

THE DIFFUSION OF SWITCH-REFERENCE SYSTEMS THROUGH LANGUAGE CONTACT: SR SYSTEM TRANSFER VERSUS MORPHEME BORROWING

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Abstract. This paper examines the transfer of switch-reference systems and morphology in three language contact situations – Coastal Papua New Guinea, The Gulf Region of the U.S.A. and Australia. In this paper, I discuss possible factors influencing the occurrence of either system or morphological transfer or both in each situation, as well as offer evidence that morphological transfer involving switch-reference may be more common than so far acknowledged in the literature. Several possible scenarios for how switch-reference may be transferred are also given. The data for this paper come from published sources on the languages discussed, with the theoretical conclusions I offer based on the implications of the data considered.

Keywords: switch-reference, language contact, pattern transfer, matter transfer, Austronesian, Muskogean, Pama-Nyungan.

1. THE PHENOMENON OF SWITCH-REFERENCE AND ITS TRANSFER THROUGH CONTACT

Switch-reference, henceforth SR, is a cross-linguistic clause-combining phenomenon occurring in roughly 10–15% of the world’s languages. It is canonically defined as a morpho-syntactic verbal affix system, whose main function is to track the continuity/discontinuity of subjects in complex sentences and, in some languages, objects as well. The main regions in which SR has been documented are certain language groups of New Guinea, Australia and North and South America. However SR has also been identified in individual groups in Siberia (Yukaghir, Tungusic, Mongolic) and Africa (Omoti, Cushitic), as well as some more isolated occurrences, such as certain Austronesian languages of Southern Vanuatu. SR most often occurs in main/dependent clause combinations, such as with adverbial, complement, purposive, medial/co-subordinate (dependent, non-embedded) and, in some languages, relative clauses. However, SR also clearly occurs in some languages in coordinate clause combinations involving two or more balanced, finite main clauses. The following are examples of adverbial (1), complement (2) and coordinate (3) complex clauses with SR marking. The abbreviations SS and DS refer to ‘same subject’ and ‘different subject’ respectively and the SR morphemes are bolded. The glossing from the original sources is retained with slight adaptations².

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² The following abbreviations are used: 1 – first person, 2 – second person, 3 – third person, A – agent-like argument of canonical transitive verb, ABL – ablative, ABS – absolutive, ACT – active, ADV – adverbial

(1) Huichol (Uto-Aztecan; Central Mexico; Comrie 1983: 19)

Adverbial temporal clause

Same subjects across clauses

nee ne-nua-ka, paapaa ne pii ʔiiti
 I 1SG-ARRIVE-SS, TORTILLA 1SG 3SG GIVE
 ‘‘When I arrived, I gave him a tortilla’’

Different subjects across clauses

ʔuuka nua-ku, nee ne-peti
 GIRL ARRIVE-DS, 1.SG 1.SG LEAVE
 ‘‘When the girl arrived, I left’’

(2) Urarina (Isolate; Peru, Olawsky (2006: 767)

Complement clauses

Same subjects across clauses

û-na heri-to-anû
 COME-INF.SS WANT-INTS-1.SG.A
 ‘I (really) want to come.’

Different subjects across clauses

tûrû-a=ne heri-ji
 ARRIVE-3=SUB.DS WANT-NEG.3
 ‘He (i) does not want him (j) to come.’

(3) Lenakel (Austronesian; Vanuatu, de Souza 2008:1-2, citing Lynch 1983: 212)

Coordinate clauses³

Same subjects across clauses

r-əm-va (kani) m-əm-auŋən
 3SG-PST-COME (AND) SS-PST-EAT
 ‘He (i) came and (he)(i) ate.’

Different subjects across clauses

r-əm-va (kani) r-əm-auŋən.
 3SG-PST-COME (AND) 3SG.DS-PST-EAT
 ‘He(i) came and he(j) ate.’

SR markers are often cumulative exponents, which in addition to coding the SR values SS and DS, typically also indicate various inter-clausal semantic and pragmatic properties, such as adverbial dependencies and participant topicality, as well as tense-aspect-modality distinctions. Apart from coordinated clauses, where both clauses are typically fully independent, SR marking almost exclusively occurs on dependent clauses, overwhelmingly manifesting as systems of suffixes.

SR is clearly an areal phenomenon occurring in clusters globally. The areal clustering of SR may well be an indication that language contact is a crucial factor in the emergence of SR systems in many languages. SR can conceivably be transferred between languages as system transfer (also known as pattern transfer) or morphological transfer (matter transfer), with seven theoretical possibilities of the way in which the transfer through contact can occur, though not necessarily all possibilities have been attested at this stage of research⁴;

clause, ALL – allative, COP – copula, DAT – dative, DS – different subject, DO – direct object, ERG – ergative, IMPFV – imperfective, INDF – indefinite, INF – infinitive, INTS – intensive, M – masculine, NEG – negation, NOM – nominative, O – patient-like argument of canonical transitive verb, PL – plural, POSS – possessive, PRED – predicate, PROG – progressive, PST – past, PTCP – participle, PURP – purposive clause, REL – relative clause, S – single argument of canonical intransitive verb, SBJ – subject, SEQ – sequential, SIM – simultaneous, SS – same subject, SUB – subordinate

³ Note: in Lenakel the DS marker is the normal 3.SG agreement in finite, independent clauses. Lenakel and other related languages of Southern Vanuatu are rare examples of SR morphology occurring as a prefix.

⁴ A detailed analysis of possible syntactic mechanisms and processes involved in these seven theoretical scenarios is beyond the scope of this paper, though I do make initial observations relative to the contact situations described.

(1) transfer of only the system of SR (pattern only transfer); (2) transfer of only SR morphology (matter only transfer); (3) transfer of both the SR system and SR morphology at once; (4) transfer of only aspects of the SR system, with initially non-SR functionality in the target language (such as sequentiality and dependency distinctions), later developing functionally into an SR system; (5) transfer of only SR morphology, with initially non-SR functionality in the target language (oblique case markers on dependent nominalized clauses could be an example), later developing functionally into an SR system; (6) transfer of aspects of the SR system and SR morphology, with initially non-SR functionality in the target language, later developing functionally into an SR system; (7) no actual transfer, with SR developing in parallel in languages within the same region, possibly due to shared underlying typological characteristics.

In the most recent edited volume on SR, *Switch Reference 2.0*, van Gijn (2016) asks the question “*why pattern replication is more common for SR systems than morpheme borrowing*”. Here the term pattern replication refers to scenario (1) – system only transfer into the target language, utilizing re-analyzed native morphology of the target language in the newly formed SR system. The question of course implicitly claims that with regards to SR, pattern replication is in fact more common than morphological transfer. Similarly, regarding the transfer of SR in Australia, Austin (1981) and Dixon (2002) both state their view that pattern only transfer occurred in this context. This paper offers evidence which at least calls into question the claim that SR pattern transfer in general is in fact more common than SR morphological transfer, as well as the claim that little or no SR morphological transfer occurred in Australia. It also offers suggestions as to why either system or morphology transfer, or both, might occur in specific instances of language contact.

This paper looks at SR clusters in three regions, North-East coastal Papua New Guinea, The Gulf region of the U.S.A and Central-Western Australia, where in each case there is evidence of SR spread through contact. The data are drawn from published grammatical descriptions and articles, as well as language specific analyses made by other researchers, however the theoretical conclusions presented are my own. For each region the evidence of the type of transfer scenario as outlined above is discussed and possible reasons for the particular type of transfer are given. This paper does not challenge van Gijn’s implicit claim directly that SR pattern replication is more common than SR morphological borrowing, since a larger amount of case studies needs to be examined in order to do so, however the evidence presented concerning Australian languages in particular of possible morphological borrowing does seem suggest that morphology transfer may be more common in SR transfer situations than so far recognized in the study of SR diffusion. Additionally, I offer the suggestion that not all SR clusters are necessarily the result of direct SR diffusion, rather that parallel development, driven by regional structural characteristics of the language groups involved, could explain the emergence of SR in certain regions.

The outline of this paper is as follows: section 2 discusses a contact situation in coastal Papua New Guinea, in which the transfer of the syntactic system of SR occurred without any morphological transfer into the target language. Section 3 exemplifies a contact situation in the Gulf region of the U.S.A., in which the transfer of SR morphology occurred. Section 4 discusses SR spread in Australia and offers evidence of SR morphological transfer among certain languages. Section 5 offers a summary and suggests the most likely scenarios for the types of transfer in each region discussed, with the conclusion in section 6 discussing the

factors involved in different scenarios of SR contact diffusion as well as the possibility of parallel development of SR in certain regions.

2. DAMI – A CASE OF SR SYSTEM ONLY TRANSFER

Languages in New Guinea are typically classified as Austronesian and Papuan, with the latter used as a cover term for many different language families. Austronesian languages are largely located in coastal areas, in many cases adjacent to Papuan languages stemming from a variety of language families. SR is common in New Guinea among Papuan languages, but there is at present only one known Austronesian language of New Guinea that has SR coded by morphological means. Dami is classified as belonging to the Oceanic branch, Bel sub-branch of Austronesian and is located in Madang Province, Papua New Guinea. It has an SR system similar to surrounding Papuan languages and is a rare instance of an Austronesian language with SR. The only other known Austronesian languages with SR are located in Southern Vanuatu (see de Souza 2008), which appear to have innovated SR independently in coordinate clauses. Lenakel, in example (3) above, is one of these SR languages of Vanuatu. Further research may discover additional Austronesian languages with SR or proto-SR systems due to contact with Papuan or through independent innovation, though it is clear that SR cannot be reconstructed for Proto-Austronesian or its branches.

In the tables below, Dami morphology is presented and compared with related Bel languages and neighboring Papuan languages. Roberts (1997) makes the claim that at least one of the Dami SR markers, same subject – sequential events, is etymologically derived from the Proto-Bel realis/irrealis markers, as shown in table (1) below⁵, and not borrowed from Papuan languages.

Table (1) data from Roberts (1997)⁶. Dami and Proto-Bel suffixes

Dami <i>-ken/-pen</i>	SAME SUBJECT – SEQUENTIAL MARKERS
Proto-Bel <i>*-gV / *-p(V)</i>	REALIS/IRREALIS MARKERS

The data in table (2), taken from Roberts (1997), compares additional SR morphology of Dami and morphology of the Bel languages Gedaged, Takia and Bilbil. As can be seen, these Dami SR morphemes are also very likely native and cognate with morphology found in other Bel languages. Though the Takia, Bilbil and Gedaged forms code simultaneous events, it appears from the description in Elliot (1979) that the Dami cognate forms *-di* and *-ma* code sequential events. This appears to indicate a change in temporal orientation as part

⁵ Synchronically the distinction between the Dami suffixes *-ken/-pen* is one of verb class conjugation, which also coincides with the present tense markers *-k/-p*. This may indicate that ultimately these SR suffixes derive historically from the re-analysis of realis/irrealis markers as present tense markers first, then, under the influence of Papuan languages, as SR markers with the possible innovative addition of the morpheme *-en*, possibly cognate with the inceptive *-ene*, to the suffixes.

⁶ It is unclear from the description in Elliot (1979) what the semantic difference is between the *-ma* suffix in table (2) and the *-ken/-pen* suffixes in table (1), though all are sequential SS markers.

of the morpho-syntactic re-analysis of these morphemes. In examining the Dami system in Elliot (1979), I also found an additional suffix *-mogo*, which was not mentioned by Roberts, but appears to code simultaneous DS and likely is cognate with Gedaged SIMULTANEOUS + REALIS *-me + -g(V)*.

Table (2) data from Roberts (1997) and Elliot (1979). Dami and other Bel languages

Dami <i>-di</i> DS SEQ EVENTS	Dami <i>-ma</i> SS SEQ EVENTS	Dami <i>-mogo</i> DS SIM EVENTS
Bibil <i>-da</i> SIM EVENTS, NO SR DISTINCTION	Gedaged <i>-me</i> SIM EVENTS, NO SR DISTINCTION	Gedaged <i>-me + -g(V)</i> SIM REALIS EVENTS, NO SR DISTINCTION
Takia <i>-du</i> SIM EVENTS, NO SR DISTINCTION		

In table (3) below, Dami SR morphology is compared to the SR morphology of neighboring Papuan languages, further indicating that the Dami morphology is native and not borrowed from those languages.

Table (3) data from Roberts (1997) and Elliot (1979). Dami and neighboring Papuan langs

Austronesian	Neighboring Papuan	Neighboring Papuan	Neighboring Papuan
Dami	Amele	Girawa	Erima
SS <i>-pen/-ken, -ma</i>	SS <i>-me</i>	SS <i>-moi, -ia(nik)</i>	
DS <i>-di, -mogo</i>	DS <i>-ʔV</i>	DS <i>-nuk, -ta, -na</i>	DS <i>-nga</i>

As seen in table (3), Dami's SR morphology mostly does not resemble those of neighboring Papuan languages, though there are some similarities in some forms, specifically the Amele and Girawa forms with an initial bi-labial nasal. In this case, it is possible that the Dami bi-labial form *-ma* is the result of morphological transfer, though it may also be cognate with the Gadaged form indicating simultaneous events or simply coincidental. The data in tables (1)–(3) fairly clearly show that at least the SR morphology of Dami was not borrowed, but is instead re-analyzed, native morphology functioning to indicate SR distinctions.

According to Ross (1988) the Proto-Oceanic branch of Austronesian is reconstructed as having SVO order, however the Bel sub-branch, in contrast, moved to quite a rigid SOV word order due to contact influence from Papuan languages. It is likely not coincidental that in its historical development Dami underwent both a word order shift to SOV and developed SR coded by suffixes, since SR languages most often have SOV profiles and, as mentioned, morphologically SR is almost exclusively suffixing. It is also clear that these developments were driven by contact with surrounding Papuan languages, since Ross (1987) characterizes other Bel languages as having medial-verb morphological patterns similar to neighboring Papuan languages (but not actual cognate morphology *J.B.*). However, according to Roberts

(1997), these other Bel languages have not yet developed functioning SR systems. Regarding the development of SR in Dami, Roberts (1997) states that “*This would appear to be a clear case of indirect morpho-syntactic diffusion, since the form of the SS/DS system found in Dami bears little resemblance to the forms found in the surrounding Papuan languages*”. In his terminology, indirect morpho-syntactic diffusion is what I call system transfer or scenario (1) above. I contend that a crucial aspect of this system transfer is the shift from SVO to SOV word order, for the reason that this order allows for the development of medial clause structures, with the re-analysis of already extant, native suffixes on non-finite clauses preceding main clauses as coding SR distinctions – the typical medial clause scenario existing in numerous Papuan languages, including those adjacent to Dami.

In the Dami example sentences below, it can be seen that the SR markers are functioning similarly to other SR systems found around the world (see the Lenakel example (3) above). It also appears that in Dami the main clause type that occurs with SR marking is the medial, co-subordinate type or dependent, non-embedded clause – the same type commonly found in many Papuan languages. Medial clauses are often translated as independent coordinate clauses, though they are less-finite, de-ranked clauses in Dami and in many Papuan languages.

Dami sequential SR examples – adapted from Elliot (1979)

- (4) Buke waag boun soŋ ye-**pen**, ponoŋ taka ilen
 BUKE BOAT IN GETING.UP 3.SG.do-**SEQ.SS**, PLACE INDF 3.SG.WENT
 ‘Buke got into a boat, and went to another place’
- (5) Ile **ma**, keŋ yen
 3.SG.SEE **SEQ.SS** CRYING 3.SG.did
 ‘He saw it and cried’
- (6) iŋ idi iwegidi-**di**, wagen dilen
 3.SG 3.PL 3SG.CALLING.TO.THEM-**SEQ.DS**, TO.3SG.POSS.FACE 3.PL.WENT
 ‘He called them, and they went to him.’

Dami simultaneous SR example – adapted from Elliot (1979)

- (7) Aya aile **mogo**, iŋ saapi beŋ yalen
 1.SG 1.SG.SEE **SIM.DS**, 3SG FOOD STEALING 3.SG.M.TOOK
 ‘While I was looking, he stole the food’

To summarize, Dami clearly underwent a change from an original SVO to SOV word order, very likely influenced through contact with Papuan languages, since Proto-Oceanic is reconstructed as SVO. Along with this change in word order, verbal morphology functioning similarly to medial-verb morphology in Papuan languages developed using re-analyzed native morphology. This native morphology originally encoded temporal values (possibly tense distinctions) and realis/irrealis modality, but was re-analyzed as coding SS/DS along with temporal sequencing, similar to surrounding Papuan languages. In this instance of SR development through contact there does not appear to have been any transfer of morphology from Papuan languages to Dami or other Bel languages, rather only the syntactic system of

SR appears to have been transferred through contact, which is scenario (1) as outlined in section 1. The question as to why Dami developed an SR system through contact with neighboring Papuan languages, whereas the other Austronesian Bel languages did not, is unclear and requires further investigation. However, since the other Bel languages are located farther to the north and are in contact with different Papuan languages, this difference may well be due to the sociolinguistic and possibly language specific typological details in each contact situation in these different locations.

3. CHOCTAW – A CASE OF SR MORPHOLOGY ONLY TRANSFER

Another example of SR transfer is discussed in Mithun (2014), in this instance morphological transfer through contact. The area in question is the Southern Gulf region of the U.S.A., which is characterized by Mithun as an ancient linguistic area with many shared structural characteristics among languages which are likely the result of long-term contact. The languages discussed by Mithun are Muskogean languages, in particular Choctaw and Chickasaw, and the language isolates Atakapa and Chitimacha. Mithun describes this contact scenario as the “*sudden copying of concrete form*”, specifically the suffix *-š*, from Atakapa and/or Chitimacha into Choctaw. All Muskogean languages have SR systems, however Choctaw is the only Muskogean language which has this suffix. A crucial difference in this scenario in comparison to Dami is that Choctaw, like all the other Muskogean languages, has a fully developed SR system, which is likely traceable back to Proto-Muskogean. Therefore this situation is not an instance of the transfer of a syntactic system, such as occurred with word order shift in Dami, that ultimately helps to facilitate the development of an SR system in the contact language, rather it is the transfer and incorporation of a specific morpheme into an already extant, fully developed SR system in the target language.

The specific details presented in Mithun (2014) are that Choctaw borrowed the morpheme *-š* from (likely) Atakapa or (possibly) Chitimacha to code same subject-simultaneous, replacing an earlier focused SS form *-ot*, consisting of *-o* ‘be’ + *-t* ‘same subject simultaneous’⁷. Mithun characterizes this as a definite recent borrowing, since the morpheme does not exist in the closely related language Chickasaw or other Muskogean languages and its development is actually attested in historical written documents. Atakapa appears to have had an SR system, or an emerging SR system, where same subject, but not different subject, is indicated. Chitimacha on the other hand appears to not have had an SR system, though the Chitimacha morpheme in question *-iš* did share certain non-SR related functions with Atakapa and Choctaw, such as occurring in progressive and focus constructions. According to Mithun, for both Atakapa and Chitimacha, it appears that the origin of the suffix *-š* is a copula which existed both on nouns (coding focus, topic shift and contrast in Atakapa and topic shift in Chitimacha) and verbs (same subject simultaneous in Atakapa and progressive and temporal clauses in Chitimacha). As shown in table (4) below, Proto-Muskogean is reconstructed as having the copula **omi*. This copula became part of the SR morpheme complexes in Choctaw prior to borrowing the suffix *-š*, and coded focused SS on verbs and

⁷ Synchronically, the Choctaw morpheme *-t* alone appears to code SS sequential without special focus, however it is unclear if sequentially is a subsequent development or was an already extant function of the non-focused SS form *-t* without the copula *-o*.

subjective marking on nouns⁸. It is possible that the existence of a copula already having been incorporated into the morpheme complex facilitated the apparently easy and rapid borrowing of the morpheme *-š* from Atakapa, since it also had its origin as a copula. The following table, adapted from Mithun (2014), outlines the various functions of these morphemes in all three languages. Note that the native SS morpheme in Choctaw *-t*, as well as the borrowed morpheme *-š*, are poly-functional and also code subjective case on nouns, with a non-focus/focus distinction on nouns, respectively.

Table (4) Comparison of forms in Choctaw/Chickasaw, Atakapa and Chitimacha.
Data from Mithun (2014) with slight adaptations

Language	Form	Syntactic category/Function
Proto-Muskogean	<i>*omi</i> 'BE' <i>*-t</i> ⁹ -SS ?	copula same subject dependency
Proto-Choctaw/Chickasaw	<i>V-o-t</i> VERB-BE-SS.SIMULTANEOUS.FOCUS <i>NP=o-t</i> NOUN=BE-SUBJ	focused SS on verbs (participle) focused subject, topic shift, contrast on nouns
Choctaw only (-š from Atakapa/Chitimacha)	<i>V/N-o-t</i> replaced by <i>V/N-o-š</i> VERB-BE-SS.SIMULTANEOUS OR NOUN=BE-SUBJ	focused SS simultaneous progressive on verbs (participle) OR focused nominative case on nouns
Atakapa (relic copula <i>-š</i> 'be')	<i>V-š</i> VERB-SS.SIMULTANEOUS <i>NP=š</i> NOUN=FOCUS	SS simultaneous on verbs (participle) focused subject, topic shift, contrast on nouns
Chitimacha (marginal copula <i>-š</i> 'be')	<i>V-š</i> VERB-PROG <i>NP=š</i> NOUN=TOPIC.SHIFT	'progressive aspect', 'when/as' (temporal clause) topic shift

⁸ In many instances SS and DS marking on verbs in Muskogean languages are formally identical to subjective and objective marking on nouns, respectively. This obviously indicates a diachronic connection between SR and core case marking in these languages, though the details are beyond the scope of this paper.

⁹ It is unclear at this time if the function SS dependency can be reconstructed to Proto-Muskogean, though the morpheme itself certainly is reconstructable. Booker (1980) reconstructs this morpheme as a Proto-Muskogean subject marker.

As a further development, I hypothesize that the incorporation of *-š* morpheme into Choctaw may have instigated the diversification of sequential vs simultaneous SR temporal values, assigning simultaneous SS to *-š* and sequential to the native SR morpheme *-t*.

Table (5) Choctaw synchronic SS temporal values

Form	Gloss	Source
<i>-š</i>	SS.SIMULTANEOUS	borrowed morphology
<i>-t</i>	SS.SEQUENTIAL	Muskogean native morphology

The following Choctaw examples, adapted from Mithun (2104), originating from Davies (1988), show the current synchronic temporal characteristics of these morphemes in conjunction with SS function.

- (8) *Hattak-at im-ofi pashoho-li-h-oš tamaha ia-tok*
 MAN-NOM 3.POSS-DOG RUB-ACT-PRED-**FOCUS.SS.SIM** TOWN GO-PST
 ‘Patting his dog, the man left for town.’
- (9) *Hattak-at im-ofi pashoho-li-t tamaha ia-tok*
 MAN-NOM 3.POSS-DOG RUB-ACT-**SS.SEQ** TOWN GO-PST
 ‘The man patted his dog and went to town.’

Choctaw also employs the SS morpheme *-š* in durative/progressive constructions, similar to the Chitimacha function.

- (10) *Nosi-kiiyoh-oo-š ittóla-tok*
 SLEEP-NEG-**BE-SS** LIE-PST
 ‘She lay there **not sleeping**.’

The significance of the details of this contact situation is that it demonstrates that morphological transfer in contact situations can occur in the case of complex, deeply entrenched morpho-syntactic systems, such as SR, if the appropriate syntactic structural framework is already in place. This was the case with Choctaw, which already had an SR system and existing SS morphology, thereby making the transfer of a new SS morpheme readily possible, and perhaps facilitating the re-analysis of the already extant SS morpheme as coding a more specialized function, i.e. SS sequential. It is also worth noting that, in addition to documented evidence pointing to the fact that this morpheme was rapidly transferred into Choctaw, this morpheme also appears to share certain additional functions and occur in similar constructions in all three languages, such as focus and progressive constructions. This may be a further explanation why the transfer of this morpheme into Choctaw occurred with such apparent speed and ease, specifically precisely because the appropriate syntactic framework was already in place in Choctaw into which this morpheme was able to easily fit. In terms of the seven theoretical scenarios for SR transfer from section 1, it seems that scenario (2) would be the most appropriate description of this contact situation, due the rapid incorporation of the morpheme and the pre-existing SR system in Choctaw.

4. AUSTRALIA – EVIDENCE OF SR MORPHOLOGICAL TRANSFER

Australia is a well-known SR area, with languages with SR systems occupying the North-Central and West-Central regions of the continent. In the example (11) below from Diyari, a language of Southern Australia, same subject and different subject are obligatorily marked as suffixes on non-finite, dependent verbs.

(11) Diyari (Australia, Pama-Nyungan; adapted from Austin 1981)

<i>karna wapa-yi, yathayatha-rna</i>	<i>karna-li wilha</i>	<i>nhayi-yi, kirli-rnanhi</i>
MAN.ABS GO-PRS SPEAK-SS.IMPERF	MAN-ERG WOMAN.ABS SEE-PRS DANCE-DS.IMPERF	
‘The man goes along talking’	‘The man sees the woman dancing’	

All known SR languages in Australia are members of the Pama-Nyungan language family, henceforth PN, with the exception of at least a couple languages, Djingili and Garrwa, generally classified as non-Pama-Nyungan and located in the far north of the SR area, but contiguous to PN languages with SR to the south. According to Alpher (2004 : 93-94) “*It is widely agreed that the Pama-Nyungan languages are related to most, if not all of the non-Pama-Nyungan languages.*” So in effect all the languages of Australia can be seen as having descended from a common ancestor, with a rather deep split between the suffixing Pama-Nyungan languages and the largely prefixing non-Pama-Nyungan to the North. Looking at SR in the Australia context, it must be borne in mind that only roughly one quarter or so of Australian languages have SR, so the question arises, are the switch reference systems in those languages the result of spread from an initial language in which it developed independently or the result of inheritance from an earlier stage of Pama-Nyungan and the consequent loss of SR in the majority of PN languages. It seems to be the general consensus that SR in Australia is the result of feature spread through contact and not inheritance, since it occurs in a limited (though fairly large) region among contiguous languages and is not represented in the majority of PN languages. However, if the development of SR is assumed to be the result of diffusion, the question then arises what type of diffusion occurred? Was SR system only diffusion, utilizing existing morphology in the target languages, responsible for the spread of SR systems in Australia or was morphological material also transferred between languages, possibly in addition to system transfer?

It has been claimed that only SR systems have spread in Australia with little or no indication of morphological transfer between languages. According to Austin (1981:329) “*the actual subordinate-verb morphology by which SS and DS are signaled varies from language to language, even within closely related groups. It seems that we are dealing with evidence of syntactic diffusion.*” Dixon (2002:239) also is of the opinion that system diffusion without morphological transfer is responsible for the spread of SR in Australia, stating that “*It is an areal phenomenon with just the category of switch-reference marking having diffused, and each language evolving switch-reference marking forms from its own internal resources.... The actual locative and allative suffixal forms differ from language to language.*”¹⁰ In other words, they claim that SR diffusion involved the transfer of the

¹⁰ Locative and allative case marking on nouns is often identical formally to SR marking on verbs in PN languages, indicating a clear diachronic connection, the details of which are beyond the scope of this paper.

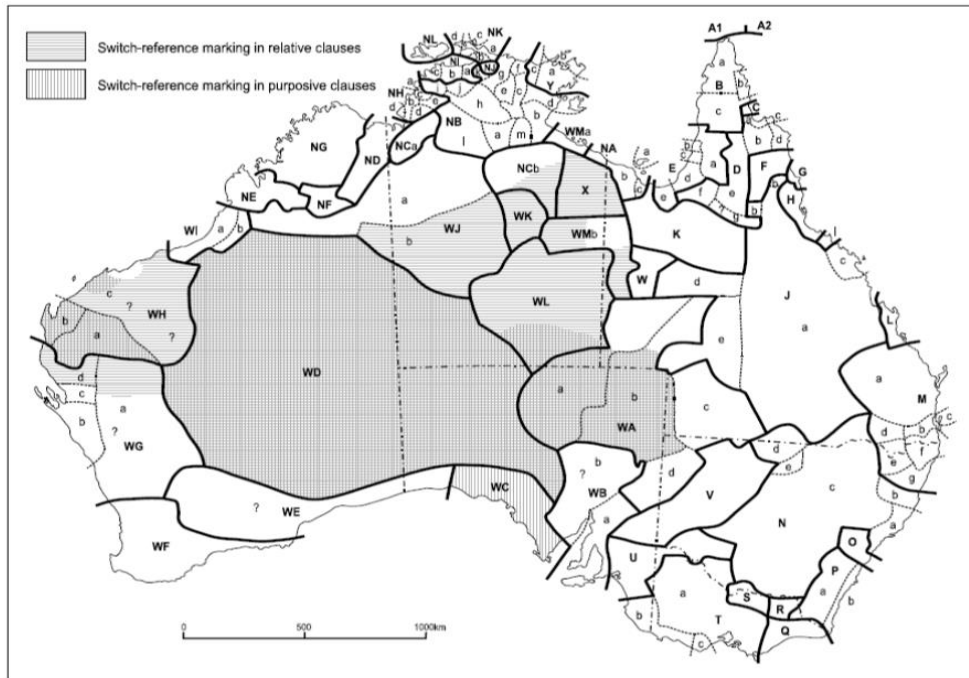
syntactic system of SR without morphological transfer (scenario 1), re-analyzing native, pre-existing morphology in the target language as coding SS/DS, along with temporal functions in many cases. This is certainly true in a number of instances when comparing SR languages in Australia, since, as Austin points out, the actual SR forms differ in various cases. However, in order to take a closer look at this issue, I collected data¹¹ on 18 SR languages in Australia from published descriptions and articles to determine if there were any SS or DS morphological correspondences among languages possibly suggestive of morpheme transfer. In most cases the morpho-syntactic analysis of each language follows that of the sources, though in the case of Panyjima, the analysis of *-rnu* as a DS suffix is my own. In the case of Baagandji, Hercus (1982) does not specifically use the term ‘same subject’ for the suffix *-la*, though it is clear from the description that it functions as such, as is likewise clear concerning the DS suffix *-rli*, formally identical to the dative/allative nominal case marker. The results of the data collection indicate that there does indeed appear to be some SR morphological correspondences between languages that are mostly contiguous in location.

Table (6) below breaks down some of these correspondences, with the languages grouped according to Dixon’s (2002) classification. Several critiques of Dixon’s classification have appeared since its publication, including Evans (2005) and Koch (2014), however proposed alternative classifications in the *Oxford Guide to Australian Languages* (Bowerman ed., forthcoming) in a number of respects correspond with Dixon’s classification. Therefore Dixon’s classification can serve as a useful point of reference with regards to the grouping of languages with SR and is also useful due to the preciseness of the indicated locations of languages relative to each other, an important factor when considering possible lateral transfer of forms. In table (6) below, the actual suffixal forms of each language are shown along with their SR function on dependent clauses (SS or DS), as well as the clause type they occur in and, where that information is available, any nominal case correspondences. Note that the alphanumeric numbering system of languages, such as WAb1, WAb2 etc., is Dixon’s method of labeling languages according to his classification of sub-groups and corresponds to the locations of languages on the maps he produced. The data in table (6) is not a complete collection of SR languages and their forms in Australian languages, rather it offers a targeted look at neighboring languages and their forms in order to help determine if morphological transfer of forms laterally among languages may have occurred at some point. Map (1), reproduced from Dixon (2002), shows the location of SR languages in general, with map (2), also from Dixon (2002), showing the specific location of each individual language mentioned. As can be seen when examining the SR forms and the locations of languages, in a number of instances languages with similar forms are located contiguous to each other.

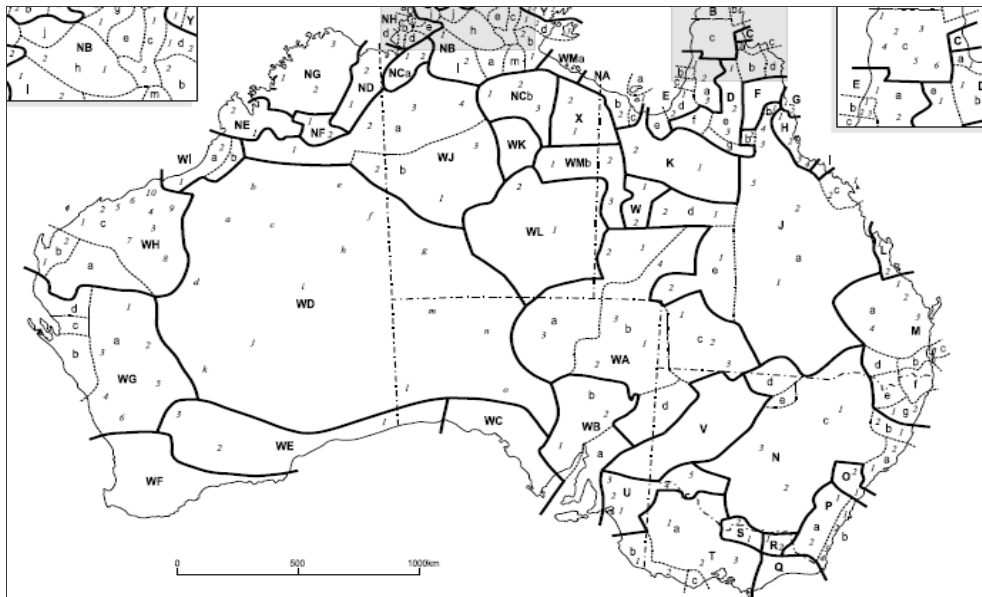
¹¹ Sources for the languages are: Yandruwandha, Diyari, Dhirari, Ngamini, (Austin 1981); Yarluandi (Austin 2013); Baagandji (Hercus 1982); Alyawarra, Kaititj (Austin 1981 from Yallop 1977); Gugada (Austin 1981 from Platt 1972); Wagaya (Austin 1981 from Breen 1976c), Warlpiri (Austin 1981 from Hale 1978); Arabana/Wangkangurru (Austin 1981 from Hercus 1976, Hercus 1994); Pitjantjatjarra (Austin 1981 from Glass & Hackett 1970); Waramungu (Simpson 1998); Djingulu (Pensalfini 2003, Austin 1981 from Hale 1960); Garrwa (Austin 1981 from Furby & Furby 1977); Panyjima (Dench 1991 – SR analysis my own); Tjiwarli (Austin 1981).

Table (6) SR forms and functions in a sample of Australian languages, as collected from cited sources

Suffix Forms	Language groups and their codes in bold according to Dixon (2002), with language names	SR suffix form and function	Clause type SR suffix appears on	Any observed case marking correspondences
Suffix 1 -la/ -r(a)/ -lha	WAb1 – Yandruwandha WAb2 – Diyari WAb2 – Dhirari WAb3 – Ngamini WAb3 – Yarluyandi V – Baagandji WL1 – Alyawarra WL2 – Kaititj WD(e) – Gugada WMb1 – Wagaya WJb1 – Warlpiri	- <i>rlayi</i> DS - <i>lha</i> SS - <i>lhali</i> SS - <i>lha</i> SS - <i>lhangga</i> SS - <i>la</i> SS -(i) <i>la</i> SS - <i>warle</i> DS - <i>rla</i> SS, - <i>rntala</i> DS - <i>rl</i> SS - <i>rla</i> SS - <i>rlarni</i> DS	ADV/REL PURP PURP PURP PURP PURP ADV/REL ADV/REL TEMPORAL ADV/REL ADV/REL SEQ ADV/REL	- <i>ngga</i> DATIVE - <i>la</i> LOCATIVE - <i>warle</i> ALLATIVE - <i>la</i> LOCATIVE - <i>rl</i> LOCATIVE - <i>rla</i> LOCATIVE
Suffix 2 -ng(k)a/ -na	WAb1 – Yandruwandha WAb3 – Yarluyandi WAb3 – Arabana WD(m) – Pitjantjatjara WJb1 – Warlpiri WK – Waramungu NCb1 - Djingili(non-PN) X2 – Garrwa (non-PN)	- <i>nga</i> SS, - <i>rnanga</i> SS - <i>lhangga</i> ss - <i>nhanga/-nga</i> DS - <i>nyangka</i> DS - <i>ngka</i> SS - <i>ngkarni</i> DS - <i>kina</i> DS (MAIN O = DEP S/A) - <i>ngka</i> DS - <i>jina</i> SS	PURP, ADV PURP ADV/REL TEMPORAL ADV/REL SEQ ADV/REL ADV/REL ADV/REL ADV/REL	- <i>nga</i> LOCATIVE - <i>ngga</i> DATIVE - <i>nga</i> LOCATIVE - <i>ngka</i> LOCATIVE - <i>ngka</i> LOCATIVE - <i>kina</i> ALLATIVE - <i>ngka</i> LOCATIVE - <i>ngka</i> ALLATIVE - <i>na</i> LOCATIVE
Suffix 3 -ri/-li/-rli	WAb2 – Dhirari WAb3 – Ngamini WAb3 – Yarluyandi V – Baagandji WMb1 – Wagaya X2 – Garrwa (non-PN)	- <i>lhali</i> SS - <i>ili</i> DS - <i>li</i> DS - <i>rli</i> DS - <i>rl</i> SS - <i>kurri/-kyurri</i> DS	PURP PURP PURP PURP ADV/REL ADV/REL	- <i>li</i> ERGATIVE - <i>li</i> ERGATIVE - <i>rli</i> ALL/DAT - <i>rl</i> M.LOCATIVE - <i>rri</i> ALLATIVE
Suffix 4 -rnu/-nhu	WHc3 – Panyjima WHa – Tjiwarli	- <i>rnu</i> DS - <i>rnu/-nhu/-ngu</i> SS	ADV/REL ADV/REL	



Map (1) from Dixon (2002: pp 529)



Map (2) from Dixon (2002: pp xxviii)

From the data above, the following observations can be made:

Suffix 1: *-la/-rl(a)/-lha*

Groups WAb, V, WL, WD, WMb, WJb

All the languages with this suffix listed in table (6) are effectively contiguous to at least one other language with this suffix, with exception that in between Wab2 (Diyari) and V (Baagandji) is WAd (Maljangapa). I have no information on Maljangapa at present so I can't confirm whether it also has SR and/or a locative suffix with this shape. It may also be the case that other languages contiguous to the languages listed above have this suffix as well, though this remains to be determined.

In several languages morphological material in addition *-la/-rl(a)/-lha* appears to be present, such as in WAb3 Yarluyandi *-lhangga*, where *-ngga* is likely cognate with *-ngka* suffix below.¹² This may represent either different stages of morphological borrowing or possibly that certain morphemes were inherited while others were borrowed in some languages.

Suffix 2 *-ng(k)a/-na*

Groups WAb, WD, WJb, WK, NCb, X

Virtually all the languages with this suffix listed in table (6) are also contiguous with at least one other language with this suffix. On the map WJb3 Warlmanpa is located in between WJb1 Walpiri and NCb1 Djingili. According to Austin (1981), citing Nash (1979), Warlmanpa has an SR system very similar to Walpiri.

WK Waramungu has SR and is contiguous to WJb1 Warlbiri and NCb1 Djingili. Its DS marker *-kina* could possibly be a composite morpheme consisting of some element *-ki* plus *-na*, possibly cognate with suffix 2. Waramungu also has *-ngka* as a locative suffix on noun phrases.

NCb1 Djingili is a non-PN language, where *-ngka* is the DS suffix as well as allative case on noun phrases. Pensalfini (2003) mentions that Djingili may have an SR system and gives examples he collected from speakers that do apparently indicate switch-reference function (both SS and DS) marked on dependent clauses. Austin (1981), based on data from Hale (1980), also mentions that Djingili appears to have SR marking, though in the data so far published, only one example of an SS marked clause with the locative *-mbili* exists, whereas several DS marked clauses with the allative *-ngka* occur. However, according to Pensalfini, similar examples of SS marked clauses appear in Hale's notes. Based on these facts, it seems likely that Djingili is an SR language, though a definitive determination requires further data and research. Another non-PN language of the Mindi group, Wambaya NCb3, has the locative suffix *-nnga*, but based on the description in Nordlinger (1998), it is unclear to what extent it has a functioning SR system, though it may well be in the process of developing one.

¹² As pointed out to me by Stef Spronck, p.c., the voicing distinction is likely to be an issue of orthographic representation rather than any actual phonetic or phonemic distinction.

The fact that a non-PN language, Djingili, likely has an SR system, whereas only one other non-PN language, Garrwa, has so far been described as having SR¹³ and at least one of the SR morphemes of Djingili, DS *-ngka*, is clearly similar to SR and case morphology in neighboring PN languages seems to clearly indicate that the SR morphology as well as the SR system of Djingili as a whole was borrowed from contact with neighboring languages, probably from the WJb Yapa (Walpiri etc.) group. Garrwa may also have an example of morpheme transfer, in that the SS morpheme *-jina* may be a composite morpheme consisting of an initial *-ji* element plus *-na*, which is formally identical to the locative *-na* in Garrwa, and may be cognate with Suffix 2 *-ng(k)a*.

It should be noted that both the *-la* and *-ngka* morphemes appear as locative suffixes in a number of PN languages without SR and far removed from languages with SR. Some of these languages according to Dixon (2002) are Gunbayngirr MG1 *-la*, Wargamay H2 *-nga*, Warungu JA3 *-ngga* and Dyirbal H1 *-nga*, all of which do not appear to have SR. This is discussed further in section 5 below.

Suffix 3 *-ri/-li*

Groups WAb, V, WMb, X

As with Suffix 1, this suffix also appears in the WAb and V groups, which could potentially be seen as evidence of a sub-grouping among these two groups, i.e. the appearance of shared suffixes among these groups could be due to inheritance. There is also a similar suffix in the non-PN SR language to the north, Garrwa, which has the suffixes *-kurri/-kyurri* as DS and *-rri* as allative. Since there is a large distance between these areas and at present I don't know of similar suffixes in intervening languages, it could be that this is simply a formal coincidence, though the fact that Garrwa has SR and is non-PN and is contiguous with PN languages certainly is not a coincidence and is at least a strong indication of systemic diffusion of SR (scenario 1).

However, there is another possibility regarding Garrwa. WMb1 Wagaya, with the suffix *-rl* functioning as both SS and masculine locative, was listed as suffix 1. However, it is possible for *-rl* in Wagaya to be grouped with suffix 3 instead and in fact Wagaya is the neighboring language to Garrwa, in which case the Wagaya SS *-rl* and the Garrwa DS *-rri* could be related by borrowing. If this turns out to be correct, the situation with transfer from Wagaya into Garrwa could represent an instance of scenario (3), transfer of both the SR system and SR morphology at once, or even possibly scenario (5), transfer of SR morphology, with initially non-SR functionality in the target language, later developing functionally into an SR system. Which of either of these possibilities holds for this situation remains as speculation at this stage. The fact that the morphemes in Wagaya and Garrwa are in contrasting SS and DS functions in the two languages respectively may not be that unusual, and in fact in some cases in table 6, the same formal suffix occurs in contrasting functions in different but closely related languages, i.e. as WAb1 Yandruwandha *-rnanga* SS purposive, Waa3 Arabana/Wangkangurru *-nhanga* DS relative/adverbial. This seems to indicate that a switch in function of a morpheme, from SS to DS for instance, can occur relatively easily.

¹³ Also Wambaya, related to Djingili, possibly has SR, though this appears to be a marginal case.

**Suffix 4 -*rnu*/*nhu*
Groups WHc3, WHa**

Again we find the same formal suffix in contrasting functions in neighboring languages, with WHc3 Panyjima *-rnu* as DS and WHa Tjiwarli *-nhu* as SS. These two languages are grouped as part of the WH “Gascoyne River To Pilbara Areal” grouping by Dixon (2002), so it may well be that the occurrence of this morpheme in these languages is due to inheritance. However, it should be noted that unlike the other languages mentioned, this SR morpheme does not seem to correspond to any nominal case morphology in either Panyjima or Tjiwarli, perhaps indicating that the SR systems in these languages developed through systemic diffusion alone (scenario 1) without any morphological transfer from other languages to the west.

The data and discussion above indicate that SR morpheme correspondences among a number of Australian languages may well be due to morphological transfer in contact. The main argument for this claim is that these correspondences have a strong tendency to occur in languages which exist in continuous locations, though, crucially, cut cross language sub-groups. Since the correspondences do not appear to primarily correspond to sub-groups, it seems quite possible that they can be accounted for in terms of morpheme borrowing through contact and not shared forms through inheritance from a proto-ancestor. Another crucial argument made here is that the languages Djingili and Garrwa are the only known non-PN languages which appear to have SR and both show evidence of SR morphemes and functions similar to neighboring PN languages with SR. This state of affairs seems to strongly indicate that for these languages both their SR systems and the associated morphology were borrowed from contact with PN languages (scenario 3).

**5. THE TYPE OF SR SPREAD THROUGH CONTACT IN THE REGIONS
DISCUSSED**

It seems fairly clear from the data and analysis that the contact situation concerning Dami can be characterized as scenario (1), system transfer only, and that of Choctaw scenario (2), morphological transfer only. In the case of Dami, there is virtually no evidence of morphological transfer, though there was a concomitant shift in word order, in line with the word order of neighboring Papuan languages. This apparently sets the stage for the reanalysis of existing temporal and modal morphology as coding SR values as the morpho-syntactic structure of Dami harmonized with that of the medial clause morpho-syntactic structures of neighboring Papuan languages. As for Choctaw, which as mentioned had a pre-existing SR system already, it is interesting to note that the borrowed morpheme *-š* appeared to have SS simultaneous function in Atakapa, and that the simultaneity function may have been transferred along with the morpheme into Choctaw, with the pre-existing SS morpheme *-t* shifting to code sequential SS. This appears to indicate some degree of systemic/functional transfer beyond just the same subject function of the morpheme. Nonetheless, the transfer situation involving Choctaw and Atakapa/Chitimacha is still best characterized as morphological only, though possibly with some additional transferred temporal functionality as well.

Regarding SR and language contact in Australia, since the languages are related, in contrast to the above situations, theoretically one possibility for the existence of SR is that it

was already present at some stage of the proto language, such as Proto-PN. However, given that the majority of PN languages do not have SR, as well as the fact that there is a good deal of variation of forms of SR morphemes among languages and language groups, inheritance of the system of SR seems unlikely. Perhaps more compelling, the languages which do have SR appear not to form any specific type of genetic grouping in themselves, other than (almost) all being PN languages – a fairly clear indication that SR as a system likely did not exist at the level of Proto-PN, and certainly not in Proto-Australian. It therefore seems that SR in Australia is most likely not due to high level inheritance from earlier stages, rather that SR started in a specific PN group which then spread to a limited extent in the center-west and center-north of the continent. But what kind of spread occurred and which of the seven possibilities seems the most likely?

It may well be the case that more than one scenario holds for SR diffusion in Australia, though I have tried to demonstrate in this paper that there seems to be a greater amount of correspondences in SR morphology among contiguous languages than has been acknowledged in the literature. This would seem to be a good indication of at least scenario (3), system and morphology transfer, holding for many of these contact situations. This seems to be a reasonable possibility, since at least the PN languages are typologically similar enough to each other that both the system and the morphology could conceivably be transferred relatively easily and quickly, similar perhaps to the situation described for Choctaw and Atakapa/Chitimacha.

However, since many of these morphemes clearly are etymologically related to nominal case forms, it could instead be that in some cases the morphology was transferred as case markers without concomitant SR functions, later developing into SR functionality due to underlying typological characteristics already present in these languages, such as the case marking of nominalized dependent clauses.¹⁴ This would represent scenario (5), the transfer of morphology prior to it developing into specifically SR morphology.¹⁵

As for the non-PN languages, their SR systems must have originated from contact with neighboring PN languages, since it certainly cannot be postulated that Proto-Non-PN had SR. Whether these contact situations represent instances of scenario (3) or perhaps (5), morphology transfer prior to it developing as SR, remains an open question for further investigation. But it seems that these two languages in particular make a good case for at the very least the transfer of SR morphology among distantly related languages in contact.

Regarding the oblique morphological forms *-la* and *-ngka* which exist in languages in other parts of the continent without SR, this may simply be due to the fact that these morphemes are descendent from Proto-PN or even Proto-Australian nominal case forms that are present synchronically throughout the continent, regardless of whether the languages have SR or not. Their existence in non-SR languages does not in and of itself invalidate the arguments presented above, since as mentioned the pattern of these morphemes in SR languages seems to be that they occur in contiguous locations which cut across sub-group designations. What it does indicate however is that SR development in Australia is closely linked to case marking forms, though why it ultimately developed in some areas and not in others remains an interesting avenue of further research.

¹⁴ Bickel (1999) discusses the intriguing idea of case marked 'absolute constructions', such as occurred in Latin and Ancient Greek, as potential sources for SR marking in both Australian and some languages of N. America, though a detailed discussion of this proposal is beyond the scope of this paper.

¹⁵ This scenario was suggested to me as a possibility by Matti Miestamo, p.c.

6. CONCLUSION – SYSTEMIC AND MORPHOLOGICAL TRANSFER

In this paper I have offered seven theoretical possibilities for the way in which SR transfer could conceivably proceed among languages in contact and I have attempted to identify possible examples of some of these scenarios among the contact situations discussed. However, in the overall context of SR spread through contact, the question remains, as cited earlier by van Gijn (2016) – is system transfer more common than morpheme transfer in instances of SR in contact, and if so, why would that be the case? I hope to have provided some initial indications and a discussion of 18 languages of Australia which show evidence suggestive of the transfer of SR morphology among languages in contact. This evidence seems to contradict the claims by Austin (1981) and Dixon (2002) that SR diffusion in Australia was the result of system only diffusion. Similarly, if SR morphology transfer were as rare as seems to be indicated by van Gijn, it perhaps would not be expected to find possible examples of morpheme transfer among these 18, albeit related, languages, though as for the non-PN languages, Djingili and Garrwa, the languages in question are only distantly related and quite different typologically. Also, Choctaw shows clear evidence of morphological transfer, which in this case is actually historically documented in written records. This evidence does not invalidate the claim that pattern transfer in SR is more common, pattern transfer certainly is the case for Dami, but it calls the claim into question. A definitive answer is beyond the scope of this paper, but the data and discussion given here seem to point towards a greater degree of morpheme transfer in SR diffusion in general than has been acknowledged at this point in SR research.

Nevertheless, the question remains, why would pattern vs morphological transfer obtain in any given circumstance? It seems that morphological transfer is most easily facilitated between languages that have what I call harmonizing morpho-syntactic structures. Examples of this would be the fact that Choctaw already had an SR system which had already incorporated a copular element into its morphology prior to borrowing a similar copula/SR element from (likely) Atakapa. Also the harmonizing typological features of PN languages, such as case marking on nominalized dependent clauses, may well have facilitated the ability of the languages to transfer SR morphology. In the case of Dami and neighboring Papuan languages, however, there was a greater typological gap, which perhaps made the transfer of actual SR morphemes from Papuan languages into Dami more problematic. However the system itself was able to transfer eventually by the convergence of word order structures in Dami with its neighbors, thereby allowing the re-analysis of existing morphology in new word order configurations to be interpreted as coding for SR.

When considering the factors effecting the ability of morphology to transfer between languages, Mithun (2020) states that “*It has become clear, however, that numerous factors can affect the susceptibility of bound morphology to transfer. One of these involves typological similarities among the languages involved, similarities which might increase over long periods of contact and in turn set the stage for elaboration of particular domains.*” (emphasis my own). These considerations directly pertain to SR as an areal phenomena, and in fact the situation in some other regions around the world may actually be somewhat different than those described in this paper. Though it is well known that SR occurs in clusters, it may be that not every regional cluster is the result of SR diffusion. In some areas, SR clusters may perhaps be due to the underlying typological characteristics of the languages in question, from which the development of SR has a certain natural tendency to occur (scenario 7). I theorize that a possible example of this is the Panoan, Jivaroan and Tacanan language families of Western Amazonia.

Overall & Vuillemet (2015) compare and contrast the SR systems of these three language families and offer evidence which suggests that contact may have played a role in the development of their SR systems. One rare SR feature (also occurring in a handful of Australian languages, but scarcely known elsewhere) is that all three language families have SR languages in which objects in addition to subjects are tracked by their SR systems. It may be that the SR systems in these three families developed through mutual contact and influence, however another possibility is that they are representative of parallel SR development due to the underlying typological characteristics of the languages involved and not due to SR diffusion through contact (scenario 7). Whether this suggestion in fact holds for these languages remains to be further investigated. However, it should be noted that various areal typological features, which may eventually lead to parallel SR development, may themselves be the result of contact prior to the emergence of SR in specific languages, much as in the way described above by Mithun. The exact mechanisms involved in identifiable cases of this type of typological priming¹⁶, where the stage is set, typologically speaking, for the emergence of SR in areal clusters, remains an area for future investigation.

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¹⁶ The use of this term for this type of areal convergence was suggested to me by Giacomo Bucci, p.c.

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