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This is a contribution from *Switch Reference 2.0*.

Edited by Rik van Gijn and Jeremy Hammond.

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Some non-canonical switch reference systems and the fundamental functions of switch reference

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Switch reference [SR] is complex; doing a truly-comprehensive typology of SR is difficult due to the plethora of “non-core” functions that different SR systems have. Inspired by the difference in usage of the SR system by older and younger speakers in the Papuan language of Menggwa Dla (de Sousa 2006a, b, c), I propose a (somewhat wide) definition of “canonical SR”. Canonical SR systems have two primary functions: the grammatico-semantic function of reference tracking, and the grammatico-discourse function of indicating participant continuity versus discontinuity of the SR pivots (the interclausal references monitored by a SR marker). Three types of non-canonical SR systems found in different parts of the world will also be discussed; we will see how they are non-canonical based on the two primary functions of canonical SR.

1. Introduction

In comparison with many other grammatical constructions, studies of switch reference (SR) are relatively rare. There have been surveys and typological studies on the SR systems in individual geographical areas, e.g. Papua New Guinea (Roberts 1997), Australia (Austin 1981), Vanuatu (Lynch 1983; de Sousa 2008), North America (Jacobsen 1983; McKenzie 2015), Western South America (van Gijn this volume-b). There have also been formal accounts of switch-reference, based on the SR systems in a number of languages (e.g. Finer 1985; Stirling 1993; Huang 2000; see also Section 4 of Van Gijn, this volume-a). However, there has yet to be an attempt on a geographically more-comprehensive typological study on SR. Evidently, this is not (primarily) due to the fact that SR systems are mostly found in lesser-studied languages; there are book-length comprehensive typological studies on grammatical categories like evidentiality (e.g. Aikhenvald 2004), which are also primarily found in lesser-studied languages. The reason for this “evasiveness” of SR has to do with the fact that, while linguists do not seem to have problems spotting SR systems (as prototypical instances of SR are easy to identify), the various SR systems vary greatly in their less-prototypical behaviours.

More often than not, studies on SR begin by giving the Haiman and Munro (1983:ix) definition of canonical SR (also repeated in Section 2 below) and then (often rightfully) argue something like “the definition of SR should be widened because the SR system in *my* language has these less common behaviours”. The wide variation in their less-prototypical behaviours makes it an arduous task to have a truly universal definition of SR, a definition that is totally applicable beyond the one or two geographical areas that a linguist is most familiar with.

In this paper, I outline my ideas on what canonical SR is and does (Section 2). Similar to many linguists who came into SR studies by being lucky enough to have studied languages with SR systems, I came into SR studies through investigating the Papuan language of Menggwa Dla (de Sousa 2006a). My ideas of what SR is and does have been shaped by how older and younger speakers utilise the SR system in Menggwa Dla differently (de Sousa 2006b, c). The older speakers’ traditional SR system in Menggwa Dla is more canonical than most other Papuan languages, whereas the younger speakers’ innovative SR system is very non-canonical. The traditional and innovative SR systems in Menggwa Dla are described in Section 3. Having discussed the differences between the traditional and the innovative SR systems in Menggwa Dla, the functions of canonical SR systems are discussed in Section 4. Based on the formal and functional criteria of canonical SR systems discussed in the preceding sections, in Section 5 I compare a few types of non-canonical SR systems with canonical SR systems, and discuss what they tell us about the functions of canonical SR systems.

In contrast with my views on what SR is, some people have definitions of SR that are narrower than mine, and others have definitions that are wider than mine. My views are also unavoidably somewhat biased by Papuan linguistics. In this paper I try to define what canonical SR *is*; what I have done very little in this paper is defining what *is not* SR (see (6) in Section (2)). Grammatical constructions lie in a space, and it is not necessarily easy, or useful, to demarcate sharp boundaries to exclude certain less-prototypical SR-like systems from being considered SR. I try to define what is definitely SR, what is definitely not SR, and I leave all the less-canonical SR systems in between as “non-canonical SR systems”, with functional explanations on why they are non-canonical.

Cases of referential-overlap, i.e. referential relationship between two references that is not strict coreference or strict disjoint-reference, fall outside of the scope of this study. Unless specifically mentioned, they are ignored throughout this paper as possible referential relationships beyond strict coreference and disjoint-reference. (Issues to do with coreference and disjoint-reference are already complex enough.)

2. Canonical and non-canonical SR systems

Given the nature of this paper, we have to begin with a section on the definitions adopted in this paper. In (3) below, I outline properties of the “SR canon”, in (4)

I outline the underlying functions of what I consider “canonical SR systems” (to be further elaborated in Section 4), in (5) I outline the formal properties of such canonical SR systems, and in (6) I outline the necessary formal properties of SR, i.e. the absolute minimal formal features that SR systems must have.

The term SR was coined by Jacobsen (1961, 1967).¹ Many studies on SR quote the following definition of canonical SR from Haiman and Munro (1983:ix): “[c]anonical switch-reference is an inflectional category of the verb, which indicates whether or not its subject is identical with the subject of some other verb”. An example of a SR system given in Haiman and Munro (1983:ix) is the following pair of examples from the Papuan language Usan quoted from Reesink (1981). In example (1), the suffix *-ab* on the verb is an inflection that indicates coreference [CR] of its subject with the subject of the following clause. In example (2), the suffix *-ine* on the verb is an inflection that indicates disjoint-reference [DR] of its subject with the subject of the following clause.

- (1) Usan
Ye nam su-ab isomei.
 I tree cut-CR I:went:down
 ‘I cut the tree and went down.’ (Reesink 1981; 1983:217–218)
- (2) *Ye nam su-ine isorei.*
 I tree cut-DR it:went:down
 ‘I cut the tree down.’ (Reesink 1981; 1983:217–218)

The way that I use the term “canonical SR” is much wider than the Haiman and Munro definition, and I shall now discuss what I mean by “canonical SR systems”. The way I use the term “canonical” here is inspired by – but not entirely the same as – Canonical Typology (e.g. Corbett 2005, 2007). In Canonical Typology, a grammatical construction (as in a typological comparative concept) has a “canon”, or the point where the clearest instances of each feature of the construction converge. (In this sense, the Haiman and Munro definition of canonical SR is a canon). However, in reality, a grammatical construction that behaves exactly like the canon often does not exist. In addition, commonality does not necessarily correlate with canonicity. For instance, languages that do not require an overt subject NP (“pro drop”) is more common than languages like English where an overt subject NP is most usually present (e.g. Dryer 2013a). However, from the point of view of subject verbal agreement, not having an overt subject is a feature that is less canonical than having an overt subject, because having a subject NP gives a clearer instance of subject agreement (Corbett 2005:28).

1. But “switch-reference” meant “a switch in subject” in Jacobsen (1961, 1967), corresponding to DR in this paper. “Switch-reference consists simply in the fact that a switch in subject or agent is obligatorily indicated in certain situations by a morpheme, usually suffixed, which may or may not carry other meanings in addition” (1967:240). This usage of “switch-reference” is still sometimes encountered. See also discussions at (6).

The SR canon adopted in this paper is presented in (3) below; SR systems with canonical features are more-clearly identifiable as SR than SR systems with non-canonical features.

- (3) The SR canon:²
- a. SR markers are inflexional affixes on verbs;
 - b. SR markers are in paradigmatic opposition;
 - c. within a set of SR markers, the COREFERENTIAL [CR] marker(s) indicate coreference, and the DISJOINT-REFERENTIAL [DR] marker(s) indicate disjoint-reference; there needs to be at least one CR marker and at least one DR marker in a SR system;
 - d. SR markers are monomorphemic, i.e. these markers signify only CR/DR and they are not portmanteau with other morphemes;
 - e. SR PIVOTS, i.e., the two references monitored by a SR marker as being coreferential or disjoint-referential, are subjects, a grammatical relation that is relevant to – and easily identifiable by – other morphosyntactic properties in the language;
 - f. SR markers are used regardless of the person, number, and gender features of the SR pivots; and
 - g. syntactic dependency exists between a (SR-)MARKED CLAUSE (the clause where a SR marker is found, and where one of its SR pivots – the INTERNAL SR PIVOT – is found) and the CONTROL CLAUSE (the clause where the other SR pivot – the EXTERNAL SR PIVOT – is found); if the marked clause is a chain clause (a.k.a. medial clause, cosubordinate clause), the control clause is the immediately adjacent clause in the clause chain, in the direction of the head of the clause chain; if the SR marker is used in a subordinate clause (not including chain clauses that are chained to a subordinate clause), the control clause is the matrix clause.

The Usan SR system as shown in examples (1) and (2) above are very close to the SR canon:

- the SR suffixes are inflexional (condition 3a);
- the SR suffixes are in the same morphological slot (condition 3b);
- there are both CR and DR suffixes; they indicate coreference and disjoint-reference respectively (condition 3c)
- (the SR suffixes in examples (1) and (2) actually indicate more than just CR or DR; condition 3d is not satisfied);

2. In (3), the terms “SR pivot”, “marked clause”, and “control clause” are adopted from Roberts (1997). “Internal SR pivot” and “external SR pivot” are mine.

- the SR pivots are the subjects: the SR markers indicate that the subjects are coreferential or disjoint-referential (condition 3e);
- (it has not been adequately demonstrated here, but) SR markers are used for SR pivots of any person, number and gender features (condition 3f); SR markers are used even for first and second person subjects, and SR markers are used even when the person features of the two subjects already indicate the coreference ('I' and 'I' in example (1)) and disjoint-reference ('I' and 'it' in example (2)) of the two subjects; and
- SR is marked in chain clauses; the chain clause immediately precedes the independent clause (the head of the clause chain). The SR marker monitors the subject of its own subject (the subject in 'I cut tree') and the subject of the following independent clause (the subject in 'I/it went down') (condition 3g).

Unlike Canonical Typology, the way that I use the term "canonical SR" covers many more SR systems than the ones closest to the SR canon. My aim here is to use a commonly known and relatively easily understood term as a cover term for a majority of SR reference systems that: (a) are relatively not too far away from the canon; and (b) have a set of formal properties that correlates with a meaningful set of functional properties (see (4)). I have chosen the term "canonical SR" here. From my point of view, these canonical SR systems form a minimum set of SR systems that should be included in any definitions of SR.

It will be argued in Section 4 that canonical SR systems have these two primary functions: the grammatico-semantic function of reference tracking, and the grammatico-discourse function of indicating participant continuity/discontinuity of the SR pivots. Nonetheless, if the definition of canonical SR includes SR systems that *only* have these two functions, very few SR systems would fit this definition, and this would render the term "canonical SR" not very useful for my purpose. The definition of canonical SR is hence widened to allow the DR markers to indicate kinds of discourse discontinuity other than participant discontinuity.

- (4) Underlying functions of "canonical SR systems":
 - a. the grammatico-semantic function of reference tracking; and
 - b. the grammatico-discourse function of indicating kinds of discourse continuity versus discontinuity of the SR pivots:
 - i. CR markers indicate (at least) participant continuity;
 - ii. DR markers indicate participant discontinuity, or another type of discourse discontinuity.

This set of functional definitions covers most Papuan SR systems, and most SR systems elsewhere.

Having these functional criteria of canonical SR in mind, we can now discuss the correlating formal properties of canonical SR, by defining a space that expands from the SR canon as described in (3) above:

- (5) Formal properties of “canonical SR systems”:
- a. SR markers are clause level markers: most SR markers are verbal affixes, but they can also be non-nominal words that are separated from the verb, typically occurring at clause-boundaries (e.g. *c/k* (CR) and *ku-* (DR) in Pima (Langdon & Munro 1979), coordinators *hab* (CR) and *huas* (DR) in Green Hmong (Li 1989), *tɨ* (CR; ⟨tu⟩ in modern orthography) and *ha* (DR) in Maxakalí (Popovich 1986));³
 - b. CR and DR verbs/clauses are “counterparts” in natural discourse. SR systems often have SR markers that are in paradigmatic opposition. However, not all SR systems are like that: CR and DR verbs can have different morphological structures (e.g. sometimes CR verbs have no cross-referencing whereas DR verbs do), CR and DR markers can be in different morphological slots, and some languages even allow CR and DR markers of the same SR system to cooccur on the same verb (to mark, e.g., referential overlap; see Roberts (1997:134–136) for examples of this in some Papuan languages). The structure of clauses that the CR and DR verbs are in could also be somewhat different (e.g. sometimes CR clauses do not allow overt noun phrase for the SR pivot). They could still be considered “canonical SR systems” if the verbs/clauses involved are used as CR and DR counterparts in natural discourse;
 - c. based on functional criterion (4), a CR marker indicates at least coreference (or referential overlap), while a DR marker indicates disjoint-reference (or referential overlap) and/or some prominent changes in discourse like changes in spatial/temporal settings, logical relations, authorship (e.g. going in and out of quotations), reality (e.g. between real and unreal events), and “discourse topics”. (In other words, it is not uncommon for a DR marker to be used when the SR pivots are in fact coreferential; the DR marker is instead indicating some other types of discourse discontinuity. On the other hand, CR marker must indicate coreference);

3. Hmong has SVO constituent order, Maxakalí has SOV, and sometimes OVS word order, and Pima has free constituent order. See Section 1 in Van Gijn (this volume-a) for examples in Maxakalí. Haiman and Munro (1983:x) give the following Pima example from Langdon and Munro (1979), which shows that the SR markers are at the edge of clauses.

- i. *Hegai 'uuvi 'a-t 'am sohñi hegai ceoj c 'am şoşa.*
 that woman 3-PFV DP hit that man CR DP cry
 ‘The woman hit the man and she cried.’
- ii. *Hegai 'uuvi 'a-t 'am sohñi hegai ceoj ku-t*
 that woman 3-PFV DP hit that man DR-PF
 (*hegai ceoj*) *'am şoşa.*
 that man DP cry
 ‘The woman hit the man and he (the man) cried.’

- d. the clearest instances of CR and DR markers are the ones that are monomorphemic, i.e. they indicate nothing other than coreference or disjoint-reference. Nonetheless, SR markers are often portmanteau with, e.g., cross-referencing, markers for temporal relations. A SR morpheme can also be expressed by a combination of morphs instead of a single affix;
- e. there are strict criteria in choosing the SR pivots. Descriptions of SR often begin with examples where the SR pivots are the “subject”. However, non-subject SR pivots are not rare. The criteria used by a SR marker to select its SR pivots can be syntactic (e.g. “subject”, “object”), semantic (e.g. “actor”, “most-animate participant”), and/or discourse prominence (e.g. “topic”). Different SR markers in the same language can employ different criteria. The SR pivots are “salient” in some ways, e.g. one would not expect an oblique object to be a SR pivot, unless it is salient in other ways, for instance the referent is much more animate or topical than the other referents in the clause;
- f. SR markers in canonical SR reference systems are used not just for third person references. SR markers are most usually redundant for reference tracking if a SR pivot is first or second person. However, SR markers are still used for first and second person SR pivots, as SR markers in canonical SR systems are indicators of participant continuity versus discontinuity of the SR pivots (cf. (4b) above; see also Section (4);
- g. SR markers indicate coreference or disjoint-reference of the SR pivots between their own clause and some other clause. Sometimes there are clauses intervening between a SR-marked clause and its control clause (“clause-skipping”). Sometimes the SR-marked clause and the control clause are used in a conversation, and the two clauses are separated by tangential conversational turns. Sometimes the control clause is not overt. While SR markers are most usually found in chain or subordinate clauses, there are also examples like Tonkawa (Hojjer 1949) where SR marker can be suffixed to coordinators of independent clauses.

SR systems that fall outside the formal criteria (5) above, and hence also the functional criteria (4) above, are non-canonical SR systems. (See below for what I consider not SR at all.) The following three types of non-canonical SR systems are discussed in Section 5: (a) “general interclausality systems”, i.e. systems where even the CR markers can be used when there is no participant continuity (Section 5.1); (b) “third person SR systems”, which are primarily used for reference tracking (Section 5.2); and (c) the ECHO SUBJECT [ES] system in Lenakel, where the external SR pivot is often not selected based on “saliency” (the ES system in Lenakel is discussed together with the other ES systems in Vanuatu in Section 5.3). Some may argue that some of these non-canonical SR systems should, or should not, be included in the definition of SR. Some might argue that type (a) should instead be considered the core of SR. In this paper I leave these

questions open; I simply leave these systems in the wide space between “canonical SR system” and what I consider to be definitely not SR (see (6) below) as “non-canonical SR systems”.

Lastly, there are the following four fundamental properties of SR. These are the very few features that I consider SR systems should minimally have. Grammatical systems without these properties are immediately considered to be not SR.

- (6) Necessary formal properties of SR:
 - a. there are SR markers, and they are clause-level grammatical markers;
 - b. there is at least one CR marker, and at least one (formally different) DR marker;
 - c. the SR markers prototypically indicate coreference or disjoint-reference of two references across different clauses;
 - d. the use of SR is not constrained by the semantics of the predicate in the controlling clause.

With condition (6a), we are excluding the use of “switch reference” to mean “switch in reference” in studies of, e.g., the use of zero versus various types of overt pronominals and nominals to indicate the predictability of participants (in, e.g., Spanish (Cameron 1992); Jabêm and Numbami (Bradshaw 1999)). We are also excluding dependent-marking devices that are not “clause-level”, e.g. long distance reflexives. With condition (6b), we are excluding systems that do not actually have a construction that specifically indicate interclausal disjoint-reference (e.g. Anejomĩ; see Section 5.3). English-type switch function systems (using voice morphology to have a particular referent maintained in a certain syntactic role across clauses; Foley and Van Valin 1984:354) are also excluded, as there is no morphology specifically for interclausal disjoint-reference. Constructions which specify coreference probably exist in all languages; what makes SR interesting is that there are markings for interclausal disjoint-reference, and that it forms a system with markings of interclausal coreference. With condition (6c), we are excluding markers that indicate referential relationships within a clause rather than across clauses, for instance markers which indicate reference relationships within serial verb constructions, and intraclausal anaphors. Condition (6c) also excludes reference-tracking systems like proximative-obviative and noun class systems; they are anaphoric devices which classify references into groups, but each marker on its own does not indicate referential relationships across clauses. With (6d), we are excluding canonical logophoricity, where logophores are conditioned by the semantics of the matrix verb.⁴ (See also Sections 3.1 and

4. While canonical cases of SR and logophoricity are mutually exclusive (and there are reports of languages with both systems, e.g. Noni (Wiesemann 1982)), these two systems share

4.2 in Van Gijn (this volume-a) for more discussions of SR in the context of the other reference tracking systems.)

3. The Menggwa Dla language and its SR systems

3.1 The Menggwa Dla language

We now turn our attention to the SR systems in Menggwa Dla. Menggwa Dla is a Papuan language spoken by about 200 people in mid-north New Guinea, in Sandaun (West Sepik) Province of Papua New Guinea, and in Keerom Regency, Papua, Indonesia (about 100 km inland from the northern coast, on both sides of the international border in New Guinea). Menggwa Dla is described in de Sousa (2006a), and is known as “Doeka-Ékor” or “Duka-Ekor” in previous surveys (Galis 1956; Voorhoeve 1971, 1975; Laycock 1973). Menggwa Dla is the smaller of the two dialects of the larger Dla (or “Dera”) language. Dla, together with its sister language Anggor (e.g. Litteral 1980),

many similarities, and often the more non-canonical a logophoricity system is, the more it resembles SR.

Logophoricity markers are commonly associated with African languages (e.g. Hagège 1974; von Roncador 1992; Curnow 2002; Güldemann 2003), while long distance reflexives in languages elsewhere are also often discussed as being closely linked to logophoricity (e.g. Strahan 2011; Huang 2000, 2001, 2013). Canonically, a logophoric marker in Africa comes in the form of a free pronoun, and the logophoric pronoun is used in a clause subordinate to a speech verb. The logophoric pronoun is coreferential with the author of speech in the matrix clause. On the other hand, disjoint-reference is indicated by a normal pronoun. These traits already make canonical logophoricity satisfy conditions (6b) and (6c) for SR. Other than free pronouns, there are also logophoric pronominal forms that are clitic (e.g. Ewe (Clements 1975)) or verbal cross-referencing. Logophoric verbal cross-referencing satisfies condition (6a) for SR. While canonical logophoricity is used with speech verbs, there are languages which have extended the use of logophoric pronouns to an entire class of clauses, e.g. purpose clause in Lele and Babungo (Wiesemann 1986), and this satisfies condition (6d) for SR. There is at least one case which satisfies all four conditions (6a) to (6d) for SR: the case of Gokana (Hyman & Comrie 1981). Instead of a pronominal form, Gokana has a logophoric enclitic which is not pronominal; it simply indicates that a reference in the clause is coreferential with another in the matrix clause, while the lack of it indicates disjoint-reference. Being a clitic and non-pronominal, this satisfies as being “clause-level”, and this satisfies condition (6a). In addition, the logophoric enclitic can be used with purpose clauses, and not just speech verbs, satisfying condition (6d). Hence, Gokana, and probably also the closely related Kana language which is said to have a similar system (Ikoro 1996), are considered here as having non-canonical SR systems. In fact Comrie (1983:21) considers Gokana as having a “very young [SR] system”. Nonetheless, the system in Gokana is not a canonical SR system: for first person references, the logophoric enclitic is not obligatory and dispreferred, violating condition 5f for canonical SR.

form the Senagi language family. The external relationship of the Senagi language family is inconclusive. (Mid-North New Guinea is the linguistically most diverse part of New Guinea; there are many isolates and small language families in the area.)

The following is a brief overview of the morphosyntax of Menggwa Dla. Nominals are relatively rare in natural discourse; clauses often consist of a single verb. For overt nominals, there are enclitics for topic (=na) and various cases (for arguments: an optional =mbo for secundative object, and zero for subject and ditransitive theme). Clauses in Menggwa Dla are overwhelmingly verb-final, and (right-headed) clause-chaining is ubiquitous. Independent and subordinate verbs carry various tense-aspect-mood affixes, while chain verbs carry a -Ø ~ -mbo ~ -mbona suffix at the end of the verb signifying that it is dependent on another verb for tense-aspect-mood. As for cross-referencing, verbs usually carry a subject suffix, or a subject plus an object suffix (in that order). Whether a verb takes one or two cross-reference suffixes does not necessarily correspond with the valence of the verb; the number of cross-reference suffixes that a verb takes depends on the conjugation class of the verb (which also does not necessarily correlate with valency). Monovalent verbs can have two suffixes; in that case, it takes a dummy third person feminine singular object suffix. The morphology of the cross-reference suffixes is somewhat complex (there are seven sets of subject suffixes, four sets of object suffixes, in association with five conjugation classes), and this issue needs not concern us here.

The SR morphology is the same for the older speakers' traditional SR system and the younger speakers' innovative SR system. (The functional differences are discussed in Section 3.2 and Section 3.3 below.) Chain verbs always carry SR morphology. The most salient formal difference between CR and DR chain verbs is that the CR marker is zero, whereas the regular DR affix is *ma-*, *-ma* or *-me*, which is affixed immediately to the verb root. (The allomorphy of the DR affix depends on the conjugation class of the verb, and whether the verb root ends in a consonant (in which case *ma-* is used) or vowel (in which case *-ma* or *-me* is used).) Other than the formal difference of the CR and DR markers, the cross-reference suffixes in CR and DR verbs are also sometimes different. There are several other morphological differences, but they are not important to our discussions here (see Section 7.2.1 in de Sousa 2006a for details).

3.2 The traditional SR system

The traditional SR system in Menggwa Dla is a canonical SR system. A CR verb indicates that its subject is coreferential with the subject of a clause subsequent in the clause chain, and a DR verb indicates that its subject is disjoint-referential with the subject of a clause subsequent in the clause chain. The subject is defined by the subject cross-reference suffix (which is the only cross-reference suffix in a verb, or the first out of two cross-reference suffixes in a verb), and subject nominals are zero-case-marked (but they can take a topic enclitic). There is no voice-changing morphology in Menggwa Dla. The

following is a pair of illustrative examples demonstrating the SR system in Menggwa Dla. Each has a chain clause followed by an independent clause. In example (7), the chain verb *walambani-o-mbo* has a zero CR marker, and it indicates that its subject ‘she’ is coreferential with the subject of the following clause ‘she’. In example (8), the chain verb *walambani-me-wa-mbo* has a DR suffix *-me*, and it indicates that its subject ‘she’ is disjoint-referential with the subject of the following clause ‘she’. (The SR system does not monitor non-subject participants; the SR system says nothing about the identities of the objects in these cases.) In these examples, the subject suffixes *-o* in the CR verb and *-wa* in the DR verb also happens to be formally different.

- (7) *rani=mbe walambani-o-mbo, homba-ya-a-hwa.*
 DEM=INS swim[CR]-3fs-DEP see-3s-3fso-PST
 ‘She_j was swimming there, and she_{j/*k} saw her_k’
- (8) *rani=mbe walambani-me-wa-mbo, homba-ya-a-hwa.*
 DEM=INS swim-DR-3fs-DEP see-3s-3fso-PST
 ‘She_j was swimming there, and s/he_{j/*k} saw her_{j/*k/l}’

The following is another example. The first two clauses have the same non-case-marked nominal *amamo* ‘moon’, and the subject suffixes are all third person singular with masculine or no gender. It is only the DR morpheme in the first clause that signifies a change in subject, and the CR morpheme in the second clause that signifies the subject remains the same in the next clause. (In the first clause, the preceding context dictates that the ‘moon’ is the object; both participants are of masculine gender.)

- (9) *amamo rani hwi=mbe ma-rafa-i-Ø-mbona,*
 moon DEM water=INS DR-put_down_in-3ms-3mso-DEP
 ‘He put the moon into the water, and’
- amamo rani baya hri-ya-a fa-ya-a-mbona,*
 moon DEM side come_out[CR]-3s-3fso COMPL-3s-3fso-DEP
 ‘the moon came out from there, and’
- hahuf-u-mbo,*
 go_up[CR]-3ms-DEP
 ‘the moon went up, and [...]’

Certain other phenomena that are common amongst Papuan SR systems are also present in Menggwa Dla. For instance, “clause skipping” is ubiquitous in Menggwa Dla. Clause skipping occurs when a clause is marked as coreferential or disjoint-referential not with the immediately following clause, but with another clause further along the clause chain. When a CR marker skips clauses, it is often said that the skipped-over clauses depict background information (more on this point in Section 4). The following is an example. The subject of the first clause is ‘I’. However, the external SR pivot ‘I’ is not found in the following second clause; it is instead found in the fourth clause. The

second and third clauses depict background information; the CR marker in the first clause “skipped” these two background clauses.

- (10) *pi-a ma-hya-a numb-a-mbo,*
 go[CR]-1s COMPL-1s-3fso STAT-1s-DEP
 ‘I would make (the fibre) loose (CR), and’
ye pi-o-mbo,
 then go[CR]-3fs-DEP
 ‘then (the fibre) would become loose (CR), and’
hupla=mbe ma-ek-wa-mbona,
 container=INS DR-exist-3fs-DEP
 ‘(the fibre) would stay in the empty trunk (DR), and’
waplu sa-hya-a hof-a
 bucket carry[CR]-1s-3fso come-1s
saha-hya-a numb-a-mbo...
 put-1s-3fso STAT-1s-DEP
 ‘I would take the palm leaf bucket here (CR), and...’

In many Papuan languages with SR systems, there are often issues involving voice, or sometimes morphosyntactic alignment, causing their SR markers to make seemingly “strange” choices for their SR pivots. This occurs when the syntactic, semantic, and/or discourse prominence of the references do not match. For instance, in a sentence like *As for colour, purple pleases me*, should a SR marker monitor the topic *colour*, the syntactic subject *purple*, or the animate experiencer *me*? And in an ergative language, which arguments in a transitive sentence should a SR marker choose as its SR pivots? Different SR languages take different approaches (see, e.g., Section 5 in Roberts (1997) for SR systems in Papua New Guinea). Especially common amongst Papuan languages is having the experiencer of an involuntary state expressed as a non-subject, and the inanimate “force” (e.g. hunger, sickness) expressed as the subject. The only, or default, option in many Papuan languages is for the animate experiencer to be picked as the SR pivot, and not the inanimate subject. The following is an example from Telefol, where ‘he got tired’ is rendered as something like ‘tiredness happened to him’, and the first clause is marked as CR despite the fact that the syntactic subjects have changed (the subject of the first clause is the masculine person, and the subject of the second clause is the feminine *daál* ‘tiredness’).

- (11) Telefol (Ok, Trans New Guinea; Sandaun Province, PNG)
daám boóyó fákán-bi-al-a-ta
 fence that make-DEL.SEQ-CR-3ms-then
daál tebe-bɿ-ee-b-u
 tiredness happen-PFV-3so:BEN-PST-3fs
 ‘[H]e got tired of fencing.’ (Foley 1986: 190; Healey 1966)

Such issues do not occur in Menggwa Dla. Menggwa Dla is nominative-accusative, and the SR pivots are the syntactic subjects. There is no morphological means of changing voice, and experiencers are subjects, as shown in the first clause of the following example.

- (12) *gwa gihali(=mbo) sufwa-a-mbo,*
 but hunger(=OBJ) feel[CR]-1s-DEP
stoberi imbu hihiri-a-mbo, ser-ih-a-hwa.
 strawberry two steal[CR]-1s-DEP eat-1s-PST
 ‘But then I was hungry, and I stole two strawberries and I ate them.’

Non-subject topics are also ignored by the SR markers; only the subject suffixes matter to the SR system in Menggwa Dla, as shown in the following example.⁵

- (13) *ai=na nyewi yanga=mbe ingufu-ma-ya-Ø-mbo,*
 3=TOP person bush=INS attack-DR-n1fs-3mso-DEP
sungwani wuli=nambo pi-Ø-hya nu.
 sick house=ALL go-3ms-PST;FOC COP:3ms
 ‘As for him_j, someone attacked him_j in the bush (DR), and he_j went to the clinic.’

In SR literature, there is one fact about the vast majority of SR systems that is taken for granted and rarely discussed: CR or DR markers must be used for SR pivots of all persons, numbers, and genders. Reference tracking is one function of SR. However, in Menggwa Dla, all SR-marked verbs already carry subject suffixes, and SR is redundantly used for reference tracking when at least one of the verbs has a first or second person subject suffix. In example (14) below, the first person singular suffixes in the two verbs already indicate coreference, but a correct CR verb form must still be used in the first clause. In example (15), the first person singular suffix of the first verb and the non-first person feminine plural suffix of the second verb already indicate disjoint-reference, yet a correct DR verb form must still be used in the first clause.

- (14) *ye ser-i fa-hya-a-mbo ap-aha-hi.*
 then eat[CR]-1s COMPL-1s-3fso-DEP sleep-1s-PRS;CONT
 ‘Then I eat it, and then I sleep.’
- (15) *yo humbli-me-aha-mbo hoho-hi-a-hya [...]*
 1 hear-DR-1s-DEP tell-n1fp-3fso-PST;FOC
 ‘I hear them tell it [...].’

5. Feminine is the default gender in Menggwal Dla language; people of unknown gender, e.g. the subject *nyewi* ‘person’ in the first clause of example (13), are cross-referenced as feminine.

If reference tracking is the only function of SR, one could imagine there being many SR systems which require SR markers only when reference disambiguation is needed, e.g. when both references are third person. We will come back to this point in Section 4.

3.3 The innovative SR system

Most speakers born since the late 1970s use the SR system differently. The young people's innovative SR system in Menggwa Dla has – to a limited extent – become a system where SR markers are used only when reference disambiguation is needed. The change into a reference disambiguation system is only to a limited extent, as it has become so only when the *subject suffixes* are incapable of reference disambiguation. (There could be free nominals disambiguating the references, but the SR system ignores them.) The workings of the innovative SR system are as follows.

- (16) The innovative SR system in Menggwa Dla
- if the person-number-gender features of the subject suffixes cannot disambiguate whether the subjects are coreferential or disjoint-referential, CR indicates coreference and DR indicates disjoint-reference;
 - otherwise, CR verb forms have become SR-neutral chain verbs (while DR verb forms can still be used optionally to indicate disjoint-reference).

In the following examples, the subject suffixes are both third person singular, and the gender features are non-conflicting. The CR verb form necessarily indicates coreference of the subjects.

- (17) *twangi=lofo wuli=na hahof-o-mbo,*
 white_person=COM house=ALL [CR]go_up-3fs-DEP
aflambli nafi-Ø-a-hwa.
 plenty show-3s-3fso-PST
 'She_j went into the house with the white person_k (CR), and she_{j/ *k/ *l}
 showed her_{k/l} many things.'

- (18) *ai dukwa-ya-a-mbo,*
 3 wake_up[CR]-3s-3fo-DEP
Hilari(=mbo) homba-i-Ø-mbona, alani-Ø-hwa.
 Hilari(=OBJ) see[CR]-3ms-3mso-DEP cry-3ms-PST
 'He_j woke up (CR), he_{j/ *k} saw Hilari_h (CR), and he_{j/ *k/ *h} cried.'

In a similar situation, if disjoint-reference is intended, then a DR verb form must be used.⁶

6. In example (19), the subject suffix *-i* in *homba-ma-i-Ø-mbona* and in *homba-i-Ø-mbona* have the same form, but they do not have the same meaning. They come from different sets of subject suffixes.

- (19) *Hilari(=mbo) homba-ma-i-Ø-mbona* (/*/*homba-i-Ø-mbona*),
 Hilari(=OBJ) see-DR-**n1ms**-3MSO-DEP see[CR]-**3ms**-3MSO-DEP
Hilari alani-Ø-hwa.
 Hilari cry-**3ms**-PST
 ‘He/ you saw Hilari (DR), and Hilari cried.’

The following example (20) shows that having overt nominals disambiguating the references does not affect the SR system; the SR system is only sensitive to the ability or inability of the subject suffixes in reference disambiguation. Since the subject suffixes are both third masculine singular, a DR verb form must be used in this case. (Contrast this example (20) with example (23), where a SR-neutral verb form is used.)

- (20) *Peter=na wamla ma-ser-u-mbo* (/*/*ser-u-mbo*),
 Peter=TOP betel_nut DR-eat-3MS-DEP [CR]eat-3MS-DEP
Simon=na fofo-Ø-mbi.
 Simon=TOP blow-3MS-PRS;CONT
 ‘Peter is chewing betel nut (DR), and Simon is smoking.’

In other situations, i.e. in situations where the subject suffixes already indicate that the subjects must be disjoint-referential or must be coreferential, the old CR chain verb forms have become SR-neutral chain verb forms for younger speakers. The DR verb forms still indicate disjoint-reference, but their use is no longer grammatically obligatory. For instance, in the traditional SR system, a verb like *hofahi-a-mbo* (fall[CR]-1s-DEP) ‘I fall, and...’ obligatorily indicate coreference. However, in the young people’s innovative SR system, *hofahi-a-mbo* ‘I fall, and...’ is SR-neutral: it can be used when the following subject is disjoint-referential (examples (21)), or coreferential (example (22)) with its own subject.

- (21) *hofahi-a-mbo*, (/*/*hofahi-me-aha-mbo*), *yoambo sumbu-Ø-hwa.*
 fall-1s-DEP fall-DR-1s-DEP 1s:OBJ laugh-3ms-PST
 ‘I tripped over and he laughed at me.’
- (22) *hofahi-a-mbo*, (/*/*hofahi-me-aha-mbo*), *sumbu-aha-hwa.*
 fall-1s-DEP fall-DR-1s-DEP laugh-1s-PST
 ‘I tripped over and I laughed.’

The following is another example. Since the gender features of the subject suffixes already indicate disjoint-reference, most younger speakers would simply use a SR-neutral chain verb form (i.e. the CR form in the traditional SR system), *atimbati-u-mbona* in this case. (The overt NPs do not matter; see also example (20) above.)

- (23) *Peter atimbati-u-mbona, bahu pi-wa-hwa.*
 Peter sneeze-3ms-DEP flying_fox go-3fs-PST
 ‘Peter sneezed and the flying fox flew away.’

When the subject suffixes are sufficient in reference disambiguation, the DR verb forms are mostly used by younger speakers when there are other kinds of discourse discontinuity, e.g. difference in spatial setting, less-usual temporal or logical relations, termination of direct quote. (The use of the SR-neutral chain verb forms is still grammatical in these cases.) The following are two examples.

- (24) *dukumi po-me-Ø-mbona (/ pi-u-mbona),*
 valley go;DR-DR-3ms-DEP go-3ms-DEP
yo lohama=rongo pi-aha-hwa.
 1 ridge=PERL go-1s-PST
 ‘He went to the valley, and I went along the ridge.’
- (25) *mi “[...] bani kaha-wa-a!”*
 mother sago chop-2s-3fso[IMP]
mehwa-mbo (/ saya-mbo), pi-Ø-hwa.
 DR:say:3fs-DEP say:3s:3fso-DEP go-3ms-PST
 ‘Mother said “[...] you chop sago!” and he went.’⁷

4. The underlying functions of canonical SR systems

We have seen in Section 3 that the SR system in Menggwa Dla is changing. The traditional SR system is a canonical SR system where “actual” SR markers must be used for subjects of all person-number-gender features. In the young people’s innovative SR system, SR markers (i.e. markers that actually indicate coreference versus disjoint-reference) are only available when the person-number-gender features of the subject suffixes fail to indicate whether the two subjects are coreferential or disjoint-referential. What are the functional motivations that drove this change? Or more generally, what are the underlying functions of the two different SR systems?

One obvious function of canonical SR systems is reference tracking. Reference tracking is a grammatico-semantic function. SR markers are useful, and sometimes essential, in helping the addressee understand who is being talked about, and who is doing what to whom. SR is often discussed in the context of typologising reference tracking systems (e.g. Foley & Van Valin 1984; Huang 2000; Bickel 2010; see also Sections 3.1 and 4.2 of the introduction to this volume).

Looking at the traditional and the innovative SR systems in Menggwa Dla, (from the view point of speech production) the innovative SR system is more-economical

7. The verb *hwafombo* ‘say/talk’ is very irregular; *saya-mbo* is a CR form in the traditional SR system.

for the purpose of reference tracking: reference disambiguation is rarely needed for first and second person references, and hence one can afford to not have CR versus DR markers when a first or second person reference is involved.⁸ “Third-person SR systems” – i.e. SR systems where SR markers are only available to third person references – do in fact occur (see Section 5.2). Nevertheless, reports of “third person SR systems” are exceedingly rare; in nearly all systems that are described as SR, SR markers are used regardless of the person-number-gender features of the SR pivots. In the context of Papuan languages, there are many languages like Menggwa Dla where subjects are obligatorily cross-referenced on both CR and DR verbs. For instance, in Roberts’ (1997) survey of SR systems in Papua New Guinea, 49 out of the 116 languages with SR systems (i.e. 42%) have subject agreement (including anticipatory marking, i.e. inflection on a verb that agrees with the subject of the following clause) on both CR and DR verb forms. Why would so many languages require SR to be “redundantly” marked on verbs with first or second person subject agreement? Compare this with a truly redundant grammatical feature like double or triple negation. One would expect a redundant feature like double/triple negation to be less prevalent than a non-redundant counterpart like single negation, and this is indeed the case. (For instance, in Dryer (2013b)’s survey of simple clausal negation, only 200 out of 1324 languages have some form of double or triple negation.) The situation with SR is seemingly the opposite: SR is obligatorily used for first and second person SR pivots “redundantly” in nearly all SR systems. If reference tracking is the only function of SR, one would expect there to be many more third-person SR systems.

Reference tracking is not the only function of SR. Another primary function of canonical SR systems is the indication of participant continuity versus discontinuity of the “salient” participant(s) between two clauses. This is a grammatico-discourse function. Amongst the literature that discusses the discourse functions of SR are Roberts 1988; Stirling 1993; Huang 2000; and van Gijn 2012.

Clauses are not organised randomly in discourse. Between clauses in discourse, there need to be some level of cohesion of (rephrased from Givón 1983a, 1983b):

- “Discourse theme” (i.e. what the discourse is “generally about”);
- Temporal/spatial settings, logical relationships; and
- Participants.

8. The innovative SR system in Menggwa Dla has gone one step further in not requiring SR markers when the gender features of the subject suffixes already indicate disjoint-reference. However, it is also not a true “third-person SR system”, as DR marking is still available for subjects of all persons in Menggwa Dla.

For instance, if the discourse theme is “a girl in red hooded cape stalked by a wolf”, one would expect that: (a) the clauses usually have the girl or the wolf as one of the arguments; (b) that new participants are introduced not too frequently; (c) that the progression of the clauses usually corresponds with the temporal and spatial progression of the story; and (d) that the logical relations between clauses are unsurprising most of the time. In contrast, one would not expect natural discourse to have in each clause a new set of participants, different temporal and spatial settings, constantly switching between real and unreal events, etc.

The SR markers in canonical SR systems are primarily grammatical markers for indicating participant continuity and discontinuity of the most “salient” participant in a clause. This needs further qualifications. Firstly, as for “salience”, the various participants and props in discourse have varying levels of discourse salience. For instance, in the “girl and wolf” story, the girl and the wolf have higher salience than the other participants and props like the girl’s relatives and the consumables that she was carrying. Higher salience is reflected linguistically as more mentions (but the amount of overt linguistic material for the references generally decreases over time as the same referent is referred to over and over again), and – indirectly – more grammatical categories being sensitive to them. On the clause level, the level of salience of a participant can change between clauses, and within a clause, the salience of the various participants also differs, as reflected by the various grammatical versus lexical ways they are expressed. Just as the grammatical relation of “subject” is a formal approximation of the status of being the most salient within a clause, “SR pivot” is another formal approximation of the status of being the most salient within a clause. However, this “salience” from the point of view of a SR system need not be the same as the “salience” of subjects from the point of view of intraclausal morphosyntax. Different SR systems choose their SR pivots based on “salience” as defined by morphosyntactic, semantic, and/or information-packaging criteria that are particular to each SR system.⁹

Secondly, as for “participant (dis)continuity”, this term is used here to mean the “salient” referent having the same versus decreased level of salience between two clauses.¹⁰ From observations on Menggwa Dla and other Papuan languages, the discourse functions of the CR and DR markers can be summarised as:

9. Some languages have more than one SR system, with each of them monitoring a different type of salience. For instance, Barai (Olson 1981) has one SR system monitoring topics, and another monitoring “pragmatic peaks”, which are syntactic positions determined by semantic factors like semantic roles, animacy and definiteness. The latter is briefly demonstrated in Section 3.2 of van Gijn (this volume-a).

10. This is related, but not identical, to Givón (1983a, 1983b)’s “topic continuity”. Givón’s topic continuity is about the predictability of participants across clauses by the use of various types of references.

(26) Discourse functions of CR and DR in “Papuan-type” SR systems:

CR: the SR pivot is going to be salient again later in the clause chain (i.e. in the next clause, or another clause later on). In other words, a CR marker is telling the addressee to keep the participant easily accessible in mind, so that it can be readily reactivated sometime later in the clause chain.

DR: the SR pivot is going to lose its saliency, and/or there will be other types of discourse discontinuity, for instance shift in temporal setting, major change in spatial setting, unusual logical relations, ending of a background clause or a direct quote.

The best illustration for a CR marker indicating “salience will be maintained” – rather than simply “same subject” – is best indicated by the ubiquitous phenomenon of “clause skipping”. We have already seen an example of clause skipping is example (10) above. The clauses that are “skipped” by a SR marker are often described as depicting background events. However, this is sometimes not true in Menggwa Dla (and many other Papuan languages). Like other clause-chaining Papuan languages, clause chains in Menggwa Dla can be exceedingly long; a clause chain with one independent clause preceded by thirty or forty chain clauses is not remarkable. A CR marker can “skip over” a long stretch of clauses, most of which depict main line of events rather than background information. The following is an example from the traditional SR system in Menggwa Dla that skips over nineteen clauses: most of these nineteen skipped clauses depict main line of events (and there are smaller occurrences of clause skipping embedded within this larger occurrence of clause skipping). In the first line, the CR morpheme in the chain verb *num-u-la-mbona* ‘he_j sits and he_j ...’ is not used as a reference tracking device in relation to nearby clauses. When uttering this CR verb form, it is probably not the case that the speaker had the twentieth clause with the coreferential subject and the nineteen “skipped” clauses in between already planned in their mind: the CR verb form *num-u-la-mbona* is instead indicating that the referent of the SR pivot (the “moon” in this case) is salient in the discourse, and the addressee should keep this participant easily retrievable in their mind, as this participant is going to be the SR pivot again sometime later in the clause chain. In this case, this “sometime later” happens to be nineteen clauses later. This is grammatical, as all the clauses are within the same clause chain.

(27) *ser-u* *num-u-la-mbona*,

[CR]eat-3ms [CR]sit-3ms-LIG-DEP

‘He (the moon) ate and lived in this place (CR), and’

sungu amni=la *afila ai haf-u-mbo*,

later garden=GEN father 3 [CR]arrive-3ms-DEP

‘one day the owner of the garden he arrived, and’

[... 17 chain clauses mostly about what the owner of the garden and other people of the village did...]

homba boka-ma-wu-Ø-mbona,
 see NEG;R-DR-n1mp-3mso-DEP
 ‘they did not see him (the moon), and’
ai=na tumali hupla ambya rungu pipa-me-Ø-mbo,
 3=TOP pandanus container hole inside hide-DR-3ms-DEP
 ‘he (the moon) was hiding in a hole inside a pandanus trunk, and...’

The discourse function of DR markers is not easily demonstrable in Menggwa Dla. In the innovative SR system, there is a tendency for DR verb forms to be used when some type of discourse discontinuity in addition to participant discontinuity is involved (see Section 3.3 above). The discourse function of DR markers is better demonstrated in other Papuan languages. In Papuan SR systems, it is very common to find DR markers used to indicate types of discourse discontinuities other than participant discontinuity. In the following example from Amele, the subjects are coreferential, but a DR marker is used. The DR marker is there to indicate that the spatial setting has changed.

- (28) Amele (Gum, Madang, Trans N Guinea; Madang Province, PNG)
age ceta gul-do-co-bil li bahim na tac-ein.
 3p yam carry-3so-DR-3p go:CR floor on fill-3p:REM:PST
 ‘They carried the yams on their shoulders and went [somewhere completely different] and filled up the yam store.’ (Roberts 1988: 107)

Some facts about SR are not surprising if SR is understood as having discourse functions, rather than simply being a reference tracking device. Firstly, that DR markers can be used to indicate kinds of discourse discontinuity like spatial/ temporal discontinuity is normal, if DR markers are already used for indicating participant discontinuity, which is also a kind of discourse discontinuity. Secondly, that SR markers are clause level markers rather than free nominals or pronominals is expected, given that discourse dis/continuity is a property of the entire clause (similar to how temporal and spatial settings are properties of an entire clause). This contrasts with, e.g. logophoric pronouns, which are reference expressions primarily used for reference tracking, and they are often free pronominals. Thirdly, that SR markers in canonical SR systems are used for SR pivots of any person-number-gender, rather than just for third person references, is not surprising; SR markers are used to monitor the saliency of the “salient” participants in each clause, and since the “salient” reference can be of any person-number-gender, SR markers in canonical SR systems are used regardless of the person-number-gender of its SR pivots.¹¹

11. One, especially one from a Western linguistic background, might still ask: why would the notion of “indicating participant continuity versus discontinuity of the SR pivot”, which is seemingly so “trivial”, be grammaticalised in any language. Languages are complex in different ways; looking from a different perspective, a person from a Mainland East/Southeast Asian

5. Some non-canonical SR systems

Having seen what canonical SR systems are and do, in this section we will see different types of systems that has also been called “SR”, but are non-canonical in various ways.

5.1 General interclausality systems

We have discussed in Section 4 that the DR markers in canonical SR systems can mark kinds of discourse discontinuity other than participant discontinuity (i.e. when the SR pivots are actually coreferential). The CR marker in canonical SR systems still signifies participant continuity. Nonetheless, there are SR systems where even the CR markers can be used to indicate kinds of discourse continuity other than participant continuity (i.e. when the SR pivots are actually disjoint-referential). For instance, example (29) from Bauzi demonstrates the cross-linguistically common case of a DR marker indicating a type of discourse discontinuity when the SR pivots are coreferential. In this case, the DR marker *-ha* in the third clause demarcates a boundary between discourse paragraphs, while the SR pivots are coreferential.

- (29) Bauzi (East Geelvink Bay; Waropen, Papua, Indonesia)
Gienali-m num foti
 Gienali-GEN house pass_by:CR
 ‘([W]e) passed by Gienali’s house’
sei debu fu-si
 matoa_tree trunk arrive-CR
 ‘and when (we) arrived at the base of the matoa tree’
aai-ha dam meb-dae ab aai-da-m-am.
 hear-DR people cry-words IND hear-CONT-IR-IND
 ‘and [we] listened, (we) began hearing wailing.’ (Briley 1997:118)

linguistic background could also wonder why a category as “trivial” as tense, which is ubiquitous in Western languages, could be grammaticalised in any language. Many Papuan languages and SR languages elsewhere simply have higher “overt complexity” than English; more cognitive effort is required on the speaker’s part, but since so many grammatical categories are obligatorily overtly expressed, comprehension is very easy for the (linguistically competent) addressee. On the other hand, Mainland East/Southeast Asian languages have higher “hidden complexity” (Bisang 2009, 2014) than English; they are relatively effortless for the speaker, but requires considerable cognitive effort for comprehension, since so little information is required to be expressed by the grammar, and the same grammatical markers often have a wide range of possible meanings.

On the other hand, the following second example from Bauzi demonstrates the cross-linguistically less common case of a CR marker indicating a type of discourse continuity when the SR pivots are disjoint-referential. In this case, the CR marker *-me* in the third clause is indicating that the next clause depicts a natural consequence from the event of its own clause. The CR marker is used despite the fact that the SR pivots have changed.

- (30) Bauzi (East Geelvink Bay; Waropen, Papua, Indonesia)
Labi Vadu-hat ozo-ha
 CON Vadu-ERG think-DR
 ‘Then Vadu thought,’
am nà beo-he-mu fa
 his sister strike-DR-CON:because ITR
 ‘because (Aseda) struck his sister,’
Sembina beo-me ab nusu-h-am.
 Sembina strike-CR IND sit-R-IND
 ‘(he _[Vadu]) struck Sembina, and (she _[Sembina]) sat down.’ (Briley 1997:21)

Examples of similar systems where both the CR and DR markers can indicate kinds of discourse dis/continuity other than participant dis/continuity include Central Pomo (Mithun 1993), Koasati (Rising 1992), and Kiowa (Watkins 1993). The SR systems in these languages (and also the ones in other North American languages quoted by the authors) are called “SR” because they are indeed not very different from the canonical SR systems; their “CR” markers do still correlate with coreferential pivots most of the time, and “DR” do still correlate with disjoint-referential pivots most of the time. There is a continuum between a “most canonical” SR system where both the CR and DR always indicate participant continuity versus discontinuity (e.g. the traditional SR system in Menggwa Dla), and a hypothetical system with “continuity” versus “discontinuity” markers which indicate any type of discourse continuity and discontinuity, without bias towards participant dis/continuity or another type of discourse dis/continuity. Where one draws a boundary between SR and not-SR on this continuum, (in other words, at what frequency do the DR and CR markers not indicate participant dis/continuity before one stops calling this system “SR”), or whether there should be such a boundary on this continuum, is an arbitrary matter.

Given that SR markers are often used to indicate kinds of discourse dis/continuity other than participant dis/continuity, van Gijn (2012) questions why participant dis/continuity has to be considered to be the core of SR. (This is especially relevant in the South American examples that he raised.) He proposes widening the definition of SR to markers for “event dis/continuity” (i.e. discourse dis/continuity in general), and an alternative term “switch-attention”. While I agree that “switch-attention” is a useful term and notion, I propose that the term SR be kept, with meanings as I define

in the sections above. This is because participant dis/continuity is indeed the default interpretation of SR markers in many SR languages, especially the ones outside of the Americas.

At the same time, I also propose a term with an even larger semantic range: INTERCLAUSALITY. Interclausality is a grammatical category that indicates any type of discourse continuity versus discontinuity between two clauses. There are the GENERAL INTERCLAUSALITY MARKERS that can (theoretically) indicate any type of discourse dis/continuity (as in the Bauzi and North American examples raised above; the South American examples raised in van Gijn (2012) are also potential examples), and there are types of interclausality markers used for one particular type of discourse dis/continuity. With the latter case, this includes systems of markers that are traditionally not included within the definition of SR in any way, because they have nothing to do with participant dis/continuity (unless they are portmanteau with SR). These include verbal markers for interclausal temporal relations, spatial relations, and logical relations. For instance, it is quite common to have affixes indicating simultaneous versus sequential temporal relationships between clauses. There is also the “switch-place” markers in Angaataha (i.e. markers for “same spatial setting” versus “different spatial setting” between clauses; Huisman 1973). Markers for interclausal logical relations are markers with meanings like “therefore”, “but”, “for the purpose of”. SR markers are not unusually portmanteau with these markers of other types of interclausal discourse relations. These, and SR, are all interclausality markers.

The best example of a “general interclausality marker” would be a marker that can genuinely indicate any type of discourse dis/continuity, without biasing towards any particular type of discourse dis/continuity. I leave the cases exemplified in this Section 5.1 as non-canonical SR systems, as I suspect that many are still biased towards participant dis/continuity. (Detailed quantitative corpus studies are needed to determine how often the “CR” and “DR” markers correlate with the various types of discourse dis/continuity in Bauzi and the other languages quoted above.)

5.2 Third person SR systems

The second type of non-canonical SR system is the “third-person” SR system. In such systems, markers that indicate coreference versus disjoint-reference are only available to third person references. This is an economical reference tracking system; reference disambiguation is rarely needed for first or second person references, and hence CR and DR markers are not needed for them. One such example comes from Aleut. Languages of the Eskimo-Aleut family are well known for having distinction of non-reflexive versus reflexive third person for intraclausal (i.e. interphrasal) purposes. Similarly, many clause-linking constructions also make a distinction between disjoint-referential versus coreferential third person, i.e. third-person SR systems. For instance,

in Aleut, certain case markers can be used to link a clause in relative tense with a following clause in absolute tense. (The relative tense marker is often the present tense suffix *-(i)ku*, which indicates a “present” that is relative to the tense of the following clause.) For first or second person subjects [S/A arguments], a dative case is used on the verb in such linking construction, with no consideration of whether the subject of the following clause is coreferential or disjoint-referential.

- (31) Aleut
Hama-aĥ hit-na-q-aang tataam hama-aġa-aġuta-na-q.
 there-ABL go:out-REM-1s-DAT:SG again there-go-again-REM-1s
 ‘I had gone out from there but [I] went back there again.’
 (Bergsland 1994: 347)
- (32) *taanasxaada-ku-q-aang igaġta-ġ waaġa-na-ġ*
 camp-PRS-1s-DAT:SG airplane-SG come:in-REM-3s
 ‘I was out camping when the airplane came in.’
 (Bergsland 1997: 244)

However, when the subject is third person, a dative case obligatorily indicates disjoint-referential subjects.

- (33) *Alitxu-ġ ina-ku-ġ-aan, Atġa-m hadan uqiti-iġuta-na-s.*
 war-SG end-PRS-3s-DAT:SG Atka-REL towards:it return-again-REM-1ns
 ‘When the war was over, we returned to Atka.’
 (Bergsland 1994: 346)

To indicate coreferential third person subjects, an absolutive case or a “relative [REL]” case (i.e. ergative-genitive case) is used instead as a clause linker: absolutive case for simultaneous events, and relative case for sequential events or contrast.¹²

- (34) *Hla-ġ uda-m hachan imyaġ-iku-ġ, atxida-txaġi-na-ġ.*
 boy-SG bay-REL outside:it fish-PRS-ABS cod-catch-REM-3s
 ‘The boy was fishing outside of the bay and caught (one or several) cod.’
 (Bergsland 1994: 346)
- (35) *Anqaġta-ku-m haqa-aġ-an aġ-iku-ġ.*
 go:out-PRS-REL come-INT-3s AUX-PRS-3s
 ‘He went out (away) but will come back.’
 (Bergsland 1994: 346)
- (36) *Wan hyaaga-ġ adu-lakaġ-im tumtatu-ku-ġ*
 this log-SG long-PRS:NEG-REL thick-PRS-3s
 ‘This log is not long but is thick.’
 (Bergsland 1997: 244)

A somewhat similar situation exists in some modern Tupí-Guaraní languages, in contrast to Proto-Tupí-Guaraní and some other modern languages which can be said to

12. The absolutive and relative cases differ only in singular, and not in dual/plural.

have canonical SR systems. As discussed in Jensen (1997, 1998), Proto-Tupí-Guaraní is reconstructed with three sets of person prefixes, two of which can be used in subordinate clauses. In subordinate clauses, one set of person prefixes indicates disjoint-reference (“set 2”), and the other indicates coreference (“set 3”) between the absolutive argument of the subordinate clause and the nominative argument of the matrix clause.¹³ There are prefixes for all three persons in each set (there are prefixes for first singular, first exclusive, first inclusive, second singular, second plural, and third person). Some modern Tupí-Guaraní languages, for instance Tocantins Asuriní and Tapirapé, have retained both sets of prefixes in their entirety. In the context of these prefixes indicating interclausal reference relations, this is a canonical SR system.

Other Tupí-Guaraní languages have experienced the loss of these distinctions: some of the coreferential (set 3) prefixes were replaced by prefixes from set 2 or set 1. This distinction is always lost with the first and second person prefixes first.¹⁴ This leaves some Tupí-Guaraní languages, for instance Guajajára and Tembé, with a coreference and disjoint-reference distinction only for third person (*o-* (third person coreferential) and *i-* (third person disjoint-referential)). In the context of these prefixes being used interclausally, this is a third person SR system. This is unsurprising; it can be inferred that these prefixes are primarily viewed as reference-tracking devices, and hence the first and second person prefixes are lost.

The innovative SR system in Menggwa Dla is similar to third person SR systems in some ways. Similar to third person SR systems, CR markers are also not available to first and second person SR pivots in the innovative SR system in Menggwa Dla. However, unlike third person SR systems: (a) the innovative SR system in Menggwa Dla is even more efficient as a reference tracking device, as functioning CR versus DR markers are only available when the subjects are *both third person and same gender*; and (b) DR verb forms have been maintained for SR pivots of any person feature (albeit most of the time their use is not obligatory). In this latter sense, the innovative SR system in Menggwa Dla has maintained some of its discourse use.

Canonical SR systems have both discourse functions and reference tracking functions. (Proper) third person SR systems, on the other hand, show no signs of them being geared for discourse functions. Most importantly, canonical SR systems monitor the discourse prominence of the “salient” participant. A reference of any person, number, and gender feature can be “salient” (i.e. becoming SR pivots) in difference

13. These prefixes also have intraclausal uses, e.g. between serial verbs and across phrase boundaries within a clause.

14. The first inclusive and second plural are lost first, then second singular, and then first singular and first exclusive last. Different Tupí-Guaraní languages show different stages of this change. See Jensen (1997, 1998).

occasions. For this reason, SR markings in canonical SR system must be available to SR pivots of any person-number-gender features. If a SR system *were* to be used for references of only certain person features, from a discourse-salience point of view, one might expect it to be used for only first and second persons, rather than for only third person, due to the higher discourse prominence of the speech act participants, as seen in, for instance, direct-inverse systems and animacy hierarchies in some languages where first/second persons are treated more favourably than third person. This is the opposite from the third person SR systems, which favours third person participants. Third person SR systems do not have discourse functions; they are only used for reference tracking. For this reason, some people might consider third person SR systems not SR. Nonetheless, “third person SR system” is a convenient term, and third person SR systems do share similarities with canonical SR systems. Third person SR systems are here treated as another type of non-canonical SR systems.

5.3 The echo subject system in Lenakel

We now turn our attention to the ECHO SUBJECT [ES] systems in Lenakel. Before that, we shall first have a look at the ES subject systems in the other Vanuatu languages, and see how different the ES systems in Lenakel and the other Vanuatu languages are from each other.

Some languages in Central Vanuatu, and all languages in Southern Vanuatu are described as having ES systems (see de Sousa & Hammond 2010). We shall restrict our discussions to the ones found in Southern Vanuatu, as the amount of descriptions and analyses on the ES systems in Southern Vanuatu (e.g. Lynch 1983; de Sousa 2008; Hammond 2014a; 2014b, this volume) vastly outnumber those on the ES systems in Central Vanuatu. The syntax of the systems that are described as “ES” actually varies considerably amongst the various Southern Vanuatu languages. Amongst these, the ES system in the Whitesands language is – or perhaps closest to being – a canonical SR system, while the ES system in the closely related Lenakel language is another type of non-canonical SR system that has not yet been discussed in this paper.

The Southern Vanuatu languages are spoken in the three southern-most big islands of Vanuatu: (from north to south) Erromango, Tanna, and Aneityum. The languages of these three islands form a genealogical group, the Southern Vanuatu family (Lynch 2001), and they all have a marker described as ES (or Hammond (2014a, b)’s term ECHO REFERENCE), which comes in the form of a prefix *m-* in most languages. Unlike most clause-chaining SR languages where the head of the chain is at the end of the clause chain, the ES clauses in Southern Vanuatu are chained to a chain-initial independent clause. The ES marker typically indicates that the subject is coreferential with that of the preceding clause.

For detailed discussions on the historical development of the ES systems, see de Sousa (2008). The ES system in Aneityum shows the original state of affairs (except that they have shifted from SVO to VOS constituent order), the ES systems in Erromango show an intermediate stage of development, and the ES systems in Tanna are the most innovative in terms of their ES systems. The following are brief summaries of the ES systems in Aneityum and Erromango, and then the ES systems in Tanna are discussed.

The ES system in Anejom̃ (e.g. Lynch 2000) – the Aneityum language – does not have a SR system. First of all, the ES proclitic (*i*)*m*= in Anejom̃ is a verb phrase coordinator; what appears to be two (or more) clauses having coreferential subjects is in fact two (or more) coordinated verb phrases sharing one subject argument – and also all tense-aspect-mood – within the same clause. Secondly, there is no corresponding interphrasal or interclausal constructions that indicate disjoint-reference; normal coordination of clauses can be used for either coreferential or disjoint-referential subjects.

The ES systems in the two languages on Erromango, Sye (Crowley 1998) and Ura (Crowley 1999), are basically third person SR systems, with the exception that ES marking can be optionally used with first and second subjects.¹⁵ Unlike Anejom̃, the ES markers in the Erromango languages are *clause-level* markers: ES clauses in Erromango can have their own tense-aspect-mood (albeit in a limited way) and their own subject number marking. The subject of an ES clause is also not necessarily coreferential with a preceding subject (i.e. it can be conreferential with a non-subject in a preceding clause). With a third person subject, ES clause signifies coreference, whereas coordinated independent clause signifies disjoint-reference. With a first or second person subject, ES still signifies coreference, but coordinating independent clauses no longer signifies disjoint-references. In other words, CR versus DR markings are only available to third person subjects.

We now turn our attention to the languages spoken in Tanna. In comparison with the Erromango languages, the ES clauses in Tanna are even more clause-like, and the ES markers have moved further away from their ancestral state as coordinators: the ES marker can be preceded by certain (contemporary) coordinators, the ES verbs are freer in marking tense-aspect-mood independently, and in North Tanna (Greg Carlson p.c.) and Whitesands, ES clauses can have their own subject noun phrases, placed between the optional coordinator and the ES verb. We shall restrict discussions to the two most-described ES systems in Tanna: Whitesands (e.g. Hammond 2009, 2014a, 2014b, this volume) and Lenakel (e.g. Lynch 1978, 1983).

15. However, the behaviour of the ES system in these languages in regards to third person plural subjects is not entirely clear from the descriptions.

In Lenakel, an ES prefix signifies coreference, and a normal subject prefix signifies disjoint-reference with a participant, usually the subject, in the preceding clause. A normal subject prefix cannot be used if there is coreference, even for first and second person subjects (unlike the Erromango languages). This is similar to a canonical SR system, which have functional CR versus DR markers for references of all person features.

- (37) Lenakel
i-əm-vən (kani) m-əm-apul.
 1ex-PST-go (and) ES-PST-sleep
 ‘I went and slept.’ (Lynch 1983:211)
- (38) **i-əm-vən (kani) i-əm-apul.*
 1ex-PST-go (and) 1ex-PST-sleep (Lynch 1983:212)
- (39) *i-əm-vən (kani) r-əm-apul.*
 1ex-PST-go (and) 3s-PST-sleep
 ‘I went and he slept.’ (Lynch 1983:211)

The situation in Whitesands is similar.

- (40) Whitesands
k-ot-whapu m-ot-elis pəken mən iahweli John mənə
 3.NPST-PL-trespass ES-PL-hold hast again elder John and
 ‘They (PL) trespassed and came against old man John and the others.’
 (Hammond 2014a: 74)
- (41) *t-iwoŋ t-eni=ahu...*
 3s.NPST-jump 3s.NPST-say=down
 ‘He_i jumped and she_j scolded...’ (Hammond 2014a: 76)

However, in Whitesands, the correlation between the use of a normal subject prefix and disjoint-reference is perhaps only a strong implicature; the use of a normal subject prefix to indicate disjoint-reference is not fully grammaticalised. “Up to 25% of coreferential clauses” (Hammond 2014a: 138, see also this volume) have a normal subject prefix rather than an ES prefix.¹⁶ There do not seem to be clear discourse reasons or other types of reasons for using a normal subject prefix instead of an ES prefix in these cases with coreferential subjects. The following are some examples from natural discourse.

- (42) *ko in t-eru ko t-elis*
 then 3s 3s.NPST-see and.then 3s.NPST-hold
 ‘And then he_x sees it and he_x takes it.’ (Hammond 2014a: 137)

16. With cases of clauses preceded by silence of greater than three seconds ignored.

- (43) *metou k-ot-eru aruaru nengau k-ot-alahu*
 but 1in.NPST-PL-see straight canoe 1in.NPST-PL-put
 ‘But we look directly at the ship, we put it (the ship straight).’
 (Hammond 2014a: 137)

Nevertheless, at this stage I would hesitate to consider this not SR. The ES system in Whitesands deserves to be considered a non-canonical SR system at very least. Without many detailed quantitative studies on the use of SR markers in other SR languages, it is reasonable to suspect that there are many cases of “underreporting” of SR markers behaving in “unexpected ways” for reference tracking in other languages. In addition, in Hammond’s comprehension experiment, where participants were asked to identify the referent(s) of subjects of verbs, the rate of consistency amongst the participants’ response for the normal subject prefixes is not low, with a 76% mean (Hammond 2014a: 189).¹⁷ The ES system in Whitesands still has many features that are common in canonical SR systems, for instance “clause skipping”, and the subject of an ES clause must still be coreferential with, or referentially include, the subject in a preceding clause (see Section 6.3.2, and Section 6.3.1 in Hammond 2014a respectively). Whitesands still has strict criteria in selecting its SR pivots.

This contrasts with the closely related Lenakel, which has a SR system that is non-canonical in another way. In Lenakel, the antecedent of the subject of an ES clause is sometimes a non-subject, for reasons that have nothing to do with discourse salience of that antecedent in its clause. The antecedent is whichever previously mentioned reference that is semantically or pragmatically most plausible to be the antecedent. Only when both the subject and another reference in that clause are equally likely to be the antecedent, then the subject takes precedence. The following are some examples of non-subjects antecedents. In example (44), the subject of the ES clause *m-sak* (ES-cry) is coreferential with the patient object, rather than the agent subject, of the preceding clause *iəmho kova tahak* ‘I hit my child’. This has nothing to do with the level of salience of *kova tahak* ‘my child’ in its own clause; the antecedent is *kova tahak* ‘my child’ simply because pragmatics determines that it is more likely for the child to be crying in the second clause, given the circumstance depicted in the first clause. To have the interpretation of ‘I hit my child and I cried’, one must instead use an independent clause for ‘I cried’, forcing a disjoint-referential reading between the subject of ‘cry’ and the object of ‘I hit my child’, as shown in example (45).

17. The 76% mean consistency rate for normal subject suffixes was statistically significantly lower than the 81% mean consistency rate for ES prefixes. (n=31). It would be very useful to conduct similar comprehension experiments in many canonical SR systems elsewhere to see how Whitesands compare with the more-familiar canonical SR languages.

- (44) Lenakel
i-əm-ho kova taha-k m-sak.
 1_{EX}-PST-hit child POSS-1_S ES-cry
 ‘I hit my child _[k] and it _[k] cried.’ (Crowley 2002: 205)
- (45) *i-əm-ho kova taha-k kani io i-əm-asak.*
 1_{EX}-PST-hit child POSS-1_S and 1_{SG} 1_{EX}-PST-cry
 ‘I hit my child _[k] and I cried.’ (Crowley 2002: 205)

The following example from Lenakel is another example of the antecedent being the object of the preceding clause. In this case, the object *kesi* ‘pawpaw’ is the only semantically possible undergoer of *m-p^walhep^walhe* (ES-splatter). (The equivalent is ungrammatical in Whitesands (Hammond 2014a: 153).)

- (46) *i-əm-alak-hiaav=in kesi m-p^walhep^walhe.*
 1_{EX}-PST-throw.down=TR pawpaw ES-splatter
 ‘I dropped a pawpaw and it splattered.’ (Lynch 1983: 216)

The following is an example of the antecedent being a dative reference. The ES verb specifies a singular subject, and this is incompatible with the number feature of the subject of the preceding clause. Out of the remaining two references, only the animate dative reference is semantically compatible with the semantics of the ES verb *mepapul* (ES:SEQ:SG:sleep).

- (47) *peravən miin k-əm-ar-ofən naunənaan kam in*
 woman PL 3_{NS}-PST-PL-give food DAT him
kani m-ep-[Ø-]apul.
 and ES-SEQ-[SG-]sleep
 ‘The wom[e]n gave him _[j] food and then he _[j] slept.’ (Lynch 1983: 215)

There are more examples of the ES antecedent being non-subjects demonstrated in Lynch (1983). The main point is that the ES antecedent in Lenakel is basically whichever semantically or pragmatically most plausible reference in a preceding clause. (This contrasts with Whitesands, where the subject of an ES clause must be coreferential with, or referentially include, the subject of a preceding clause, for verbal clauses at least.) If the ES antecedent can be “any” plausible preceding reference, then the ES marker in Lenakel is not monitoring the discourse salience of the external SR pivot in the control clause, unlike SR markers in canonical SR systems. (Canonical SR systems have strict criteria in selecting the SR pivots.) The ES markers in Lenakel are primarily used for reference tracking; they function like the East Asian-type of zero anaphora or long distance reflexives, where the antecedent is basically any pragmatically appropriate reference mentioned in the preceding discourse. The following Mandarin examples show how zero anaphors can have any antecedent that is pragmatically appropriate. The ES marker *m-* in Lenakel resembles such zero anaphors that exist in most East

and Southeast Asian languages. (Especially compare Lenakel (46) above with example Mandarin example (48) below.)

(48) Mandarin

那個人把西瓜掉在地上，碎了。

nèi ge rén bǎ xīguā diào zài dì shàng,
that CLF person OBJ watermelon drop LOC ground on

[Ø] suì le.

broke_to_pieces PRF

‘That man dropped the watermelon on the ground, (and it) burst.’

(LaPolla 1993: 152)

(49) 那個人把西瓜掉在地上，惶了。

nèi ge rén bǎ xīguā diào zài dì shàng,
that CLF person OBJ watermelon drop LOC ground on

[Ø] huáng le.

get_flustered PRF

‘That man dropped the watermelon on the ground, (and he) got flustered.’

(LaPolla 1993: 152)

Nevertheless, in contrast to third person SR systems and Asian zero anaphora, which are primarily used for reference tracking, the ES system in Lenakel has retained some sensitivity to “salience”, firstly by virtue of the internal SR pivot always being a subject, and secondly by the fact that the subject of the preceding clause is still the default choice for the antecedent/ external SR pivot. Also unlike third person ES systems, and more like canonical ES systems, there are CR versus DR markers for subjects of all persons, not just for third person. The ES system in Lenakel is a non-canonical SR system, albeit in ways different from all other ES systems.¹⁸

18. One possible question to ask is whether this flexibility in the selection of the ES antecedent in Lenakel is in some ways facilitated by its “leftward looking” chaining ES system. Such level of flexibility in the selection of the SR pivots is not found in the usual “rightward looking” clause-chaining SR languages (canonical SR systems always have strict criteria in selecting the SR pivots). This is perhaps analogous to the cross-linguistically relatively frequent occurrence of long distance anaphora, versus the decidedly rare occurrence of long distance cataphora. While this flexibility in the Lenakel ES system is plausibly facilitated by its leftward looking clause chains, it must be remembered that left-headed chain clauses do not necessarily cause SR systems to behave like Lenakel. Firstly, Whitesands, which is closely related to Lenakel, has strict – and easily definable – criteria for the selection of its ES antecedents. Leftward looking SR systems are also not restricted to Vanuatu; there is also the example of Panare (e.g. Payne & Payne 2012: 403–421), which has left-headed clause chains, and it also has strict grammatical criteria in selecting its SR pivots.

6. Conclusion

Many languages have been described as having SR systems. While prototypical instances of SR are easy to identify, less prototypical behaviours of SR vary hugely, making it difficult to have a universal definition of SR. While acknowledging that different people's ideas of what counts as SR or not differ, in this paper I propose, in Section 2, a set of functional and formal criteria for "canonical SR systems", which covers a rather wide range of SR systems. Some of the formal criteria for "canonical SR" are: SR markers are clause level markers; there are strict criteria in choosing the SR pivots (i.e. the reference in its own clause and another reference in another clause that a SR marker indicates as being coreferential or disjoint-referential); a CR marker always indicate coreference (and participant continuity) whereas a DR marker indicate disjoint-reference and/or types of discourse discontinuity; and SR markers are used regardless of the person-number-gender features of the SR pivots (see (5) in Section (2)). These "canonical" SR systems form the minimal set of SR systems that I consider SR. In this paper I have talked very little about what I consider *not* SR (see (6) in Section (2)), and I leave several types of SR-like systems in between these two realms as "non-canonical SR", without drawing sharp boundaries separating the various non-canonical SR systems that should or should not be considered SR.

In Section 3 we have seen descriptions of the SR systems in the Papuan language of Menggwa Dla. The traditional SR system used by older speakers is one of the most canonical SR system possible: CR verb forms indicate coreferential subjects, and DR verb forms indicate disjoint-referential subjects, with no exceptions (other than cases of referential overlap). On the other hand, the innovative SR system used by younger speakers is non-canonical: the CR verb forms only indicate coreference when the subject cross-reference suffixes in the two verbs cannot disambiguate whether the subjects are coreferential or disjoint-referential; otherwise, the old CR verb forms have become SR-neutral chain verb forms. Having seen this, in Section 4 we discussed the primary functions of canonical SR systems: the grammatico-semantic function of reference tracking, *and* the grammatico-discourse function of indicating participant continuity versus discontinuity of the SR pivots. This discourse function of canonical SR systems explains many "odd" behaviours of SR, e.g. being clause-level markers, "clause skipping", and the use of DR markers to indicate kinds of discourse discontinuity other than participant discontinuity. In Menggwa Dla, while the traditional SR system satisfies both the grammatico-semantic and grammatico-discourse functions, the innovative SR system is primarily used for the grammatico-semantic function of reference tracking.

In Section 5 we discussed three types of non-canonical SR systems. Firstly, there are the *general interclausality markers*, i.e. SR markers in languages where even the CR markers sometimes indicate kinds of discourse continuity other than participant continuity. Then there are the "third person" SR systems, which are primarily used for reference tracking. Lastly, there is the echo subject system in Lenakel; while it still shares many features of

canonical SR systems, their echo subject markers function more like the zero anaphors or long distance reflexives in East Asian languages; their antecedents are whichever preceding reference (or references) that is pragmatically appropriate. (The echo subject systems in other Vanuatu languages are functionally different from the one in Lenakel.)

SR is arguably more complex than most other grammatical constructions. While there are many similarities shared amongst the SR systems within each linguistic area, there are hardly any linguists who understand well enough the intricacies of the SR systems in more than one or two different linguistic areas. (I am also not immune from this; as for SR is concerned, my area is New Guinea, with dabblings in Vanuatu.) The linguistic community needs a truly-comprehensive typological study of SR; a number of linguists, each with expertise in a different linguistic area, need to sit down together to make this a reality.

Abbreviations

1	first person	INT	intentional
2	second person	IR	irrealis
3	third person	ITR	iterative
ABL	ablative	LIG	ligature
ABS	absolutive	LOC	locative
ALL	allative	m	masculine
AUX	auxiliary	n	non-
BEN	benefactive	N	non-
CLF	classifier	NEG	negative
COM	comitative	o	object
COMPL	completive	OBJ	object
CON	conjunction	p	plural
CONT	continuous	PERL	perlative
COP	copula	PFV	perfective
CR	coreferential	PL	plural
DAT	dative	POSS	possessive
DEL	delayed	PRF	perfect
DEM	demonstrative	PRS	present
DEP	dependent	PST	past
DP	deictic particle	R	realis
DR	disjoint-referential	REL	relative (ERG/GEN)
ERG	ergative	REM	remote
ES	echo-subject	s	singular
ex	exclusive	SEQ	sequential
f	feminine	SG	singular
FOC	focus	SR	switch-reference
GEN	genitive	STAT	stative
in	inclusive	TOP	topic
IND	indicative	TR	transitive
INS	inessive		

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