

Abstract Focusing to begin with on the Shuri dialect of Okinawan, this paper poses the question of whether Ryukyuan languages display evidence for the analysis of verbal morphology proposed for Japanese by de Chene (2015), an analysis according to which consonant-stem allomorphs are the underlying or default representations of alternating suffixes and regular vowel-stem allomorphs are derived by intervocalic epenthesis of *r* at verb stem boundary. It is found that Shuri combines two characteristics that make it particularly revealing as evidence for the *r*-Epenthesis analysis. First, with respect to primary vowel-stems, Shuri illustrates the logical endpoint of the changes entailed by that analysis, namely the total assimilation of vowel-stem inflection to the inflectional pattern of *r*-stems. Second, because of the creation of secondary vowel stems from historical *w*-stems and the ongoing nature of the assimilation of those vowel-stems to *r*-stem inflection, it displays evidence at the same time for *r*-Epenthesis as a living process that is still being extended. When we broaden the focus from Shuri to Ryukyuan and to Japonic as a whole, we find that, with regard to the initiation of changes that lead in the direction of assimilation of vowel-stem to *r*-stem inflection, the area from northern Kyushu to southern Okinawa constitutes a dialect continuum straddling the Japanese-Ryukyuan boundary within which, to a first approximation, those changes are further advanced the further south one proceeds.

Keywords Ryukyuan, Japanese, Shuri, *r*-Epenthesis, verb inflection

de Chene (2015) proposes an analysis of Japanese verbal morphology based on two claims. The first is that, for suffixes that alternate between consonant-stem and vowel-stem forms, underlying representations (URs) coincide with consonant-stem allomorphs, which are all vowel-initial. The second is that regular vowel-stem allomorphs are derived by a rule that inserts *r* intervocalically at verb stem boundary. The evidence for these claims is that, across the entire range of Japanese dialects, (a) consonant-stem suffixes, modulo unrelated changes, are stable; (b) vowel-stem suffixes that consist of the corresponding consonant-stem suffix preceded by *r* (Indicative *-ru*, Provisional *-reba*, Passive *-rare-*) are also stable; (c) other vowel-stem suffixes are subject to replacement by innovative forms that duplicate the pattern of *-ru*, *-reba*, and *-rare-* in being made up of the corresponding consonant-stem suffix preceded by *r*. For speakers, then, it is clear that V-stem suffixes not formed on that pattern are irregular and subject to elimination; when elimination occurs, the generation of the regular innovative *r*-initial replacement follows automatically from the postulated URs and rule.

The data on which the analysis of de Chene 2015 is based, however, are limited to dialects of Japanese proper and do not extend to those of the Ryukyus. As a result, that article does not consider the question of whether or not Ryukyuan languages (Amami, Okinawan, Miyako, Yaeyama, Yonaguni) display evidence supporting the proposed analysis. The present paper attempts to answer this question in the affirmative, concentrating to begin with on the Shuri dialect of Okinawan, which is a natural focus for two reasons: it is the most thoroughly documented of all Ryukyuan dialects, and it represents the logical endpoint of the changes implied by the *r*-Epenthesis analysis of de Chene 2015. The paper is organized as follows. Section 1 summarizes the basics of verbal inflection in Shuri from a synchronic standpoint. Section 2 discusses the evolution of that system and shows how it provides evidence for the *r*-Epenthesis analysis of de Chene 2015. Section 3 compares Shuri, with regard to the regularizations implied by that analysis, with other northern Ryukyuan (Amami and Okinawan) dialects, with Kyushu and other Japanese dialects, and finally with Sakishima (Miyako, Yaeyama, and Yonaguni) dialects. Section 4, a brief conclusion, identifies directions for further research.

1. Synchrony: Shuri Verb Inflection

Shuri Okinawan verb inflection has been described since Kinjo and Hattori 1955 as involving thirteen or fourteen conjugation types and three or four stems for each lexical entry. In discussing the inflectional system below, I note

that there are nine basic conjugation types, each corresponding to a stem-final consonant, and focus on the degree to which stem alternations are predictable in terms of general principles.

The forms of Table 1 illustrate all nine Shuri stem-final consonants in the order /s t d k g r n b m/; at the head of each column are given cognate stems from Tokyo Japanese and rough glosses intended to apply both to Japanese and to Shuri. *c* and *z* represent the palato-alveolar affricates [tʃ] and [dʒ]; of the nine stems, ‘die’ and ‘fly’ (and thus all of their inflected forms) are accented.¹

	1 kaes- ‘return’	2 tat- ‘stand’	3 nemur- ‘sleep’	4 kak- ‘write’	5 kog- ‘row’	6 tor- ‘take’	7 sin- ‘die’	8 tob- ‘fly’	9 yom- ‘read’
Negative	kees-an	tat-an	nind-an	kak-an	kuug-an	tur-an	sin-an	tub-an	jum-an
Hortative	kees-a	tat-a	nind-a	kak-a	kuug-a	tur-a	sin-a	tub-a	jum-a
Prohibitive	kees-una	tat-una	nind-una	kak-una	kuug-una	tun-na	sin-una	tub-una	jum-una
Provisional	kees-ee	tat-ee	nind-ee	kak-ee	kuug-ee	tur-ee	sin-ee	tub-ee	jum-ee
Imperative	kees-i	tat-i	nind-i	kak-i	kuug-i	tur-i	sin-i	tub-i	jum-i
Passive	kees-arir-	tat-arir-	nind-arir-	kak-arir-	kuug-arir-	tur-arir-	sin-arir-	tub-arir-	jum-arir-
Causative	kees-imir-	tat-as-	nind-as-	kak-as-	kuug-as-	tur-as-	sin-as-	tub-as-	jum-as-

Table 1 Shuri Verb Conjugation I

The forms of Table 1 show the close affinity of Shuri and Japanese verb inflection; the first five lines of that table illustrate five of the six traditional forms of the Japanese verbal paradigm, all except the *Ren’yookei*. In particular, the Negative and Hortative are based, in the traditional analysis, on the *Mizenkei*, the Prohibitive includes the *Syuisikei/Rentaikēi*, the Provisional is based on the *Izenkei*, and the Imperative preserves the *Meireikei*, with the ending showing the raising of mid vowels that is also evident in the stems of ‘row’, ‘take’, ‘fly’, and ‘read’. The last two lines show the Passive and Causative stems corresponding to each of the lexical stems of the table; I will assume that, as in Japanese, the suffixes in question are auxiliary verbs (as they are called in the Japanese grammatical tradition) in the syntax, but (as the result of head movement) inflectional stem-forming suffixes from the point of view of the morphology. We may note that apart from the reduction of *ru* to mora nasal before *n* in the Prohibitive of ‘take’ (characteristic also of Tokyo Japanese), all nine stems of Table 1 are nonalternating in the forms given. The Causative suffix, however, shows a suppletive alternation, being *-imir-* (Japanese *-(a)sime-*) after *s*-stems and *-as-* (Japanese *-(s)ase-* ~ *-(s)as-*) otherwise.

Shuri verb inflection shares with that of almost all Northern Ryukyuan (Amami and Okinawan) varieties the property of having replaced most uses of the old *Syuisikei* or Conclusive form with an innovative formation combining the *Ren’yookei* or Conjunctive with an inflected form of the auxiliary *or-* ‘be’. This construction originally expressed progressive aspect (Okinawa kogo daiziten hensyuu iinkai:765), as it does in much of western Japan today (see GAJ map 198), and had a full paradigm with the exception of the Imperative (Ahagon 1983:448-450; for more detail, see Okinawa kogo daiziten hensyuu iinkai 2011:767-782). Given that *or-* historically shows a contrast between Conclusive and Adnominal (*Rentaikēi*) forms, it is not surprising that the Amami and Okinawan Conjunctive + *or-* constructions display this contrast as well. Let us examine briefly how that contrast is realized in Shuri.

In Shuri, the Adnominal ending *-(j)uru* is clearly the reflex of Infinitival *-i* plus the Adnominal form *oru* of *or-*. In place of the expected Conclusive *-(j)uri* (< *-i + ori*), which is widely attested in Amami dialects, however, we find *-(j)un*. Since the mora nasal of this suffix appears as *m* before the interrogative particle *-i* (in contrast with that of Negative *-an*, which appears as *n*), it seems unquestionable that the suffix is cognate with the Conclusive *-jum* shown by certain Amami dialects, as in Shiba (Kakeroma) *kak-jum* ‘writes’ (GAJ map 67). The origin of that suffix’s *-m*, however, despite informed speculation (Uemura 1963:67), remains uncertain. Table 2 below shows Shuri (Nonpast)

¹ Accented words have a pitch fall on the syllable containing the second mora; unaccented words have level pitch. Here and below, the stems that are accented in Shuri are precisely those that are unaccented in Tokyo Japanese.

Conjunctive, Conclusive, and Adnominal forms of the nine verbs of Table 1, accompanied for comparison by the Negative forms of that table. The Conclusive, like its Japanese counterpart, is the verbal citation form in dictionaries (Kokuritu Kokugo Kenkyuuzyo 1963, Uchima and Nohara 2006).

	1 'return'	2 'stand'	3 'sleep'	4 'write'	5 'row'	6 'take'	7 'die'	8 'fly'	9 'read'
Conjunctive	kees-i	tac-i	ninz-i	kac-i	kuuz-i	tu-i	sin-i	tub-i	jum-i
Conclusive	kees-un	tac-un	ninz-un	kac-un	kuuz-un	tu-jun	sin-un	tub-un	jun-un
Adnominal	kees-uru	tac-uru	ninz-uru	kac-uru	kuuz-uru	tu-juru	sin-uru	tub-uru	jun-uru
[Negative	kees-an	tat-an	nind-an	kak-an	kuug-an	tur-an	sin-an	tub-an	jum-an]

Table 2 Shuri Verb Conjugation II

There are three sets of forms in Table 2 with respect to which variation is reported in the literature. First, for adult males of the old samurai class, the Conclusive and Adnominal of *s*-stems (column 1) are formed with the suffixes *-jun* and *-juru* and thus end phonetically in [jun] and [juru]. The occurrence of [j] before back vowels in Shuri, however, is one of several features of pronunciation that, for the group of speakers in question, is “artificially acquired and maintained” in adulthood through instruction and drill reinforced by class consciousness (Uemura 1961:340). Since forms with [j] do not reflect the result of language acquisition in childhood for contemporary speakers, they will be disregarded here.

The second set of forms in Table 2 that display variation are the Conclusive and Adnominal of *r*-stems (column 6), in which [ju] optionally becomes [i]. Finally, the Conclusive and Adnominal of *m*-stems (column 9) display a tendency for their stem-final *n* (< *mj*) to be replaced by the *m* that characterizes the rest of the paradigm. In all three respects, the forms of Table 2 reflect the pronunciations recorded by the speakers of the *Syuri-Naha Hoogen Onsei Deetabeesu* (<http://www.ocls.u-ryukyu.ac.jp/>).

Consider now the ways in which the stems of Table 2 differ from their counterparts in Table 1. *s*-stems, *n*-stems, and *b*-stems (columns 1, 7, 8), first of all, are non-alternating in the forms of Table 2 just as they were in the forms of Table 1. The remaining six stem-types show changes that can be characterized as palatalization or the immediate consequences thereof: *t d k g* are replaced by the corresponding palato-alveolars, *r* deletes, and before *j* (but not *i*), *m* is replaced by *n*. The input-output relations of the observed alternations, then, are phonologically natural. Further, there is no conditioning of those alternations by individual lexical items: all instances of a given stem-final consonant undergo the same changes.

It thus seems clear that the stem alternations shown by the forms of Table 2 could be captured by a palatalization rule plus a small set of rules adjusting the output of palatalization, although we will not formalize those rules here. The point on which some doubt arises concerns the environment in which palatalization applies. While the conditioning of palatalization was surely phonological to begin with, the contrast between palatalizing Conjunctive *-i* and non-palatalizing Imperative *-i* (< *e*) plus the loss of *j* from the Conclusive and Adnominal suffixes (approaching completion with the shift of *ju* to *i* in the *r*-stem paradigm) suggests that it can no longer be regarded as such. As an alternative to phonological conditioning, it may be noted that the Conjunctive, Conclusive, and Adnominal are precisely the “structural” verbal categories, corresponding to structural case in the nominal system. The features that distinguish them, that is, are uninterpretable in the sense of Chomsky 2000. If these three categories share a morphosyntactic feature [+Structural], the combination [+Structural –Past] will be a possible environment for the palatalizations observed in the forms of Table 2, apart from the failure of *m* to palatalize before *i*.

The third and final set of Shuri verbal forms, illustrated in Table 3 below (and accompanied for comparison by Negatives from Table 1 and Conclusives from Table 2), involves suffixes that historically begin with *t*. In Japanese, *t*-initial suffixes condition a complex set of stem alternations known as *onbin* (‘euphony’) in consonant-final stems, and it is convenient to refer to forms showing those suffixes as “onbin forms”; here we will extend that label to V-stem

forms with *t*-initial suffixes even though V-stems undergo no parallel alternations. The alternations of Shuri onbin forms are less regular than the palatalizations we saw in Table 2, and, unlike those palatalizations, they involve conditioning by individual lexical items. In particular, as we will see in more detail below, there are two types of *d*-stem and four types of *r*-stem with respect to onbin forms, so that those given in columns 3 and 6 of Table 3 are representative rather than exhaustive.

	1 'return'	2 'stand'	3 'sleep'	4 'write'	5 'row'	6 'take'	7 'die'	8 'fly'	9 'read'
Past Conj	kee-ci	tat-ci	nin-ti	ka-ci	kuu-zi	tu-ti	si-zi	tu-di	ju-di
Past Concl	kee-can	tat-can	nin-tan	ka-can	kuu-zan	tu-tan	si-zan	tu-dan	ju-dan
Past Adn	kee-caru	tat-caru	nin-taru	ka-caru	kuu-zaru	tu-taru	si-zaru	tu-daru	ju-daru
[Negative	kees-an	tat-an	nind-an	kak-an	kuug-an	tur-an	sin-an	tub-an	jum-an]
[Conclusive	kees-un	tac-un	ninz-un	kac-un	kuuz-un	tu-jun	sin-un	tub-un	jun-un]

Table 3 Shuri Verb Conjugation III

Let us first look at the morphemic constituency and segmentation of the forms of (the first three columns of) Table 3. To begin with, I have treated the form of the first line of that table, often called a participle or gerund and involving a suffix whose Japanese form is *-te*, as a Past Conjunctive on formal grounds without considering the question of the degree to which its semantics justify a temporal (or aspectual) designation. Second, a comparison of Nonpast Conclusive/Adnominal *-un/-uru* and Past Conclusive/Adnominal *-Tan/-Taru* (T a coronal obstruent) reveals that these forms are undersegmented in Tables 2–3, presumably containing the suffixes Conclusive *-n* and Adnominal *-ru*. Further questions of segmentation, however, including that of whether Conjunctive *-i* and Past Conjunctive *-Ti* share a suffix, will be set aside here. Finally, although the initial consonant of the suffixes of Table 3, following Kinjo and Hattori (1955:332), is typically treated as part of the stem in descriptions of Shuri (Uemura 1963:58, Tshako 1997:383, Uchima and Nohara 2006), such a treatment precludes an explanation of why that consonant is always a coronal obstruent, one of /t d c z/, and requires the postulation of a set of unnatural alternations, such as between stem-final *b* in column 8 of Tables 1 and 2 and stem-final *d* in the same column of Table 3. I will therefore take there to be ample grounds for assuming the segmentations shown in Table 3.

Turning now to the alternations displayed by forms of table 3, it is clear first of all that every stem-final consonant other than *t* alternates with zero before *t*-initial suffixes, although we will see that there are exceptions to this generalization among the *r*-stems. Regarding the suffixes themselves, the initial consonant, which can be taken to be underlying /t/, alternates both in voicing (as it does in Japanese) and anteriority, taking the latter (as in Chomsky and Halle 1968) to be the feature that distinguishes dentals and palato-alveolars among the coronals. The voicing alternation is largely predictable from the voicing of the stem-final consonant, although voiced *d* and *r* fail to trigger voicing in the suffix. The anteriority alternation is more opaque; thus while the stem *sin-* 'die' (Nonpast Conclusive *sinun*) has onbin forms *si-zi*, *si-zan*, etc. (Table 3, column 7), the corresponding forms for the stem *tanusim-* (Nonpast Conclusive *tanusinun*) are *tanusi-di*, *tanusi-dan*, etc. (Table 3, column 9). Although, apart from *d*-stems and *r*-stems, onbin forms are determinate given the stem-final consonant, I will assume for convenience that lexical entries contain two representations, one for the (basic) stem and one for onbin forms; the latter will have to include a specification of the suffixal consonant. For example, the lexical entry of 'stand' (column 2) will be /tat-, tat-c-/, and that of 'fly' (column 8) will be /tub-, tu-d-/. I will refer to the second member of such lexical entries as the "onbin base".

Let us now look at the sub-classification of onbin forms for Shuri *d*-stems and *r*-stems. *d*-stems, first of all, which do not exist in Japanese, are the result of reduction processes operating on stems ending in BU*r*, where B is *b* or *m* and U is *u* or *i*: in that sequence, BU becomes mora nasal, after which *r* becomes *d*.² As shown by the fact that *d*-stems agree with *r*-stems as against all other stem-final consonants in having suffixal *t* in the forms of Table 3, *d*-stem onbin forms reflect a historical stage at which the stem still ended in *r*. When stem-final *r* was preceded by *i*, however, as in

² Typical cases are *abur-* > *λand-* 'roast', *jabur-* > *ʔjand-* 'break', *kabur-* > *kand-* 'put on the head', *mamor-* > *mamur-* > *mand-* 'watch over', *nemur-* > *nind-* 'sleep', *kubir-* > *kund-* 'tie up', *mi-* (reanalyzed as *mir-*) > *nnd-* (with lengthening of mora nasal) 'see'.

kubir- > *kund-* ‘tie up’, suffixal *t* palatalized to *c*. While the lexical entry for ‘sleep’ will be /*nind-*, *nin-t-*/, then, that for ‘tie up’ will be /*kund-*, *kun-c-*/.

The onbin of *r*-stems is more complex. In fact, though, it is only *ir*-stems, those in which stem-final *r* is preceded by *i*, that show lexical conditioning of onbin forms; other *r*-stems, as we will see in more detail in section 2, uniformly have lexical entries of the form /*Xr-*, *X-t-*/, following the model of ‘take’ in column 6 of Table 3. For a lexical entry whose stem is of the shape /*Xir-*/, however, the four onbin base possibilities /*Xi-t-*, *Xi-c-*, *Xit-t-*, *Xit-c-*/ are all attested, as illustrated in Table 4 below (/Xit-t-/ occurs only in cases where /Xit-/ is a truncated form of the basic stem).

	‘arise’	‘wear’	‘insert’	‘dry (intr.)’
Nonpast Negative	ʔukir-an	ci-an	ʔirir-an	ʔir-an
Nonpast Conclusive	ʔuki-jun	ci-jun	ʔiri-jun	ʔi-jun
Past Conclusive	ʔuki-tan	ci-can	ʔit-tan	ʔic-can
Lexical Entry	/ʔukir-, ʔuki-t-/	/ci-, ci-c-/	/ʔirir-, ʔit-t-/	/ʔir-, ʔit-c-/
Japanese Cognate	oki-	ki-	ire-	hi-

Table 4 The Onbin of *ir*-stems in Shuri

Below, I will refer to the first of these onbin patterns as unmarked or regular, the second as displaying palatalization, the third as displaying gemination, and the fourth as displaying both palatalization and gemination. Adding to the nine conjugation types defined by stem-final consonants and illustrated in Tables 1–3 the variant onbin patterns of *d*-stems and *r*-stems yields the thirteen conjugation types of Kinjo and Hattori 1955; there are also several irregular verbs, some of which we will touch on in the course of the following discussion.

To close this section, and in preparation for the next, we will survey the inventory of Shuri *r*-stems, noting the distribution of the four onbin types of Table 4 and the conjugational irregularities that a small number of *r*-stems display. We will divide Shuri *r*-stems into three groups depending on the stem-type of their Japanese cognates, those corresponding to Japanese *r*-stems, those corresponding to Japanese vowel-stems, and those corresponding to Japanese *w*-stems. While this tripartite division will serve purely descriptive purposes at first, we will argue in section 2 that the three types of Shuri *r*-stem represent three successive historical layers, and on this basis we will refer to the three types as primary, secondary, and tertiary *r*-stems, respectively. (In the material below, “Japanese” and “Shuri” are represented by their initial letters when citing example stems.)

Beginning with primary *ir*-stems, it is necessary to distinguish between those that correspond to Japanese *ir*-stems (below, “strict *ir*-stems”) and those that correspond to Japanese *er*-stems or (after coronal obstruents) *ur*-stems. The onbin of strict *ir*-stems, but not those of the other two groups, depends on syllable count. In particular, monosyllabic strict *-ir* stems show the geminated and palatalized onbin pattern: J *ir-* ‘enter, be necessary’, S /*ir-*, *it-c-*/; J *kir-* ‘cut’, S /*cir-*, *ci-c-*/; J *sir-* ‘know’, S /*sir-*, *sit-c-*/; J *hir-* ‘release from body’, S /*ʔir-*, *ʔit-c-*/.

Other primary *ir*-stems, however, including polysyllabic strict *ir*-stems, show the unmarked onbin pattern: J *sosir-* ‘censure’, S /*susir-*, *susi-t-*/; J *musir-* ‘pluck’ S /*musir-*, *musi-t-*/; J *ter-* ‘shine’, S /*tir-*, *ti-t-*/; J *ner-* ‘knead’, S /*niir-*, *nii-t-*/; J *sur-* ‘rub’, S /*sir-*, *si-t-*/; J *tur-* ‘hang, fish’, S /*cir-*, *ci-t-*/.

Primary *Vr*-stems where *V* ≠ *i*, as already mentioned, display regular onbin: J *nar-* ‘become’, S /*nar-*, *na-t-*/; J *nor-* ‘ride’, S /*nur-*, *nu-t-*/; J *nur-* ‘paint’, S /*nur-*, *nu-t-*/.

Primary *r*-stems also include stems with long vowels that correspond to Japanese vowel sequences or diphthongs, stems such as /*tuur-*, *tuu-t-*/ ‘pass through (intr.)’ (J *toor-*), /*noor-*, *noo-t-*/ ‘heal (intr.)’ (J *naor-*) and /*keer-*, *kee-t-*/ ‘return (intr.)’ (J *kaer-*). Finally, two primary *r*-stems, the existential verbs /*ʔar-*, *ʔa-t-*/ (inanimate subject) and /*ur-*, *u-t-*/ (animate subject), corresponding to Japanese *ar-* and *or-*, are irregular in lacking modal forms (Imperative, Prohibitive, Hortative) and in having simple Conclusive and

Adnominal forms /ʔa-n, ʔa-ru/, /u-n, u-ru/ that are not based on the Conjunctive.³

Let us now move to secondary *r*-stems, those corresponding to Japanese vowel-stems. In Table 4, we have already seen that collectively, this class of *r*-stems exhibits all four possible onbin patterns. The three marked patterns, however, are rare. Starting from the right of Table 4, the palatalized and geminated pattern /Xit-c-/ is apparently observed in only two secondary *r*-stems apart from the example /ɸir-, ɸic-c/ ‘dry (intr.)’ of the table, /ʔir-, ʔit-c-/ ‘shoot’ (J *i*-) and /kir-, kit-c-/ ‘kick’ (OJ *kuwe*-, Classical *ke*-), with the latter also allowing the unmarked onbin pattern (Uemura 1963:61). Next, the geminated pattern /Xit-t-/ as well apparently occurs in only two secondary *r*-stems apart from the example /ʔirir-, ʔit-t-/ ‘insert’ of the table, both of them auxiliary verbs. Passive /-arir-, -at-t-/ (J *-are*-) follows the pattern of ‘insert’ precisely, while the paradigm of the situational Potential coincides with the Passive in the forms of Tables 2 and 3 but displays a truncated stem alternant /-ar-/ in the forms of Table 1. The Potential suffix thus requires a lexical entry /-ar-, -arir-, -at-t-/ that specifies three stem alternants. The palatalized onbin pattern /Xi-c-/, finally, is characteristic of monosyllabic secondary *ir*-stems other than the three that take the pattern /Xit-c-/. In addition to /cir-, ci-c-/ ‘wear’ (Table 4), typical examples are /ir-, i-c-/ ‘sit’ (J *i*- (animate existential)) and /nir-, ni-c-/ ‘boil (tr.)’ (J *ni*-).

Remaining secondary *r*-stems, the great majority, show the unmarked onbin pattern. And with one exception, /ɸirir-, ɸit-t/ ‘pick up’ (J *hirow*-), the same is true of tertiary *r*-stems, those corresponding to Japanese *w*-stems. It is thus clear that across the entire range of Shuri *r*-stems, the group showing genuine irregularity in the choice of onbin base is quite limited. In section 2, while seeking to elucidate the historical development of the class of *r*-stem verbs, we will take this irregularity in onbin forms for granted and not attempt to provide an explanation for it.

2. Diachrony: The History of Shuri *r*-stem Inflection

We have noted that Shuri *r*-stems can be divided into three groups depending on whether they correspond to Japanese *r*-stems, Japanese vowel-stems, or Japanese *w*-stems. Further, we have suggested that these three groups represent distinct diachronic layers and have referred to them as primary, secondary, and tertiary *r*-stems, respectively. Apart from the fact that this one-to-many correspondence between Shuri and Japanese is more likely a priori to represent neutralization on the part of Shuri than secondary differentiation on the part of Japanese, however, what evidence is there that Ryukyuan inherited the stem-type distinctions in question—most crucially, a distinction between consonant-stem and vowel-stem inflection? In section 2.1, I offer three types of evidence that Shuri must descend from an ancestor with a C-stem vs. V-stem distinction corresponding to that of Japanese before proceeding in section 2.2 to a consideration of how that distinction was lost. Section 2.3 deals with the history of *w*-stems, which will be seen to have passed through a vowel-stem stage on the way to being reanalyzed as *r*-stems.

2.1 The Antiquity of the C-stem vs. V-stem Distinction

Perhaps the clearest evidence that Ryukyuan languages descend from an ancestor with the same C-stem vs. V-stem distinction as Japanese is that one of them, the language of the Miyako islands, preserves that distinction intact, showing none of the innovations that, in other Ryukyuan and Japanese varieties, lead in the direction of a merger of V-stem and *r*-stem inflection. Crucially, individual verbs agree (modulo sound change and with isolated exceptions) in their stem-final segment between Miyako and Japanese, and individual C-stem and V-stem suffix alternants agree in shape as well, once relatively recent changes are factored out. Both in stems and in suffixes, then, Miyako and Japanese display a degree of correspondence with regard to the C-stem/V-stem distinction that would be difficult or impossible to explain as the result of parallel innovation. Table 5 displays partial paradigms for *kak*- ‘write’ and *oki*-/*uki*- ‘arise’ for Tokyo and Hirara (formerly Hirara city, now part of Miyakojima city), the administrative center of the Miyako islands, with Hirara data from Karimata 1997:398-399, supplemented by Nakamoto 1990 and Uchima

³ Further, the expected Negative /ʔar-an/ of /ʔar-, ʔa-t-/ serves as the Negative of the copula /jar-, ja-t-/, while the Negative of /ʔar-, ʔa-t-/ is supplied by suppletive /neen ~ neeran/.

	'write'		'arise'	
	Hirara	Tokyo	Hirara	Tokyo
Negative	kak-an	kak-ana-	uki-n	oki-na-
Hortative	kak-a	kak-oo	uki-Ø	oki-joo
Conjunctive	kak-i	kak-i	uki-Ø	oki-Ø
Provisional	kak-iba	kak-eba	uki-riba	oki-reba
Imperative	kak-i	kak-e	uki-ru	oki-ro

Table 5 C-stem and V-stem Inflection in Hirara

Looking at the forms of Table 5 line by line, it is clear first that while Tokyo shows the “adjectivalization” of the Negative suffix that has been characteristic of eastern Japanese since some time before 1600 (Rodriguez 1604-1608/1955:612), the two dialects display the same *a* ~ Ø alternation for this suffix that goes back to the earliest Japanese. Negative *oki-n*, of course, is characteristic of most of western Japan apart from Kyushu (GAJ map 72). In the Hortative, Hirara *kaka* and Tokyo *kakoo* represent alternative monophthongizations (see GAJ map 109) of *kakau* < *kak-am*; while Hirara *uki* follows from *okiu* < *oki-m* by the same processes that give *kaka* (i.e. progressive spreading followed by shortening), Tokyo *okijoo* displays analogical reshaping of the expected *okjuu* (see GAJ map 106 for the geographical range of this reanalysis).

Where the two dialects differ in the first two lines of the table, then, it is Hirara that is the more conservative. For the remaining three lines, the correspondence between Hirara and Tokyo forms is perfect, given centralization of *i* and raising of *e* or *o* in Hirara,⁵ although it must be noted that the V-stem Provisional forms of both dialects reflect leveling of the inherited stem-vowel alternation between *u* in the Conclusive (originally *Rentaiki* or Adnominal) and Provisional (originally *Izenkei* or Realis) and *i* or *e* elsewhere, a development that in Japanese did not occur until after 1600. The detailed agreement between the C-stem and V-stem paradigms of Hirara (and Miyako generally) and those of Tokyo (and Japanese generally) shows that the distinction between consonant-stem and vowel-stem inflection must be attributed to proto-Japonic, the common ancestor of all Ryukyuan and Japanese varieties.⁶ It follows from this, of course, that the Shuri failure to distinguish the two classes is secondary.

We have seen that there is comparative evidence that Shuri must descend from an ancestor with a C-stem vs. V-stem distinction. There is in fact a small amount of evidence for this proposition internal to Shuri itself, in the paradigm of ‘come’ (Japanese *ko-/ku-/ki-*), the most irregular verb of the dialect (and of virtually any Japonic variety). The Shuri paradigm of ‘come’ is based on two stems, /kuu-/ in the forms of Table 1 and /c-/ in the forms of Tables 2 and 3. The Table 1 forms (from Uemura 1963:66 except for the Causative, which is from GAJ map 120) are displayed below in Table 6, along with, for comparison, those of *r*-stem ‘take’.

⁴ Inherited Conclusive and Adnominal forms have been eliminated in favor of the Conjunctive in Miyako and are thus absent from the table; the Conclusive/Adnominal of vowel-stems, however, displays the same suffix *-i* that characterizes all three forms of consonant-stems.

⁵ Particularly striking is Hirara V-stem Imperative *-ru* < *-ro*, which otherwise survives outside Eastern Japan only in the northwestern fringe of Kyushu (see GAJ maps 85-87, 91).

⁶ This conclusion is entirely consistent with the widespread understanding (Ono 1953, Unger 1977, Frellesvig 2008, Whitman 2008) that V-stem inflection is historically secondary with respect to C-stem inflection, but not with the stronger assertion that the origins of V-stem inflection are so recent that “any reconstruction of pJ [Proto-Japanese = Proto-Japonic (see Frellesvig and Whitman 2008:1)] verb inflection must be based exclusively on the primary verb classes, and should not take account of the forms of the bigrade verbs.” (Frellesvig 2008:190)

	‘come’	‘take’
Negative	kuu-n	tur-an
Hortative	kuu-Ø	tur-a
Prohibitive	kuu-nna	tun-na
Provisional	kuu-ree	tur-ee
Imperative	kuu-Ø	tur-i
Passive	kuu-rarir-	tur-arir-
Causative	kuu-ras-	tur-as-

Table 6 Table 1 Forms of ‘come’ in Shuri

Of the forms of ‘come’ in Table 6, the Prohibitive, the Provisional, and the Passive descend from forms involving inherited *r*-initial V-stem suffix alternants, as shown by Tokyo *ku-ru na* (~ *kunna*), *ku-reba*, and *ko-rare-*, respectively; the Causative shows an innovative *r*-initial alternant in place of the expected *s*-initial form that appears in Tokyo *ko-sase-* (*ko-sas-* in much of Western Japan) and in Naze (Amami) *ku-sas-*, among a number of other Amami dialects (GAJ map 120). These four items, then, are not identifiable in isolation as V-stem as opposed to *r*-stem forms. The two forms with zero endings, the Hortative and the Imperative, are clearly distinct from *r*-stem forms, but neither involves on the surface an inherited V-stem ending, although they are plausibly derivable from forms that do, namely Hortative **ko-u* and Imperative **ko-i*. The most unambiguously V-stem form of the paradigm, then, is Negative *kuun*, which, uniquely among Shuri verbal Negatives,⁷ shows the V-stem allomorph *-n* of the Negative suffix that we saw in the Hirara data above and that, as we noted there, is observed throughout most of western Japan. It is thus clear that Shuri preserves a single fossilized relic of vowel-stem inflection, so that we would have to conclude that it probably inherited a distinction between C-stems and V-stems even in the absence of comparative evidence to that effect.

The third and final type of evidence that Shuri descends from an ancestor with a C-stem vs. V-stem distinction is philological, deriving from the records of Classical Ryukyuan (see Takahashi 1997:422-423) and in particular the *Omoro Soshi* (/soosi/, historical kana spelling *sausī*), a collection of 1248 poems (excluding duplicates) compiled in 22 volumes at the Shuri royal court between 1531 and 1623 and whose texts are said to date back as far as the 12th or 13th century. Some of the *Omoro Soshi* poems have Amami origins, but most can be taken to represent a language ancestral to the modern Shuri dialect.

The language of the *Omoro Soshi* differs from contemporary Shuri in a number of interesting respects. With regard to the contrast between mid and high vowels, while the merger of /o/ with /u/ is well under way, /e/ remains distinct from /i/ except in syllables with zero onset (Takahashi 1997:423).⁸ Intervocalic *r* has not yet been lost before *ij*. In verbal inflection, the inherited Conclusive/Adnominal form survives, and there are only hints of the Conjunctive + *or*-construction that subsequently, in supplanting it, restored the Conclusive : Adnominal contrast. Leveling of the inherited stem-vowel alternation *i/e* ~ *u*, referred to above in connection with the Hirara dialect of Miyako, has gone to completion (on all these points, see Takahashi 1991a, 1991b). For our purposes, however, the most important fact about the language of the *Omoro Soshi* is that in it, the merger of V-stem inflection with *r*-stem inflection that we see in contemporary Shuri, while clearly in progress, remains incomplete. This is shown, for example, by the fact that all verbs corresponding to Japanese vowel-stems retain in the *Omoro* poems Conjunctive forms with the inherited suffix -Ø, so that the Conjunctive coincides with the stem.

We thus have, in addition to external and internal linguistic evidence, evidence from the documentary record that Shuri’s failure to distinguish vowel-stem and *r*-stem inflection is historically secondary. In section 2.2, we will examine the process by which that distinction was lost, drawing on data from the *Omoro Soshi* and from other Japonic

⁷ Apart from the defective negative existential *nee-n* (note 3), whose *-n* is in the process of being replaced by *-ran*.

⁸ Inherited /e/, however, is thought to have been raised and centralized /i/, as it is in the dialects of Amami Oshima and the neighboring Tokunoshima today (Takahashi 1997:423, Uemura 1997:328).

dialects, both Ryukyuan and Japanese. We will also ask whether it is possible to date the beginning of that process, either in relative or absolute terms.

2.2 Loss of the C-stem versus V-stem Distinction

Broadly speaking, there are two paths that can be imagined from a Pre-Shuri state in which vowel-stem inflection and *r*-stem inflection are distinct to the contemporary state in which the distinction has been eliminated in favor of the latter. On one path, the distinction will be eliminated stem by stem: a stem that showed vowel-stem inflection at time *t* will show *r*-stem inflection at time *t* + α , with the entire paradigm of the stem making the transition more or less simultaneously. On the other path, the distinction between V-stem and *r*-stem inflection will (to all appearances) be eliminated suffix by suffix, building on the fact that the initial state of the V-stem paradigm, to be discussed below, involves three suffixes, Conclusive *-ru*, Provisional *-reba*, and Passive *-rare-*, that differ from their C-stem counterparts *-u*, *-eba*, and *-are-* only in including an initial *r*. Both of these paths or scenarios are consistent with the possibility that the detailed sequence of changes may be sensitive to characteristics of individual stems—notably, the possibility that the forms of shorter stems will show instability and change before the forms of longer stems. The crucial difference between the two scenarios is whether or not stems “flip” from V-stem to *r*-stem conjugation in all their forms at once.

In fact, all the available evidence, both from the *Omoro Soshi* and from other dialects, Japanese and Ryukyuan, indicates that the “suffix by suffix” scenario is the historically accurate one. Intermediate stages between the initial state of the V-stem paradigm and the state in which V-stem inflection has been assimilated to *r*-stem inflection, that is, always involve innovative V-stem “*r*-suffixes” that, like Conclusive *-ru*, Provisional *-reba*, and Passive *-rare-*, consist of the corresponding C-stem suffix alternant preceded by *r*; they do not involve stems whose paradigms have switched *en bloc* from V-stem to *r*-stem inflection. Below, referring first to the *Omoro Soshi* and then to a range of dialects, we will document some of the intermediate stages that are attested. First, though, we need to survey the main innovative V-stem *r*-suffixes that we might expect to observe if the *r* ~ \emptyset alternation of the Conclusive, Provisional, and Passive suffixes is extended to other categories. Table 7 below displays five such categories, listing for each of them the C-stem suffix, the expected innovative V-stem *r*-suffix, and the conservative V-stem suffix that the innovative *r*-suffix replaces.

	C-stem	Innovative V-stem	Conservative V-stem
Negative	-an(a-)	-ran(a-)	-n(a-)
Hortative	-oo, -a(a)	-roo, -ra(a)	-joo, -u
Conjunctive	-i	-ri	- \emptyset
Imperative	-e	-re	-ro, -yo, -i
Causative	-as(e)-	-ras(e)-	-sas(e)-

Table 7 C-stem and V-stem Suffixes for Five Inflectional Categories

Let us also note the grammatical mechanism that arguably underlies the appearance of the innovative *r*-suffixes, following the analysis of the relevant suffix alternations proposed for Japanese in de Chene 2015. That analysis claims that C-stem alternants are the underlying or default forms of the suffixes in question, and that regular V-stem alternants are produced by a rule of *r*-Epenthesis that to a first approximation can be written as (1).

$$(1) \emptyset \rightarrow r / V_{vb}[_-V]$$

V-stem suffix alternants other than those resulting from (1)—in particular, the five conservative V-stem suffixes of Table 7—are irregular in the sense of constituting “excess information” in the lexical entries of their respective suffixes. They are therefore subject to elimination over time, and when this occurs, the default form of the suffix, always vowel-initial, is left as the unique lexical representation. Innovative *r*-suffixes are then the automatic outcome of rule (1) applying to the combination of a vowel-final stem and a vowel-initial suffix. I will assume that this account

applies equally to Japanese and to Ryukyuan dialects.

Let us now move to the documentation of intermediate stages in the process of the assimilation of V-stem to *r*-stem conjugation in the ancestor of contemporary Shuri. Consider first the data of the *Omorō Soshi*, as treated in Takahashi 1991a, 1991b. The points on which those data are clearest concern the Imperative, for which V-stem verbs invariably have innovative *-re*, and the Conjunctive, for which, with two exceptions involving monosyllabic stems (Takahashi 1991a:332, 342), they have conservative $-\emptyset$. At the stage recorded in the *Omorō* poems, then, the $r \sim \emptyset$ alternation of the Conclusive, Provisional, and Passive suffixes has been extended to the Imperative suffix, but is only beginning to be extended to the Conjunctive.

With regard to the remaining categories of Table 7, the *Omorō* data is less revealing: there appear to be no clear examples of V-stem Causatives (Takahashi 1991b:217-219), and Negatives and Hortatives are grouped together as *Mizenkei* (“Irrealis”) forms, following the traditional Japanese analysis, along with other suffixes whose C-stem alternant begins with *a*. It is noteworthy, however, that while stems belonging to classes all of whose members are monosyllabic (i.e. the upper and lower unigrade verbs of Classical Japanese) uniformly have innovative *-raX* V-stem alternants for suffixes whose C-stem form is *-aX*, stems belonging to classes most of whose members are polysyllabic (classical upper and lower bigrade verbs) show for such suffixes a mixture of innovative forms in *-raX* and conservative forms in *-X*. The data for suffixes of the form *-aX*, then, confirms that, as suggested by the data for the Conjunctive, shorter stems adopted innovative V-stem *r*-suffixes before longer stems did.

It is clear, then, that with regard to the distinction between C-stem and V-stem inflection, the *Omorō Soshi* preserves a stage in the development of southern Okinawan intermediate between the inherited state illustrated by the Hirara and Tokyo data of Table 5, on the one hand, and modern Shuri, on the other. Furthermore, given that the membership of the C-stem and V-stem classes at that intermediate stage is essentially unchanged from that of the inherited state, the *Omorō Soshi* shows that the path between the inherited state and the contemporary one involved not a stem-by-stem transfer from V-stem to *r*-stem inflection, but a gradual accumulation in the V-stem paradigm of suffixes each of which consisted of the corresponding C-stem suffix preceded by *r*.

Given that inherited V-stems are uniformly *r*-stems in contemporary Shuri, however, the claim that they remained V-stems as innovative *r*-suffixes accumulated in their paradigm raises the question of the point at which reanalysis as *r*-stems occurred. In answering this question, it is crucial to consider the onbin forms of V-stems and *r*-stems, those forms involving suffixes that historically begin with *t*. The reason is that while extension of the $r \sim \emptyset$ alternation of the Conclusive, Provisional, and Passive suffixes to vowel-initial C-stem suffixes like those of Table 7 will bring the inflection of V-stems into superficial conformity with *r*-stem inflection for forms containing those suffixes, it is incapable of assimilating V-stem conjugation to *r*-stem conjugation with regard to onbin forms. To see this, consider the example of Tokyo Japanese *ki-* ‘wear’ and *kir-* ‘cut’. The first has Imperative, Hortative, and Perfective forms *ki-ro*, *ki-joo*, and *ki-ta*, respectively; the corresponding forms of the second are *kir-e*, *kir-oo*, and *kit-ta*. If conservative V-stem Imperative *-ro* and Hortative *-joo* in the paradigm of *ki-* are replaced by the corresponding innovative *r*-suffixes of Table 7, the new forms will be *ki-re* and *ki-roo*, segmentally identical with the corresponding forms of *kir-*. The difference between the Perfective forms *ki-ta* and *kit-ta*, however, will remain. In section 3, we will consider the interaction of this contrast in onbin forms with the reanalysis of V-stems as *r*-stems in Kyushu.

While the contrast between the *t*-suffixed forms of V-stems and the *t*-suffixed forms of *r*-stems just illustrated holds throughout Japanese, however, it is extremely rare in Northern Ryukyuan. As we have already seen, stem-final *r* usually deletes before *t*-initial suffixes in Shuri, and the same is true of almost all Amami and Okinawan dialects. Of the 22 Amami locations whose verbal inflection is surveyed by Hirayama (1966:201-256), first of all, only one reports *tutti*, corresponding to Japanese *totte*, as the Past Conjunctive of *tur-* ‘take’; the remainder have *tuti* or *tuti*. Three of 16 Okinawan locations (Hirayama 1966:256-275), Nago, Onna, and Naha, are reported to have *tutti*, but in the last of these dialects, for which a full dictionary (Uchima and Nohara 2006) is available, it is clear that the geminate onbin base for *tur-* is a lexical exception: other *r*-stems, primary and secondary, have onbin bases that correspond with those

of Shuri.

As a first approximation, then, it is possible to say that there is no systematic distinction between the onbin bases of inherited V-stems and the onbin bases of inherited *r*-stems in Northern Ryukyuan. As a result, it is reasonable to conclude that relexicalization of V-stems as *r*-stems in Shuri and related dialects will have occurred when the last conservative V-stem suffix was replaced by its innovative *r*-initial counterpart, since at that point the paradigm of V-stems will have become indistinguishable from that of *r*-stems; this will have happened earlier for monosyllabic stems than for polysyllabic ones. I will assume that irregular onbin bases, discussed above, do not compromise this account. Thus, while it is true that a pair like /cir-, ci-c-/ ‘wear’ versus /cir-, cit-c-/ ‘cut’ happens to preserve (with palatalization) the contrast in onbin forms noted above for Japanese *ki*- and *kir*-, these facts are lexical idiosyncrasies in Shuri rather than predictable consequences of a difference in stem-final segment, and the correlation of onbin base with historical stem type is imperfect in any case, as shown by the forms of Table 4.

In closing this section, let us ask whether anything can be said about the relative or absolute chronology of loss of the distinction between V-stems and *r*-stems in Shuri. Regarding this question, I will take a hint from what the dialects of Kyushu suggest about the prerequisites for extension of the inherited *r* ~ Ø alternation of the Conclusive, Provisional, and Passive suffixes.

Innovative *r*-suffixes for the categories of Table 7 are prominent in the dialects of Kyushu. There is, however, a virtually absolute condition on their occurrence, namely the leveling of the stem-vowel alternation *i/e* ~ *u*, referred to above, that characterized the “bigrade” conjugations of Classical Japanese. This leveling started in Eastern dialects toward the end of the 16th century (see Kokugogakkai 1980:76, 856 and Rodriguez 1604-08/1955:29), progressed westward, and remains incomplete in Kyushu and isolated pockets of Western Japan to this day. In particular, the *e* ~ *u* (“lower bigrade”) alternation in polysyllabic *e*-stems is largely intact in Kyushu dialects. Thus the Conclusive of the stem *ake*- ‘open (tr.)’ is *akuru* or forms derived therefrom (cf. Tokyo *akeru*) for the large majority of Kyushu dialects in GAJ map 64, and the Conclusive of the stem *kangae*- ‘think’ is *kangajuru* or forms derived therefrom (cf. Tokyo *kangaeru*) for the large majority of Kyushu dialects recorded in Kyushu Hoogen Gakkai 1991:68-69. Correspondingly, innovative *r*-suffixes for *ake*- are almost completely absent in Kyushu according to the GAJ: the Negative is uniformly *aken* rather than *akeran* (map 77); the Hortative is almost uniformly *akjoo* (rarely *akejoo*) or *ak(j)uu*, with only one response deriving from *akeroo* recorded (map 107); the Imperative is derived from *akei* except in the northwest, where *akero* is the conservative form and *akere* is also recorded (map 87); and the Causative is almost uniformly *akesase*- (Conclusive *akesasuru*) and forms derived therefrom, with just two locations showing *akerase*- (map 118). Conjunctive forms are not recorded.

The facts for monosyllabic *e*-stems and (polysyllabic) *i*-stems are a bit more complex, but the same generalization holds (monosyllabic *i*-stems with an *i* ~ *u* alternation had leveled it by the end of the Old Japanese period (see Frellesvig 2010:97-98, 106)). The *e* ~ *u* alternation of monosyllabic *e*-stems (e.g. *ne*- ‘sleep’) has been leveled in most of Kyushu, surviving only in the northwest (GAJ map 66); correspondingly, the Negative of ‘sleep’ remains *nen* in the northwest even though it is innovative *neran* in the rest of the island (map 79). The *i* ~ *u* alternation of stems like *oki*- ‘arise’ survives in the eastern third of Kyushu, roughly Oita and Miyazaki prefectures, but has been leveled elsewhere (map 61); correspondingly, the Negative of ‘arise’ is *okin* or (with absorption of the alternating *i*-stem class by the more numerous alternating *e*-stems) *oken* in the east and to some extent in the northwest, but innovative *okiran* elsewhere (map 72).

It is thus clear that the presence of the *i/e* ~ *u* alternation in vowel stems blocks extension of the inherited *r* ~ Ø alternation of the Conclusive, Provisional, and Passive suffixes—blocks, that is, the spread of the innovative *r*-suffixes that are exemplified in Table 7. In the case of Japanese dialects, this allows absolute dating of the beginning of that spread, since it is known, as noted above, that leveling of the *i/e* ~ *u* alternation did not begin until the end of the 16th

century.⁹ In the case of Ryukyuan dialects, the fact that the *i/e* ~ *u* alternation survives neither in the *Omoro Soshi* nor in attested dialects makes absolute dating of the inception of the spread of innovative *r*-suffixes impossible, but, based on the evidence of Kyushu dialects, we can at least infer that that development must have postdated leveling of the *i/e* ~ *u* alternation.

2.3 Tertiary *r*-stems

In section 2.2, we sketched the process that created the secondary *r*-stems of Shuri from vowel-stems. We have so far said nothing, however, about the origin of what we have called tertiary *r*-stems, the set of Shuri *r*-stems that correspond to Japanese *w*-stems. In this section we will trace the steps involved in the development of historical *w*-stems (originally **p*-stems) to *r*-stems. First, as we will see, loss of intervocalic *w* erases any trace of a stem-final consonant in the paradigm of *w*-stems. They are consequently reanalyzed as vowel-stems, at which point they become subject to *r*-epenthesis. Finally, as the latter comes to apply before any vowel-initial suffix, the epenthetic *r* is reanalyzed as part of the stem.

In Japanese, stem-final *w* is the reflex of proto-Japonic **p*, a consonant that word-initially is [h] in modern Japanese but remains [p] in many Ryukyuan varieties (see the word lists in Uemura 1997:324-327) and may still have been [p] in Japanese as well as late as the Heian period (Kiyose 1985, Frellesvig 2010:205). Intervocalically, however, **p* merged with **w* at a relatively early stage and followed the latter to extinction except before the low vowel *a*. This sequence of changes was complete in Japanese by about 1100 (Frellesvig 2010:207), and appears to have been complete in the language of the *Omoro Soshi* as well (Takahashi 1991b:5).¹⁰ With respect to the distribution of *w*, then, the historical stage preserved in the *Omoro Soshi* corresponds to that of contemporary Japanese: *w* occurs only before *a* and is thus found in the paradigm of *w*-stem verbs only before suffixes that begin with that vowel, for example Negative *-an*, Hortative *-a*, and Passive *-are-*.

Let us briefly survey the set of inherited *w*-stems and their Shuri reflexes, classifying them according to two parameters that will be seen to have guided the process of reanalysis they underwent, length (monosyllabic vs. polysyllabic) and height of the vowel preceding *w*. With the exception of *iw-* < **ip-* ‘say’ (J *iw-*) and *wew-* < **wep-* ‘become intoxicated’ (J *jow-*), stem-final *w* is preceded by a back vowel; the three possibilities for that vowel are illustrated by Japanese *waraw-* ‘laugh’, *jatow-* ‘employ’, and *sukuw-* ‘rescue’. In Ryukyuan, raising of mid vowels results in neutralization of the last two possibilities, so that after loss of *w* and subsequent reanalysis of the stems as *r*-final we expect *warar-*, *jatur-*, and *sukur-*. This is precisely as attested in Shuri, except that the reanalysis of polysyllabic *Xaw-* stems like ‘laugh’ as *r*-final remains incomplete, as we will see in more detail below. Corresponding to the monosyllabic Japanese stems *kaw-* ‘buy’, *sow-* ‘accompany’, and *suw-* ‘suck’, however, rather than the short-vowel forms *kar-* and *sur-* that the above pattern would suggest, we find Shuri *koor-* and *suur-*; similarly, the monosyllabic *ew-* stem ‘become intoxicated’ appears as *wiir-*.¹¹ Apart from the two stems with front vowels in their final syllables, then, inherited *w*-stems appear in one of four forms in Shuri, *Xar-* or *Xur-* when the stem is polysyllabic, and *Xoor-* or *Xuur-* when it is monosyllabic.

As we saw above, stem-final *w*, while having deleted before non-low vowels, remains before *a* in the *Omoro Soshi*.

⁹ The conclusion that innovative *r*-suffixes date from no earlier than 1600 receives indirect support from the failure of Rodriguez (1604-08/1955:607-613) to mention them in his section on nonstandard dialects. In particular, given that he records in some detail the morphological idiosyncrasies of Western Kyushu Japanese, including Imperative *-ro* and adjectival Present Indicative *-ka*, it seems more than likely that *r*-suffixes such as Imperative *-re* and Negative *-ran* would also have been mentioned had they been in use at the time.

¹⁰ There are exceptions in contemporary Shuri, however: the prefix **opo-* ‘great’ (J *oo-*) is *ʔuhu-*, and **sipo* ‘salt’ (J *sio*) appears as *sipu-* in *sipukarasan* ‘salty’ (Uemura 1997:336).

¹¹ The long vowel in these stems appear to be the result of influence from onbin forms (Uemura 1963:60), as suggested by (a) the fact that vowel length in the onbin base (“*u*-onbin”), but not yet in the basic stem, is a distinctive characteristic of monosyllabic as opposed to polysyllabic *w*-stems already in the *Omoro Soshi* (Takahashi 1991b:192-195) and (b) the fact that *iw-* ‘say’, the only monosyllabic *w*-stem, then and now, without *u*-onbin is also the only one that ends up without a long vowel in the basic stem, which is *ʔj-* (with irregularities) in Shuri (Uemura 1963:65-66) and *ʔir-* in Naha and other southern Okinawan locations (Hirayama 1966:272-273).

In virtually all contemporary Ryukyu dialects, however, *w* has been lost before *a* as well when a back vowel precedes.¹² Thus **kapa* ‘skin’ remains *kawa* at only two of 22 Amami locations surveyed by Hirayama (1966:67, 89), both of them on Kikaijima at the northern extremity of the Ryukyus; the remaining locations report *kuu*, *koo*, *hoo*, or *kaa*. Similarly, all ten Okinawan locations surveyed report *haa* or *kaa* for that word (Hirayama 1966:105, 117). Hirara (Miyako) has *kaa* for **kapa* and *naa* for **napa* ‘rope’ (Karimata 2005:79), and Ishigaki (Yaeyama) has *aa* for **awa* ‘foam’ and **apa* ‘millet’ (Karimata 1997:405). There are exceptional cases; thus in Shuri and Naha, **awa* ‘foam’ is *ʔaa*, as expected, but **apa* ‘millet’ remains *ʔawa*. Further, on Amami Oshima, while intervocalic *w* has been lost before *a* in monomorphemic forms like ‘skin’, it remains at the end of verb stems, so that the negative of ‘laugh’ is generally the historically expected *warawan* (Hirayama 1966:201-256). What is important for our purposes is that in Shuri and related dialects, historical *w*-stems came, as a result of deletion of *w* before *a*, to have paradigms in which *w* never appeared, inviting their reanalysis as vowel stems and thus feeding the *r*-Epenthesis rule (1).

What evidence do we have, however, that the transition from *w*-stem to *r*-stem inflection was mediated by a vowel-stem stage—that is, that *w* was lost preceding *a* before innovative *r*-suffixes like those of Table 7 began appearing in the *w*-stem paradigm? To begin with, the paradigm of historical *w*-stems shows no trace of innovative *r*-suffixes in the language of the *Omoro Soshi* (Takahashi 1991a:192, 1991b:423, following Hokama 1960), even though such suffixes are prominent at that stage in the paradigm of primary vowel-stems. It is clear, then, that there was a crucial difference between inherited V-stems and inherited *w*-stems in the relevant period with regard to their ability to accept innovative *r*-suffixes; the most plausible explanation for this difference is that (a) innovative *r*-suffixes were due, as we have proposed above, to an *r*-Epenthesis rule that operated intervocalically at verb stem boundary, and (b) inherited *w*-stems were still consonant-stems at the time of the *Omoro Soshi* and failed for this reason to meet the environment of *r*-Epenthesis. On this account, according to which the explanation for the difference between V-stems and *w*-stems with regard to innovative *r*-suffixes is precisely the same for the language of the *Omoro Soshi* as it is for contemporary Japanese, it follows that if *w*-stems came eventually to undergo *r*-Epenthesis in pre-Shuri, it can only have been because they were reanalyzed as V-stems.

More concretely, however, the hypothesized vowel-final stems survive to this day in Shuri for one subclass of inherited *w*-stems, namely polysyllabic *Xaw*-stems. In the National Language Research Institute *Dictionary of the Okinawan Language* (Kokuritu Kokugo Kenkyuuzyo 1963), stems descending from monosyllabic *w*-stems and polysyllabic *Xow*-/*Xuw*-stems have listings that are completely parallel to those of primary and secondary *r*-stems. In particular, those *w*-stems’ Negatives, representing the forms of Table 1 above, have the shape *Xran*: *tuurán* ‘question’ (J *tow*-) and *jaturán* ‘employ’ (J *jatow*-) like *turan* ‘take’ (J *tor*-) and *ciran* ‘wear’ (J *ki*-). The Negatives of polysyllabic *Xaw*-stems, however, are listed without *r*, implying a basic stem that ends in *a*: *waraan* ‘laugh’ (J *waraw*-), *naraan* ‘study’ (J *naraw*-). Crucially, it is clear at the same time that these vowel-final shapes do not represent the end point of the historical development of their respective stems: the accompanying grammatical sketch (Uemura 1963:60) makes it clear that Negatives of the shape *Xaran* (and parallel forms for the other categories of Table 1) are also possible, and the same variation between *Xaan* and *Xaran* is noted by Tsuchiaki (1997:383). That this variation represents ongoing replacement of *Xaan* by *Xaran* is confirmed not only by the fact that original monosyllabic *w*-stems and polysyllabic *Xow*-/*Xuw*-stems have all developed into *r*-stems in Shuri but by the fact that polysyllabic *Xaw*-stems, too, have become *r*-stems in the neighboring Naha dialect (Uchima and Nohara 2006, Hirayama 1966:272).

It is the *a*-final forms of inherited polysyllabic *Xaw*-stems, then, that constitute the clearest evidence that inherited *w*-stems of other types went through a V-final stage on their way to *r*-stem inflection in Shuri. If that is the case, the origin of Shuri’s tertiary *r*-stems (historical *w*-stems) can be explained, like the origin of its secondary *r*-stems (historical V-stems), as an effect of the *r*-Epenthesis rule (1), albeit with important differences between the two cases. With regard to secondary *r*-stems, recall, we claimed that the assimilation of V-stem to *r*-stem conjugation proceeded through the following steps. First, irregular V-stem suffixes were eliminated in favor of their C-stem counterparts, the default

¹² After *i*, however, *w* is not subject to deletion: **nipa* ‘garden’ is *niwa* (with occlusion of *w* to *b* at two Sakishima locations) throughout the Ryukyus on Kokuritu Kokugo Kenkyuuzyo 1966-1974 map 193, showing loss of the medial consonant at one location only.

forms. Since the default forms were vowel-initial, elimination of irregular suffixes fed *r*-Epenthesis, resulting in extension of the *r*-zero alternation—equivalently, in the introduction of innovative *r*-suffixes such as those of Table 7. Finally, when the last irregular V-stem suffix had been eliminated, epenthetic *r* was reanalyzed as part of the stem.

This account of the assimilation of V-stem to *r*-stem conjugation, however, cannot be applied directly to the history of inherited *w*-stems, because there is no reason to believe that *w*-stems took V-stem suffixes at any stage of their development. One way to account for this fact would be to assume that speakers reanalyzed *w*-stems as ending in a null consonant—a melodically empty skeletal position or timing slot—when deletion of *w* before *a* had gone to completion and there was thus no longer any evidence for a particular stem-final consonant. In order to explain why *r*-Epenthesis eventually came to apply in the paradigm of those stems, however, we must assume that at some point they were reanalyzed as frankly vowel-final, and at that point the question of V-stem suffixes resurfaces. In fact, it would seem that by the time inherited *w*-stems came to be vowel-final in pre-Shuri, V-stem suffixes, with the possible exception of Conjunctive -Ø, were almost completely obsolete, being restricted to a handful of irregular stems like *kuu*- ‘come’. This can be inferred from the fact that the conjugational tables of Okinawa kogo daiziten hensyuu iinkai 2011, which are based primarily on *ryuuka* and *kumiodori* poems that date for the most part from the 18th century, show innovative *r*-suffixes for primary vowel-stems except in the Conjunctive, but record only conservative forms for inherited *w*-stems, with *w* before *a* and zero before other vowels. Even before the events that led to the reanalysis of *w*-stems as *r*-stems got underway, then, irregular V-stem suffixes had been almost completely eliminated.

On the above understanding of the historical development of *w*-stems, contemporary variation between conservative *waraan* and innovative *wararan* as the Negative of ‘laugh’, along with parallel forms for the other categories of Table 1, reflects ongoing reanalysis of the stem: before reanalysis, the stem will be /waraC-/ , with an empty consonantal slot; afterwards, it will be /wara-/ , thus feeding *r*-Epenthesis. An alternative would be to say that the stem is /wara-/ before reanalysis as well as after, but at first with an exception feature that blocks the application of *r*-Epenthesis and is gradually lost. Monosyllabic *w*-stems and polysyllables of the shape *Xow-/Xuw-* will have followed this reanalysis through to completion, coming to show only innovative *r*-initial forms for the suffixes of Table 1. As a result, the epenthetic *r* will quickly have been reanalyzed as part of the stem; as was the case for secondary *r*-stems, no adjustment of onbin forms will have been necessary. It is only for polysyllabic stems of the shape *Xaw-* that this sequence of developments remains incomplete.

3. Comparison: Shuri in the Context of Ryukyuan and Japonic

Above, we began with the question of whether or not Ryukyuan languages display evidence for the analysis of verbal morphology proposed for Japanese by de Chene (2015), an analysis according to which consonant-stem allomorphs are the underlying or default representations of alternating suffixes and regular vowel-stem allomorphs are derived by the *r*-Epenthesis rule (1). On the basis of what we saw in section 2, we can say in answer to that question that Shuri Okinawan combines two characteristics that make it particularly revealing as evidence for the analysis at issue. The first is that, with respect to primary vowel-stems, Shuri illustrates the logical endpoint of the changes entailed by that analysis, namely the total assimilation of vowel-stem inflection to the inflectional pattern of *r*-stems. The second is that, because of the creation of secondary vowel stems from historical *w*-stems and the ongoing nature of the assimilation of those vowel-stems to *r*-stem inflection, it displays evidence at the same time for intervocalic *r*-Epenthesis at verb stem boundary as a living process that is still being extended. In particular, as we saw in section 2.3, the inflection of polysyllabic *a*-stems shows variation between hiatus forms like *wara-an* and *r*-Epenthesis forms like *wara-ran* (‘doesn’t laugh’), where *wara-an* is the conservative and *wara-ran* the innovative variant. An isolated case showing parallel variation, mentioned above, is the negative existential, in whose defective paradigm Conclusive/Adnominal (but not Conjunctive) *nee-n* varies with *nee-ran* (Uemura 1963:65).

To this point, however, we have dealt with Ryukyuan varieties other than Shuri only as necessary to advance our account of Shuri verbal stem types and their historical development. In this section, we will briefly survey both Ryukyuan and Japanese dialects with regard to their status along one crucial parameter of variation, namely how far

they have gone down the path leading to the assimilation of V-stem to *r*-stem inflection. For reasons that will become clear in the course of the discussion, we will start our survey in Okinawa and work northward, returning to Sakishima languages at the end.

In having completely eliminated vowel-stem inflection, Shuri is typical of central and southern Okinawan dialects.¹³ More generally, though, throughout Northern Ryukyuan distinctive V-stem inflection survives, if at all, only under very strict conditions, namely in Conjunctive and Conjunctive-based forms (i.e. Table 2 forms) of polysyllabic stems. Thus in Hendona (Kunigami Village) in northeastern Okinawa, for which Hirayama (1966:256) notes the existence of a stem-type contrast that corresponds to C-stem versus V-stem inflection, monosyllabic historical V-stems have fully assimilated to *r*-stem inflection, and polysyllabic historical V-stems take *r*-suffixes (Negative *-ran*, Hortative *-ra*, etc.) throughout the forms of Table 1. It is only in Table 2 forms of polysyllables, then, that *r*-stem and V-stem inflection visibly diverge. For example, whereas the primary *r*-stem *tur-* ‘take’ (J *tor-*) and the secondary *r*-stem *kir-* ‘wear’ (J *ki-*) have the Conjunctives *tui* (< *tur-i*) and *kii* (< *kir-i*) and the corresponding Conclusives *tuin* and *kiin*, the V-stem *agi-* ‘raise’ (J *age-*) has the Conjunctive *agi-*, preserving irregular V-stem \emptyset , and the Conclusives *agin*. Regarding the parameter we are interested in, the degree to which V-stem inflection approaches *r*-stem inflection, there is thus only a limited range of variation in Northern Ryukyuan, namely whether Conjunctives in \emptyset (below, “null suffix Conjunctives”) survive for polysyllabic stems or not.

The data of Hirayama 1966 show a clear distinction between northern and southern Okinawa regarding the survival of null suffix Conjunctives. First, of the twelve southern and central locations surveyed, six from the island of Okinawa itself and six from offshore islands, only three (one mainland and two offshore) show null suffix Conjunctives for λ *agi-* ‘raise’ (mainland) or λ *uki-* ‘receive’ (offshore). Of six locations, mainland and offshore, in northern Okinawa, however, five, beginning with the Hendona dialect referred to above, show null suffix forms for λ *agi-*.¹⁴ The high frequency of null suffix Conjunctives reported for northern Okinawa continues, again limited to polysyllabic stems, when we move northward into the Amami dialect area (see Hirayama 1966:201-256). For Amami Oshima itself, all ten of the locations surveyed by Hirayama show null suffix Conjunctives for ‘receive’, and the same is true for nine of the twelve locations from the surrounding islands (Kikaijima, Tokunoshima, Okinoerabushima, Yoronjima). The remaining three locations, one on Kikaijima and two on Tokunoshima, have eliminated null suffix Conjunctives and thus show the complete merger of V-stem and *r*-stem inflection that is characteristic of Shuri.

Proceeding north from Amami Oshima, we cross the boundary between Ryukyuan and Japanese. With regard to developments leading toward assimilation of V-stem to *r*-stem inflection, however, the situation in Kyushu is broadly continuous with that in Northern Ryukyuan. The dialect of the southernmost part of the island, roughly coterminous with the former feudal domain of the Shimazu family, first of all, is well-known for the assimilation to *r*-stem inflection of V-stems that have undergone leveling of the bigrade *i/e* ~ *u* alternation, specifically *i*-stems like *oki-* ‘arise’ and monosyllabic *e*-stems like *ne-* ‘sleep’ (see e.g. HK4:279-285 and (for Kagoshima city) Sadowara 1957). As noted in section 2.2, however, retention of the bigrade alternation in the paradigm of polysyllabic *e*-stems like *ake-* ‘open (tr.)’ acts as a block on extension of the *r*-zero alternation, so that innovative *r*-suffixes are not observed with those stems. According to Kyuusyu Hoogen Gakkai (1991:240), it is in the former province of Osumi that the assimilation of V-stem to *r*-stem inflection has most clearly gone to completion; crucially, when it does, former V-stems come to show before *t*-initial suffixes (i.e. in onbin forms) the same obstruent-final allomorph as do historical *r*-stems, so that the Perfects of ‘see’ and ‘emerge’, *mi-ta* and *de-ta* in most of Japan, are *mit-ta* and *det-ta* in Osumi.

Concerning the path taken in southern Kyushu from V-stem to *r*-stem inflection, it would be natural to speculate, following our remarks above on the parallel process in Shuri, that when all irregular V-stem suffixes had been

¹³ Explicit statements to the effect that there is no contrast between C-stem and V-stem inflection are available for, in addition to Shuri, Ojima on the southeast coast (Hirayama 1966:269) and Ishikawa in the south-central part of the island (Hirayama 1966:263), as well as for Nakijin in the northwest (Shimabukuro 1997:365).

¹⁴ Nakamoto’s (1990:542) map for the Conjunctive of (λ)*uki-* ‘arise’ (J *oki-*) does not display this differentiation: only six of 43 Okinawan points show a null suffix form, and those six are distributed equally between north and south.

eliminated and consequently replaced with innovative *r*-suffixes as a result of *r*-Epenthesis, the originally epenthetic *r* was reanalyzed as part of the stem. Only at this point will obstruent-final onbin allomorphs such as *mit-* and *det-*, which cannot be the result of *r*-Epenthesis because they occur pre-consonantly, have appeared. Interestingly, however, the neighboring Kumamoto dialect, where the reanalysis of V-stems as *r*-stems is still in progress, shows that this account is oversimplified. Kumamoto is typically described as having, along with variation between conservative and innovative V-stem suffixes in the Imperative, Hortative, and Negative for *i*-stems and monosyllabic *e*-stems (along with variable retention of the *i/e* ~ *u* alternation for the latter), variation between e.g. *okita* and *okitta* for the Perfect of *oki-* ‘arise’ and between *deta* and *detta* for the Perfective of *de-* ‘emerge’ along with invariant conservative Infinitives *oki* (**okiri*) and *de* (**deri*) (Kyuusyuu Hoogen Gakkai 1991:231)—or, equivalently, as having, alongside V-stem conjugation for the relevant stems, an *r*-stem conjugation that is defective in lacking an Infinitive (HK4:224-226). This description suggests that children have begun to reanalyze *i*-stems and monosyllabic *e*-stems as *r*-stems in the absence of an innovative Infinitive form—at a stage, that is, at which *okir-* and *der-* will have to be considered irregular *r*-stems. The precise conditions under which V-stems that have accumulated multiple innovative *r*-suffixes in their paradigms are reanalyzed as *r*-stems, then, is a topic that would benefit from further investigation.

The facts of Kagoshima and Kumamoto Japanese make it clear that, with regard to the tendency to assimilate vowel-stems to *r*-stem inflection, southern and west-central Kyushu are part of a dialect continuum that straddles the Japanese-Ryukyuan boundary and extends southward to southern Okinawa. Indeed, since 71% of all Kyushu locations in the GAJ show three or more of the five innovative *r*-suffixes of Table 7 and 92% show two or more of those suffixes,¹⁵ and since a number of northern Kyushu locations show all five, the dialect continuum in question can plausibly be construed to include all of Kyushu. Outside Kyushu, on the other hand, areas with three or more innovative *r*-suffixes are relatively small and isolated; typical examples are Hata County in southwestern Kochi Prefecture (Hamada 1982), the northwestern part of the former province of Izumo, centered on the cities of Izumo and Hirata (Konishi 2011), the island Awajishima in Hyogo Prefecture (Hattori 1962), the southern part of Yoshino County in Nara Prefecture (Nishimiya 1962:312), the eastern part of the former province of Mikawa, centered on the city of Toyohashi (Yoshikawa and Yamaguchi 1972:152-155), and the Shonai region of Yamagata Prefecture, centered on the cities of Tsuruoka and Sakata (Kokuritu Kokugo Kenkyuuzyo 1953:191-193).

The sharpest discontinuity within Japonic with respect to the tendency in question, however, is that which separates Okinawa from the Sakishima Islands. We have already seen in Table 5 above that Hirara (Miyako) shows inherited irregular V-stem suffix alternants or phonological developments thereof in the Negative, Hortative, Conjunctive, and Imperative. That the same is true of Miyako dialects in general is shown by the maps of Nakamoto 1990:540–544: conservative suffixes are reported for 20 of 20 locations for the Negative,¹⁶ 23 of 23 for the Hortative, 18 of 19 for the Conjunctive, and 19 of 19 for the Imperative.¹⁷ For the Causative, Hirara shows regular reflexes of the two auxiliaries that appear in Japanese as *-(s)ase-* or *-(s)as-* and *-(a)sime-* except that the V-stem alternant of the former is lacking: the Causative of *kak-* ‘write’ may be either *kak-as-* or *kak-asimi-*, but the Causative of *uki-* ‘arise’ can only be *uki-simi-* (Karimata 1997a:394-395). As this last form shows, Hirara preserves an irregular V-stem suffix alternant for the Causative as well as for the other four categories.

When we move westward from Miyako to Yaeyama, innovative *r*-suffixes reappear. Thus Ishigaki has the same two Causative suffixes as does Hirara, but while their C-stem alternants coincide precisely in the two languages, their V-stem alternants in Ishigaki both consist of the corresponding C-stem form preceded by *r*: the Causative of *nagi-* ‘throw’ (J *nage-*) is either *nagi-ras-* (cf. C-stem *-as-*) or *nagi-rasimi-* (cf. C-stem *-asimi-*) (Karimata 1997b:408). Similarly, not only Ishigaki (Miyara 1995:51), but most Yaeyama dialects and Yonaguni as well (Nakamoto 1990:544) have innovative V-stem Imperative *-ri* (cf. C-stem *-i*). On the other hand, Negative, Hortative, and Conjunctive

¹⁵ The exceptions, Kyushu locations showing at most one innovative *r*-suffix, are for the most part situated either along the western fringe of Kyushu itself or on western offshore islands (e.g. Hirado island in Nagasaki Prefecture or the Amakusa group in Kumamoto Prefecture).

¹⁶ Uchima (1984:282), however, reports Negative *uti-ran* alongside *uti-n* for *uti-* ‘drop’ (J *oti-*) in Nishizato, adjacent to Hirara.

¹⁷ The Miyako forms reported (Nakamoto 1990:514ff.) for ‘wear’ (J *ki-*) appear to reflect a reanalysis of that stem as *r*-final followed by a shift of *r* to *s*.

V-stem suffix alternants in Yaeyama and Yonaguni tend to preserve conservative or otherwise idiosyncratic forms (Nakamoto 1990:540-542). Given the limited extent of the introduction of innovative *r*-suffixes in those languages, it seems likely that Miyako represents the proto-Sakishima state of affairs in this regard and that the Causative and Imperative *r*-suffixes of Yaeyama and Yonaguni are relatively recent developments, historically independent of the parallel suffixes seen in Okinawa and further north.

The survey that we have conducted in this section confirms that with regard to the assimilation of V-stem inflection to that of *r*-stems, Shuri and other southern Okinawan varieties represent not only the natural endpoint of the process, but the furthest point reached by any set of Japonic dialects. We have also seen that with regard to how far the process in question has advanced, Kyushu Japanese, Amami, and Okinawan represent a dialect continuum such that, roughly, the further south one progresses from northern Kyushu, the more advanced the process is. In the next and final section of the paper we will identify several questions concerning the motivation and details of the process leading to the reinterpretation of V-stems as *r*-stems that are raised by the data we have seen and suggest directions for future research.

4. Conclusion

The evidence we have seen above shows that the analysis of verbal inflection proposed for Japanese by de Chene (2015), according to which consonant-stem suffix alternants are basic and regular vowel-stem alternants are derived by intervocalic epenthesis of *r* at verb stem boundary, holds not only for Shuri Okinawan, but for northern Ryukyuan in general. All Okinawan and Amami dialects, that is, show evidence of the changes that that analysis predicts in case of loss of irregular V-stem suffixes, namely extension of the *r*-zero alternation that results from the *r*-Epenthesis rule—equivalently, the introduction of innovative *r*-initial suffixes such as Imperative *-re* (Japanese) or *-ri* (Ryukyuan) and Negative *-ran*. We have also seen that both in Okinawan and in Kyushu Japanese, the accumulation of *r*-initial suffixes in the V-stem paradigm eventually results in the originally epenthetic *r* being reanalyzed as part of the stem. In conclusion, I would like to identify three issues for future research on these topics.

The first is the question of why the bigrade alternation inhibits extension of the *r*-zero alternation. We have seen that in Kyushu, vowel-final stems that maintain the stem-vowel alternation *i/e* ~ *u* almost invariably resist generalization of the *r*-Epenthesis rule (1). Such stems, that is, fail to show innovative *r*-suffixes. Crucially, in the same dialects, verbs that have leveled the bigrade alternation do show innovative *r*-suffixes. It is clear, then, both that rule (1) is active in those dialects and that irregular V-stem suffix alternants are being eliminated—but only for nonalternating stems. This conditional loss of irregular suffixes poses two related problems. The first is a problem of technical implementation, namely how to make elimination of an irregular suffix alternant sensitive to a feature of the stem with which the suffix combines. The second is a problem of motivation, namely why this sensitivity should obtain in the first place.

Another issue that we have touched on is that of the precise conditions triggering reanalysis of V-stems as *r*-stems. This question arises from the fact that, as we saw in section 3, Kumamoto Japanese, with incipient Perfective *det-ta*, *okit-ta* for historical *de-* ‘emerge’, *oki-* ‘arise’ but no Conjunctive **de-ri*, **oki-ri*, shows that elimination of all irregular suffixes is not a precondition for reanalysis, as might otherwise be thought. Finally, the role of children in advancing the elimination of irregularity and the extension of the *r*-zero alternation is another area that would benefit from more attention than it has hitherto received. There is anecdotal evidence suggesting that this role is probably significant. Thus, for example, Nakajima (1972:111-112) notes for the town of Inami, adjacent to Kakogawa city in Hyogo Prefecture, that innovative Negative *-ran*, Hortative *-roo*, and Imperative *-re* are attested, but not Conjunctive *-ri*. He adds, however, that *-ri* occurs in the speech of children. Similarly, the consultant for GAJ point 66034 in Nagano Prefecture reports that he used innovative *mi-ran* ‘doesn’t look’ as a child, but reverted to conservative *mi-n* as an adult. Insofar the tendency to replace irregular V-stem suffixes with regular substitutes derived by *r*-Epenthesis is rooted in child language acquisition, it probably has a secure future even if some of the regional varieties, Japanese and Ryukyuan, that presently exemplify it most abundantly are fated for extinction.

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