). Such embedded clauses are always skipped by the S/R mechanism of the language and S/R is calculated with respect to the next verb on the same syntactic level, in this case the *verbum dicendi*.

(31) *temê'-b-e=to*
look.IPFV-(DS.)SIM-3SG.M.SBJ=MED

[*naka=i unīta tl-aa-ib=e?*]
man=PL.AN who.PL.AN come.PFV-IRR-2/3PL.AN.SBJ=INT

ga-b-e=ta
say.IPFV-DS.SIM-3SG.M.SBJ=MED
'while looking around, he was asking (himself): "Who's about to come?", while ...'
[Danenok]

Contrary to *-n* which can have DS following (except in the first person singular) as long as events proceed sequentially, cases such as those illustrated in (30) and (31) above are very rare. A similar situation can be found in Dani. Bromley (1981: 255-61) analyses a verb suffix *-tik* which generally expresses SS and sequentiality of events and a verb suffix *-ma ~ -mo* which expresses DS and sequentiality of events. While the former also occurs with DS following, occasionally in the spontaneous corpus and quite frequently in daily conversation (thus similar to Mian *-n*), the latter only very rarely also occurs with SS following (thus similar to Mian *-s* and \emptyset). Although it might be possible to discount the Mian examples in (30) and (31) as unrepaired errors, especially since they are generally judged incorrect in elicitation, while *-n* with DS following is generally accepted, the fact that such examples do occur in the spontaneous corpus is at least tentative evidence for the lesser degree of grammaticalization of S/R in Mian.

6. Conclusion

In contrast to the robust, grammaticalized S/R systems of the PNG Highlands languages, the Mian S/R system is less strongly grammaticalized and thus reminiscent of the systems found in languages of the West Papuan Highlands. Medial verbs are not formally differentiated in any crucial way. They basically look like final verbs and the forms indicating S/R and temporal structure of events are homophonous with TAM suffixes found in the same slot in final verbs. Mian S/R markers show some unexpected behaviour. Tracing them back to their origin, namely the homophonous forms in final verbs, sheds light on the semantic development of the S/R markers within the Mian system and the semantics of the TAM markers help explain and understand the function of the S/R markers.

The process of language change we observe in Mian broadens our understanding of how S/R systems evolve. While existing theories of the origin of S/R markers in Papuan languages assume gapping or a pronominal or deictic origin, the Mian case illustrates a development where markers that provide TAM information in final verbs (remote past, imperfective, or realis) assume temporal information (sequential vs. simultaneous) in medial verbs and subsequently also referential information.

Abbreviations: 1 - 1st person, 2 - 2nd person, 3 - 3rd person, ADV - adverbial clause, AN - animate, AUX - auxiliary, CL - close link (necessary condition, temporal closeness), D - dative, DECL - declarative, DS - different subject, GPST - general past, F - female, FEM - feminine, FPST - far past, IMM - immediate action, INT - interrogative, IPFV - imperfective, M - male, MASC - masculine, MED - medial, N1 - neuter 1, N2 - neuter 2, O - object, PFV - perfective, PL - plural, REAL - realis, RESID - residue class, RPST - remote past, SBJ - subject, SEQ - sequential, SG - singular, SIM - simultaneous, SS - same subject.

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¹ In a story with an Open-Sesame-type cave whose stone door can only be opened by blowing on the stone through a bamboo tube.

² There are languages in which S/R marking is only obligatory in the third person or even restricted to third person, e.g., Gokana, Kaingáng, and Yup'ik Eskimo (also West Greenlandic/Kalaallisut).

³ Thus, in final verbs 'realis' is always marked $-\emptyset$, if the verb stem ends in a consonant, e.g. *a-tem- \emptyset -o=be* [3SG.M.O-see.PFV-REAL-3SG.F.SBJ=DECL] 'She saw him'. 'Realis' is commonly marked $-\emptyset$, if the succeeding subject suffix starts with /i/, e.g. *go- \emptyset -ib=obe* or *go-n-ib=obe* [cut(skin).PFV-REAL-2/3PL.AN.SBJ=DECL] 'They cut (skin)'.
⁴ Some verb forms inflected with *-b* for non-hodiernal past are also marked tonally, while this never happens in imperfective final verbs or DS simultaneous medial verbs. However, tonal marking in the non-hodiernal past is irregular and not found in all forms.