Switch-Reference in a Dying Language: the Case of Menggwa Dla

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Abstract

Menggwa Dla — a Papuan language spoken in Papua New Guinea and West Papua — possesses a switch-reference (SR) system which traditionally functions like those in many other Papuan languages: coreferential (CR) chain verb forms indicate the coreference of the interclausal subjects, and the disjoint-referential (DR) chain verb forms indicate the disjoint-reference of the interclausal subjects. However, in the speech of younger speakers, the SR function of the SR markers has only been retained when the person-number-gender features of the subject cross-reference suffixes are incapable of disambiguating their referentiality. Otherwise, the CR chain verb forms have become unmarked (SR-neutral) chain verb forms, and while the DR chain verb forms still indicate the disjoint-reference of the interclausal subjects, the DR chain verb forms are mainly used to indicate some sort of discourse discontinuity (e.g. temporal discontinuity, logic discontinuity) in addition to participant discontinuity. SR systems can be shown to be serving two different functions: reference-tracking, and the indication of discourse participant continuity versus discontinuity (e.g. Stirling 1993). The latter is the primary function of canonical SR systems. It will be demonstrated that the traditional SR system in Menggwa Dla is a canonical SR system which indicates participant continuity versus discontinuity, whereas the innovative SR system — as used by younger speakers — is more biased towards the function of reference-tracking.

Keywords

Switch-reference, discourse continuity, reference tracking, Papuan languages, language change.

Menggwa Dla is spoken by about 200 people in Sandaun Province of Papua New Guinea and Kabupaten Jayapura of Papua Province, Indonesia ('West Papua'). Menggwa Dla is a minority dialect of the Dla language; Dla belongs to the Senagi language family, a small language family which only consists of Dla and its sister language Anggor (e.g. Litteral 1980).

Menggwa Dla shares a number of typological similarities with the languages of the Trans New Guinea family (the largest and probably the best known Papuan family), including rampant clause-chaining and switch-reference (SR). Like most other Papuan languages with SR systems, SR is indicated on chain verbs in Menggwa Dla. The function of the SR system in older speakers' speech is canonical: coreferential (CR) and disjoint-referential (DR) chain verb forms indicate the coreference and disjoint-reference, respectively, of the subject of their own clause with the subject of the following clause. In younger speakers' speech, however, the function of the SR system has changed: the proper SR functions (the indications of coreference or disjoint-reference of the interclausal subjects) is only retained only when the person-number-gender features of the interclausal subjects are not sufficient to disambiguate whether they are coreferential or disjoint-reference. Otherwise, the CR chain verb forms no longer monitors the coreference or disjoint-reference of the interclausal subjects; in other words, the CR chain verb forms have become 'SR-neutral'. The DR chain verb forms still indicate the disjoint-reference of the interclausal subjects. However, DR chain verb forms are mainly used by younger speakers to indicate kinds of discourse discontinuity like logic discontinuity in addition to participant discontinuity.

This paper will begin by looking at examples of SR systems in other Papuan languages. Relevant morphosyntactic features of Menggwa Dla will be introduced, and the functions of the SR system in both older and younger speakers' speech will be discussed. Later on in this paper, I will discuss the notion that SR markers are primarily indicating discourse participant continuity versus discontinuity rather than acting as devices of reference-tracking. In light of this difference, the traditional SR system in Menggwa Dla thus represents a canonical SR system where the primary function is the indication of participant continuity versus discontinuity, whereas the younger people's innovative SR system is more biased towards the function of reference-tracking than the indication of participant continuity versus discontinuity.

Switch-reference systems

Many Papuan languages are said to possess SR systems. In such languages, 'SR markers' (typically verbal affixes) are compulsorily used in a particular type of clause, and these SR markers indicate that a particular reference of their own clause (typically the subject) is coreferential or disjoint-referential with a particular reference of another syntactically related clause. The references which are monitored as being coreferential or disjoint-referential by the SR markers are called the SR pivots (following Roberts'

(1997) terminologies). Within a system of SR markers,[1] there is at least one coreference (CR) marker which indicates that the SR pivots are coreferential, and at least one disjoint-reference (DR) marker which indicates that the SR pivots are disjoint-referential.[2] (There can be more than one CR and one DR marker as SR markers are often portmanteau morphs with other categories like cross-referencing or interclausal temporal relations.)

The following examples from Nggem (Etherington 2002: 148-149) demonstrate a SR system. In Nggem, subordinate clauses are marked with switch-reference and the SR pivots are the syntactic subjects. In the following examples, a subordinate clause is linearly followed by its matrix clause. The CR suffix *-rik* in example (1) indicates that the third person singular (3SG) subject of its own clause is coreferential with the 3SG subject of the following matrix clause, and the DR suffix *-ma* in example (2) indicates that the third person plural (3PL) subject of its own clause is disjoint-referential with the 3PL subject of the following matrix clause.[3]

Nggem (Greater Dani, Trans New Guinea; Jayawijaya, Papua, Indonesia)

(1) *daga* *wa-g-**a-rik***,
ascend come-R-**3SG**:NEARPAST**-CR:SEQ**
andenam *amwa* *nogo* *yi-g-**as***.
there home sleep weave-R-**3SG**:NEARPAST
'After [**his$_j$**] coming up, **he$_{[j]}$** slept there at his home.'

(2) *yu-g-u* *la-g-ag-**wa-ma***,
say-R-PL stay-R-FARPAST-**3PL-DR**
*oga-g-ag-**wa***.
do-R-FARPAST-3PL
'After **they** had spoken, **they (different subject)** did it.'

In canonical SR systems, a correct CR or DR form must be used no matter what person-number-gender features the SR pivots have. In other words, CR and DR markers must be used even when reference disambiguation is not needed for the SR pivots (e.g.

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[1] SR markers are most usually, but not necessarily, in paradigmatic opposition. For instance, there are languages like Apali (Wade 1999) where a DR suffix and a CR suffix can coexist to indicate partial overlap of referents between the SR pivots.

[2] I prefer the terminologies of 'coreferential (CR) markers' and 'disjoint-referential (DR) markers' over Roberts' terminologies of 'same subject (SS) markers' and 'different subjects (DS) markers' as SR pivots can be, for instance, the actor or 'topic' rather than the syntactic subjects in some languages, as demonstrated convincingly in, for instance, Roberts (1988).

[3] Please refer to the list of abbreviations at the end of this paper. All emphases in the quoted examples are mine. Some glosses used in the quoted examples have been altered to conform to the glosses used for Menggwa Dla. Zero-morphs have been inserted in the Kanite and Diyari examples to clarify the morphological structures.

first or second person references). In the following examples from Kanite (McCarthy 1965:67), the non-final clauses are chain clauses, and the final clauses are independent clauses. Chain clause verbs are marked with SR, and the SR markers indicate the coreference or disjoint-reference of the subject their own clause with the subject of the linearly following clause. The chain verbs must be in the appropriate CR or DR forms even when the person and number features of the subject cross-reference suffixes already indicate that the subjects of are coreferential or disjoint-referential.[4]

Kanite (Gorokan, Trans New Guinea; Eastern Highlands, Papua New Guinea)

(3) *a-ke-ne-**Ø**-ʔna,*
3SG:O-see-SIM-**CR**-1SG:S→
neʔ-v-u-e.
PROG-go-1SG-IND
'As **I** was looking at him, **I** was going.'

(4) *a-k-o-**ke**-no,*
3SG:O-see-1SG:S-**DR**-3SG:S→
*v-i-**ke**-ʔna,*
go-3SG:S-**DR**-1SG:S→
ne-n-o-e.
PROG-eat-1SG:S-IND
'**I** see it, **he** goes, and **I** eat it.'

Menggwa Dla morphosyntax — some preliminaries

Before our discussion on the SR system in Menggwa Dla, we will look briefly at the independent verbal morphology, noun-phrasal morphosyntax and intraclausal syntax of the language.

Independent verbs always indicate tense, aspect and/or mood. Tense-aspect-mood categories are expressed by portmanteau affixes, usually suffixes. Cross-referencing in Menggwa Dla is rather complicated. Independent verbs carry at least one cross-reference suffix. There are seven sets of subject ([S/A]) cross-reference suffixes and four sets of object ([P/R]) cross-reference suffixes; verbs are lexically-specified as to which sets of cross-reference suffixes they can take, and whether they only take subject cross-reference suffixes or both subject and object cross-reference suffixes. The number of cross-reference suffixes a verb has often does not match the valence of the

[4] The suffixes *-ʔna* (1SG:S→) and *-no* (3SG:S→) in examples (3) and (4) are 'anticipatory markers', i.e. cross-reference affixes which cross-reference with the subject of the following clause. In Kanite, the same set of anticipatory suffixes is used for both CR and DR chain verbs.

verb. For instance, the verb *seru* 'eat' only takes subject cross-reference suffixes, but the verb can be monovalent or bivalent (examples (8) and (18) below). Both the verbs *hihili* 'turn around and come back' and *homba* 'see' take subject and object cross-reference suffixes. However, *hihili* is monovalent, and it receives a 'dummy' 3FSG object suffix (compare examples (5) and (6) below).[5] The following are some examples of independent verbs.

Menggwa Dla (Senagi; Sandaun, Papua New Guinea & Jayapura, Papua, Indonesia)

(5) *hihili-wu-a-mbi.*
turn.back-N1MPL-3FSG:O-PRES:TRANSN
'They are turning back now.'

(6) *homba-wu-a-ni.*
see-N1MPL-3FSG:O-TENT
'Maybe they saw her.'

(7) *pi-wi-hi.*
go-N1FPL-PRES:CONT
'They are going.' ('They are currently on their way.')

(8) *ser-iha-hwa.*
eat-1SG-PAST
'I am eating.'/ 'I am eating (that).'

(9) *simi-wa-hya.*
drink-3FSG-PAST:FOC
'She did drink.'/ 'She did drink (that).'

(10) *sa-mba-i!*
give-2SG-1SG:O (IMP)
'Give me (that) (now)!'

While there are verbs like *hihili* 'turn around and come back' and *homba* 'see' which have invariant verb root forms, most commonly used verbs show irregularities in their verb roots. Just as a demonstration, some verbs have special finite verb root forms for future tense. The verb roots in examples (11) to (14) below are future finite verb roots; compare them with the (regular) non-future finite verb roots in examples (7) to (10) above.[6]

(11) *po-l-a-mby-a.*
go:FUT-LIG-1SG-POS:SMR-1SG
'I will go.'

(12) *ga* *det-u.*
NEG:SMR eat-3MSG
'He will eat.'/ 'He will eat (that).'

(13) *ma-dom-o?*
NEG:IR-drink:FUT-3FSG
'Will she drink?'/ 'Will she drink (that)?'

(14) *da-mba-ya!*
give:FUT-2SG-1SG:O (IMP)
'Give me (that) (later)!'

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[5] It is beyond the scope of this paper to describe the cross-reference suffixes fully. See chapter 5 in de Sousa (forthcoming) for discussions on the cross-reference suffixes and the notions of transitivity and valency in Menggwa Dla.

[6] The non-future finite verb roots are 'regular' as they are either identical to the non-finite verb root or more similar to the non-finite verb root than the future finite verb root. The non-finite forms of the four lexemes are *pi* 'go', *seru* 'eat', *simi* 'drink' and *sefi* 'give'.

(As a comparison, the following are the future forms of the verbs *hihili* 'turn around and come back' and *homba* 'see' which have invariant verb root forms:

(15) *ga* *hihili-nya-a.*
NEG:SMR turn.back-N1DU-3FSG:O
'They two will turn back.'

(16) *ga* *homba-na-a.*
NEG:SMR see-N1DU-3FSG:O
'They two will not see her.')

As seen in the examples above, well-formed clauses do not need to have nominals. In fact, clauses which only consist of a verb are very common. When there are nominals in a clause, the verb is most usually the last constituent in the clause.[7] The relative order of the constituents in front of the verb is both grammatically and pragmatically free, except that a head noun and its modifiers must be contiguous to form a noun phrase (word order within noun phrases is free). For instance, in example (17) below, the constituents of *yo* 'I/ we', *sihafumbo* 'you (SG:OBJ)', *suŋgu* 'later' and *ehala ufati* 'his/her medicine' can be scrambled to any order (and 'his/her medicine' can also be expressed as *ufati ehala*), as long as the verb *daniŋganimbya* 'I will give you' is placed at the end of the clause. There is a range of nominal clitics: an object ([P/R]) case clitic *=mbo*, various semantic case clitics, a topic clitic *=na* and various focus clitics. Subjects ([S/A]) and ditransitive second objects ([T]) are zero case-marked, as shown in (17) below. The nominals clitics are optionally used with nouns (e.g. *ayamu* 'chicken' in example (18) below) and obligatorily used with personal pronouns (e.g. the object pronouns in example (17) and (19) below).

(17) *yo* *sihafumbo* *suŋgu* *[ehala* *ufati]* *da-niŋga-ni-mby-a.*
1 2SG:OBJ later [3SG:GEN medicine] give:FUT-1SG-2SG:O-POS:SMR-1SG
'I will give you his/her medicine later.'

(18) *(ai)* *ayamu(=mbo)* *ser-yefa-hwa.*
(3) chicken(=OBJ) eat-N1FDU-PAST
'They two ate the chicken.'

(19) *(yo)* *aiahefimbo* *homba-ha-pa-hwa.*
(1) 3FDU:OBJ see-1SG-N1DU-PAST
'I saw them two.'

Chain clauses and the function of SR in Menggwa Dla

Similar to a lot of other Papuan languages (languages of the Trans New Guinea family in particular), Menggwa Dla is heavily into clause-chaining, and chain clauses in Menggwa Dla indicate switch-reference. Chain clauses — also known as medial clauses and cosubordinate clauses — is the most common type of dependent clause in Menggwa Dla. One or more chain clauses are 'chained' together with one independent clause at the end to form a 'clause chain'; the chain clauses are dependent on the final

[7] One noun phrase can exist after the verb; this post-verbal position can be used to clarify the identity of references which are otherwise only expressed by cross-reference suffixes. Either old or new information can be expressed in this position.

independent clause for full tense-mood specifications. Chain clause verbs ('chain verbs') carry cross-reference suffixes (like independent verbs; see above), a 'dependency' suffix *-Ø ~ -mbo ~ -mbona* which indicates that they are dependent on another clause for tense-mood specifications, and a SR marker. There are two SR markers: the coreference (CR) marker *Ø* and the disjoint-reference (DR) marker *ma-/ -ma/ -me*.[8] Chain verbs which carry the zero CR marker are called 'CR chain verbs', and chain verbs which carry the *ma-/ -ma/ -me* DR marker are called 'DR chain verbs'.[9] The following are examples of one CR chain verb and a corresponding DR chain verb.

(20) *walambani-**Ø**-o-mbo,*
swim-**CR**-3FSG-DEP
'She$_j$ swam, and she$_j$ …?

(21) *walambani-**me**-wa-mbo,*
swim-**DR**-3FSG-DEP
'She swam, and someone else…'

The traditional SR system

The traditional SR system as used by older speakers in Menggwa Dla represents a canonical SR system. In older speakers' speech, CR chain verbs indicate that the subject of its own clause is coreferential with the subject of the next clause, and DR chain verbs indicate that the subject of its own clause is disjoint-referential with the subject of the next clause. In the following pair of examples, the first clause is a chain clause and the following clause is an independent clause. In example (22), the CR chain verb (as marked by the zero CR morph) indicates that the subject of the next clause is coreferential with the subject of its own clause (i.e. the same person swam and saw someone else). In example (23), the DR chain verb (as marked by the DR suffix *-me*) indicates that the subject of the next clause is disjoint-referential with the subject of its own clause (i.e. the person who saw is different from the person who swam).

(22) *rani=mbe* *walambani-**Ø**-**o**-mbo,* *homba-**ya**-a-hwa.*
DEM=INS swim-**CR**-**3FSG**-DEP see-**3SG**-3FSG:O-PAST
'**She$_j$** was swimming/ swam there, and **she$_{j/*k/*l}$** saw her$_k$.'

[8] The allomorphy of the DR affix is as follow: a) *-me* for verbs which do not take object cross-reference suffixes and the verb root ends in a vowel; b) *ma-* for: (i) verbs which do not take object cross-reference suffixes and the verb root ends in a consonant; and (ii) *sefi* (*sa-/ da-*) 'give'; and c) *-ma* for verbs which take object cross-reference suffixes except *sefi* (*sa-/ da-*) 'give'.

[9] There are other morphosyntactic differences between CR and DR chain verbs other than the zero CR marker and the DR affix *ma-/ -ma/ -me*. Firstly, CR and DR chain verbs usually requires different sets of cross-reference suffixes (as shown in examples (20) and (21)). Secondly, CR chain verbs may be serialised with grammatical verbs which indicate completive aspect and/ or interclausal sequentiality, whereas DR chain verbs cannot be serialised. Thirdly, DR chain verbs can be positive or negative in polarity, whereas CR chain verbs can only be positive in function and form (the scope of negativity does not extend beyond clause boundaries in Menggwa Dla). If a clause is in negative polarity and its subject is coreferential with the subject of the next clause, the first clause must be an independent clause.

(23) *rani=mbe* *walambani-**me**-**wa**-mbo,* *homba-**ya**-a-hwa.*
DEM=INS swim-**DR**-**3FSG**-DEP see-**3SG**-3FSG:O-PAST

'**She$_j$** was swimming/ swam there, and **s/he$_{*j/k}$** saw her$_{j/*k/l}$.'

The following is another example. The DR chain verb form *hwafomembo* 'he talks and…' in the first clause indicates a change in subject between its own clause and the following (second) clause, whereas the CR chain verb form *hahofumbo* 'he goes up and…' in the second clause indicates that the subjects of its own clause is the same person as the subject of the following (third) clause.[10]

(24) *wuli=hi* *afila=lofo* *hwafo-**me**-**Ø**-mbo,*
house=ADS father=COM talk-**DR**-**3MSG**-DEP

***Ø**-hahof-**u**-mbo,*
CR-go.up-**3MSG**-DEP

ye *ap-**u**-hwa.*
then sleep-**3MSG**-PAST

'**He$_j$** talked with father$_k$ outside the house (DR), and **he$_{*j/k/l}$** went into the house (CR), and then slept.' (70III)

In many Papuan SR languages, the SR pivots are the 'topics' rather than the syntactic subjects (e.g. Amele (Roberts 1988)). Nevertheless, the SR pivots in Menggwa Dla are always the syntactic subjects; more specifically, subjects as defined by the subject cross-reference suffixes. In the first clause of the following example, the object noun phrase is topicalised in the first clause, and the topicalised object of the first clause is coreferential with the subject of the second clause. However, this coreference between the topic of the first clause and the subject of the second clause is ignored by the SR marker as SR markers only monitor the syntactic subjects. In the first clause, the non-first person feminine singular (N1FSG) subject suffix *-ya* cross-references with the subject noun phrase *nyewi* 'person' (people of unknown gender are cross-referenced as feminine), and the subject of the second clause is represented by the third person masculine (3MSG) subject suffix *-Ø*, the referent of which can be inferred as the same as the 3MSG reference of the previous clause, *Pius*.

[10] Menggwa Dla examples from natural conversations carry a tag with a Hindu-Arabic numeral followed by a Roman numeral, e.g. (80I); the Hindu-Arabic numeral indicates the decade in which the speaker was born, and the Roman numeral is an individual identifying code. Examples from texts carry a tag with an uppercase Roman alphabet, e.g. (B). The texts can be found in de Sousa (forthcoming).

OBJ SUBJ

(25) Pius=*na* *nyewi* *yaŋga=mbe* *iŋgufu-**ma**-ya-Ø-mbo,*
Pius=TOP person bush=INS attack-**DR**-N1FSG-3MSG:O-DEP

suŋgwani *wuli=nambo* *pi-Ø-hya* *nu.*
sick house=ALL go-3MSG-PAST:FOC COP:3MSG

'**As for Pius$_p$, someone$_j$** attacked him$_p$ in the bush (DR), and **he$_{p(/?l)}$** went to the clinic.' (60III)

In Menggwa Dla, there are no voice oppositions, and there is basically no morphological valency changing operations (e.g. causativity is conveyed by analytic means, with the causative verb most usually in DR chain verb form since the causer and the causee are most usually disjoint-referential). For involuntary states like *suŋgwani* 'sick'/'be sick', *kakalu* 'pain'/'be in pain', and *gihali* 'hunger'/'be hungry', the animate undergoer is marked as the subject, while the inanimate force is either part of the predicate or marked as the object. This is different from a lot of Papuan languages where the animate undergoer of involuntary states is marked as a non-subject. Papuan SR languages vary as to whether the animate undergoer non-subject is selected or not selected as a SR pivot (and also by which SR marker) due to the non-alliance of the syntactic subject and the most 'newsworthy' animate participant in these construction types. Menggwa Dla avoids this problem as the animate undergoer of an involuntary state is always the subject. In the following example, the animate undergoer is marked as the subject on the verb, while the inanimate force *gihali* 'hunger' is represented by an object noun phrase.

(26) *gwa* *gihali(=mbo)* *sufwa-**Ø**-a-mbo,*
but hunger(=OBJ) feel-**CR**-1SG-DEP

stroberi *imbu* *hihiri-**Ø**-a-mbo,*
strawberry two steal-**CR**-1SG-DEP

ser-iha-hwa.
eat-1SG-PAST

'But then **I** was hungry (CR), and **I** stole two strawberries and **I** ate them.' (50II)

As seen in the examples (22) to (26) above, in older speakers' traditional SR system, an appropriate SR marker has to be used even when the subject cross-reference suffixes already indicate that the interclausal subjects are coreferential or disjoint-referential unambiguously. Reference disambiguation is basically not needed when one of the subject is a first or second person reference, or when the gender features are conflicting. In the examples below, the person-number-gender features of the subject cross-reference suffixes already indicate the coreference (example (27)) and disjoint-reference (example (28)) of the interclausal subjects. Nevertheless, a CR chain verb is still required in example (27), and a DR chain verb form is still required in example (28).

(27) *ye* ***Ø-****ser-i* *fa-hya-a-mbo,*
then **CR-**eat-1SG SEQ-1SG-3FSG:O-DEP
ap-aha-hi.
sleep-1SG-PRES:CONT
'**I** eat (CR), and then **I** sleep.' (B)

(28) *ini.* *pusi* *homba-****ma****-ha-a-mbo,*
yes cat see-**DR**-1SG-3FSG:O-DEP
hwi=na *han-wa-hwa.*
water=ALL go.down-3FSG-PAST
'Yes, **I** saw the cat_j (DR), $\mathbf{it_{j/k}}$ went down towards the stream.' (60III)

The innovative SR system

The function of the SR system is different for speakers of Menggwa Dla who were born since late 1970s. The function of the innovative SR system differs depending on whether the subject cross-reference suffixes (i.e. the SR pivots) can resolve the referentiality of the interclausal subjects or not. The innovative SR system consists of two mutually exclusive sub-systems.

Sub-system 1

When the person-number-gender information of the two subject cross-reference suffixes already unambiguously indicates that the two subjects are coreferential or disjoint-referential (i.e. when one of the cross-reference suffixes is first or second person, or when the gender features of the two suffixes do not match), CR chain verb forms are SR-neutral, i.e. the CR chain verb forms have become the unmarked chain verb forms which do not monitor whether the interclausal subjects are coreferential or not. (Conversly, grammatically speaking, disjoint-referential subjects can be marked by either CR verb forms or DR verb forms.) DR chain verb forms still indicate disjoint-reference of the interclausal subjects.

In example (29), a CR chain verb form *hofahiambo* 'I trip over and…' is used because the interclausal subjects are meant to be coreferential. However, in example (30), the same CR verb form *hofahiambo* is used in the first clause when the interclausal subjects are actually disjoint-referential (1SG and 3MSG). The fact is that the CR verb form in examples (29) and (30) are SR-neutral; this is so as the person-number-gender features of the subject suffixes *-a* (1SG) and *-Ø* (3MSG) already indicate the disjoint-reference of the interclausal subjects. While the use of a DR verb form like *hofahi-me-aha-mbo* (fall-DR-1SG-DEP)) is also grammatical in example (30), most younger speakers would use a CR verb form in a situation like this.

(29) *hofahi**(-Ø)-a**-mbo,*
fall**(-CR)-1SG**-DEP
*sumbu-**aha**-hwa.*
laugh-**1SG**-PAST
'**I** tripped over and **I** laughed.'

(30) *hofahi**(-Ø)-a**-mbo,*
fall**(-CR)-1SG**-DEP
yoambo *sumbu-Ø-hwa.*
1SG:OBJ laugh-3MSG-PAST
'**I** tripped over and **he** laughed at me.' (90I)

The following are two more examples. Since the subject cross-reference suffixes already indicate the disjoint-reference of the subjects, most younger speakers would use CR chain verb forms rather than DR chain verb forms in these situations.

(31) Peter *atimbati**(-Ø)-u**-mbona,*
Peter sneeze**(-CR)-3MSG**-DEP
bahu *pi-**wa**-hwa.*
flying.fox go-**3FSG**-PAST
'**Peter** sneezed and **the flying fox** flew away.' (80IV)

(32) *aya* *ifali* *kwemi**(-Ø)-Ø**-mbo,*
father spear take**(-CR)-3MSG**-DEP
yo=amba *aha* *yowala* *ifali* *tamnya* *kwami-**Ø-a**-mbo…*
1=too 1SG:EMPH 1SG:GEN *spear* small:MASS take-**CR-1SG**-DEP
'**Father** took spears with him, **I** too took my own small spears, and…' (N)

It is still grammatical to use DR chain verb forms when the interclausal subjects are disjoint-referential. Nevertheless, most younger speakers only use DR chain verb forms to emphasise discourse discontinuity of some sort. For instance, in the following example, a CR chain verb like *pi-Ø-u-mbona* (go-CR-3MSG-DEP) can be used in the first clause, but instead the younger speaker used the DR chain verb form *po-me-Ø-mbona* (go:DR-DR-3MSG-DEP),[11] presumably due to the contrastive focus, or alternatively the disruption in spatial continuity (i.e. the spatial settings of the two clauses have changed).

[11] The verb root *po-* is an irregular DR verb root of the verb *pi* 'go' (class I).

(33) *dukumi* *po-**me-Ø**-mbona,*
valley go:DR-**DR**-3MSG-DEP
yo *lohama* *roŋgo* *pi-**aha**-hwa.*
1 ridge along go-**1SG**-PAST
'**He** went to the valley, and **I** went along the ridge.' (N)

In the following example, the younger speaker may have used the DR verb form to emphasise the termination of the direct quote.[12]

(34) *mi* *"... bani* *kaha-wa-a-Ø!"* ***me**-h-**wa**-mbo,*
mother "… sago chop-2SG-3FSG:O-IMP" **DR**-say:DR-**3FSG**-DEP
*pi-**Ø**-hwa.*
go-**3MSG**-PAST
'**Mother** said "… you chop sago!" and **he** went.' (80I)

Sub-system 2

When the person-number-gender information of the two subject cross-reference suffixes is not sufficient in resolving whether the two subjects are coreferential or disjoint-referential (i.e. when the two cross-reference suffixes are both third person and when the gender features are not conflicting), the use of CR verb forms obligatorily indicate the coreference of the interclausal subjects, and the disjoint-reference of the interclausal subjects are obligatorily indicated by DR verb forms.

In the following example, all subject cross-reference suffixes are third person singular, and the gender features of them are not conflicting. The use of CR verb forms in this case necessarily indicate the coreference of the interclausal subjects.[13,14]

(35) *ai* *dukwa-**Ø-ya**-a-mbo,*
3 wake.up-**CR-3SG**-3FSG:O-DEP
Hilari=*mbo* *homba-**Ø-i**-Ø-mbona,*
Hilario=OBJ see-**CR-3MSG**-3MSG:O-DEP
*alani-**Ø**-hwa.*
cry-**3MSG**-PAST
'**He**$_{\mathbf{j}}$ woke up (CR), **he**$_{\mathbf{j}}$ saw Hilari$_{h}$ (CR), and **he**$_{\mathbf{j/*h}}$ cried.' (90III)

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[12] In example (34), the verb root *h-* is an irregular DR verb root of the verb *hwafo* 'say' (class I).

[13] In example (35), the verb *dukwefi* 'wake up' (class IIB) is monovalent; the object suffix *-a* (3FSG:O) in the first clause of example (35) is semantically empty. Class IIB, II and III verbs must have one subject suffix and one object suffix when they are finite.

[14] For class IIB of cross-reference suffixes, gender differentiation is made for 3SG subject suffixes only when the object suffix is 3MSG.

In a similar situation, if the interclausal subjects are meant to be disjoint-referential, then a DR chain verb form must be used; a CR chain verb form cannot be used in this situation because CR chain verb forms are no longer SR-neutral.

(36) Hilari=*mbo* *homba-**ma-i**-Ø-mbona* *(/*homba-**Ø-i**-Ø-mbona),*
Hilario=OBJ see-**DR-3MSG**-3MSG:O-DEP (/see-**CR-3MSG**-3MSG:O-DEP)
*alani-**Ø**-hwa.*
cry-**3MSG**-PAST
'**He**$_{j}$ saw Hilari$_{h}$ (CR), and **he** $_{*j/h/l}$ cried.'

The following are two other examples demonstrating the sub-system 2 of the innovative SR system. Also notice that in example (38) below, having overt noun phrases which disambiguate the referentiality of the subjects has no effect on the SR system; what matters to the innovative SR system are the person-number-gender features of the subject cross-reference suffixes.

(37) *twaŋgi=lofo* *wuli=na* ***Ø**-hahof-**o**-mbo,*
white.person=COM house=ALL **CR-**go.up-**3FSG**-DEP
aflambli *nafi-**Ø**-a-hwa.*
plenty blow-**3SG**-3FSG:O-PAST
'**She**$_{j}$ went into the house with the white person$_{k}$ (CR), and **she**$_{j/*k/*l}$ showed her$_{k/l}$ many things.' (90III)

(38) Peter=*na* *wamla* ***ma**-ser-**u**-mbo* *(/***ma**-ser-**u**-mbo),*
Peter=TOP betel.nut **DR-**eat-**3MSG**-DEP (/**DR-**eat-**3MSG**-DEP)
Simon=*na* *fofo-**Ø**-hwa.*
Simon=TOP blow-**3MSG**-PRES:CONT
'**Peter** is chewing betel nut (DR), and **Simon** is smoking.' (80II)

The (real) functions of SR systems

We have seen that the traditional SR system is a canonical SR system, and the function of the innovative SR system has significantly diverged from that of the canonical traditional SR system. One has to ask exactly in what way is the innovative SR system non-canonical. To answer this question, one has to investigate what the primary function of canonical SR systems is.

Canonical SR systems can be shown to be serving two different functions. The first function is the reference tracking function; 'reference tracking' refers to the fact that the SR markers help the addressee in tracking the identities of the referents of the SR pivots. In this sense SR is an operation of the morphosyntactic and semantic levels. The second function, as argued by linguists like Givón (1983), Roberts (1988), Huang (2000) and Stirling (1993, 2001), is the indication of discourse participant continuity versus

discontinuity. A piece of linguistic discourse tends to be constructed in such a way that one or a group of topical participants constantly feature as the most salient or foregrounded participant across clauses. The continuation in the foregrounding of the salient participant(s) is called 'participant continuity' and the discontinuation in the foregrounding of the salient participant is called 'participant discontinuity'. SR is in this sense a grammaticalisation of the discourse function of participant continuity versus discontinuity between two clauses. While reference tracking is often an important function of SR (the CR markers in particular), SR is rarely the only reference tracking devices available between two clauses, and there often are more-effective reference-tracking devices like cross-referencing and overt nominals in SR-marked clauses. By contrast, all canonical SR systems are united by the fact that their CR markers always indicate participant continuity, and their DR markers indicate participant discontinuity most of the time (see below for exceptions).

I will just present a few examples where SR is obviously redundant as a reference-tracking device. In a lot of Papuan SR languages, the SR pivot(s) is/are cross-referenced in all SR verb forms. In Roberts (1997)'s survey of around one hundred and twenty SR languages in Papua New Guinea (and Papua New Guinea already contains more than two-third of the worlds Papuan languages), around forty percent of the languages surveyed mark one or both SR pivots in both CR and DR verb forms. This means that in a lot of instances, the cross-reference affixes would already have indicated the coreference or disjoint-reference of the SR pivots (due to their person-number-gender features), rendering the SR markers redundant as a reference tracking device in a lot of instances. For instance, in the Amele examples (39) and (40) below (Roberts 1987:294), the subject cross-reference suffixes already indicate the coreference and disjoint-reference of the subjects. The main function of the CR and DR markers are presumably not primarily used for reference-tracking; people certainly do not need a CR marker to remind themselves that 1SG is the same person as 1SG, and similarly, people do not need a DR marker to remind themselves that 1SG is a different person from 2SG. If reference-tracking is the main function of SR, one wonders why SR markers are obligatorily used for SR pivots of all person categories in nearly all languages which are said to have a SR system. Rather, the main function of the CR and DR markers is the indication of participant continuity and discontinuity. The CR marker indicates that participant continuity will be maintained; in other words, the salient participant of its own clause, the SR pivot, will continue to be foregrounded in the following clause. The DR marker indicates that participant continuity will be disrupted; in other words, the salient participant of its own clause will no longer be foregrounded in a following clause.

Amele (Gum, Madang, Trans New Guinea; Madang, Papua New Guinea)

(39) *ija* *h-u-**m-iq***
1SG come-PRED-**CR-1SG**
sab *j-**iq**-a.*
food eat-**1SG**-TODPAST
'**I** came and ate the food.'

(40) *ija* *ho-**co-min***
1SG come-**DR-1SG**
sab *ja-**q**-a.*
food eat-**2SG**-TODPAST
'**I** came and **you** ate the food.'

In languages where it is common to have the SR-marked clause linearly following the control clause (the clause where the other SR pivot is found; Roberts (1988)), as in many Australian SR languages, the SR markers are primarily indicating that participant continuity has been maintained or disrupted from the linearly preceding clause. For instance, in the Diyari example below (Austin 1981: 313), the DR morpheme in the second clause is not primarily used for reference tracking; in other words, the DR morpheme is not primarily indicating that *thalara* 'rain' is different from *karna* 'man' (or *marda* 'stone') in the linearly preceding independent clause. The DR morpheme is primarily indicating that participant continuity has been disrupted from the linearly preceding clause; in other words, the salient participant of the previous clause *karna* 'man' has been backgrounded in the SR-marked clause *thalara kurdarnanthu*.

Diyari (Karnic, Pama-Nyungan; Lake Eyre, South Australia)

(41) *karna-li* *marda-Ø* *matha-rna* *warrayi,*
man-ERG stone-ABS bite-PART AUX [=immediate past time]
thalara-Ø *kurda-**rnanthu**.*
rain-ABS fall-**IMPL:DR**
'**The man** bit the stone so **the rain** would fall.'

There is a minority of Papuan SR languages where the SR pivots are not cross-referenced on the verbs, like Bargam (Roberts 1997: 151, Hepner 1986). However, even here the role of reference tracking is often fulfilled by the appropriate use of different overt and covert anaphora, as in English. In the second clause of the example below, the DR suffix *-id* indicates that participant continuity will be disrupted in the next clause, whereas the role of reference-identification is fulfilled by the nominal *anamren* 'owner' in the third clause. The identity of a SR pivot is often signified by an overt nominal or pronominal after a DR-marked clause in languages which lack cross-referencing in SR marked clauses.

Bargam (Isolate, Madang, Trans New Guinea; Madang, Papua New Guinea)

(42) *mileq-**eq***
return-**CR:IR**
*leh-**id***
go-**DR:IR**
teq *anamren* *aholwaq-**ad***
then owner see-**CR:IR**

in *didaq* *tu-ugiaq.*
3SG food PERF-give:HAB:3SG

'When (**the pig**) would return and go then **the owner**, on seeing it, used to give it food.'

In addition, in a lot of SR languages, while the CR markers must indicate participant continuity, the DR markers can be used to indicate other kinds of discourse discontinuity across clauses, like discontinuity in temporal relations, spatial settings and logical relations. This is only a small extension of function if the primarily function of SR markers is the indication participant continuity versus discontinuity. For instance, in the example below from Amele (Roberts 1988:107), participant continuity is maintained throughout. Nonetheless, the DR marker in the first clause is indicating the disruption in spatial continuity. In other words, the meaning of the following example is really that 'they carried the yams on their shoulders and went *somewhere completely different* and filled up the yam store.'

Amele (Gum, Madang, Trans New Guinea; Madang, Papua New Guinea)

(43) *age* *ceta* *gul-do-**co-bil***
3PL yam carry-3SG:O-**DR-3PL**
li *bahim* *na* *tac-**ein***.
go:CR floor on fill-**3PL:REMPAST**

'**They** carried the yams on their shoulders and went and filled up the yam store.'

Similar use of DR markers for the indication of other kinds of discourse discontinuity has also been documented in other parts of the world, e.g. Yankunytjatjara in Australia (Goddard 1983), and Northern Pomo in North America (O'Connor 1993). (See chapter 2 in Stirling (1993) for further illustrations and discussions on this point.)

One further step from this are systems of general discourse continuity markers. In a SR system, a DR marker may be used to indicate other kinds of discourse discontinuity rather than participant discontinuity, but CR markers always indicate participant continuity. In a system of discourse continuity markers, the continuity (C) and discontinuity (D) markers usually also indicate participant continuity versus discontinuity, but both D markers and C markers may be used to indicate kinds of discourse dis/continuity other than participant dis/continuity. The system in Bauzi (Briley 1997) is an example. In the following example, participant continuity is actually disrupted between the third clause and the fourth clause. Nonetheless, the C suffix *-me* in the third clause is indicating that the situation of the next clause is a natural consequence of the situation of its own clause.

Bauzi (East Cenderawasih Bay; Jayapura & Yapen-Waropen, Papua; Briley 1997)

(44) *labi* *Vadu-hat* *ozo-ha*
like.that Vadu-ERG think-D
'Then **Vadu[v]** thought,'
am *nà* *beo-he-mu* *fa*
his sister strike-D-because ITR
'because (**Aseda**) struck his sister,'
Sembina *beo-**me***
Sembina strike-**C**
'(**he[v]**) struck Sembina[s],'
ab *si-h-am*
IND seize-R-IND
'and (**she[s]**) sat down.' (1997: 21)

In the third clause of the following example, participant continuity is actually maintained between the third clause and the fourth clause. Nonetheless, the D suffix *-ha* in the third clause is used here to indicate a significant discourse boundary.

(45) *Gienali-m* *num* *foti*
Gienali-GEN house pass.by:C
'(**[W]e**) passed by Gienali's house'
sei *debu* *fu-si*
matoa.tree trunk arrive-C
'and (**we**) arrived at the base of the *matoa* tree'
*ai-**ha***
hear-**D**
'and listened,'
dam *meb-dae* *ab* *aii-da-m-am.*
people cry-words IND hear-CONT-IR-IND
'(**we**) began hearing wailing.' (1997: 118)

Other examples of general discourse continuity markers are also found in Central Pomo (Mithun 1993) and the Muskogean language Koasati (Rising 1992).

We have seen that there are SR-lookalikes — the general discourse (dis)continuity markers — which are primarily used for the indication of discourse continuity versus discontinuity in general (rather than participant continuity versus discontinuity in particular). There are also SR-lookalikes which are primarily used for reference tracking. There is a small number of languages with so-called 'third-person SR systems' where functional CR and DR markers are only available for third person references. The rationale of having CR versus DR markers only for third person references is that reference disambiguation is often needed for third person references, whereas reference disambiguation is seldom needed for first and second person references. For example,

in Eskimo-Aleut languages, there are many different clause-linking devices where CR versus DR marking is only available for third person references. For instance, in Aleut (Bergsland 1994, 1997), a dative case marker can be used to link tensed clauses (the tense of the datively marked-clause is relative to the tense of the independent clause). When used with first or second person subjects (the [S/A] argument), the dative case clause linker is SR-neutral, as shown in the examples below.

Aleut (Eskimo-Aleut; Aleutian Islands & Alaska Peninsula)

(46) *hama-ax̂* *hit-na-q-**aanq***
there-ABL go.out-REM-1SG**-DAT:1SG**
tataam *hama-aĝa-aĝuta-na-q*
again there-go-again-REM-1SG
'**I** had gone out from there but [**I**] went back there again.' (Bergsland 1994:347)

(47) *taanasxaada-ku-q-**aanq***
camp-PRES-1SG**-DAT:1SG**
igax̂ta-x̂ *waaĝa-na-x̂*
airplane-ABS:SG come.in-REM-3SG
'**I** was out camping when **the airplane** came in.' (Bergsland 1997:244)

However, with third person subjects, the use of dative case as a clause linker obligatorily indicates disjoint-reference of the interclausal subjects.

(48) *alitxu-x̂* *ina-ku-ĝ-**aan***
war-ABS:SG end-PRES-3SG-DAT:3SG**(3DR)**
Atx̂a-m *hadan* *uqiti-iĝuta-na-s*
Atka-REL:SG toward.it return-again-REM-1NSG
'When **the war** was over, **we** returned to Atka.' (1994:346)

For coreferential third person subjects, an absolutive or relative case[15] is used instead as a clause linker,[16] and the use of absolutive or relative case as a clause linker is only available for third person subjects. In effect, functional CR markers (absolutive or

[15] In Eskimo linguistics, the 'absolutive case' marks absolutive relations ([S/P]), and the 'relative case' mark ergative ([A]) and genitive relations. However, in Aleut, certain cases are called 'absolutive' and 'relative' simply because they are the cognates of the absolutive and relative cases in Eskimo languages. Most importantly, both arguments of a transitive clause can be marked with an 'absolutive' case in Aleut. See Bergsland (1997).

[16] The use of absolutive case as a clause linker signifies immediate sequential events, whereas the use of relative case as a clause linker signifies other interclausal temporal relations.

relative case) and DR markers (dative case) are only available for third person references.

(49) *anqax̂ta-ku-**m***
go.out-PRES-REL:SG**(3CR)**
haqa-ag̊-aan *ag̊-iku-x̂*
come-INT-REL:3SG AUX-PRES-3SG
'**He**$_{[j]}$ went out (away) but [**he**$_{j}$] will come back.' (1994:346)

(50) *wan* *hyaaga-x̂* *adu-lakag̊-**im***
this *log-ABS:SG* long-PRES:NEG-REL:SG**(3CR)**
tumtatu-ku-x̂
thick-PRES-3SG
'**This log**$_{[j]}$ is not long but [**this log**$_{j}$ is] thick.' (1997:244)

Another example of 'third person SR systems' comes from Tupí-Guaraní languages. According to Jensen (1997, 1998), Proto-Tupí-Guaraní and some modern Tupí-Guaraní languages, e.g. Tapirapé and Tocantins Asuriní, have a full range of (interclausal and interphrasal) CR versus DR cross-reference prefixes. However, in some other modern Tupí-Guaraní languages, e.g. Guajajára and Tembé (from the same branch of Tupí-Guaraní as Tapirapé and Tocantins Asuriní), the CR versus DR distinction is only maintained for third person references, whereas the cross-reference prefixes for the other persons have merged into one set.

The (real) function of the innovative SR system in Menggwa Dla

The traditional SR system is certainly a canonical SR system where the primary function is the indication of participant continuity versus discontinuity; the CR and DR markers indicate participant continuity versus discontinuity in every chain clause.

The innovative SR system is functionally two mutually exclusive systems of which the functions represent two different departures from the function of canonical SR systems. When reference-disambiguation is needed for the subject cross-reference suffixes, the innovative SR system in Menggwa Dla is mainly aimed at reference tracking, somewhat similar to Aleut.[17] When reference-disambiguation is not needed

[17] The difference is that in Aleut, functional CR and DR markers are available for third person references, whereas in Menggwa Dla, functional CR and DR markers are available for third person references which agree in number and do not conflict in gender.

for the subject cross-reference suffixes, the SR verb forms are used to indicate discourse continuity versus discontinuity in general, somewhat similar to Bauzi.[18]

Conclusion

In conclusion, we have seen that the traditional SR system in Menggwa Dla is a canonical SR system of which the main function is the indication of participant continuity versus discontinuity, and the innovative SR system is sometimes primarily a reference tracking device, and at other times indicating discourse continuity versus discontinuity in general. With the indication of participant continuity versus discontinuity being the primary function of SR systems, linguists investigating SR systems should concentrate on the discourse properties of SR, and investigate SR systems on par with other interclausal continuity systems like systems of interclausal temporal relation markers and logical relation markers.

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[18] The difference is that in Bauzi, the discontinuity markers indicate any kind of discourse discontinuity, whereas the DR markers in Menggwa Dla indicate participant discontinuity plus another kind of discourse discontinuity.

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Abbreviations

ABS	absolutive case
ABL	ablative case
ADS	adessive case
ALL	allative case
AUX	auxiliary
C	discourse continuity
COM	comitative case
CONT	continuous aspect
COP	copula(r)
CR	coreferential
D	discourse discontinuity
DAT	dative case
DEM	demonstrative
DEP	(syntactic) dependency
DR	disjoint-referential
DU	dual
EMPH	emphatic
ERG	ergative case
F	feminine
FAR	far (past) tense
FOC	focus
FUT	future tense
GEN	genitive case
HAB	habitual aspect
IMP	imperative mood
IMPL	implicative
IND	indicative mood
INS	inessive case
INT	intentional mood
IR	irrealis
ITR	iterative aspect
LIG	ligature
M	masculine
MASS	mass undergoer
N	non-
NEAR	near (past) tense
NEG	negative
O	object
OBJ	object case
PAST	past tense
PART	participial
PERF	perfective aspect
PL	plural
PRED	predicate
PRES	present tense
PROG	progressive aspect
S	subject
SEQ	sequential
SG	singular
SIM	simultaneous
SR	switch-reference
STAT	stative aspect
TOD	today (past) tense
TOP	topic
TRANSN	transitional aspect (inchoative/ completive aspect)
R	realis
REL	relative case (ergative/ genitive)
REM	remote (past/ future) tense