

Roon *ve*, DO/GIVE coexpression, and language contact in Northwest New Guinea

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This paper tells the story of the form *ve* in Roon, a language of the South Halmahera West New Guinea branch of Austronesian. The myriad functions of *ve*, including DO, GIVE, SAY, verbalizer, reifier, possessive, BECOME, causative, dative, allative, and WANT/future, are all argued to be connected to one another to variable degrees in a complex web of polyfunctional and macrofunctional relationships, represented in a semantic map. The development of these functions is traced through a study of cognate forms in nearby languages. The main focus of this paper is on DO/GIVE coexpression, an areal feature of Northwest New Guinea encompassing both Austronesian and non-Austronesian languages, which is argued to have originated in a serial verb construction in some of the non-Austronesian languages of the New Guinea Bird's Head.

1. Introduction¹

In Roon, an Austronesian language spoken in the Cenderawasih Bay of Northwest New Guinea,² the same form, *ve*, means both DO and GIVE. When first starting to work on the language, I assumed this was a coincidence, a case of accidental homophony. After all, Roon has a rather small phonemic inventory, relatively short words, and what is more, no obvious connection between the two meanings leaps to the eye.

However, when I went on to look at other languages of the region, a surprise was in store: it turned out that several of them also have a single word for both DO and GIVE, even though in many cases the word in question is formally unrelated to Roon *ve*. For example, in Ansum, another nearby Austronesian language, DO and GIVE are expressed with the same word, *ong*. Moreover, this was true also in Austronesian languages. In Meyah, a language of the East Bird's Head family, both DO and GIVE are expressed with *eita*, while in Hatam, a language isolate, both meanings are expressed with *yai*. Thus, it became clear that DO/GIVE coexpression is a characteristic areal feature of at least part of the Northwest New Guinea region.

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² For the purposes of this paper, Northwest New Guinea is understood to consist of the Raja Ampat islands, the Bird's Head, and the islands and surrounding coastline of the Cenderawasih Bay.

Viewed from an areal perspective, the fact that Roon *ve* means both DO and GIVE can hardly be a coincidence. But why should the same form be used to express both meanings? What if any is the semantic basis for such coexpression? And what are the historical processes that give rise to the current rather striking areal distribution of DO/GIVE coexpression? These are the questions that are addressed in this paper.

This paper tells the story of Roon *ve*, and through it, the story of DO/GIVE coexpression in the Northwest New Guinea region. The story is a complex and multi-faceted one. From a purely historical perspective, DO/GIVE coexpression in the region is the product of diverse processes that played out at different times in different places. There is no single integrated narrative providing a unified account of how the areal pattern arose; we deal, instead, with a tangled network of plots and subplots, offering twists and turns galore. Much of this complexity reflects the interplay between the two main modes of propagation of linguistic features: vertical, through inheritance via a traditional family tree of languages, and horizontal, through contact and diffusion across the branches of such family trees. In particular, as we will see, the role of language contact turns out to be more significant than is sometimes acknowledged to be the case with regard to the spread of Austronesian languages.

A further complexity to the story is of a methodological nature. In order to reconstruct the past, a proper understanding of the present is a prerequisite; you cannot tell how a language got from where it once presumably was to where it is today until you have a clear picture of the latter. In this sense, then, diachrony presupposes synchrony. Moreover, even within the realm of synchrony, the analysis of a particular construction in a particular language may appeal to generalizations gleaned from the study of similar constructions in other languages: language-specific description may be informed by cross-linguistic typology. Thus, the story of Roon *ve* and DO/GIVE coexpression presented in this paper weaves together three different modes of analysis: historical, language-specific descriptive, and cross-linguistic typological.

This paper consists of two main parts: Section 2, of a primarily synchronic nature, and Section 3, of a mostly diachronic orientation. Section 2.1 provides a detailed description of Roon *ve*, showing that in addition to expressing the notions of DO and GIVE, it is associated with a variety of additional functions: SAY, verbalizer, reifier, possessive, BECOME, causative, dative, allative, and WANT/future. Section 2.2 formulates the question whether the range of functions associated with Roon *ve* is more appropriately described in terms of homophony, polyfunctionality (also known as polysemy) or macrofunctionality (monosemy), while Section 2.3 lays the groundwork for an answer to this question by proposing a semantic map for Roon *ve*, specifying the multiple relationships that hold between its variegated functions. Section 2.4 provides a critical cross-linguistic typological evaluation of the semantic map, arguing that each and every one of the lines in the map, representing a pairwise connection between two functions, is well-motivated, albeit to variable degrees, on general typological grounds pertaining to cross-linguistically recurring patterns of coexpression and/or the presence of semantic commonality. In particular, in Section 2.4.1, the relationship between the DO and GIVE functions, although only weakly supported by cross-linguistic patterns of coexpression, is argued to be motivated by a shared semantic property associated with Generalized Action Verbs, a closed class of verbs characterized by maximally underspecified semantics within their respective valency frames. The conclusion, presented in Section 2.5, is that there is just a single *ve* in Roon, associated with a wide range of functions including, among many others, both DO and GIVE, all tied together

through a complex and finely-articulated web of relationships involving polyfunctionality and macrofunctionality.

Section 3.1 examines the distribution and functions of potential cognates of Roon *ve* in other languages of the region, accounting for their variable functional ranges in terms of scenarios involving grammaticalization, replacement, and borrowing, both within Austronesian and from Austronesian to neighboring non-Austronesian languages. Section 3.2 focuses on DO/GIVE coexpression, expanding the vista to include not only cognates of Roon *ve* but also other non-cognate forms in both Austronesian and non-Austronesian languages exhibiting DO/GIVE coexpression. The coexpression of DO and GIVE is argued to originate in a serial-verb construction expressing the notion of GIVE, in which a verb meaning DO is followed by a verb of directed motion; subsequently, the second verb undergoes grammaticalization to become a directional preposition, as a result of which the primary locus of the GIVE meaning is telescoped into the first verb, where it ends up in a relation of coexpression with DO. This process of serial-verb grammaticalization is argued to have originated in the non-Austronesian languages of the Bird's Head, from which it and the resultant DO/GIVE coexpression then spread to other languages of the region, both non-Austronesian and Austronesian. These historical processes thus provide support for the characterization of Northwest New Guinea as a linguistic area.

Interspersed throughout the story of Roon *ve* are a number of points of broader relevance to synchronic and diachronic linguistics. In the domain of semantic maps, Section 2.3 argues for an integrated interpretation whereby a line connecting two functions on a map is justified to the extent that a form associated with both functions may be analyzed as macrofunctional in accordance with various criteria pertaining to semantic relatedness, cross-linguistic recurrence of coexpression, paths of grammaticalization, and others. In the field of grammaticalization, Section 3.2 proposes a path for the development of coexpression in which a meaning of a word is extended not directly via metaphor, metonymy and the like, but rather through a process of telescoping whereby a meaning associated with an entire construction has its locus reassigned to an individual word within the construction, which, while retaining its original meaning, also takes on the new one, thereby giving rise to coexpression. In the interface between diachrony and synchrony, Section 3.3 shows how, in some cases, diachronic analyses may inform synchronic ones; specifically, given a single form associated with seemingly distinct functions, these functions may be said to be instances of a single unified macrofunction to the extent that the form, with its range of functions, can be shown to have undergone borrowing from one language to another.

In mapping out DO/GIVE coexpression in the languages of Northwest New Guinea, this paper joins forces with other recent work, such as Koptjevskaja-Tamm and Liljegren (2017), in showing how such patterns of coexpression reflect linguistic areas, and thus provide an important tool for the exploration of linguistic history. In particular, the story of Roon *ve* presented in this paper reinforces a view, argued for by, among others, Donohue and Denham (2010, to appear), Blench (2012), and Gil (2015, to appear), to the effect that the historical expansion of the Austronesian language family into Wallacea and other parts of the archipelago was a complex and multi-faceted process, in which linguistic features were often disassociated from genes and cultural packages, instead spreading, on their own, by means of horizontal diffusion and language contact.

2. Roon *ve*

Roon is spoken on the eponymous island located in the Cenderawasih Bay, off the tip of the Wandamen peninsula, by some one to two thousand speakers. Its closest relatives are Biak, Meoswar and Dusner, which, according to Kamholz (2014, this volume) and others, constitute the Biakic subgroup of the South Halmahera West New Guinea (SHWNG) branch of the Austronesian language family. Previous publications on Roon are all of a lexicographic nature: a few short word lists in Fabritius (1855), Galis (1955), Voorhoeve (1975), and Smits and Voorhoeve (1992a, b), plus the recent and more extensive talking dictionary by Gasser and Gil (2016).³

Typologically, Roon bears a close resemblance to Biak, described in two recent dissertations by van den Heuvel (2006) and Mofu (2008). Although clearly Austronesian in accordance with conventional classificatory criteria, Roon displays a number of grammatical features exhibiting areal patterning and attributable to early contact with non-Austronesian languages. While some of these features are characteristic of the large Mekong-Mamberamo linguistic area, such as SVO basic word order (Gil 2015), others are typical of the smaller sprachbund of Wallacea, for example an animate/inanimate gender distinction (Schapper 2015), while yet additional ones are associated with even smaller areas such as the Cenderawasih Bay, e.g. null content questions (Gil in preparation b).

A central organizing feature of Roon morphosyntax is Person-Number-Gender (PNG) marking, which applies to a large class of stems including all expressions denoting activities, e.g. *-farar* ‘run’, most expressions denoting properties, e.g. *-bwa* ‘big’, and various deictic and determiner expressions such as the definite article *-ya*. Such forms may not occur in isolation; most commonly they appear with a PNG-marking affix, which refers to the subject, broadly defined, of the host expression. The PNG affix distinguishes first, second and third person; singular, plural and dual number; and, for third person, animate and inanimate gender; moreover, for first person plural and dual, a distinction is made between inclusive and exclusive. For the most part, the forms of the PNG-marking affixes closely resemble those of the corresponding independent pronouns. However, the forms of the PNG-marking affixes vary somewhat in accordance with their host expressions, dividing them into three inflectional classes, or conjugations: (a) V-initial; (b) C-initial prefixing, and (c) C-initial infixing. Whereas the choice between V-initial and C-initial conjugations is determined by a phonological property of the host, namely whether its first segment is a V(owel) or a C(onsonant), that between C-initial prefixing and infixing conjugations is unpredictable, an arbitrary lexical property of the host expression.

³ My ongoing field work on Roon is based mainly on elicitation sessions with a speaker of Roon living in the provincial capital Manokwari, supplemented with additional data, both elicited and naturalistic, collected in the course of a few short visits to the island of Roon.

Roon data cited in this paper are presented in a provisional practical orthography, resembling, for the most part, that of Indonesian. One notable difference, relevant to the present paper, is the letter *v* (as in the form *ve*), whose realizations vary considerably. Most often, *v* is pronounced as a bilabial fricative [β], however it is occasionally strengthened to a stop [b], or alternatively weakened to a bilabial approximant [β̞] or even deleted entirely. Because of its occasional realization as a stop, I had previously cited the form *ve* as *be*, but this was incorrect, given that *v* contrasts phonemically with a non-alternating *b*. Future work may provide reason to further modify the orthography. Some of the currently unresolved phonological issues that impinge on the orthography include the representation of word boundaries, suprasegmental features, and diphthongs/vowel sequences.

This paper focuses on the Roon form *ve*. Morphologically, *ve* may occur in three different constructions: (a) bare; (b) in the C-initial prefixing conjugation; and (c) in the C-initial infixing conjugation.⁴ (At present, it is the only form I am familiar with that may occur in both conjugations.) Grammatically, *ve* is associated with a veritable potpourri of functions, indicated below, together with the morphological construction characteristic of each function.

- (1) Functions of Roon *ve*
- | | | |
|-----|-------------|---------------------|
| (a) | DO | C-initial infixing |
| (b) | GIVE | C-initial infixing |
| (c) | SAY | C-initial prefixing |
| (d) | verbalizer | C-initial infixing |
| (e) | reifier | bare |
| (f) | possessive | C-initial infixing |
| (g) | BECOME | C-initial infixing |
| (h) | causative | C-initial infixing |
| (i) | dative | bare |
| (j) | allative | bare |
| (k) | WANT/future | C-initial prefixing |

Following a brief illustration and discussion of each of these functions, we will address the question to what extent these variegated functions are related to each other.

⁴ The two conjugational paradigms for *ve* are presented in Tables i and ii below.

Table i. Conjugation of *ve* (C-initial prefixing)

		SG	PL	DU
1	INCL	<i>yave</i>	<i>kove</i>	<i>kuve</i>
1	EXCL	—	<i>nggove</i>	<i>nuve</i>
2		<i>wave</i>	<i>mokove</i>	<i>muve</i>
3	ANIM	<i>ive</i>	<i>sive</i>	<i>suve</i>
3	INAN	<i>rive</i>	<i>nave</i>	<i>nuve</i>

Table ii. Conjugation of *ve* (C-initial infixing)

		SG	PL	DU
1	INCL	<i>ive</i>	<i>kove</i>	<i>kuve</i>
1	EXCL	—	<i>nggove</i>	<i>nuve</i>
2		<i>vve</i>	<i>mokove</i>	<i>muve</i>
3	ANIM	<i>vve</i>	<i>se</i> (< * <i>seve</i>)	<i>suve</i>
3	INAN	<i>re</i> (< * <i>reve</i>)	<i>ne</i> (< * <i>neve</i>)	<i>nuve</i>

As evident from Tables (i) and (ii), the two paradigms are partly identical. The most salient difference is in the singular for the 2nd person and 3rd person animate, which are prefixing and infixing in the two paradigms respectively. Other differences are in the singular for the 1st person and 3rd person inanimate, and in the plural for the 3rd person animate and inanimate. Note that in the C-initial infixing paradigm, the expected forms **reve*, **seve* and **neve* (as evidenced by the corresponding forms for other stems) are reduced to *re*, *se* and *ne* respectively, through what is probably a regular phonological rule that changes *eve* to *e*.

2.1 The functions of *ve*

The first two functions to be considered are the two that constitute the main focus of this paper, namely DO and GIVE. Example (2) below illustrates the DO function of *ve*, which occurs in the C-initial infixing conjugation:

- (2) *Nikoi vye for*
 Niko:PERS <3SG.ANIM>**ve** fire
 ‘Niko is making a fire.’

As suggested above, the DO function subsumes meanings whose translations into English involve either ‘do’ or, as in the above example, ‘make’. This is justified by the obvious affinity between the two, as reflected by the fact that in many languages, they are expressed by the same word, for example French *faire*, Hebrew *ʿs-y*, Riau Indonesian *bikin*, and others.⁵

Example (3) below illustrates the GIVE function of *ve*, also in the C-initial infixing conjugation:

- (3) *Musai vye pipi fa Riksoni*
 Musa:PERS <3SG.ANIM>**ve** money OBL Rikson:PERS
 ‘Musa gave money to Rikson.’

In conjunction, then, (2) and (3) above illustrate DO/GIVE coexpression, the central topic of this paper.

In addition, though, Roon *ve* is associated with a wide range of other functions. Example (4) below illustrates the SAY function of *ve*, this time in the C-initial prefixing conjugation.

- (4) *Olofi ivere fa Minggusi rwama*
 Olof:PERS 3SG.ANIM:**ve**:TOP OBL Minggus:PERS <2SG.ANIM>go:come
 ‘Olof told Minggus to come.’

To form the word meaning ‘say’, *ve* occurs in construction with the form *re*, itself associated with a range of apparently distinct functions, including topic marker, 3rd person singular inanimate agreement marker, and possibly others. To the extent that the meaning of *vere*, namely ‘say’, is not predictable from the meaning of its two constituent parts, the form may be said to represent the outcome of a process of lexicalization.

Example (5) below illustrates the function of *ve* as a *verbalizer*, used, in the C-initial infixing conjugation, to convert loan words from other languages into *bona fide* Roon verbs.

- (5) *Klemensi vyedansa*
 Klemensi:PERS <3SG.ANIM>**ve**:dance
 ‘Klemens is dancing.’

In the above example, *dansa* is a loan word from Portuguese, via Papuan Malay; in order to function as a verb in Roon and take on the appropriate inflectional morphology, it must be preceded by *ve*.

⁵ The close relationship between DO and MAKE is discussed by Schultze-Berndt (2008), who finds instances of their coexpression in almost all of the languages in her sample: Samoan, Kalam, Yimas, Ewe, Hausa, Kham and Chantyal.

Example (6) below illustrates the function of *ve* as a *reifier*, a term introduced in Gil (2003) for the description of certain forms in Singlish and its Malay and Sinitic substrate languages.

- (6) (a) (*Nonggaku*) *vekon iyamu kyon fasis*
 (person) **ve:sit** 3SG.ANIM:DIST.DEM:DEM <3SG.ANIM>sit quiet
 ‘That person/one sitting over there is sulking.’
- (b) *rovekwan*
 NMLZ:**ve:long**
 ‘snake’

In its function as a reifier, *ve* occurs in bare, uninflected form, applying to an expression X to form an expression *ve X* with a meaning roughly representable as ‘one that X’. For example, in (6a) above, *ve* applies to the expression *kon* ‘sit’ to yield an expression *vekon* which means ‘one that is sitting’. The reifier function is reminiscent of a nominalizer, in that it seems to form a noun out of a verbal phrase; it is also similar to a relativizer, in that it appears to relativize on a certain element within its host phrase. However, unlike an English relative clause such as, for example *that is sitting*, *vekon* is an endocentric phrase that does not need to occur in attribution to a head noun. Nevertheless, it has the option of doing so, as indicated in (6a) above by the presence of the optional head noun *nonggaku* ‘man’. In its function as a reifier, Roon *ve* resembles forms such as Malay/Indonesian *yang* and Mandarin *de*, while differing from these in one important respect: whereas expressions such as *yang X* and *X de* may refer to an entity standing in a variety of semantic and grammatical relationships *vis à vis* its host X, expressions of the form *ve X* may only refer to an entity broadly construable as the “subject” of X. Example (6b) shows that the reifier function of *ve* may, in some cases, form the input to a process of lexicalization. On its own, *vekwan* means ‘one that is long’, but when the lexicalizing nominalizer *ro* is added, the result is a conventionalized meaning, ‘snake’.

Example (7) illustrates the function of *ve* as a *possessive* marker in a construction expressing attributive alienable possession.

- (7) *Hendriki wa vyerya*
 Hendrik:PERS boat POSS<3SG.ANIM>**ve**:3SG.INAN:DEF
 ‘Hendrik's boat’

The attributive alienable possession construction consists of three separate parts, possessor followed by possessum followed by a complex attributive alienable possessive marker consisting of five distinct morphemes, as shown in the interlinear gloss above. At the core of the possessive marker is the form *ve*, inflected in the C-initial infixing conjugation, here marking agreement with the possessor. The inflected form of *ve* then undergoes ablaut, which may be analyzed as a “floating *e*” morpheme that functions as a dedicated marker of the attributive alienable possessive construction.⁶ The resulting complex is then followed by the definite article *-ya*, which,

⁶ The effect of the “floating *e*” ablaut is to change all vowels other than *u* into *e*. The outcome of this process is indicated in Table iii below, which should be compared to the base conjugation in Table ii (footnote 4 above). In Table iii, the vowels that undergo ablaut are indicated in **boldface**.

as always, is inflected in the C-initial prefixing conjugation, marking agreement with the possessum, or, equivalently, since the possessum is its head, the entire Noun Phrase. An inaccurate but still helpful way of getting one's head around this efflorescence of complexity is to think of the attributive alienable possessive construction as saying something along the lines of, for example, 'Hendrik, boat, he does it', where the 'do' in 'he does it' is expressed by the form *ve*.

Example (8) below illustrates the BECOME function of *ve* in the C-initial infixing conjugation:

- (8) *Aweni vye guru*
 Awen:PERS <3SG.ANIM>**ve** teacher
 'Awen became a teacher.'

Example (9) below shows the causative function of *ve* in the C-initial infixing conjugation:

- (9) *Yamoi vye arriya fa rikwan*
 Yamo:PERS <3SG.ANIM>**ve** fence:3SG.INAN:DEF OBL 3SG.INAN:long
 'Yamo lengthened the fence.'

It should be acknowledged, however, that *ve* is not the most common way of forming causative constructions; more frequent is a zero-marked construction exploiting the labile nature of many verbs, for example *-ri* 'descend'/'make descend'.

Example (10) illustrates the function of *ve*, in its bare, uninflected form, as a *dative* marker:

- (10) *Musai vye pipi ve Riksoni*
 Musa:PERS <3SG.ANIM>**ve** money **ve** Rikson:PERS
 'Musa gave money to Rikson.'

Example (10) is identical to (3) above except that the general oblique marker *fa* is replaced by *ve*. (At present, I am not aware of any differences in meaning between the two variants.) Note that in (10) *ve* occurs twice, first in inflected form meaning 'give', and then in bare form with the dative function.

Example (11) illustrates the function of *ve*, in its bare, uninflected form, as an *allative* marker:⁷

Table iii. Conjugation of Roon *ve* (C-initial infixing paradigm) with possessive floating *e*

		SG	PL	DU
1	INCL	<i>eve</i>	<i>keve</i>	<i>kuve</i>
1	EXCL	—	<i>nggeve</i>	<i>nuve</i>
2		<i>vwe</i>	<i>mekeve</i>	<i>muve</i>
3	ANIM	<i>vye</i>	<i>se</i> [< * <i>seve</i>]	<i>suve</i>
3	INAN	<i>re</i> [< * <i>reve</i>]	<i>ne</i> [< * <i>neve</i>]	<i>nuve</i>

It may be speculated, though nothing elsewhere in this paper depends on it, that this floating *e* morpheme is, itself, a relic of some earlier cognate of *ve*. This conjecture could presumably be tested by a more detailed study of the corresponding possessive forms in related languages, an endeavor that lies beyond the scope of this paper.

⁷ Impressionistically, it seems that when *ve* functions as an allative marker, it encliticizes to the preceding word, e.g. in example (11) above, *rya=ve*. However, to this point, I have not been able to come up with any solid arguments in support of this claim.

- (11) *Wefuri rya ve Syabes*
 Wefur:PERS <3SG.ANIM>go **ve** Syabes
 ‘Wefur went to Syabes.’

Finally, example (12) illustrates the WANT/*future* function of *ve* in the C-initial prefixing conjugation.

- (12) (a) *Utui ive tan do*
 Utu:PERS 3SG.ANIM:**ve** 3SG.ANIM:eat thing
 ‘Utu wants to eat.’
- (b) *Rive rimin*
 3SG.INAN:**ve** 3SG.INAN:rain
 ‘It’s going to rain.’

While in (12a), *ve* means WANT, in (12b) it marks the future. However, in many other contexts, the meaning of *ve* may be indeterminate between WANT and future, which is why, for expository purposes, they have been lumped together here.

2.2 Homophony, polyfunctionality or macrofunctionality?

As illustrated above, the range of functions expressed by Roon *ve* is so variegated that one may reasonably wonder whether there is any connection between them, or whether it is mere coincidence that they all happen to be expressed with the same form.

Imagine a linguist from Mars encountering the English form *-s* with its three allomorphs [-s], [-z] and [-ɪz] for the very first time, and realizing that it has the three different functions of plural marker, possessive marker, and 3rd-person-singular simple-present agreement marker; one would hope that it would not take long for our extraterrestrial linguist to reach the conclusion that these represent three different markers that are only coincidentally associated with the same phonological form. But now imagine a Yagua linguist from the Amazon encountering the English form *-ed* for the very first time and positing five different forms associated with five different degrees of remoteness in the past, on the basis of the fact that in Yagua, these five functions are expressed by means of five different forms (Payne and Payne 1990:386–8). In this case, we would presumably not hesitate to refute our Amazonian linguist’s analysis and posit instead a single unified function underlying the supposedly diverse functions of the English form *-ed*.

So is Roon *ve* more like English *-s* or more like English *-ed*? The answer provided in this paper is that it is somewhere in the middle, though in balance more like English *-ed*. In other words, it is argued that all of the functions of Roon *ve* are indeed related to each other, albeit to variable degrees.

As implied in the preceding paragraph, relatedness between functions is not a discrete black-and-white categorical distinction but rather a continuous cline; this idea is discussed in more detail in Gil (2004). At one end of the cline is accidental *homophony* of the kind exemplified by, among others, the three English *-s* forms. At the other end of the cline is the case of a single form associated with a single function, as instantiated by, among others the single English form *-ed*; this is known as *monosemy* or, alternatively, when the single function is larger than whatever expectations the linguist may have brought to bear on the problem, *macrofunctionality*, keeping in mind, of course, that size is strictly in the eyes of the beholder. In-between these two extremes, however, are a variety of situations in which a single form is associated with two or

more functions which on the one hand can be argued to be distinct from one another, but on the other hand can be shown to be related; such cases are commonly referred to as involving *polysemy* or *polyfunctionality*. These different alternatives may be subsumed under the neutral cover term *coexpression*, as in the title of this paper.⁸

In order to adjudicate between these various alternatives, several criteria have been proposed; Gil (2004: 373) provides a detailed discussion of the issues involved, summarized in terms of the following three criteria:⁹

- (13) A single form is associated with a single function to the extent that:
- (a) in a variety of genealogically, geographically and typologically unrelated languages, there exists a single form associated with a similar range of functions;
 - (b) the boundaries between the putative distinct alternative functions are ill-defined;
 - (c) the function in question can be defined in a unified manner, without recourse to disjunctions.

In light of the areal distribution of DO/GIVE coexpression in the languages of Northwest New Guinea discussed in Section 3, an additional, fourth criterion is proposed in Section 3.3, as follows:

- (14) A single form is associated with a single function to the extent that it is borrowable as a single unit into some other language.

2.3 The semantic map

In order to apply the criteria in (13) and (14) to Roon *ve*, it is helpful to represent the range of functions of *ve* in terms of a *semantic map* — a method introduced and developed by Anderson (1986), Kemmer (1993), Haspelmath (1997, 2003), Croft (2003), Croft and Poole (2008) and others. Using a semantic map, the range of functions associated with Roon *ve* may be represented as follows:

⁸ The terminology presented above differs slightly from that in Gil (2004), where the term *macrofunctionality* was used with a systematic ambiguity, referring on the one hand to the case of a single form associated with a single function, as per the preceding paragraph, but on the other hand also to a situation in which the analyst has not yet determined the nature of the relationship between the form and its one or more functions — what is referred to above as *coexpression*. The motivation for this terminology was the argument, put forward in Gil (2004), that when we're just starting out on an analysis, the default hypothesis should be to posit one form associated with a single meaning. But the ambiguity still rendered it a less-than-optimal terminological choice. In this paper, then, the term *macrofunctionality* is reserved for the former case, that in which a one-form-one-function relationship is explicitly asserted; for the latter case, that in which one does not wish to take a stand with regard to homophony, polyfunctionality or macrofunctionality, the term *coexpression* is used instead.

Instead of coexpression, may scholars make use of the term *colexification*; however this latter term is less desirable in the present context, in that it implies that the form bearing two or more distinct functions is an entire word, rather than possibly some smaller unit such as a clitic or an affix. As far as I have been able to ascertain, the term coexpression was first introduced into current linguistic discourse in Hartmann, Haspelmath and Cysouw (2014).

⁹ The formulation proposed in (13) differs from that in Gil (2004) in the use of the term *function* instead of *meaning*; this is in recognition of the fact that the entities under consideration are not always purely semantic. For example, they may include pragmatic information, or, alternatively, they may be bundled together with certain formal or morphosyntactic properties. The substitution of functions for meanings as the relevant unit of analysis follows Haspelmath (1997), who makes the same point with regard to semantic maps, to which we turn right below.

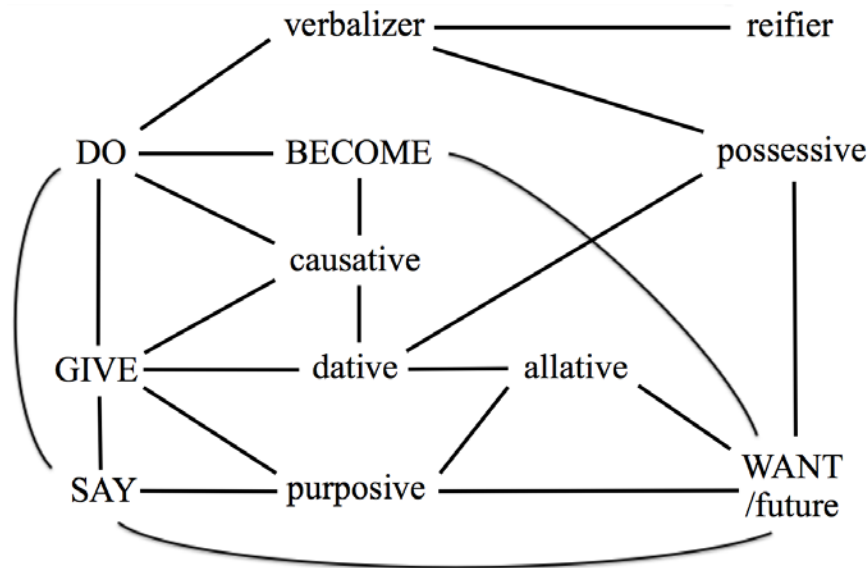


Figure 1: The semantic map

In Figure 1 above, nodes represent the functions associated with Roon *ve* listed in (1) and exemplified in Section 2.1, but with one addition, the purposive function. The reason for including the purposive is that it enters into close relationships with surrounding functions, and indeed, in Biak and other related languages, forms cognate with Roon *ve* are also associated with the purposive function (see Table 1 in Section 3.1 below).¹⁰

It is important to keep in mind that the functions listed above are etic rather than emic; they are comparative concepts in the sense of Haspelmath (2010, 2015, 2016), introduced for the purpose of cross-linguistic comparison. To what extent they are relevant also to the grammar of Roon is precisely what is at issue here. Indeed, as argued below, it is highly unlikely that a good description of Roon *ve* motivated entirely by language-internal considerations would make reference to precisely the set of functions shown in Figure 1 following the description presented in Section 2.1.¹¹

As comparative concepts, there is nothing sacred about the choice of functions represented in the semantic map; many other alternative representations would have been equally valid. To begin with, the level of resolution of the functions is arbitrary. For example, dative and allative could easily have been collapsed together, or, alternatively, WANT and future separated. Moreover, additional functions not present in the map could have been included. For example, in closely related Dusner, the cognate form *ve*, while bearing most of the functions in Figure 1, also means ‘bark (V)’

¹⁰ The purposive function is most readily rendered into English with the expression ‘in order to’. Following is an example of the cognate form *ve* in Biak expressing the purposive function (van den Heuvel 2006:170):

(i) *Sai wark i fa sive sfor i*
 3PL.ANIM:open block 3SG OBL 3PL.ANIM:ve 3PL.ANIM:catch 3SG
 ‘They blocked the way for him (by opening up as a group and surrounding) in order to catch him.’

¹¹ In fact, the very notion of semantic map embodies an inherent paradox: the stronger the evidence is for a line connecting two etic functions on a map, the weaker the case is that these two functions should indeed be distinguished from each other in an emic analysis of a particular language.

(Dalrymple and Mofu 2012). In Waropen, the cognate *we* also means ‘beat’ (Held 1942b). And in Ambel, the cognate *be* also has instrumental and locative functions (Laura Arnold pc). Ultimately, the choice of functions represented in a semantic map is determined by whatever is most useful to the task at hand.

Semantic maps are amenable to a number of different and complementary interpretations. Foremost among these is the *typological* interpretation, in which the lines connecting functions make empirical predictions about the possible range of functions associated with particular linguistic forms. Specifically, if a form is associated with two functions on a map, it must also be associated with all of the functions on a path connecting the two functions. However, the typological interpretation of semantic maps is often problematical; in many cases, diachronic processes give rise to discontinuities in the range of functions expressed by a single form. An example of such a discontinuity is provided in Section 3.1 below, in the discussion of Figure 4, pertaining to the distribution of *ve* cognates in some languages of the Western Yapen subgroup of SHWNG.

An alternative interpretation of semantic maps is *notional*: lines connect functions that are similar to each other in terms of their inherent semantic properties. Although seemingly taken for granted by most users of semantic maps, the notional interpretation is also problematical in that, armed with sufficient imagination and dexterity, the analyst can seemingly find some way to connect almost any two different functions. Then again, it sometimes appears as though languages can indeed make an exceedingly wide range of connections between supposedly disparate functions.

Finally, a third interpretation of semantic maps is *diachronic*: lines connecting functions represent possible paths of change involving grammaticalization, lexicalization, and other historical processes.

This paper adopts a synthesis of the above interpretations, formulated in terms of the following general principle governing the interpretation of semantic maps:

- (15) Two functions on a semantic map may be connected by a line to the extent that they are related; more specifically, to the extent that a form associated with both functions can be analyzed as macrofunctional in accordance with criteria such as those in (13) and (14).

In accordance with (15), the integrated typological, notional and diachronic interpretation of semantic maps reflects the typological, notional and diachronic nature of the criteria governing the postulation of macrofunctionality in (13) and (14).¹²

2.4 The unity of *ve*: A critical evaluation

With the criteria proposed in (13) and (14), and the interpretation proposed in (15) for the semantic map in Figure 1, we are now in a position to address the question posed above: How are the variegated functions of Roon *ve* related? There is not a single answer to this question. Each of the 22 lines in the semantic map in Figure 1 represents

¹² Note that in accordance with (15), the simple lines in most semantic maps should be replaced with lines of varying shade or thickness, representing the extent to which the two functions connected by the line are related; this, too, is a reflection of the scalar, non-discrete nature of the criteria in (13) and (14). Note also that in accordance with the diachronic interpretation of semantic maps, the lines connecting the various functions should be replaced with arrows indicating the directionality of the grammaticalization. That such more refined representations are not adopted in Figure 1 above, and subsequent semantic maps in this paper, is for practical reasons only.

a pairwise relationship that must be evaluated on its own individual merits. Different lines are of different strengths, reflecting varying degrees of affinity between the functions that they connect. Each pairwise relationship of functions is worthy of a full-scale study of its own, for which there is neither time nor space. Instead, this section provides a brief evaluation of each of the 22 pairwise relationships represented in Figure 1. Since the relationships proposed by the semantic map are not specific to Roon but rather universal, the evaluation relies heavily on the existing typological literature.

2.4.1 DO - GIVE

The relationship between the DO and GIVE functions is the central concern of this paper. A detailed analysis of DO/GIVE coexpression from a diachronic perspective is provided in Section 3. Here we briefly consider the synchronic aspects of the relationship.

Addressing the cross-linguistic criterion in (13a), Gil (in preparation a) provides a world-wide typological survey of DO/GIVE coexpression, with a sample set of 805 languages. Three feature values are distinguished: (i) full DO/GIVE coexpression, (ii) partial DO/GIVE coexpression,¹³ and (iii) no DO/GIVE coexpression. In order for a form to instantiate DO/GIVE coexpression, both functions must be present productively; excluded are cases where one of the functions is limited to expressions that are frozen, formulaic, or of otherwise restricted distribution.¹⁴ Of the 805 languages in the sample, 35, or 4.3%, exhibited complete DO/GIVE coexpression, an additional 10 displayed partial DO/GIVE coexpression, while the remaining 760 had no DO/GIVE coexpression. The figures show that DO/GIVE coexpression is a relative rarity in the languages of the world. These figures are discussed in more detail in Section 3.2 and Table 2 below, where it is shown that the scarcity of DO/GIVE coexpression is even more striking when the languages of Northeast New Guinea are excluded. Thus, the criterion of cross-linguistic recurrence provides little support for relating the DO and GIVE functions.¹⁵

¹³ Partial coexpression refers to a situation in which the forms expressing DO and GIVE are not the same but still transparently related to each other. For example, in Pashto, *kawəl* DO plus one of a set of deictic preverbs forms a verb meaning GIVE where the choice of preverb marks the person feature of the recipient, e.g. *dar-kawəl* (DEIC2-do) ‘give to you’ (Ludwig Paul pc).

¹⁴ For example, in the Ruhr dialect of German (Johann-Mattis List pc), the word for DO can occur in a construction expressing a GIVE meaning, e.g. *Mama tu mich ein eis* (mummie do.2SG.IMP 1SG.OBL ART ice) ‘Mummy give me an ice cream’; however, this construction is highly formulaic, and its acceptability drops off if the imperative mood is replaced by indicative, or the 1st person recipient substituted by a 2nd or 3rd person recipient. Accordingly, the Ruhr dialect of German is not considered to have DO/GIVE coexpression.

¹⁵ An alternative source of data for the investigation of cross-linguistic patterns of coexpression is provided by the online CLICS database of List, Mayer, Terhalle and Urban (2014). When consulted, CLICS contained a total of 221 languages, of which not one exhibited DO/GIVE coexpression, thus pointing, perhaps even more dramatically, towards the same conclusion as the Gil (to appear a) survey. It should be noted, however, that the CLICS notion of colexification, while including both “semantic vagueness” (corresponding here to macrofunctionality) and polysemy (polyfunctionality), explicitly excludes cases of accidental homonymy, which are treated as “spurious links”. Fortunately, such cases of putative homonymy remain searchable within CLICS, and in fact, when the search is broadened to include them, 4 cases of DO/GIVE coexpression emerge, comprising 1.8% of the sample. Still, in a database of such scope, trying to distinguish systematically between “real” and “spurious” cases of coexpression is problematical: as argued further down in this paper for DO and GIVE, what seems at first glance to be homonymy may turn out, under further investigation, to be anything but accidental.

Turning now to the notional criteria in (13b) and (13c), the most salient feature of the DO function is its semantically bleached nature; Van Valin and LaPolla (1997) characterize words expressing DO as *Generalized Action Verbs*. Because of the extremely broad meaning of DO, it is hard to evaluate the connection between it and other activities, since pretty much any other activity can be construed as a narrowing down of a more general DO meaning, especially when supported by additional more specific meaning-bearing elements. For example, one might propose an analysis of *ve* in which the GIVE function arises out of the DO function when occurring in an appropriate syntactic environment involving a recipient marked as oblique, such as is the case with Roon oblique marker *fa* as in (3), or dative marker *ve* as in (10); it is not too hard to imagine a hypothetical version of English in which *Musa did money to Rikson* were understood as involving an act of giving. However, for such an analysis to work, a principled explanation must be provided for why *ve* is interpreted as ‘give’, as opposed to a variety of other activities that could potentially occur in a ditransitive construction directed towards a goal-marked participant, e.g. ‘take’, ‘throw’, ‘send’, and so forth, all of which are expressed with other words in Roon.

Newman (1996, 1998, 2005) comes through with such an explanation, arguing that GIVE represents a basic verbal meaning, involving “one of the more significant interpersonal acts which humans perform” (2005:151). In particular, GIVE may be construed as constituting the simplest and most basic activity associated with a tri-valent semantic frame. Thus, GIVE is semantically bleached relative to other tri-valent activities, such as ‘take’, ‘throw’, and ‘send’; compared to such other activities, its meaning is “highly schematic” (Newman 1996:202). In support of this characterization, Newman cites examples of languages in which GIVE is expressed with a zero morpheme, Amele (a language of the Madang subgroup of the Trans-New-Guinea family), Bardi (a Nyulnyulan language of Australia) and Koasati (a Muskogean language of the USA). Commenting on the Amele, Newman (1998:xi) writes that “[i]t is as though the concept of GIVE is present as a default interpretation of a clause containing a subject, object and indirect object”. Thus, GIVE may be considered to represent a tri-valent DO, that is to say, a semantically bleached tri-valent activity corresponding to the semantically empty monovalent or bivalent activity DO. Putting it a bit differently, words expressing the GIVE function may be subsumed under a notion of Generalized Action Verbs that is only minimally expanded from that originally posited by Van Valin and LaPolla for words expressing the DO function.

Newman’s insight thus provides for a synchronic connection between the DO and GIVE functions. Admittedly, in appealing to the absence of substantive semantic content, the connection is perhaps not quite as strong as an alternative connection that would be based on the presence of particular substantial semantic features. However, as argued in Section 3.3 below, diachronic considerations involving language contact, borrowing, and areal patterns, as encapsulated in criterion (14) above, provide stronger additional support for the claim that the DO and GIVE functions of Roon *ve* are indeed synchronically related.¹⁶

¹⁶ Acknowledgement should be made of an additional possible connection between the DO and GIVE functions, involving *hortatives*. A hortative expression conveys a deontic modality which, in the absence of an overt verb, can be interpreted as applying to an understood DO, e.g. *Let’s do it!* Now in several European languages, hortatives are formed from the verb GIVE; Newman (1996:194-195) cites examples from Italian, Russian, Bulgarian and Hungarian. Newman derives the hortative use of GIVE from what he calls the “enable” use, closely related to the causative (see below). However, an alternative or perhaps complementary perspective on hortative GIVE would appeal to its characterization, above, as

In the meantime, however, we move on to evaluate the remaining lines in the semantic map in Figure 1.

2.4.2 DO - verbalizer

Unlike DO/GIVE, the relationship between the DO and verbalizer functions of *ve* is quite obvious. The bridge between the two functions is provided by light-verb constructions involving expressions meaning DO, which combine with a more semantically-specific expression to form a complex predicate construction. For example, in English expressions such as *do a booboo* or *make a mistake*, the forms *do* and *make* can be construed as straddling the boundary between ordinary verbs associated with the DO function, and devices forming a complex verb and thereby associated with the verbalizer function. Forms such as these are cross-linguistically widespread, and in fact, in many languages they bear a significantly greater functional load, for example Japanese *suru* (Grimshaw and Mester 1988), Yali (a language of the Trans-New-Guinea family) *suruk* (Kristian Walianggen pc), Jaminjung (a language of northern Australia) *-yu(nggu)* (Schultze-Berndt 2000), and Q'anqob'al (a Mayan language of Guatemala) *aq'* (Mateo Pedro Mateo pc). In terms of grammaticalization, the directionality of the process is clearly from the more concrete meaning of DO to the more abstract function of verbalization.

The relationship between DO and verbalizer functions is even more widespread cross-linguistically if bound forms are also taken into consideration. Consider the so-called active verbal prefixes of many Austronesian languages, for example Minangkabau (a Malayic language of Sumatra) *maN-*, as in *mangecek* 'say', derived from stem *kecek* 'say'.¹⁷ Although not commonly thought of as such, prefixes such as these could be analyzed as expressing a DO meaning, which, in some cases, does indeed surface in the English translation, for example *manga* 'do what', derived from stem *a* 'what'. At the same time, they could also be analyzed as verbalizers, as is evident when applying to a borrowed stem, for example *mangontrak* 'contract' from *kontrak* 'contract'.

2.4.3 Verbalizer - reifier

The connection between verbalizer and reifier functions is rather less obvious; at present, I am not aware of any examples of the coexpression of these two functions outside of the Northwest New Guinea region. Indeed, there is a sense in which these two functions are opposites, seeing as how one forms verbs while the other appears to create nominal-like expressions. Nevertheless, these two opposites may in fact be two sides of the same coin.

A potential unified account of these two functions is suggested by the analysis of the reifier *yang* in Riau Indonesian proposed in Gil (2013:105-108). (The analysis is equally valid for most or all other varieties of colloquial Malay/Indonesian, as well as for corresponding forms in other languages.) In accordance with this analysis, given an expression *E* with meaning *M*, the derived expression *yang E* is interpreted as having the meaning PRTP (*M*), or 'participant belonging to the semantic frame of *M*', where the thematic role of the participant is unspecified. For this to work, the inventory of

a semantically bleached Generalized Action Verb. For example, relative to English *Let's do it*, the Russian equivalent *Davaj* (give:IMP) would simply reflect the substitution of a Russian ditransitive Generalized Action Verb, GIVE, for an English transitive or intransitive one, DO.

¹⁷ The symbol *N-* represents *prenasalization*, a morphophonemic process whereby the first consonant of the stem is replaced by a homorganic nasal.

thematic roles is enriched with the role of *essant*, corresponding roughly to the subject of symmetric predications of the kind that, in many languages, make use of a copula. (For example, in English, the demonstrative *this* bears the *essant* role in constructions such as *This is John*, *This is a student*, *This is a murder*.) Thus, when *yang* applies to an expression such as *makan* ‘eat’, the resulting expression *yang makan* assumes the meaning PRTP (EAT), or ‘participant belonging to the semantic frame of EAT’, where the participant could bear the roles of agent (‘entity that is eating’), patient (‘entity that is being eaten’), or *essant* (‘entity that is an eating activity’), among others.

The range of potential semantic roles associated with the participant in the above analysis provides the necessary bridge between the verbalizer and reifier functions of Roon *ve*. In both cases, when *ve-* applies to an expression E with meaning M, the resulting expression, *ve(-)E* is assigned the unitary semantic representation PRTP (M). The difference between the two functions boils down to the choice of thematic role associated with the participant. When the role is agent or agent-like, the result is the reifier function, as for example in (6a) *vekon* ‘(agent) entity that is sitting’. On the other hand, when the role is *essant*, the result is the verbalizer function, as for example in (5) *vvedansa* ‘(activity) entity that is a dancing activity’.

2.4.4 Verbalizer - possessive

The connection between verbalizer and possessive functions parallels that between DO and verbalizer functions considered in Section 2.4.2 above, centering on light verb constructions, here associated with a possessive meaning. For example, in English expressions such as *have a smoke* or *have a chat*, the form *have* can be construed as indeterminate between an ordinary possessive verb associated with the possessive function, and a device forming a complex verb and thereby associated with the verbalizer function.

Again, as for the DO and verbalizer functions considered in Section 2.4.2, the similarity between verbalizer and possessive functions is even more common across the world’s languages if bound forms are also taken into account. Consider, for example, the Minangkabau medial verb prefix *ba-*, as in, for example *batanyo* ‘ask’, derived from stem *tanyo* ‘ask’. One of the common usages of *ba-* is to form verbs from loan nouns, for example *basakolah* ‘go to school’ from *sakolah* ‘school’, *bahelem* ‘wear a helmet’ from *helem* ‘helmet’. At the same time, in many other cases, *ba-* involves a possessive meaning, for example *babini* ‘have a wife’ from *bini* ‘wife’, *babulu* ‘have body hair’ from *bulu* ‘body hair’.¹⁸

2.4.5 DO - BECOME

DO/BECOME coexpression is widespread in the world’s languages, for example Mandinka (a Niger-Congo language of West Africa) *ké* (Denis Creissels pc), Skou (a language of the northern New Guinea coast) *li* (Mark Donohue pc), and Jaminjung *yu* (Eva Schultze-Berndt pc). In many cases, BECOME is derived from DO by means of detransitivizing verbal morphology. For example, in Hebrew, the root ʕ-s-y ‘do’/‘make’, when occurring in the ‘*nifʕal*’ conjugation, often but not exclusively used to derive medial or passive verbs, may have either of the following two interpretations: (a)

¹⁸ It should be noted that if Van Hasselt’s (1905) etymology for forms related to Roon *ve* represented in (23c) below is correct, then Minangkabau *ba-* would actually be cognate with Roon *ve*. However, as argued below, this etymology is rather unlikely; the similarity between Minangkabau *ba-* and Roon *ve* is most probably accidental.

passive DO, e.g. *haʃavoda naʃasta* (DEF:work do.NIFʃAL.PST.3SGF) ‘the work was done’, or (b) BECOME, e.g. *haʃavoda naʃasta kaʃa* (DEF:work do.NIFʃAL.PST.3SGF difficult.3SGF) ‘the work became difficult’. Similarly, in Walman (a Torricelli language of Papua New Guinea), *r-any* BECOME is derived from *any* DO by reflexivization (Matthew Dryer pc), while in Patwin (a Wintuan language of California), *lelu-nana* BECOME is derived from *lelu* DO (more precisely, ‘make’) also by reflexivization (Lewis Lawyer pc).¹⁹

The semantic relationship between these two functions is discussed in Schultze-Berndt (2008), who accounts for it in terms of Levin and Rappaport-Hovav’s (1995) notion of *internal causation*, in which eventualities are conceptualized as arising from inherent properties of their arguments. Specifically, whereas DO presupposes agentivity and external causation, BECOME denies the agentivity, speaking instead of a change in state that emerges from the participant itself.

2.4.6 BECOME - causative

In order to establish the viability of a direct BECOME-causative relationship, it is necessary to rule out a possible intermediate role for the DO function, which, as argued in Section 2.4.5 above and 2.4.7 below, is itself closely related to both BECOME and causative functions. One way of doing so is through the consideration of morphological markers that are not typically associated with the DO function, but which nevertheless express both BECOME and causative functions.

For example, in Hebrew, the two primary functions of the ‘*hiʃʃil*’ conjugation are to form inchoatives, e.g. *hichiv* (yellow.HIFʃIL.PST.3SGM) ‘he became yellow’ from root *c-h-v* ‘yellow’, and causatives, e.g. *higdil* (big.HIFʃIL.PST.3SGM) ‘he enlarged’ from root *g-d-l* ‘big’. In Vafsi (an Indo-Aryan language of Iran), a change-of-state enclitic =*a* functions as the basis for both inchoatives and causatives; thus, from *sur b-* (red.PRS be) ‘be red’, it derives both *sur=a b-* (red.PRS=COS be) ‘become red’ and *sur=a kær* (red.PRS=COS do) ‘make red’ (Don Stilo pc). And in Korean, a BECOME-causative connection is evident diachronically: Modern Korean *toy* is derived from Late Middle Korean *tAv* ‘be like’ plus causative suffix *-i* (Rhee and Koo 2014:320).

Semantically, BECOME and causative both involve a change of state. While the BECOME function expresses this concept in pure form, the causative ties it in to other more specific notions pertaining to causation.²⁰

2.4.7 DO - causative

The DO-causative relationship is one of the strongest in the semantic map of Figure 1. Heine and Kuteva (2002:117-118) provide examples from Moru, Lendu and Logo (central Sudanic languages of East Africa), Sango (a Niger-Congo language of Central Africa), Wanjkumara (a Pama-Nyungan language of Australia), and several others, while Schultze-Berndt (2008:189) provides additional examples from Ewe (a Niger-Congo language of West Africa) and Chantyal (a Tibeto-Burman language of the

¹⁹ These and other examples of DO/BECOME coexpression are discussed in a 2015 query on the LINGTYP email list, accessible at <http://listserv.linguistlist.org/pipermail/lingtyp/2015-July/004744.html>.

²⁰ It should be noted that the BECOME-causative connection in the semantic map of Figure 1 would seem to conflict with the semantic map in Schultze-Berndt (2008:201), in which these two functions, in her terms “INCHO” and “CAUSE”, are located far apart, seeming to suggest that in order to get from one to the other, one needs to pass through an intermediate DO function.

Himalayas). DO/causative coexpression occurs also in English; indeed, an alternative translation of Roon sentence (9) into English, *Yamo made the fence longer*, provides an illustration of the potential indeterminacy between the two functions, in that *made* can be understood here either as expressing the DO function or as forming a periphrastic causative construction.

The common core meaning shared by the DO and causative functions is one in which an agent acts in a way that produces a certain result. An alternative relationship between DO and causative functions would be one in which DO is conceptualized as consisting of the causative function applied to a general copular verb, that is to say, ‘make’ is understood as ‘cause to be’. Conceivably, either of the two alternative relationships between DO and causative could be appropriate for different cases involving different languages.

2.4.8 GIVE - causative

GIVE/causative coexpression also recurs cross-linguistically, though it is rather less widespread than its DO/causative counterpart. Gil (2015) argues that it is an areal feature associated with the Mekong-Mamberamo linguistic area encompassing mainland Southeast Asia, the Indonesian archipelago and western New Guinea, present in, among others, Lahu (a Tibeto-Burman language of Southeast Asia), Maonan (a Tai-Kadai language of southern China), Lao, Mentawai and Madurese (Austronesian languages of western Indonesia), Ternate (a North-Halmaheran language of Wallacea), Saweru (a Yawa-Saweru language of Yapen island in the Cenderawasih Bay) and Warembori (a SHWNG language of the Cenderawasih Bay). Heine and Kuteva (2002:152) also discuss the GIVE-causative relationship, providing examples from Vietnamese, Khmer, Thai, Siroi (a language of Papua New Guinea), and, from East Africa, Luo (a Nilotic language) and Somali (a Cushitic language), while Newman (1996:176–178, 2005:157–158) provides further examples from Kunwinjku (a language of Australia), Chamorro, Ainu, Nahuatl and Jacaltec.

In order to account for GIVE/causative coexpression, Newman (1996:178–179) posits a path of metaphorical extension from GIVE, in which a giver wilfully instigates the movement of a thing into the sphere of control of the recipient, though “manipulative extension”, whereby person A causes person B to change state or perform some action, culminating in “general causative extension”, in which entity/event A causes entity/event B. Applying Newman’s analysis to the cognate Biak form *ve*, van den Heuvel (2006:395–396) draws a semantic connection between the GIVE and causative functions in terms of ditransitivity, both requiring a second argument for completeness. The difference between the resulting constructions is in the nature of the second argument: whereas for GIVE it is a prepositional phrase, for the causative it is a clause.

2.4.9 GIVE - dative

GIVE/dative coexpression is perhaps best known from languages of Mainland South East Asia and West Africa, where it is commonly cited as one of the stock examples of verb serialization. For example, in Vietnamese, *Quân gửi thư cho Tám* (Quân send letter give Tám) ‘Quân sent a letter to Tám’; similarly, in Kupang Malay, *Riki kirim kasi Rongki surat* (Riki send give Rongki letter) ‘Riki sent a letter to Rongki’. Other examples of GIVE/dative coexpression, from Twi, Yoruba, Cantonese, Mandarin, Lao, Keo (an Austronesian language of Flores in eastern Indonesia), Nez Perce (a Sahaptian language), Sranan and Saramaccan (both Atlantic creoles), and other languages, are

provided in Lord (1993:31–45), Newman (1996:221–223), Heine and Kuteva (2002:153–154) and Margetts and Austin (2007:418–419).

Newman (1996:215–216) characterizes the common semantic structure of GIVE and dative as largely identical, the only difference being in terms of emphasis, or what he calls “profiling”. Specifically, compared to GIVE, the dative function downplays the importance of the time axis and of the agent and theme, while highlighting the recipient. Given the inherently squishy nature of the notion of emphasis, it is not surprising to find that in many particular instances, especially in isolating languages, linguists have struggled in their attempts to decide whether particular forms in specific constructions should be more appropriately analyzed as verbs expressing the GIVE function, or alternatively as prepositions associated with the dative function — for some varying perspectives on the issues involved see Lord (1993:31–45), Newman (1996:215), Matthews (2006:76–77) on Cantonese *bei*², and Enfield (2006) on Lao *haj*⁵ as well as other forms that pose a similar quandary. The sometimes seemingly intractable nature of this issue — prompting some creative terminological proposals, such as Ansre’s (1966) *verbid* — reflects the indeterminacy of forms associated with both GIVE and dative functions, and in so doing attests to the strong affinity between these two functions.

2.4.10 Causative - dative

Compared to some of the other function pairings in the semantic map, the causative-dative connection is relatively less well-supported; moreover, it is probably not a direct connection, but rather facilitated by an intermediate applicative function.

The cross-linguistic recurrence of causative-applicative syncretism is discussed in McDonnell (to appear) and references therein. Although different in many respects, both functions share a valency-increasing role; based on evidence from Besemah and other Malayic languages, McDonnell argues that the typical path of grammaticalization is from applicative to causative.

An applicative-dative connection is argued for in Gil and Grossman (2017), who reconstruct **(a)ka(n)* for dative, applicative and causative functions in proto-Malayic; this form is argued to derive from an earlier dative **ka* via a process of dative-to-applicative grammaticalization, with subsequent spread from applicative to causative. Coexpression of this range of functions is still observable in a few contemporary Malayic varieties, such as Brunei Malay, which has *kan* for dative, applicative and causative.

In general, however, the dative-causative connection is not that common cross-linguistically, and it remains to be demonstrated that is relevant for Roon *ve*, which would seem to lack the intermediate applicative function.²¹

2.4.11 Dative - allative

The dative-allative connection is so close that the two are sometimes grouped together as a single macrofunction. (The main reason for separating them in Figure 1 is that they stand in different relationships to other functions; thus, whereas the dative is the target

²¹ However, to the extent that it can be shown that dative *ve* encliticizes to the preceding word (cf. footnote 7 above), such encliticization may perhaps be construed as evidence in support of a possibly incipient applicative construction involving dative *ve*. Perhaps also significantly, Arnold (2017) describes an instrumental applicative construction in Ambel with the clearly cognate form *be*.

of grammaticalization from GIVE, the allative is the source of grammaticalization to WANT/future.) Some examples of dative-allative identity are provided by English *to*, French *à*, Hebrew *l-*, Tagalog *sa* and Jakarta Indonesian *ke*. Other examples are provided by Newman (1996:88–90), and by Heine and Kuteva (2002:37–38), who argue that the usual path of grammaticalization is from allative to dative.

2.4.12 Dative - possessive

Possessive constructions are of two major types, attributive and predicative, the latter further dividing into “have” and “belong” types, depending on whether the possessor or the possessum is semantically and pragmatically prominent. As pointed out by Heine and Kuteva (2002:103–106), each of these three types of possessive exhibits some kind of connection to the dative function.

The relationship between dative and attributive possessive functions is manifest in dative-genitive syncretism, characteristic of the languages of the Balkans but also present elsewhere (Catasso 2011), occurring in, among others, Baka (a Niger-Congo language of Central Africa), Norwegian, Armenian and Diyari (a Pama-Nyungan language of Australia) (Heine and Kuteva 2002:103–104). The connection between dative and predicative “have” possessive functions is evident in languages which use an existential construction in which the Possessor is marked in the dative, for example Hebrew *yeš li sefer* (exist DAT:1SG book) ‘I have a book’; this construction is subsumed under the “locational” construction type whose worldwide distribution is mapped in Stassen (2005). Finally, the relationship between dative and predicative “belong” possessive functions is evident in constructions such as the French *Le livre est à moi* (ART.MSG book be.PRS.3SG DAT 1SG) ‘The book belongs to me’, though as pointed out by Heine and Kuteva (2002:105), this connection is less widespread cross-linguistically. The semantic motivation behind all three types of the dative-possessive connection would seem to be the same: application of the dative marker to the possessor suggests that the possessum has metaphorically entered into a domain associated with the possessor.²²

On the face of it, the Roon possessive construction exemplified in (7) above would seem to instantiate the connection between the dative and the first, attributive type of the possessive function. However, in view of its formal complexity, it is possible that the Roon attributive possessive construction represents the product of grammaticalization of an earlier predicative possessive construction.

2.4.13 DO - SAY

DO/SAY coexpression is well-attested cross-linguistically; some of the languages in which it occurs include Hebrew, Greek, German and Pastaza Quechua (Buchstaller and van Alphen 2012), Spanish (Martinez 2014), Jaminjung and Samoan (Schultze-Berndt 2008), Kokota (an Austronesian language of the Solomon Islands) (Bill Palmer pc) and Central Alaskan Yupik (Miyaoka 2010).²³ While in some languages, the coexpression is fully incorporated into the lexicon, in other cases, such as with Hebrew *l-s-y* and

²² The possessive-dative connection is also captured in the semantic map proposed by Malchukov, Haspelmath and Comrie (2010: 52), in which the dative function is further broken down into beneficiary and recipient functions.

²³ Other examples of DO/SAY coexpression are discussed in a 2006 query on the Papuan Languages email list, accessible at <http://mailman.anu.edu.au/pipermail/papuanlanguages/2006-December/000113.html>.

Spanish *hacer*, the primary function appears to be DO, while the SAY function is a very recent innovation associated with special registers such as slang or youth language.

As noted previously, given the exceedingly general meaning of the DO function, it can of course be related to any other activity by means of further semantic specification. However, when an expression meaning SAY occurs with a complement expressing a quotation, the semantic content of SAY is relatively light, and hence the amount of semantic specification needed to get from DO to SAY is correspondingly small. In discussing the motivation for DO/SAY coexpression, Schultze-Berndt (2008:192), drawing on work by Rumsey (1990), suggests that it may reflect the “absence of both a linguistic and a cultural distinction between the use of language and other types of behavior”, as a result of which “speaking can be regarded as just another form of bringing about or ‘doing’ something”.

2.4.14 GIVE - SAY

GIVE/SAY coexpression is somewhat less widespread than its DO/SAY counterpart considered previously, but still attested from various parts of the world, albeit in rather diverse guises. In Nai (a language of the Kwomtari family of Sandaun province, Papua New Guinea), GIVE is expressed with a presentative embedded within a quotative SAY — ‘give’ is literally ‘say “here!”’ (Newton Hamlin pc). In Jaminjung, the verb coexpressing DO and SAY mentioned in the preceding section is morphologically defective in that it lacks a reflexive/reciprocal form; in order to express the reflexive/reciprocal, the GIVE verb is co-opted in its place (Schultze-Berndt 2000). In Central Alaskan Yupik, the same form coexpressing DO and SAY mentioned in the preceding section can also mean GIVE (Miyaoaka 2010). In the Frankfurt dialect of German, *geben* has “taken on the sense of ‘relate, tell’” (Newman 1996:282). And in the newly emerging variety of Multicultural London English, the verb *give* is used as quotative with the SAY function (Cheshire, Kerswill, Fox and Eivind Torgersen 2011). Whether there is any common semantic base to the above examples is not clear.

More generally, however, it is not hard to imagine a conceptualization of the quotative as involving the giving of a proposition by the speaker to the hearer. Newman (1996:137–138) argues that “the transmission of a message to someone is understood as the giving of a thing to someone”, supporting his assertion with examples such as English *give advice to someone*, *give the verdict to the court* and their counterparts in Italian, Bulgarian, Swahili, Japanese and other languages.

2.4.15 GIVE - purposive

GIVE/purposive coexpression is cross-linguistically widespread; Heine and Kuteva (2002:154–155) cite examples from Acholi (a Nilotic language of East Africa), Thai, Khmer, Vietnamese, and Saramaccan. The path of grammaticalization from GIVE to purposive is motivated by Newman (1996:181), who argues that “the act of giving commonly leads to a further event in which the [recipient] makes some use of the [thing] passed [...]. This aspect of literal GIVE could also be seen as motivating an extension of GIVE to a purposive marker.”

2.4.16 SAY - purposive

SAY/purposive coexpression is also well-attested cross-linguistically; Heine and Kuteva (2002:265–267) cite examples from Ewe, Gokana, Baka, Koranko, and Lingala (all West and Central African languages), as well as Sranan and Negerhollands (both

Atlantic Creoles). The motivation for the connection between SAY and purposives is clear: a verbal expression from an actor is one of the most common sources of evidence to the effect that the actor's activity is associated with a certain purpose. In this respect, the connection between SAY and purposive functions resembles that between SAY and WANT/future functions discussed in Section 2.4.20 below.

2.4.17 Allative - purposive

Allative/purposive coexpression is also common across the languages of the world; Heine and Kuteva (2002:39–40) cite examples from Basque, Albanian, Lezgian (a Daghestanian language of the Caucasus) and Imonda (a Trans-New-Guinea language). As discussed in Gil and Grossman (2017), allative/purposive coexpression also occurs in Malayic languages, for example Minangkabau *ka* in *Ali pulang ka Padang* (Ali go.home **ka** Padang) 'Ali went home to Padang' and *Ali pulang ka makan* (Ali go.home **ka** eat) 'Ali went home (in order) to eat'. The latter sentence, as for that matter its English translation, illustrates a natural bridging context between the two functions, in which a sequence of activities (going home and then eating) is also associated with a sequence of physical locations (out and then home). This highlights the origin of allative/purposive coexpression in a metaphor mapping the linear order of activities associated with the purposive, i.e. engaging in one activity in order to facilitate another, onto spatial movement from one location towards another.

2.4.18 Purposive - WANT/future

The coexpression of purposive and WANT/future does not feature in the Heine and Kuteva (2002) compendium of paths of grammaticalization; nevertheless, it would still seem to be commonly attested cross-linguistically. One example, discussed in Gil and Grossman (2017), involves the same Minangkabau form *ka* illustrated in the previous subsection: *Ali pulang ka makan* (Ali go.home **ka** eat) 'Ali went home to eat' and *Ali ka makan* (Ali **ka** eat) 'Ali will eat'. Again, the former sentence illustrates a bridging context; this time the sequence of activities (going home and then eating) is associated with a sequence of points in time (earlier and then later) — the second activity thus being in the future relative to the first. The connection between purposive and future functions relies on a metaphor analogous to that posited in the preceding subsection, this time mapping the linear order of activities associated with the purposive onto the linear order of time. Moreover, the purposive-WANT connection is inherent in the notion of purpose: if you engage in one activity in order to bring about another, then you obviously wish for the other activity to take place.

Another somewhat different example relating purposive and WANT/future functions comes from languages of the Timor-Alor-Pantar family (Antoinette Schapper pc), in which WANT-to-purposive grammaticalization is part of a lengthier chain of grammaticalization discussed further in section 2.4.21 below.

2.4.19 Allative - WANT/future

Whereas the grammaticalization of a verb of motion to express the future is extremely widespread cross-linguistically, as is evident in the English *going to* construction and numerous others like it, the coexpression of allative and WANT/future functions is somewhat less well known. Nevertheless, the connection between allative and WANT/future is discussed in Bybee, Perkins and Pagliuca (1994), Grossman, Lescuyer and Polis (2014), and Grossman and Polis (2014), with the latter providing examples from Ancient Egyptian, Portuguese, Mongolian, Kolyma Yukaghir, West Greenlandic, and others — including, somewhat marginally, English *to* (as in *He is to go*). And of

course, completing the triangle set up in the preceding two subsections is Minangkabau, with *Ali pulang ka Padang* (Ali go.home **ka** Padang) ‘Ali went home to Padang’ and *Ali ka makan* (Ali **ka** eat) ‘Ali will eat’. In the present case, the rationale behind the connection between allative and WANT/future functions lies in the familiar metaphor mapping temporal relations onto spatial ones, with movement in time towards an activity being construed as analogous to movement in space towards a location.

2.4.20 SAY - WANT/future

The coexpression of SAY and WANT/future has not attracted much attention in the literature, though sporadic examples can be found. For example, in Tubu’ Penan (an Austronesian language of Borneo) the form *kə* (cognate with Minangkabau *ka* above) expresses both SAY and WANT/future functions (Soriente 2013). For WANT, at least, the logic behind the connection with SAY is straightforward: if one wishes to perform an activity, one is likely to express one’s desire to do so verbally.

In fact, one may speculate that the coexpression of SAY and WANT might constitute a reflection of a specific cultural feature associated with peoples of New Guinea. A number of scholars have discussed the notion of *opacity of mind*, referring to an ingrained belief, prevalent to various degrees amongst the diverse peoples of Melanesia, to the effect that a person can never, or perhaps only with substantial effort, be privy to the thoughts of another; see Robbins and Rumsey (2008), Robbins (2008), Schefflin (2008), Stasch (2008), and references therein. Under one interpretation of the opacity of mind, the only way in which one can know what another person wants to do is if that person says what it is that they want to do. This would then lead directly to the conflation of SAY and WANT. And indeed, Reesink (1993) notes that SAY/WANT coexpression is characteristic of a number of Papuan languages.

2.4.21 Possessive - WANT/future

Due to the variegated nature of the possessive function and the difference between WANT and future, there are several potential ways in which a connection between possessive and WANT/future can be established, albeit none of particular salience from a cross-linguistic perspective. Heine and Kuteva (2002:242–243) cite well-known examples of the grammaticalization of ‘have’ possessives to form futures in Romance languages, plus also less familiar examples of the same process from Bulgarian, and also Nyabo and Godié (two Niger-Congo languages). In a rather different pattern involving attributive possession and WANT functions, Antoinette Schapper (pc) posits a chain of grammaticalization in Timor-Alor-Pantar languages leading from alienable possession through prospective aspect to WANT (and thence to purposive, as already mentioned in Section 2.4.18 above). All in all, it would probably be fair to say that this is one of the less well supported connections in the semantic map of Figure 1.

2.4.22 BECOME - WANT/future

The coexpression of BECOME and WANT/future functions is discussed in Dahl (2000), and further mentioned in Heine and Kuteva (2002:64–65) who cite the case of German *wird*.

Possible insight into how the connection between these two functions comes about is provided by the Riau Indonesian form *jadi*. (Similar observations hold for the corresponding form in most or all varieties of colloquial Malay/Indonesian.) The basic meaning of *jadi* is ‘become’, as in *Ali jadi guru* (Ali **jadi** teacher) ‘Ali became a

teacher’; however, *jadi* can just as readily occur in construction with a word denoting an activity, as in *Ali jadi berangkat* (Ali **jadi** depart) — with a meaning that is not easily expressible in English. Note, first, that Riau Indonesian has optional Tense-Aspect-Mood marking; each of the above sentences can be understood as referring to past, present or future. The sentence *Ali jadi berangkat* presupposes that at a certain reference point, which could be in past, present or future time, Ali’s departure, in the future relative to that reference point in time, was, is, or will be called into question, and asserts that at a later point in time, Ali’s departure was, is, or will be realized, notwithstanding the earlier doubt. Something approaching this meaning can perhaps be expressed in English with *after all*, as in *Ali left / is leaving / will leave after all*. Thus, although *jadi* is not a future marker, when occurring in construction with words denoting activities, it is almost one. To get from the meaning of *jadi* to a future meaning, one simple additional step is required: the negative presupposition associated with the earlier of the two points in time needs to be abandoned.

Riau Indonesian *jadi* thus highlights the commonality of the BECOME and future functions, and suggests a possible path of grammaticalization from the former to the latter. Both functions involve two points in time, an earlier reference point plus some later point associated with a state or activity. However, whereas BECOME involves a transition of a state from absence to presence, and lays more emphasis on the process of change itself, the future involves either a state or an activity and says nothing about the earlier reference point, instead focusing on the state or activity at the later point in time.

2.5 Roon *ve*: A summary

As suggested in the preceding discussion, the evidence in support of the 22 lines in the semantic map in Figure 1 is of variable quality, ranging from overwhelming to rather limited. Whereas some pairings of functions, such as DO-verbalizer in Section 2.4.2, or dative-allative in Section 2.4.11, are sufficiently close to warrant being characterized, in at least some cases, as instances of monosemy or macrofunctionality, others are substantially weaker. Still, for each line on the map, there would seem to be at least some reason to believe that it represents a significant relationship between the functions that it connects, characterizable at least in terms of polysemy or polyfunctionality, if not monosemy or macrofunctionality.

Putting it all together, one can get from any point on the map to any other point following a path that is, on the whole, reasonably well supported; in fact, excluding the reifier function, there are actually two or more such paths available that are completely separate from each other, thereby further enhancing the unity and cohesion of the semantic map. In this sense, then, there is only “one” *ve* in Roon, not two, or five, or eleven — as seemingly implied by the etic description in Section 2.1 above.

However, the variable quality of the evidence in support of different pairs of functions suggests that *ve* is not a single homogeneous whole, but rather constitutes a structured complex of relationships of variable strengths. In *toto*, then, *ve* may be characterized as polysemous or polyfunctional. With respect to its internal diversity, Roon *ve* thus lies somewhere in-between homophonous English *-s* and macrofunctional English *-ed*, though in balance rather closer to English *-ed*.

As a final note on Roon *ve* and the semantic map in Figure 1, the distribution of the three morphological constructions in which *ve* occurs, as summarized in (1), is plotted in Figure 2 below. Gray dashed lines enclose two contiguous zones on the map, consisting, respectively, of functions associated with the C-initial infixing conjugation,

above, and with the C-initial prefixing conjugation, below. Functions outside these two zones are those associated with the bare form of *ve*. (Figure 2 omits the purposive function in Figure 1, since it is not present in Roon.)

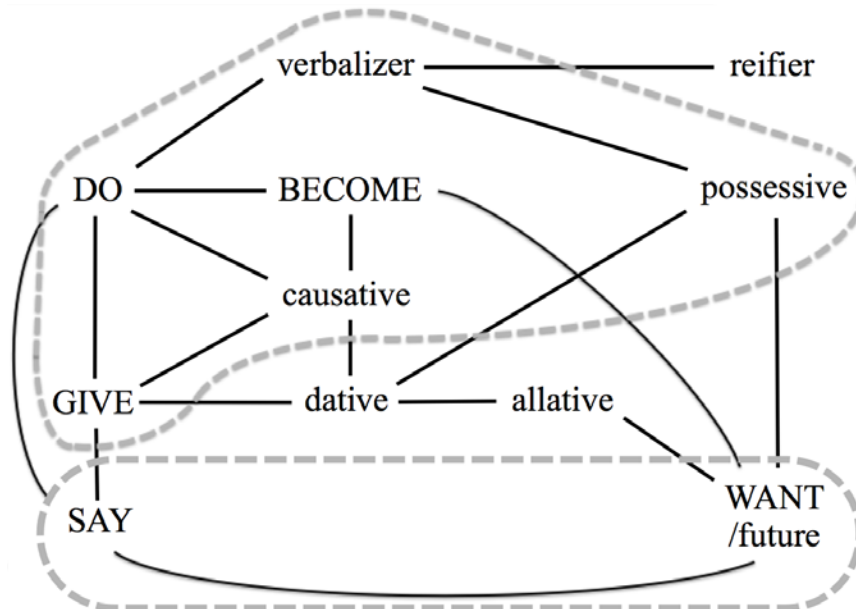


Figure 2: Roon *ve* conjugation classes

The first and most obvious observation to be made with regard to Figure 2 is that the two conjugations occupy contiguous zones on the semantic map. In doing so, they provide further justification for the relationships between the functions as represented in the semantic map.

However, one can go further than this. In a study of related SHWNG languages which have distinct prefixing and infixing conjugations cognate to those of Roon, Gasser (2014, 2015) argues that the infixing conjugation is derived from an older and more productive prefixing conjugation through a process of metathesis. The effect of such metathesis is readily observable in Roon, in the 2nd person singular and 3rd person animate singular forms of *ve* cited above, for example the 3rd person animate singular prefixing *ive* which undergoes metathesis to become *vye*.²⁴

This points towards the following two alternative diachronic interpretations of Figure 2. Under the first interpretation, all of the functions of *ve* that involve inflection originally belonged to the C-initial prefixing conjugation, and then a subset of them underwent metathesis. In accordance with this interpretation, the functions that underwent metathesis would have had to have constituted a unified group to the exclusion of the others, in order for them and them alone to have undergone metathesis. Under the second interpretation, at an earlier stage of the language, *ve* was associated with just a subset of its current functions, and when metathesis applied, it applied to all of the

²⁴ It should be acknowledged, however, that for the other PNG values with respect to which the two conjugations differ, this difference does not involve metathesis. Nevertheless, even in these other cases, the forms in the C-initial infixing conjugation are less similar to the independent pronouns than the corresponding forms in the C-initial prefixing conjugation, thereby providing further support for the claim that the C-initial infixing conjugation may be derived, in its entirety, from an older C-initial prefixing conjugation.

functions available at the time. Subsequent to the application of metathesis, *ve* acquired additional functions, and these were then inflected in accordance with the more productive C-initial prefixing conjugation. Some possible evidence in support of the second interpretation is provided in Section 3.1 below.

3. Historical inferences

What can Roon *ve* and DO/GIVE coexpression tell us about the history of Northwest New Guinea? Some initial diachronic inferences were already offered in the preceding section. But in order to address this question in a systematic fashion, it is necessary to adopt a comparative perspective and take a look at other languages of the region. Section 3.1 takes a form-based approach, focusing on potential cognates of Roon *ve* and examining their functions in other languages of the region, while Section 3.2 adopts a function-based perspective, examining the distribution of DO/GIVE coexpression in the languages of the region, and proposing a diachronic account of its development.²⁵

3.1 VE-forms in other languages

Table 1 below presents potential cognates of Roon *ve* expressing the 12 functions in Figure 1 from a regional sample of 23 languages, primarily from Northwest New Guinea, but with a handful of outliers included for purposes of comparison.²⁶ In Table 1, the languages are presented in 5 sections ordered in increasing genealogical distance from Roon. The first section contains languages of the Biakic subgroup, Roon and Biak. The second section, here following the classification in Kamholz (2014, this volume), contains languages of the Yapen subgroup, sister to Biakic within the larger Cenderawasih subgroup; these include Wamesa, Wooi, Ansus, Ambai and Kurudu. The third section contains other SHWNG languages not belonging to the Cenderawasih subgroup: Waropen, Moor, Ambel, Taba and Irarutu (though the membership of Irarutu in SHWNG is disputed). The fourth section contains other Austronesian languages belonging to the Central-Eastern Malayo-Polynesian (CEMP) branch but not SHWNG:

²⁵ Although recent years have witnessed a welcome efflorescence of descriptive studies focusing on the languages of Raja Ampat, the Bird's Head and the Cenderawasih Bay regions, our knowledge of the linguistic landscape is still woefully inadequate. Still, one has to begin somewhere. However it should be kept in mind that when further data become available, the overall picture painted below may change significantly.

²⁶ All 23 languages in the regional sample are also included in the world-wide 805-language sample of Gil (in preparation a).

Data on the languages cited in Table 1 and in the remainder of Section 3 are from the following sources: Abun — Berry and Berry (1999); Amarasi — Edwards (2016, pc); Ambel — Arnold (2017), Laura Arnold (pc); Ansus — own fieldwork; Batuley — Daigle (2015, pc); Biak — van Heuvel (2006), Mofu (2008), own fieldwork; Inanwatan — De Vries (2004); Hatam — Reesink (1999, 2002c), own fieldwork; Irarutu — Jackson (2014, pc); Kurudu — own fieldwork; Maybrat — Dol (1999), own fieldwork; Meyah — Gilles Gravelle (2010), own fieldwork; Moor — Dave Kamholz (pc); Moskona — Gloria Gravelle (2010); Mpur — Odé (2002), Boas Wabia (pc); Pom — own fieldwork; Serewen — own fieldwork; Sougb — Reesink (2002a), own fieldwork; Taba — Bowden (2001, pc); Tidore — van Staden (2000); Ujir — Antoinette Schapper (pc); Umar — Dave Kamholz (pc); Waropen — Held (1942a,b), own fieldwork; Wamesa — Gasser (2014, pc); Wooi — Sawaki (2016, pc), Jimmy Kirihio (pc); Yawa — Linda Jones (2003), Antoinette Schapper (pc) based on Jones, Paai and Paai (1989).

It should be acknowledged that due to the heterogeneous and occasionally incomplete nature of the sources, the quality of the data in Table 1 is not ideal; further descriptive work on the languages in question may suggest revisions to the data, and hence also the conclusions that are drawn from it.

Ujir, Batuley and Amarasi. And the fifth section contains non-Austronesian languages, mostly of the Cenderawasih Bay and eastern and central Bird's Head region, but also one from Maluku: Yawa, Meyah, Sougb, Hatam, Mpur, Abun, Maybrat, Inanwatan and Tidore — other than Meyah and Sougb, which belong to the East Bird's Head family, there is no generally agreed upon genealogical relationship between these languages, and for present purposes they are probably best considered to represent mutually-unrelated languages.

Table 1 presents the forms associated with each of the 12 functions that bear a phonological resemblance to Roon *ve*, meaning, for the most part, that they contain a labial consonant followed by a front vowel (though some liberty is taken in exercising this criterion).²⁷ Such forms are referred to as *VE-forms*.

VE-forms may belong to one of three distinct categories: (i) *VE-cognates*, forms sharing a common inheritance with Roon *ve* and therefore constituting a cognate set; (ii) *VE-loans*, forms related to VE-cognates via one or more processes of borrowing; and (iii) *VE-lookalikes*, forms bearing a mere chance resemblance to VE-cognates. Sorting out which category each and every VE-form belongs to is a major task requiring expert knowledge in each of the languages in question as well as familiarity with related ones — essentially more knowledge than is available not only to any one person but, in its present state, to the field as a whole. In the absence of such knowledge, Table 1 errs in the direction of inclusivity. Table 1 should thus be treated as an explanandum, which the remainder of this paper will take just a few initial steps towards addressing.

²⁷ In Table 1, the “—” symbol means that the function in question is expressed with a form that bears no phonological resemblance whatsoever to *ve*, while an empty cell means that no data is currently available on how the function is expressed. The “/” symbol separates alternative forms regardless of whether they are different morphemes or morphophonemic variants of the same morpheme. Parentheses are used to represent either of two situations: (a) marginal use of a form to express the function, as in allative *ve* in Wamesa, or (b) optional occurrence, as in Mpur *bwa(r)*. Table 1 makes no reference to whether the forms in question are free or bound, and to their linear order relative to other forms in the construction. Finally, for many of the languages in Table 1, the letter *v* is used, as in Roon, to refer to a bilabial fricative [β].

The most obvious pattern evident in Table 1 is that the distribution of VE-forms drops off significantly as one moves away from Roon and Biak through other SHWNG languages, and then out of SHWNG to other CEMP and then non-Austronesian languages.

Near the top of the table, Biak *ve*, clearly cognate to its Roon counterpart, has a similar range of functions, differing from Roon in just two respects. One is the presence of a VE-cognate with the purposive function, already mentioned in Section 1 previously. The second is the absence of a VE-cognate for DO: the form *frur* given in Table 1, is most probably not cognate, but rather a mere VE-lookalike.²⁸ On the basis of the Roon and Biak forms, it may be safely concluded that the entire range of functions represented in Figure 1 and Table 1 was available for the form **ve* in proto-Biakic.²⁹

Skipping down past the remaining SHWNG languages to the fourth section of the table, containing the non-SHWNG CEMP languages Ujir, Batuley and Amarasi, hardly any VE-forms are in evidence.³⁰ Given the plausible Austronesian etymologies of *ve* in (23a,b) below, it is likely that a larger sample of non-SHWNG languages of the CEMP branch would produce more cognates. Still, from the data in Table 1 it seems safe to conclude that the bulk of the functional expansion of VE-cognates as represented in the semantic map took place well after the break-up of CEMP, over a period of time that extended from pre-Proto-SHWNG through Proto-SHWNG all the way to Proto-Biakic.

Turning now to the non-Biakic SHWNG languages in sections 2 and 3 of the table, a mixed and rather complex picture presents itself, with many functions expressed with VE-forms alongside many other expressed by means of alternative forms. The first observation that can be made is that of the twelve functions in the table, two, possessive and WANT/future are almost completely absent from non-Biakic languages, suggesting that these represent innovations associated with proto-Biakic. (The one exception to this generalization, the WANT/future form *abi* in Ambel, is discussed below.) With respect to the WANT/future function at least, its relatively late development in SHWNG, together with the fact that in Roon, at least, it is associated with the C-initial prefixing conjugation, would seem to lend support to the second of the two diachronic interpretations of Figure 2 proposed at the end of Section 2.5, that in which metathesis applied to the verbal prefixes at an earlier stage, prior to the development of the WANT/future function.³¹

Two of the non-Biakic SHWNG languages, Moor and Irarutu, display an identical pattern of VE-forms, associated with nine of the twelve functions, to the exclusion of possessive, WANT/future and also GIVE. This pattern is illustrated in Figure 3 below:

²⁸ Note that as in Roon, the VE-cognate associated with the SAY function, *ove*, contains an additional element, in this case *o-*; this form is also available alongside *ve* to express the WANT/future function. (This form is probably related to Wamesa *oyo* SAY and *o* WANT.)

²⁹ From the limited data available in Dalrymple and Mofu (2012), it would appear that the Dusner cognate for *ve* (not represented in Table 1) is also associated with a more or less similarly wide range of functions.

³⁰ While Ujir has no VE-forms whatsoever, Batuley has a single VE-form *fei* SAY. Of the three VE-forms in Amarasi, only one would appear to be a plausible candidate for a VE-cognate, *fee* GIVE from proto-Austronesian **beRay*. According to Owen Edwards (pc), the form *bi* is originally a past locative verb, of non-Austronesian origin, while the form *fani* is of unclear provenance.

³¹ However, this does not account for why the SAY function is also associated with the C-initial prefixing conjugation, or, for that matter, why the possessive function, also supposedly a proto-Biakic innovation, is associated with the C-initial infixing conjugation.

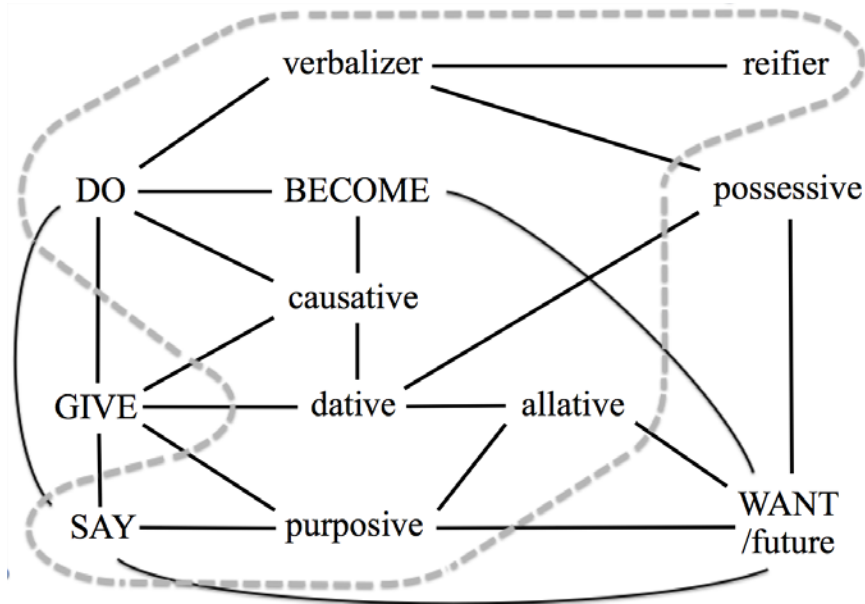


Figure 3: VE-forms in Moor and Irarutu

The interpretation of this shared pattern is open to question. According to Jackson (2014:196), *f~v* is a regular sound correspondence between Irarutu and other SHWNG languages, so the Irarutu forms in Table 1 are plausible VE-cognates. Nevertheless, within each of the two languages, the relationship between the different forms remains to be established. Still, the similarity of patterning, as illustrated in Figure 3, is striking. Genealogically, the two languages are not particularly closely related: while Waropen, according to Kamholz, (2014, this volume), constitutes a first-level subgroup within SHWNG, the very membership of Irarutu within SHWNG has been called into question: see Jackson (2014), Kamholz (2014) and references therein for discussion. Other than mere chance, at least three possible accounts of the resemblance between the two languages can in principle be put forward. First, their similar distribution could reflect a set of shared innovations supporting a subgroup containing the two languages. Secondly, their similar distribution could be due to contact, at some possible earlier stage when the ancestors of the two languages were in geographical proximity. Thirdly, their similar distribution could represent an older, more widespread pattern that was subsequently whittled down in other languages by the replacement, in various functions, of VE-cognates with other unrelated forms. As we shall see below, the replacement of VE-cognates with other forms did definitely take place at least once in the history of SHWNG, thereby lending *prima facie* support for the latter account. Still, at present, we do not know enough in order to make an informed choice between these three possible accounts.

A second set of languages displaying similar patterning in Table 1 above are Wamesa, Wooi and Ansus, which, according to the classification in Kamholz (2014, this volume), belong to the Western Yapen subgroup, part of the more extensive Yapen subgroup. Excluding the SAY forms *peya* in Wooi and *kavio* in Ansus, which are probably not VE-cognates, and generalizing across the differential distribution of VE-cognates associated with the dative, allative and purposive functions, the collective distribution of VE-cognates in these three languages may be represented as in Figure 4 below:

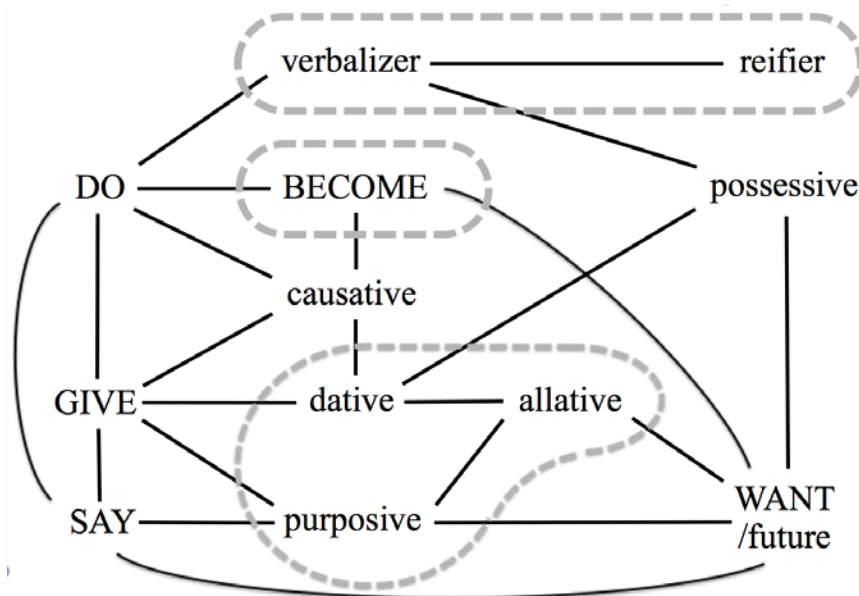


Figure 4: VE-cognates in Wamesa, Wooi and Ansus

As evident in Figure 4, the distribution of VE-cognates across the twelve functions of the semantic map is discontinuous, occupying three disjoint zones on the map. This distribution thus violates the typological interpretation of the semantic map, in accordance with which a single form should occupy contiguous zones on the map.³² In order to account for the discontinuous distribution of VE-cognates in Figure 4, at least two plausible accounts suggest themselves. First, the discontinuities may have arisen due to borrowing: some of the apparent VE-cognates represented in Figure 4 may instead be VE-loans. The obvious candidate source language for such borrowings is Biak, which until recently was a lingua franca throughout much of the northern Bird's Head and Cenderawasih Bay regions, and uses *ve* for all of the functions occurring in the Western Yapen languages. An additional advantage of the borrowing scenario is that it would account directly for the variation within the three languages with respect to the dative, allative and purposive functions, with different languages borrowing different subsets of these from Biak. However, a second alternative account is at least as attractive, namely that at a stage prior to proto-Western Yapen, additional functions were also associated with VE-cognates, thereby filling in the discontinuities characteristic of the contemporary Western Yapen languages. The two obvious candidates for this are the DO and GIVE functions: adding these would result in a single contiguous zone of functions associated with VE-cognates.³³ In accordance with this account, then, at some stage prior to proto-Western Yapen, VE-cognates associated with the DO and GIVE functions were replaced with other forms. In Section 3.2 below, evidence is provided that this is exactly what happened.

Turning now to Ambel, a somewhat different picture presents itself. To begin with, alongside *be*, with several of the functions in Table 1, there are also forms based on *bi*

³² For Wooi, in fact, there is an additional discontinuity, with VE-cognates for dative and purposive but not allative functions. In Wooi, an alternative form *to* is used for the allative function, as well as, alongside *ve*, for the dative function; this form may be related to the nearby (non-Austronesian) Yawa form *to* 'go'.

³³ In fact, including DO and GIVE in Figure 4 would result in a functional distribution that is not too dissimilar from that represented in Figure 3 for Moor and Iraputu, differing from it in the inclusion of the GIVE function and the exclusion of the causative and SAY functions.

with variable additional phonological material, associated with further functions. Most likely all of these forms are related to each other and may accordingly be characterized as VE-cognates, though the details still need to be sorted out.³⁴ Assuming they are all VE-cognates, the resulting range of functions can be represented as in Figure 5 below:

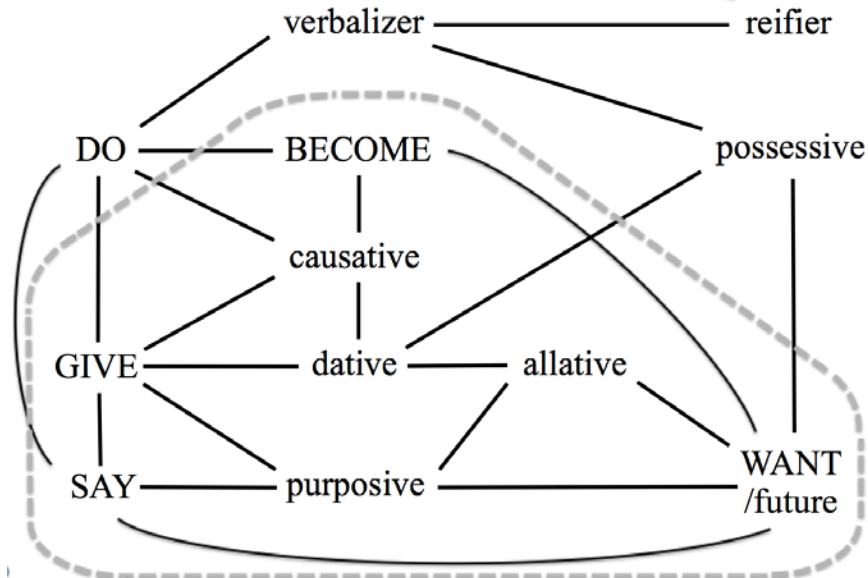


Figure 5: VE-cognates in Ambel

Unlike for Wamesa, Wooi and Ansus, the distribution of VE-cognates across the twelve functions in Ambel occupies a contiguous zone on the semantic map. What is perhaps most noteworthy of Ambel is that it is the only Austronesian language in Table 1 outside of Biakic that uses a VE-cognate to express the WANT/future function. At the same time, however, it lacks a VE-cognate for the DO, verbalizer and reifier functions, present in several other SHWNG languages. In conjunction, these two facts demonstrate that the distribution of functions associated with VE-cognates across the SHWNG group cannot be represented entirely in terms of a single tree structure whose nodes are host to shared innovations involving the expansion of the functional range of VE-cognates. Specifically, whereas allative-to-WANT/future grammaticalization would be a shared innovation of a putative group including Biakic and Ambel to the exclusion of, say, Moor, generalization of a VE-cognate to the DO, verbalizer and reifier functions would constitute a shared innovation of a conflicting group including Biakic and Moor to the exclusion of Ambel. Instead, in order to account for the distribution of functions associated with VE-cognates across the various SHWNG languages, it is necessary to posit either or both of two additional processes: borrowing, and the replacement of VE-cognates with alternative forms. In the case at hand, the most plausible scenario for the development of the WANT/future function of VE-cognate *abí* in Ambel would involve borrowing, possibly from Biak. Support for such a borrowing scenario is provided by the presence of VE-forms, potential VE-loans, expressing the WANT/future function, in three non-Austronesian languages along the

³⁴ Laura Arnold (pc) speculates that the form *bin(é)* SAY might be derived historically from *bi* GIVE plus the proximal deictic marker *ne*. This would seem to bear an interesting resemblance to what happens in Roon, where, as suggested in Section 2.1 above, *vere* SAY is derived from *ve* plus a marker *re* with pronominal and topic-marking properties.

north coast of the Bird's Head connecting Biak with Raja Ampat, where Ambel is spoken: Mpur *bwana*, Abun *be* and Maybrat *awe*.³⁵ Note that such a contact scenario need not necessarily involve the simple and direct borrowing into Ambel of a form-function pairing from Biak, which would render Ambel WANT/future *abi* and dative-purpose-allative *be* as doublets. Instead, it might involve a universally-motivated process of allative-to-WANT/future grammaticalization internal to Ambel, but further encouraged by contact with Biak, in which the similar-sounding form *ve* itself exhibits coexpression of allative and WANT/future functions.

Moving on to Waropen, the distribution of VE-cognates across the 12 functions is represented in Figure 6 below:

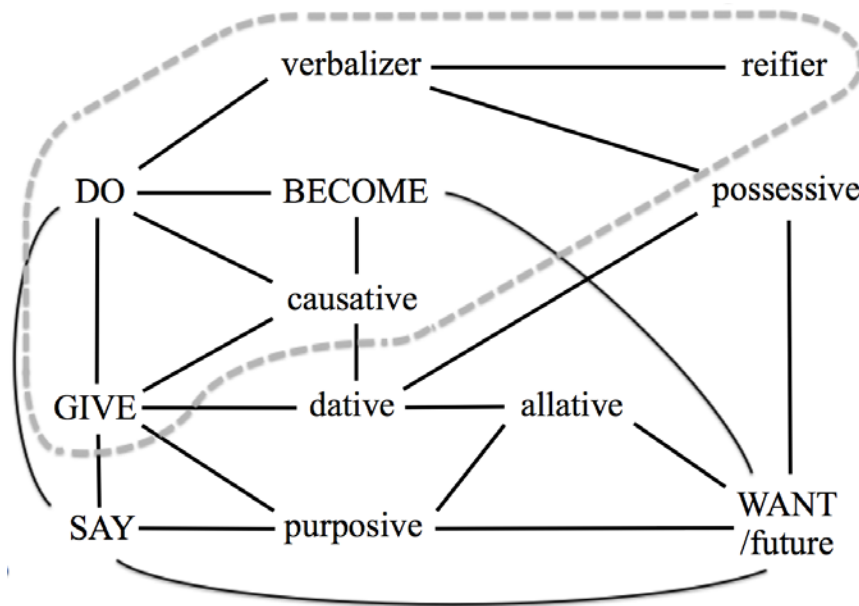


Figure 6: Waropen

As evident above, the distribution of VE-cognates in Waropen is somewhat more restricted. Like Roon, it has DO/GIVE coexpression with a VE-cognate, but beyond that, the only other functions expressed by VE-cognates are the closely related BECOME and causative, as well as the verbalizer and reifier functions. However, the latter, reifier function of Waropen *we* displays a noteworthy grammatical property. In Roon, and in all of the other SHWNG languages considered so far in this section, the morphosyntactic behaviour of VE-cognates has been consistent with an SVO word-order typology. As main or auxiliary verbs, VE-cognates precede their complements, while as affixes, clitics or adpositions, they precede their hosts. The same is true largely also for Waropen — with the striking exception of reifier *we*, which occurs in a construction with a mirror-image word-order to that in Roon and other SHWNG languages. Specifically, whereas in the latter languages, the reifier construction is head-initial, of the form (N) VE X, as illustrated in Roon example (6a), in Waropen the reifier construction is head-final, of the form X VE (N), for example *hikoaina we rumagha* (1PL.INCL:live *ve* house:ART) ‘the house we live in’ (Held 1942a:140). In order to explain how this construction may have arisen, the geographical location of

³⁵ It should be acknowledged, however, that for Mpur *bwana*, at least, an alternative etymology is available, deriving it from Mpur *bwa(r)* SAY (van Staden and Reesink 2008: 21).

Waropen is key. Compared to the other languages considered so far, Waropen is situated further to the east, on the New Guinea mainland, and in closer proximity to many non-Austronesian languages exhibiting an SOV word-order typology. Little grammatical information is currently available on the closest neighbors of Waropen, namely, Bauzi, Barapasi and Demisa, of the East Geelvink Bay family.³⁶ In particular, it is not known what the corresponding nominalization and relativization constructions look like in those languages. Still, it would seem very likely that the reverse head-final order of the reifier construction in Waropen arose through contact with one or more of the non-Austronesian languages of that region with their SOV word-order typology. As we shall soon see below, a similar word-order switch occurs also in Yawa, a non-Austronesian language of Yapen island with SOV word-order typology.³⁷

The final two non-Biakic SHWNG languages in Table 1, Kurudu and Taba, would appear to be largely lacking in VE-cognates.³⁸ Genealogically, Kurudu and Taba do not belong to any particular subgroup within SHWNG, nor for that matter does their complement set belong to a coherent subgroup that might have played host to various shared innovations involving the functions of *ve* and its cognates. In accordance with Kamholz (2014, this volume), Kurudu is a member of the Yapen subgroup and hence more closely related to Roon and Biak than are languages such as Moor, Ambel and Irarutu, even though, in terms of the wide range of functions associated with VE-cognates, the latter languages bear a greater resemblance to Roon and Biak. Taba, on the other hand, is a member of the Raja Ampat South Halmahera subgroup and hence more closely related to Ambel, even though the latter has a significantly wider range of functions associated with its VE-cognates. What Kurudu and Taba have in common is their peripheral location in the western and eastern extremities of the SHWNG-speaking region respectively. This suggests that the various functional expansions associated with VE-cognates originated in locations near the centre of the region, and then spread outwards in various directions, but never made it to the geographical extremities of the SHWNG-speaking region.

So much for the Austronesian languages in Table 1; the fifth and final section in the table provides data from some of the non-Austronesian languages of the region. Since the languages are not Austronesian, none of the VE-forms this section of the table are possible VE-cognates; however, their relative profusion suggests that some are not mere VE-lookalikes but rather VE-loans, representing instances of borrowing. One obvious case of this is the Mpur form *frur* DO, which is most probably a loan from

³⁶ Briley's (1996) description of Bauzi indicates an SOV word order, while a single sentence in Barapasi cited by Larry Jones (1987) also suggests the same.

³⁷ The word-order flip of the reifier construction in Waropen is of course reminiscent of the more extensive word-order shift characteristic of many Austronesian languages further to the east in New Guinea, which have adopted many or all of the SOV word-order typology correlates of the neighboring non-Austronesian languages — see, for example, Ross (1996, 2001, 2007). Unlike those languages, however, in Waropen the word-order change appears to be limited to the reifier construction. In this respect, Waropen bears a striking resemblance to Singlish, the basilectal variety of English spoken in Singapore, which, while maintaining its overall SVO word-order typology, has calqued its reifier construction on the corresponding head-final construction in Sinitic languages such as Hokkien and Cantonese — see Gil (2003) for detailed description. For example, alternative Singlish equivalents of the above Waropen phrase would be *we live one (house)*, and *we live that one (house)*, in which reifiers *one* and *that one* correspond to the Waropen reifier *we*.

³⁸ Kurudu *ve* BECOME is most likely a borrowing from either Biak or Waropen, given the absence of any other VE-forms in the language. Taba *pe* DO is a VE-cognate: *p~v* is a regular sound-change relating South Halmahera languages to other SHWNG ones (Kamholz 2014: 45).

Biak, given the role of Biak as a trade language across the region. Another possible instance of borrowing, alluded to in the discussion of Ambel and Figure 5 above, is provided by some or all of the WANT/future forms, Sougb *ouwan*, Mpur *bwana*, Abun *be* and Maybrat *awe*, also from the Biak forms *ve* or *ove*.

A somewhat more complex instance of borrowing is found in Yawa. The verbalizer and reifier *ve* is clearly a borrowing from some SHWNG language, as is the form *ave*, with DO and causative functions, though the origin and function of the initial vowel *a* remains unclear. Moreover, the form *aunanto* GIVE would seem to be decomposable into three constituent parts: *au*, probably a phonological reduction of *ave*; *nan*, of unclear provenance; and *to* GO (mentioned in footnote 32 above). Support for this analysis is provided by an alternative form *aude*, glossed as ‘be given’, which consists of *au* plus *de* COME. Thus, the Yawa forms *ave* and *aunanto* would appear to provide an example of partial DO/GIVE coexpression.

As Gasser (this volume) points out, Yawa is characterized by a high rate of borrowing from neighboring SHWNG languages. However, Yawa *ve* is but one example of what is perhaps the most striking case of borrowing from SHWNG languages into neighboring non-Austronesian ones, that involving the verbalizer: other such examples in Table 1 are Meyah *ebe*, Sougb *ebe*, Hatam *bi*, Mpur *bi* and Abun *bi*. Indeed, this widespread pattern of borrowing has even reached the attention of the general typological literature — see Wichmann and Wohlgemuth (2008), Wohlgemuth (2009: 236–239) for discussion. The spread of the verbalizer across the non-Austronesian languages of the Bird’s Head provides yet another striking instantiation of the areal rather than genealogical nature of the distribution of forms in Table 1.³⁹

The Yawa verbalizer *ve*, as well as its companion reifier *ve*, also display an interesting switch in word order. Whereas the remaining non-Austronesian languages in Table 1 all share the SVO word order typology of their Austronesian neighbors, Yawa alone exhibits an SOV word order typology. And indeed, verbalizer and reifier *ve* both conform to the SOV word order typology, occurring after their hosts rather than before, as is the case for most SHWNG languages, including the presumed donor language for the borrowing into Yawa, namely, Biak. What the mechanisms might have been for such a change in word order is a fascinating question, but one that lies beyond the scope of this paper.⁴⁰

At present, there is little more that can be said with certainty about the data in Table 1. Many questions, some big, others pertaining to matters of small detail, remain open. Some answers may emerge when further data is available on the languages of the region; others, however, may remain lost in the mists of time.

³⁹ The spread of the verbalizer into the languages of the Bird’s Head may perhaps also underlie a typologically remarkable feature of the East Bird’s head languages Meyah, Moskona and Sougb, namely a correlation between phonological form and syntactic category membership: all verbs begin with a non-high vowel, most commonly *e-* or *o-*. One may speculate that this non-high vowel is a now no longer transparent reflex of an earlier VE-loan associated with DO and/or verbalizer functions that was borrowed from Austronesian into the East Bird’s head languages. Such an earlier VE-loan may also possibly be ancestral to the contemporary verbalizer *ebe* in all three languages, and/or the verb DO *ebe/eba* in Sougb — for the latter, see also footnote 50 below.

⁴⁰ It should be noted that for the reifier function, the word order flip-flop in Yawa precisely mirrors that mentioned above for Waropen. However, whereas for Waropen, the postpositional nature of the reifier is an anomaly in an otherwise SVO word order typology, in Yawa, the linear order of the reifier conforms to that of the closely related verbalizer, and indeed, to the SOV word order typology of the language as a whole.

3.2 DO/GIVE coexpression

Having examined in detail the range of functions in the semantic map of Figure 1 and the data from Table 1, we may now return to take a closer look at DO/GIVE coexpression in the languages of the region. In doing so, we broaden the scope of the discussion to consider not only VE-forms but, in addition, other forms, not cognate to Roon *ve*, that exhibit DO/GIVE coexpression.

As noted in Section 2.4.1, DO/GIVE coexpression is cross-linguistically uncommon. However, as suggested by the Gil (in preparation a) 805-language sample, the closer one gets to Northwest New Guinea, the more frequent DO/GIVE coexpression becomes. This is shown in Table 2 below. In Table 2, rows zoom in progressively on the Northwest New Guinea region, providing figures for the total worldwide sample, the languages of New Guinea plus Wallacea, the languages of New Guinea alone, and the languages of Northwest New Guinea.⁴¹ The first column provides the total number of languages in each region in the sample. The next three columns show the frequency of DO/GIVE coexpression in each region. The next column represents the percentage of languages with complete DO/GIVE coexpression in each region; for example, for Northwest New Guinea, 36.7% is 11 out of 30. The final column represents the percentage of languages with complete DO/GIVE coexpression in the remainder of the world relative to each region. For example, for Northwest New Guinea, 3.1% represents the percentage of languages outside of Northwest New Guinea that have DO/GIVE coexpression. (The calculation is as follows: The number of languages outside of Northwest New Guinea is $805 - 30 = 775$. Of these, the number that have DO/GIVE coexpression is $35 - 11 = 24$. 24 out of 775 is 3.1%.)

Table 2. DO/GIVE coexpression in the 805-language sample

<i>region</i>	<i>languages in sample</i>	<i>DO/GIVE coexpression</i>			<i>percentage of complete</i>	
		<i>absent</i>	<i>partial</i>	<i>complete</i>	<i>in region</i>	<i>out of region</i>
TOTAL	805	760	10	35	4.3%	—
NG & Wallacea	178	151	4	23	12.9%	1.9%
NG	156	132	3	21	13.5%	2.2%
NW NG	30	17	2	11	36.7%	3.1%

As shown in Table 2, the frequency of DO/GIVE coexpression increases dramatically as one zeroes in on the Northwest New Guinea region, from 4.3% worldwide, though 12.9% and 13.5% to an impressive 36.7% in Northwest New Guinea. Thus, the frequent DO/GIVE coexpression associated with Northwest New Guinea does not arise out of the blue, but, rather, appears to be the culmination of an increased propensity for DO/GIVE coexpression that is evident across the larger region of New Guinea and Wallacea.

The distribution of DO/GIVE coexpression in New Guinea and the surrounding region is shown in the following map, in which languages with complete DO/GIVE

⁴¹ For present purposes, New Guinea is understood to consist of the main island plus associated smaller islands, as demarcated by the current political boundaries, however arbitrary they may be; it thus consists of Papua New Guinea plus the Indonesian provinces of Papua and Papua Barat. Wallacea refers to “Linguistic Wallacea” as defined in Schapper (2015), including Timor Leste and the Indonesian provinces of Maluku Utara, Maluku, Nusa Tenggara Timur and the eastern part of the island of Sumbawa, in addition to its overlap with parts of western New Guinea.

coexpression are in red, with partial DO/GIVE coexpression in yellow, and with no DO/GIVE coexpression in black.

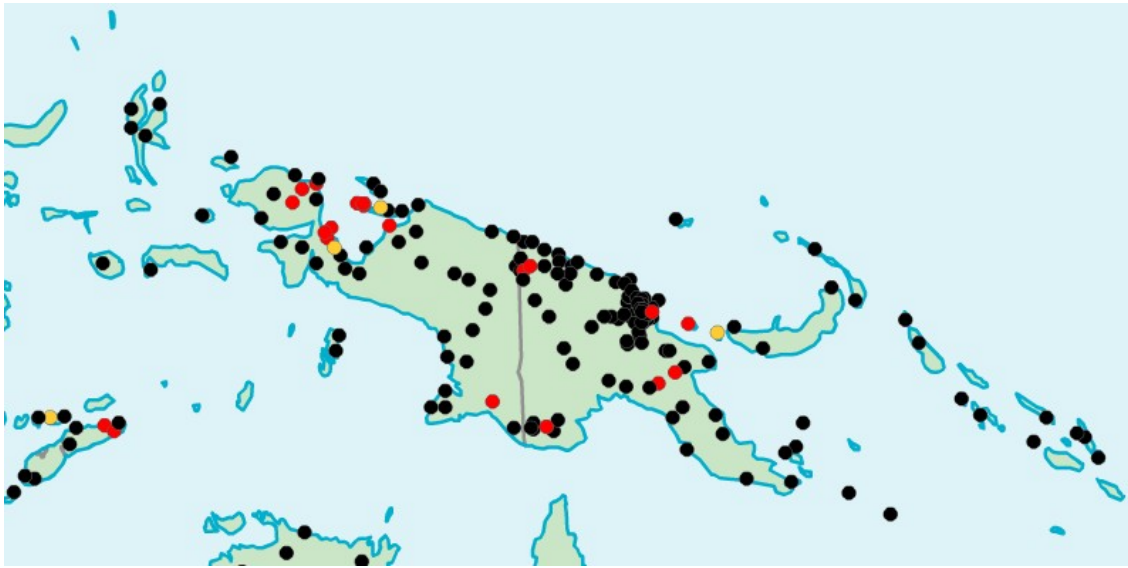


Figure 7: DO/GIVE coexpression in New Guinea and surrounding region

In the 805-language sample, Northwest New Guinea is virtually the only region in the world where DO/GIVE coexpression occurs frequently and across several different linguistic families.⁴² Table 3 below presents a summary of the 13 languages of Northwest New Guinea in the sample that exhibit partial or complete DO/GIVE coexpression.⁴³

⁴² Elsewhere in New Guinea, the 805-language sample reveals two other cases of DO/GIVE coexpression occurring in two geographically proximate but genealogically unrelated languages, possibly indicative of language contact. One is in the Eastern Highlands of Papua New Guinea, where both Patep (Austronesian) and Menya (Trans-New-Guinea) exhibit DO/GIVE coexpression, while the other is in southern New Guinea, straddling the political boundary, where both Marind (a language of the Marindic family) and Nen (a language of the Morehead-Wasur family) display DO/GIVE coexpression — though in the latter case, it should be noted that there are several other languages in the region, including Anta, Kanum (Ngkâlmpw), Komnzo, Wára and Yaqay that do not.

Further afield, southern Alaska also presents a possible case of a DO/GIVE coexpression hotbed, albeit spread out more sparsely over a somewhat larger region, with DO/GIVE coexpression in Yupik Eskimo (of the Eskimo-Aleut family), Han Athabaskan (of the Na-Dene family), and Haida (a language isolate); the areal nature of the phenomenon is underscored by the absence of DO/GIVE coexpression in several related (Eskimo-Aleut and Na-Dene) languages outside the region.

The extent to which the historical account for DO/GIVE coexpression proposed in this paper for the languages of Northwest New Guinea is applicable to these other cases must remain subject to future investigation.

⁴³ Of the 13 languages in Table 3, two exhibit partial DO/GIVE coexpression. The first case, that of Yawa, was mentioned above. The second case is that of the SHWNG language Umar, with *e* for DO and *ve* for GIVE. Given the nearby cases of DO/GIVE coexpression expressed with *ve*, and the propensity for the bilabial fricative to be lost in Roon and other languages of the region, these two forms are very likely to be related.

To complete the picture of DO/GIVE coexpression in Northwest New Guinea, the 17 languages of the region not exhibiting DO/GIVE coexpression are as follows: Biak, Ambai, Serui Laut, Kurudu,

Table 3. DO/GIVE coexpression in Northwest New Guinea

	DO	GIVE
1 Roon	<i>ve</i>	<i>ve</i>
Dusner	<i>ve</i>	<i>ve</i>
Waropen	<i>we</i>	<i>we</i>
Umar	<i>e</i>	<i>ve</i>
2 Pom	<i>ong</i>	<i>ong</i>
Serewen	<i>ong</i>	<i>ong</i>
Wooi	<i>ong</i>	<i>ong</i>
Ansus	<i>ong</i>	<i>ong</i>
Wamesa	<i>(one)</i>	<i>one</i>
3 Meyah	<i>eita</i>	<i>eita</i>
Moskona	<i>eyta</i>	<i>eyta</i>
4 Hatam	<i>yai</i>	<i>yai</i>
5 Yawa	<i>ave</i>	<i>aunanto</i>

As shown in Table 3 above, DO/GIVE coexpression in Northwest New Guinea is present in four unrelated language families: Austronesian (in sections 1 and 2 of the table), the East Bird's Head family (section 3), the isolate Hatam (section 4), and in partial form also the Yawa-Saweru family (section 5). Given the scarcity of DO/GIVE lexicalization worldwide, its occurrence in several unrelated families within a single small geographical region can hardly be coincidental: the only plausible inference is that it (or perhaps, as argued below, a structural precursor to it) originated once in the region and then spread through contact.

In Table 3, DO/GIVE coexpression is manifest in four distinct cognate sets, two of which are associated with the Austronesian family. Whereas one of these cognate sets, represented in Roon, Dusner, Waropen, and Umar, as well as in Yawa, is that of the familiar *ve*, a second cognate set, occurring in Pom, Serewen, Wooi, Ansus and Wamesa, involves a completely different form, namely *ong* or *one* — in what follows these are referred to as ONG-cognates.

In order to understand the nature and history of DO/GIVE coexpression in the languages of Northwest New Guinea, it is necessary to expand the scope of the discussion and consider an additional function, namely TAKE. Consider the Meyah form *eita* in the following sentences:

Warembori, Moor, Yaur, Yeresiam, Irarutu, Magei Matbat and Ambel (SHWNG Austronesian), Manokwari Papuan Malay (other Austronesian), Sougb (East Bird's Head), Mpur (isolate), Maybrat (isolate), Tause (Lakes Plain), and Inanwatan (South Bird's Head). It should be noted that several of these languages, including perhaps Kurudu, Warembori, Tause, Irarutu, Inanwatan, Magei Matbat and Ambel, might be argued to be geographically peripheral to a more nuclear linguistic area centered on the eastern Bird's Head and Cenderawasih Bay regions, within which the percentage of languages with DO/GIVE coexpression would be significantly higher than the 36.7% cited above.

- (16) *Yedi eita oska*
 Yedi **eita** bad
 ‘Yedi did bad things.’
- (17) *Alfian eita mek gu Lorens*
 Alfian **eita** pig to Lorens
 ‘Alfian gave a pig to Lorens.’
- (18) *Alfian eita mek jeska Lorens*
 Alfian **eita** pig from Lorens
 ‘Alfian took a pig from Lorens.’

Examples (16) and (17), paralleling Roon (2) and (3), illustrate DO/GIVE coexpression. However, example (18) shows that in Meyah, *eita* is also associated with the TAKE function.⁴⁴

Table 4 below shows the distribution of the coexpression, partial or complete, of the three functions, DO, GIVE and TAKE, in a sample of languages containing most of the 23-language regional sample of Table 1, augmented with the other languages included in Table 3.

⁴⁴ Constructions such as the above are discussed by Reesink (2002c: 29–30), who characterizes GIVE/TAKE coexpression as an areal feature associated with the Bird’s Head region. However his discussion fails to clearly distinguish between *bona-fide* instances of GIVE/TAKE coexpression and constructions involving a dedicated GIVE word, such as in Papuan Malay and possibly also Mansim, which do not instantiate GIVE/TAKE coexpression. Also, no mention is made by Reesink of the more widespread occurrence of GIVE/TAKE coexpression in Austronesian languages, as evident in Table 4. The absence of a dedicated GIVE word, associated with GIVE/TAKE coexpression, is also cited in Gil (2015:332) as a potential Mekong-Mamberamo feature, in that it is present at both extremities of the region, in western New Guinea plus Wallacea and in Mainland Southeast Asia, albeit not in the many islands of the Indonesian archipelago that separate the two. Further to the east, Fedden (2010) discusses GIVE/TAKE coexpression in Mian (an Ok language of Sandaun Province, Papua New Guinea).

Table 4. DO/GIVE/TAKE coexpression

	DO	GIVE	TAKE	coexpression	
1	Biak	<i>frur</i>	<i>ve</i>	<i>un</i>	
	Ambai	<i>narir</i>	<i>okon</i>	<i>kar</i>	
	Ambel	<i>alén</i>	<i>bi</i>	<i>ál</i>	
	Ujir	<i>yngau</i>	<i>sawang</i>	<i>nal</i>	
	Amarasi	<i>dake/mo'e</i>	<i>fee</i>	<i>kat</i>	—
	Inanwatan	<i>ge</i>	<i>we/wi</i>	<i>ra</i>	
	Maybrat	<i>no</i>	<i>e</i>	<i>o</i>	
	Abun	<i>ben</i>	<i>bi</i>	<i>nai</i>	
	Tidore	<i>gahi</i>	<i>falang</i>	<i>oro</i>	
2	Roon	<i>ve</i>	<i>ve</i>	<i>bar</i>	
	Dusner	<i>ve</i>	<i>ve</i>	<i>ut</i>	
	Waropen	<i>we</i>	<i>we</i>	<i>wu</i>	
	Umar	<i>e</i>	<i>ve</i>	<i>ur</i>	
	Pom	<i>ong</i>	<i>ong</i>	<i>ko</i>	DO/GIVE
	Serewen	<i>ong</i>	<i>ong</i>	<i>ko</i>	
	Wooi	<i>ong</i>	<i>ong</i>	<i>ko</i>	
	Ansus	<i>ong</i>	<i>ong</i>	<i>ko</i>	
	Wamesa	<i>(one)</i>	<i>one</i>	<i>ko</i>	
3	Moor	<i>ven</i>	<i>ha</i>	<i>ha</i>	
	Taba	<i>pe</i>	<i>yat</i>	<i>yat</i>	
	Irarutu	<i>fi</i>	<i>ar</i>	<i>ar</i>	GIVE/TAKE
	Batuley	<i>el</i>	<i>nal</i>	<i>nal</i>	
	Sougb	<i>eba/ebe</i>	<i>eic</i>	<i>eic</i>	
	Mpur	<i>frur</i>	<i>bot</i>	<i>bot</i>	
4	Meyah	<i>eita</i>	<i>eita</i>	<i>eita</i>	
	Moskona	<i>eyta</i>	<i>eyta</i>	<i>eyta</i>	DO/GIVE/TAKE
	Hatam	<i>yai</i>	<i>yai</i>	<i>yai</i>	
	Yawa	<i>ave</i>	<i>aunanto</i>	<i>augav</i>	

In Table 4, the four sections divide the languages into four groups, in accordance with the patterns of coexpression exhibited by DO, GIVE and TAKE. The first group consists of languages with no coexpression, that is to say, with three distinct words for DO, GIVE and TAKE. The second group consists of languages with DO/GIVE coexpression but a different word for TAKE; among these languages is Roon, as discussed in Section 2. The third group consists of languages with GIVE/TAKE coexpression but a different word for DO. And the fourth group consists of languages with DO/GIVE/TAKE coexpression, as exemplified by sentences (16) – (18) in Meyah above.

Table 4 lends itself to a number of observations. First is the fact that in the languages of Table 4, only four of the five logically possible combinations of coexpression are realized; there are no instances of DO/TAKE coexpression without also coexpression

of GIVE.⁴⁵ This fact points towards the following expansion of the semantic map in Figure 1 to include the TAKE function:⁴⁶

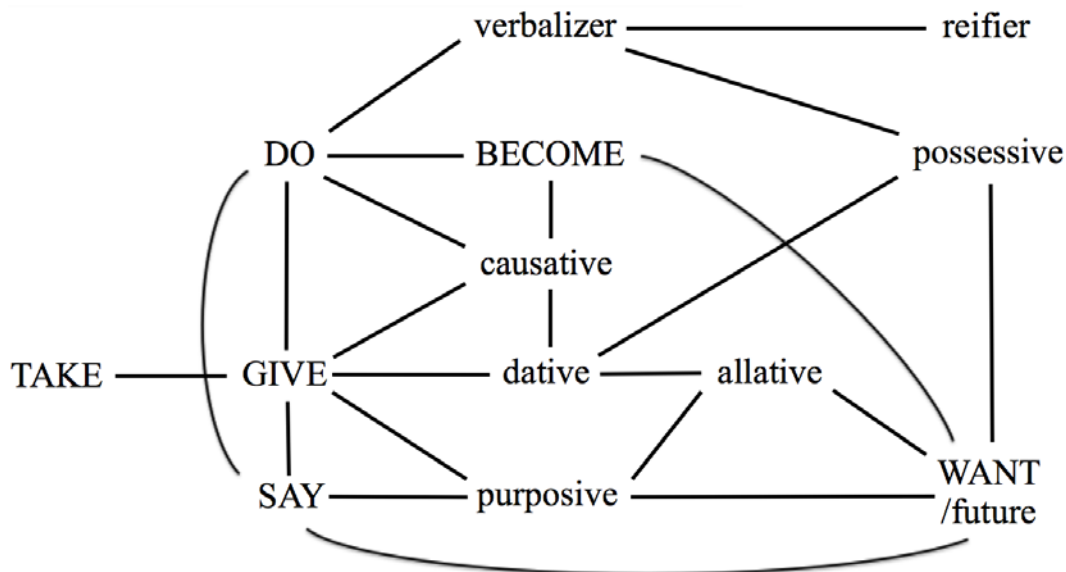


Figure 8: Adding TAKE to the semantic map

Under the typological interpretation, the map in Figure 8 makes the prediction that if a language has DO/TAKE coexpression, the same form must also express the GIVE function. Whether this prediction withstands future cross-linguistic investigations remains to be seen. (See also discussion in footnote 51 below.)

The second observation with regard to Table 4 is that the various patterns of coexpression exhibit qualitatively different geographical and genealogical distributions. In the second section of the table, DO/GIVE coexpression (without TAKE) is limited to Austronesian languages of the Cenderawasih Bay region. In contrast, in the third section, GIVE/TAKE coexpression (without DO) enjoys a much wider distribution. Geographically, it is found from Moor in the southeast Cenderawasih Bay, through Irarutu of the Bomberai peninsula, Sougb and Mpur of the Bird's Head, and then south to Batuley in the Arafura Sea, and all the way west to Taba in the Maluku islands. And genealogically, it occurs in both Austronesian and non-Austronesian languages. Finally, in the fourth section, DO/GIVE/TAKE coexpression is limited to some non-Austronesian languages of the eastern Bird's Head, and, in partial form, also to Yawa on the nearby island of Yapen.

How might the patterns of coexpression represented in Table 4, and, in particular, the coexpression of DO and GIVE, have arisen? In order to construct a historical account, a useful point of departure is provided by the serial-verb-grammaticalization analysis proposed by Klamer and Schapper (2012) in their reconstruction of GIVE constructions

⁴⁵ A possible partial counterexample to this generalization may be provided by Ambel, to the extent that *anén* DO and *ál* TAKE can be shown to be related.

⁴⁶ It is probable that additional lines might connect the TAKE function to other functions in the map. Thus, Heine and Kuteva (2002) cite paths of grammaticalization from TAKE to causative (p.286), TAKE to future (p. 288), and TAKE to possessive (p. 290–291). These additional relationships are beyond the scope of the present paper.

in the languages of the Timor-Alor-Pantar family. Simplifying considerably, the gist of their proposal can be summarized as follows:

- (19) The Serial-Verb-Grammaticalization Analysis:
Timor-Alor-Pantar (Klamer and Schapper 2012)

Stage 1:	A	T	TAKE	R	GIVE
			↓		
Stage 2:	A	T	postp	R	GIVE

In (19) above, letters *A*, *T* and *R* represent, respectively, the Agent, Theme and Recipient of the ditransitive GIVE construction. Stage 1 involves a serial verb construction consisting of two verbs expressing the notions of TAKE and GIVE respectively. In terms of the typology proposed by Enfield (2007), the construction exhibits a typical “handling-dispatch” pattern, in which the first verb describes the manipulation of the *T* argument, while the second verb describes its transfer towards or placement with the *G* argument. Stage 2 represents the outcome of a process of grammaticalization in which the TAKE verb is semantically bleached and formally reduced, ending up as a postposition flagging the *T*, resulting in a typical ditransitive construction; in accordance with the terminology introduced by Haspelmath (2005), the construction may be said to exhibit secundative alignment.

In order to adapt Klamer and Schapper’s serial-verb-grammaticalization analysis to Northwest New Guinea, three modifications need to be made. First, the word order typology must be transposed from the OV/postpositional order characteristic of Timor-Alor-Pantar languages to the VO/prepositional order typical of the languages of Northwest New Guinea. Resulting is the following schema:

- (20) The Serial-Verb-Grammaticalization Analysis:
(19) transposed to VO/prepositional order

Stage 1:	A	TAKE	T	GIVE	R
			↓		
Stage 2:	A	prep	T	GIVE	R

In (20), TAKE and GIVE both precede, rather than follow, their *T* and *R* complements respectively. But this is not enough. A second modification is that the locus of grammaticalization shifts from TAKE to GIVE:

- (21) The Serial-Verb-Grammaticalization Analysis:
(19) transposed to VO/prepositional order, locus of grammaticalization shifted

Stage 1:	A	TAKE	T	GIVE	R
				↓	
Stage 2:	A	TAKE/GIVE	T	prep	R

In (21), it is GIVE, rather than TAKE, that is semantically bleached and formally reduced to a preposition flagging the *R*; the result is a typical ditransitive construction exhibiting indirective alignment. In fact, this particular instance of grammaticalization is none other than the familiar GIVE-to-dative path of grammaticalization already discussed in Section 2.4.9 above.

However, as suggested in (21), another change is in evidence. Since the erstwhile GIVE verb has become a semantically-bleached preposition, the locus of the GIVE meaning has shifted to the TAKE verb. But since the TAKE verb retains its original TAKE meaning (as evidenced in other constructions), GIVE/TAKE coexpression has arisen.

Thus, the serial-verb-grammaticalization analysis represented in (21) provides a potential account for the development of GIVE/TAKE coexpression in those languages where it occurs, namely, those in the third and fourth sections of Table 4.

Support for the analysis in (21) comes from Maybrat. In Maybrat, as shown in Table 4, there is no GIVE/TAKE coexpression; however, giving events are encoded in a serial verb construction consisting of verbs meaning TAKE and GIVE respectively — see Reesink (2013:246) for discussion. Thus, Maybrat instantiates the initial Stage 1 of the development shown in (21).⁴⁷ And in fact, as evident in Table 4, one of the languages with GIVE/TAKE coexpression is a geographical neighbor of Maybrat, namely, Mpur. Accordingly, in Mpur at least, GIVE/TAKE coexpression may plausibly have arisen as a result of the path of grammaticalization represented in (21) and exemplified by Maybrat.

However, it is less clear whether the path of grammaticalization in (21) is appropriate for all of the other languages with GIVE/TAKE coexpression shown in Table 4. Moreover, the analysis in (21) does not address the occurrence of DO/GIVE coexpression, either on its own, as in Roon and other languages, or in conjunction with GIVE/TAKE coexpression, as in Meyah and other similar languages.

In order to account for DO/GIVE coexpression, a third modification must be introduced into Klamer and Schapper's original serial-verb-grammaticalization analysis in (19). This modification consists of replacing the verb meaning TAKE with a verb meaning DO, and the verb meaning GIVE with either of two verbs of motion, distinguished in terms of direction: MOVE-TO or MOVE-FROM:

(22) The Serial-Verb-Grammaticalization Analysis:
Languages of the Bird's Head and Cenderawasih Bay

(a) Variant 1: MOVE-TO

Stage 1:	A	DO	T	MOVE-TO	R
				↓	
Stage 2:	A	DO/GIVE	T	prep	R

(b) Variant 2: MOVE-FROM

Stage 1:	A	DO	T	MOVE-FROM	R
				↓	
Stage 2:	A	DO/TAKE	T	prep	R

In accordance with (22), the initial Stage 1 consists of a serial verb construction comprising a semantically relatively light verb meaning DO, followed by a verb of motion, either towards the R as in variant 1, or away from the R as in variant 2. Although no verbs meaning GIVE or TAKE are present, GIVE and TAKE meanings emerge compositionally from the construction as a whole, specifically, from the combination of DO with the verb of motion: DO + MOVE-TO = GIVE; DO + MOVE-FROM = TAKE. Then, at Stage 2, grammaticalization applies to the verb of motion, reducing it to the corresponding preposition, with appropriate dative or ablative meaning. Due to this grammaticalization, the semantic weight of the construction shifts

⁴⁷ Other languages exhibiting TAKE-GIVE serialization as in (21) Stage 1 include Cantonese (Matthews 2006: 76–77), Lao (Enfield 2007: 525), Yoruba (Atoyebi, Haspelmath and Malchukov 2010: 150), Fongbe (Lefebvre 1994: 3), and Baule (a Kwa language of the Ivory Coast) (Creissels and Kouadio 2010: 177).

from the erstwhile second verb to the first, which takes on the GIVE or TAKE meaning, resulting in coexpression: DO/GIVE coexpression in variant 1, DO/TAKE coexpression in variant 2.⁴⁸

Although the serial-verb-grammaticalization analysis proposed in (22) goes beyond the original Klamer and Schapper (2012) proposal in (19) in several significant ways, it shares with it a fundamental underlying feature, namely the derivation of a ditransitive construction involving GIVE from an earlier construction involving verb serialization. From a generalist perspective, the serial verb grammaticalization analysis in (22) highlights an important potential mechanism underlying lexical semantic change. We tend to think of changes in the meanings of words as proceeding along paths defined in terms of principles involving metaphor, metonymy, and so forth, all based on similarities between the meaning of the original word and that of the new one. However, in the case at hand, the expansion of a word's meaning from DO to DO/GIVE does not originate in the commonality of meaning between DO and GIVE. Rather, it can only be understood in terms of the syntactic environment in which the word occurs, whereby the GIVE meaning originates as a constructional meaning present at clausal level, and then, as part of the process of grammaticalization, is subsequently telescoped into the DO word, resulting in DO/GIVE coexpression.

The serial-verb-grammaticalization analysis in (22) provides a plausible account for all of the patterns of coexpression observed in Table 4. For Roon and all the other SHWNG languages in the second section of Table 4, with DO/GIVE (but not TAKE) coexpression, the grammaticalization represented in (22a) alone applies, while that in (22b) does not. For Meyah and the other non-Austronesian languages in the fourth section of Table 4, with DO/GIVE/TAKE coexpression, the grammaticalizations in (22a) and (22b) both apply.⁴⁹

⁴⁸ A potential source of support for the serial-verb-grammaticalization analysis in (22) would come in the form of languages, ideally nearby ones, that instantiate Stage 1 of (22), in the same way that the analysis in (21) was supported by the instantiation of its Stage 1 by Maybrat. At present, however, I am not aware of any such languages. However, a possible relic of such a stage is provided by Yawa and the forms cited in Table 4. As suggested above, in Yawa, *au* (<*ave*) DO combines with *to* GO to yield *aunanto* GIVE, in a pattern reminiscent of that posited in (22a) Stage 1. In addition, *au* (<*ave*) DO also combines with *gav* to yield *augave* TAKE, which might represent the pattern posited in (22b) Stage 1; unfortunately, at present, I have no information regarding the independent meaning, if any, of the form *gav*. Curiously, as pointed out above, when *au* (<*ave*) DO combines with *de* COME, the resulting *aude* reportedly does not mean TAKE, as per (22b) Stage 1, but rather 'be given'. More descriptive work on Yawa is needed before the significance of these facts can be adequately assessed.

⁴⁹ Support for this analysis is provided by the Meyah constructions in (i) and (ii) below, derived from (17) and (18) above, in which combinations of *eita* with either *gu* or *jeska* occur as complete grammatical sentences with understood arguments.

- (i) *Eita* *gu* (Gilles Gravelle 2010: 204)
eita to
 'He gave it to him'
- (ii) *Eita* *jeska*
eita from
 'He took it from him'

Given that in most languages, prepositions tend not to occur without an overt argument host, in (i) and (ii) above the forms *gu* and *jeska* would appear to have retained some of their original verbal nature, as per the analysis in (22) above.

Remaining to be accounted for are the motley crew of languages in the third section of Table 4, with GIVE/TAKE (but not DO) coexpression. As pointed out above, these languages may be accounted for in terms of the grammaticalization process represented in (21), and this would seem to be the most likely analysis for Mpur. However, an alternative analysis for these languages would posit the two grammaticalizations in (22a) and (22b), followed by the subsequent replacement of DO with some other, unrelated form. For Sougb, a member of the Eastern Bird's Head family and thus related to Meyah and Moskona, this would seem to be the most plausible analysis, given the apparent cognacy of the Sougb word for GIVE/TAKE with the words for DO/GIVE/TAKE in Meyah and Moskona.⁵⁰ However, for the SHWNG languages in the third section of Table 4, Moor, Taba and Irarutu, I am not currently in a position to adjudicate between these alternative analyses.⁵¹

In light of the serial verb grammaticalization analysis in (22), we may now turn to explore the mechanisms by which DO/GIVE coexpression may have spread throughout the Northwest New Guinea region. Given the presence of DO/GIVE coexpression in distinct and unrelated families, it is clear that a great deal of horizontal diffusion, or language contact, must have taken place. Still, two general and interrelated questions need to be addressed.

The first and obvious question is: Where did serial verb constructions of the form represented in (22a) and the ensuing DO/GIVE coexpression originate, and what were the paths by which they spread from one language to another to assume their current distribution? A second and somewhat less obvious question is: What, exactly, is the nature of the linguistic feature that underwent spreading? At first blush, it seems natural to suppose that DO/GIVE coexpression itself is what was borrowed from one language to another, presumably via a process of calquing. However, given the serial verb grammaticalization analysis, another equally plausible alternative presents itself, namely that what spread across linguistic families through processes of language contact were the original serial verb constructions that gave rise to DO/GIVE coexpression, that is to say, the constructions indicated in Stage 1 of the two variants of (22). In accordance with such a scenario, the processes of grammaticalization resulting in DO/GIVE coexpression would have occurred independently at several distinct times and places.⁵² Crucially, however, such independent developments could only occur

⁵⁰ While it is hard, in small families such as these, to engage in etymologizing, it is worth recalling the possibility, raised in footnote 39 above, that Sougb *ebe/eba* DO could be a loan from a SHWNG language (thereby turning the tables on the proposal by Reesink in (23d) below to the effect that the Sougb form was the source of a borrowing into SHWNG languages).

⁵¹ It should be noted that the account in (22) “overgenerates” patterns of coexpression: if a language made use of the path of grammaticalization in (22b) but not that in (22a), then the result would be DO/TAKE coexpression without GIVE, a pattern that is so far unattested. The possibility cannot be ruled out that further investigations may reveal the existence of such a language. Conversely, if this really is an impossible pattern, as per the typological interpretation of the semantic map in Figure 8, then this could be due to a possible implicational hierarchy to the effect that MOVE-TO is a more likely source of grammaticalization than MOVE-FROM, which might in turn be related to the observation that cross-linguistically, datives tend to be endowed with a wider range of functions than ablatives, reflecting their higher position on case hierarchies such as that proposed by Blake (1994).

⁵² To the extent that the decompositional analysis for the relevant Yawa forms suggested above can be supported, this would provide strong evidence for the second alternative. Specifically, some language ancestral to Yawa would have borrowed a VE-form meaning DO from an older SHWNG language, after which DO/GIVE coexpression would have arisen independently within a precursor to Yawa, along the

given the prior existence of the serial verb constructions, which spread through language contact; although independent, such developments are thus anything but coincidental. Nevertheless, in addition to the shared starting point provided by the serial verb construction, their multiple occurrences presuppose a shared typological propensity of the languages of the region to play host to processes of grammaticalization such as represented in (22).⁵³

Given our present state of knowledge, a full answer to the above two questions is currently unachievable; nevertheless, some progress in addressing them can be made. To begin with, it would seem clear that the expression of GIVE by means of two more basic activities combined in a serial verb construction, as per (22) Stage 1, is of non-Austronesian provenance. In general, as argued by van Staden and Reesink (2008), serial verb constructions are more common in the non-Austronesian languages of Wallacea than in their Austronesian counterparts. More specifically, as pointed out by Reesink (2013), the absence of a unitary ditransitive expression GIVE, although cross-linguistically uncommon, is a recurring feature of New Guinea languages, which he characterizes as an instance of “Papuan exceptionality”. Finally, as noted above, use of a serial verb construction to express the notion of GIVE, as in Stage 1 of (19), is also argued by Klamer and Schapper (2012) to be characteristic of the non-Austronesian languages of the Timor-Alor-Pantar region. In conjunction, then, these observations point towards a non-Austronesian origin of the serial verb construction posited as the initial Stage 1 in (22), and hence also an ultimately non-Austronesian origin for DO/GIVE coexpression.

Of course, given that the non-Austronesian languages of Northwest New Guinea, and Wallacea more generally, belong to several genealogically unrelated families, the question remains how serial verb constructions and DO/GIVE coexpression spread across the non-Austronesian languages from one family to another. However, at present, we do not know enough to answer this question. Instead, we shall turn to consider the perhaps somewhat less intractable question of how serial verb constructions and DO/GIVE coexpression spread from non-Austronesian to Austronesian languages.

As shown in Table 3, DO/GIVE coexpression is manifest, in Austronesian languages, in two distinct cognate sets, one, associated with VE-cognates, in Roon, Dusner and Waropen, another, involving ONG-cognates, occurring in Pom, Serewen, Wooi, Ansus and Wamesa. This raises the question whether serial verb grammaticalization and the development of DO/GIVE coexpression in SHWNG languages, following the scenario laid out in (22a), occurred once or twice — or, for that matter, at several different times and places. In general, when a substrate feature present over a large geographical area is adopted into an incoming language family, there is no a priori reason to posit a single contact event; the feature in question could very likely have entered into the incoming

lines suggested in (22), as evidenced by the decompositional analysis of contemporary Yawa forms such as *aunanto* GIVE.

⁵³ A similar analysis is offered by Enfield (2003: 353–366) in his extensive discussion of the distribution of forms expressing the polyfunctional concept ACQUIRE in the genealogically diverse but typologically uniform languages of Mainland Southeast Asia. In discussing the latter alternative, that of independent developments originating in similar starting points, Enfield coins the term “typological poise” to denote the increased likelihood, shared across different linguistic systems, that certain innovations would occur independently at multiple times and places. With regard to ACQUIRE in Mainland Southeast Asian languages, Enfield concludes that both scenarios, calquing, and independent developments motivated by shared typological characteristics, may be relevant at different times and places; this conclusion is echoed in the historical analysis of DO/GIVE coexpression presented below.

language family at a number of different times and places independently. For example, in the case at hand, one could imagine one or more events taking place in the southern Cenderawasih Bay region involving the introduction of DO/GIVE coexpression with *ve* or its cognates, which would underlie their present distribution in Waropen and in the Biakic languages, whose homeland, as argued by Kamholz (2014:143), is in the Wandamen Bay in the southern Cenderawasih Bay region, plus in addition a separate event taking place at a different time, further to the north, in which DO/GIVE coexpression was adopted with ONG-cognates, giving rise to the present distribution of these forms in the languages of the Western Yapen subgroup.⁵⁴

Nevertheless, there is reason to believe that the introduction of serial verb constructions such as in (22a) and the ensuing development of DO/GIVE coexpression in Austronesian languages was not something that happened several times in several different places independently, but rather a single event that took place at a relatively early stage in the diversification of the languages of Northwest New Guinea, and, moreover, that this single event was associated with VE-cognates.

Support for the single-event scenario is provided by the distribution of VE-cognates in the Western Yapen languages Wamesa, Wooi and Ansus, as illustrated in Figure 4. As argued above, the discontinuous distribution of the VE-cognates across the semantic map suggests that at an earlier point in time, a language ancestral to proto-Western Yapen had VE-cognates expressing both DO and GIVE functions. These two functions then gave rise, through the processes of grammaticalization discussed in Section 2.4 above, to the many currently observable functions of VE-cognates in the contemporary Western Yapen languages. Subsequently, in different times and places, many of these forms underwent replacement. Whereas some replacements resulted in the loss of DO/GIVE coexpression, in just one case, that of the Western Yapen languages, the VE-cognate expressing both DO and GIVE functions was replaced, in both functions, with an alternative form, an ONG-cognate, thereby preserving DO/GIVE coexpression.

The single-event scenario for the development of serial verb constructions and DO/GIVE coexpression in Austronesian is consistent with the widespread but spotty distribution of VE-cognates across the SHWNG languages as represented in Table 1 and Figures 3-6. It is widespread because DO/GIVE coexpression expressed with VE-cognates entered once and relatively early into SHWNG languages, setting the stage for the spread of VE-cognates across the semantic map in Figure 1 even as the SHWNG languages were themselves spanning out across the region. But it is spotty not only because the processes of grammaticalization may not have applied universally, but also because in many cases, VE-cognates were subsequently lost, to be replaced by other competing forms. One such case, involving DO/GIVE coexpression, is the replacement of VE-cognates with ONG-cognates in Western Yapen languages mentioned above, but there are others. For example, within the Biakic family, Roon replaced the purposive function, while Biak replaced the DO function, thereby losing DO/GIVE coexpression.

The above account leaves open, however, the question of what exactly the linguistic feature was that spread from non-Austronesian to Austronesian languages: DO/GIVE coexpression itself, or, alternatively, the serial verb construction in (22) Stage 1, which might have undergone subsequent grammaticalization within Austronesian, resulting in

⁵⁴ Such a multiple-source analysis would be analogous to the account proposed in Kamholz (this volume) for the development of lexical tone in SHWNG languages, which is attributed to multiple contact events between individual SHWNG languages and individual non-Austronesian substrate languages, in which the SHWNG languages acquired their lexical tone from their respective non-Austronesian substrates.

an independent development of DO/GIVE coexpression. At present, I see no way of adjudicating between these two alternatives.⁵⁵

Remaining to be accounted for is the actual choice of forms that express DO/GIVE coexpression in SHWNG languages, that is to say, the two cognate sets in the first two sections of Table 3. For the first cognate set, the VE-cognates, four relevant etymologies have been proposed:

(23) Potential etymologies for VE-forms

- (a) inherited form:
Proto-CEMP **bai*
DO
Kamholz (2014:161), after Blust and Trussell (2010, accessed 4 June 2017)
- (b) inherited form:
Proto-Austronesian, Proto-Malayo-Polynesian **beRay*;
Proto-Eastern-Malayo-Polynesian **boRe*
GIVE
Kamholz (2014:163), after Blust and Trussell (2010, accessed 4 June 2017)
- (c) borrowed form:
medial verb prefix
Malay *ber-*
Van Hasselt (1905:11)
- (d) borrowed form:
DO, verbalizer
Sougb *eba* (and related forms in Meyah, Hatam and Mansim)
Reesink (2002b:303–304, 2002c:16–17)

While (23a) and (23b) involve direct inheritance, (23c) and (23d) posit borrowing, the former from Malay, the latter from neighboring non-Austronesian languages. In terms of functions targeted, (23a) and (23d) account for DO, (23b) for GIVE, and (23c) and (23d) for the verbalizer.

The unitary nature of the semantic map argued for in Section 2 above would seem to point towards a single etymology for all of the functions of VE-cognates, suggesting that one of the above four proposals should be adopted to the exclusion of the other three. However, this is not quite a knock-down argument. Although related by means of the semantic map, different functions of VE could still potentially have different etymologies. Indeed, even a single unitary macrofunction of VE could have more than one possible source, in a convergence scenario of the kind discussed by Zuckermann (2000).

The various paths of grammaticalization discussed in Section 2 and their associated directionalities would seem to mitigate against the proposals, in (23c) and (23d), to the effect that the verbalizer function was borrowed into SHWNG, either from Malay or from some non-Austronesian language. As pointed out in Section 2.4.2, the more abstract verbalizer typically arises through grammaticalization of the DO function. As

⁵⁵ In the particular and historically later case of replacement of VE-cognates with ONG-cognates in Proto-West-Yapen, it would seem clear that what is involved is an instance of calquing, in which one form exhibiting DO/GIVE coexpression is replaced with another form, retaining the coexpression of DO and GIVE. However, it should be acknowledged that this is not quite as far-reaching a development as the introduction of a form coexpressing DO and GIVE into a language that previously had no DO/GIVE coexpression.

such, it is unlikely that a verbalizer borrowed into some SHWNG language would then degrammatize to acquire the DO function, and subsequently extend its range of functions to encompass the entire semantic map in Figure 1. Proposal (23c) is improbable for further reasons. First, it would involve the development of a bound prefix into an independent word capable of hosting its own inflections. Secondly, given the relatively recent arrival of Malay in the region, just a very few centuries ago, it would entail that the development of the entire range of functions represented in the semantic map, as described in Section 3.2, took place over an implausibly short period of time. As for the proposal, in (23d), that the DO function was borrowed from some non-Austronesian language into SHWNG, this is unlikely on the grounds that, in general, relatively few basic vocabulary items were borrowed from non-Austronesian languages into SHWNG, and, moreover, there are not one but actually two perfectly good Austronesian etymologies for the forms in question, namely those in (23a) and (23b).

Turning now to the proposals in (23a) and (23b), both are plausible, and indeed Kamholz (2014: 161-163) offers both, deriving Moor *veni* DO, among others, from Proto-CEMP **bai* DO, but Dusner *ve* GIVE, among others, from Proto-Austronesian **beRay* via Proto-Eastern-Malayo-Polynesian **boRe* GIVE. However, simply saying that in a language like Roon, *ve* DO comes from **bai* DO while *ve* GIVE comes from **beRay* GIVE fails to take into account the systematicity of DO/GIVE coexpression, and more generally, the myriad relationships between the various functions of VE-cognates, represented in Table 1 and discussed at length in Section 2. Instead, the grammaticalization analysis for DO/GIVE coexpression proposed in (22a) suggests that the most likely etymology for all of the VE-cognates — including even those that mean GIVE — is Proto-CEMP **bai* DO, as per (23a).⁵⁶

Whereas the VE-forms enjoy an *embarras de richesses* of proposed sources, the second cognate set associated with DO/GIVE coexpression in Austronesian, namely the ONG-cognates of Western Yapen languages, have, to the best of my knowledge, no etymologies proposed in the literature. Kamholz (2014:230) lists a few related forms and attributes them to his Proto-Cenderawasih-Bay subgroup, however all of the languages that he cites actually belong to the smaller Western-Yapen subgroup.

A potential etymology for ONG-cognates arrives from an unexpected source: Antoinette Schapper (pc) reconstructs **wa'na* DO, EXIST, CAUSE, USE for Proto-Timor-Alor-Pantar. Although the islands of Timor, Alor and Pantar are relatively distant from Northwest New Guinea, an emerging consensus suggests that the non-Austronesian languages of that region represent the product of a migration from the

⁵⁶ This is as appropriate a point as any to acknowledge the elephant in the room, namely that Proto-CEMP **bai* DO and Proto-Austronesian **beRay* GIVE are themselves not miles apart in terms of their phonological form. Could this be a remnant of an ancient, long-lost DO/GIVE coexpression in the history of Austronesian? We may never know.

In the Gil (in preparation a) sample, there is one other Austronesian language with DO/GIVE coexpression outside of the New Guinea plus Wallacea region, namely Nias, spoken off the west coast of Sumatra, with, remarkably, *be* for both functions. Given that the neighboring languages do not exhibit DO/GIVE coexpression, it is hard to know how to interpret this fact. It could be the case that Nias *be* represents a phonological coalescence of two distinct etymons, one related to proto-CEMP **bai* DO, the other derived from Proto-Austronesian **beRay* GIVE (saying nothing about whether those two reconstructed sources are themselves related, as per the discussion in the preceding paragraph). However, alternative scenarios are also possible, or it could just be a coincidence; at present we simply do not know enough.

New Guinea mainland within the last few thousand years, consistent with proposals to the effect that Timor-Alor-Pantar languages constitute a subgroup of the much larger Trans-New-Guinea family (Wurm, Voorhoeve and McElhanon 1975, Ross 2005 and others). In fact, further support for such a connection was provided above by the similar serial-verb-grammaticalization analyses proposed by Klamer and Schapper (2012) for Timor-Alor-Pantar languages in (19) and in this paper for the diverse languages of Northwest New Guinea in (22). If indeed Proto-Timor-Alor-Pantar or an ancestor thereof came from the New Guinea mainland, then it is possible that forms cognate to Proto-Timor-Alor-Pantar **wa'na* were present in the non-Austronesian languages of Western New Guinea, and that one of these forms might have been borrowed into Proto-Western-Yapen, extending its range of functions from DO to GIVE, in order to match the DO/GIVE coexpression of the VE-cognate that it replaced.⁵⁷

In accordance with this scenario, DO/GIVE coexpression, of ultimately non-Austronesian provenance, entered into Austronesian where it was expressed with an Austronesian VE-cognate, only for that Austronesian form to be subsequently replaced with a different non-Austronesian ONG-cognate. This may seem strange, but should not. Although the Austronesian expansion into Melanesia is sometimes conceptualized as a linear progression in which a dominant newcomer language family and its associated culture replaces older pre-Austronesian languages and cultures, the truth is actually much more complicated. The interaction between non-Austronesian and Austronesian languages is a two-way street, or rather, a jumble of two-way streets, in which the traffic of linguistic features flows back and forth in different places and at different times. If indeed ONG-cognates originate in a non-Austronesian cognate of Proto-Timor-Alor-Pantar **wa'na*, then this would be just another case in point.⁵⁸

As argued in this section, the story of DO/GIVE coexpression in Northwest New Guinea is a complex one, with many twists and turns and branch offs hither and thither. It is also a story in which much remains unknown — from numerous little details to several big-picture questions. One such question, couchable in the cladistic framework of the standard comparative method, is what, if anything, the rise and fall of DO/GIVE coexpression can tell us about SHWNG subgrouping. Another such question, associated with the complementary paradigm of language contact and diffusion, is what

⁵⁷ Alongside **wa'na* DO, BE, CAUSE, USE, Schapper also reconstructs **ini/ine* GIVE for Proto-Timor-Alor-Pantar. It is not clear whether there is any connection between these two reconstructed forms. However, as suggested in Table 2 above, outside of Northwest New Guinea, the region with the highest density of DO/GIVE coexpression in the 805-language sample is Wallacea, which in fact is due to the Timor-Alor-Pantar region, with DO/GIVE coexpression occurring in Makalero, Makasae and (partially) Abui. For example, in Makalero, both DO and GIVE are expressed with *ini* (Huber 2011), an obvious reflex of Proto-Timor-Alor-Pantar **ini/ine* GIVE. Given the affinity between the serial-verb-grammaticalization accounts proposed for the Timor-Alor-Pantar and Northwest New Guinea languages, it should not come as a surprise if some of the Timor-Alor-Pantar languages also happened to choose the path of grammaticalization proposed in (22), or some other similar path, resulting in DO/GIVE coexpression in Timor-Alor-Pantar languages too.

⁵⁸ This proposed scenario also bears consequences *vis à vis* the nature of Austronesian/non-Austronesian language contact on the island of Yapen as described by Gasser (this volume). Since the only remaining non-Austronesian languages on Yapen today are Yawa and closely related Saweru, Gasser's treatment of the non-Austronesian side naturally focusses on these two languages. However, in view of the apparent absence of ONG-cognates in Yawa and Saweru, the borrowing of ONG-cognates from a non-Austronesian source into Western-Yapen languages suggests that in the past, Austronesian/non-Austronesian language contact on Yapen might have involved additional now-extinct non-Austronesian languages.

model of language contact — borrowing, relexification, metatypy, or others — is most suitable to characterize the spread of serial verb grammaticalization and DO/GIVE coexpression across the languages of the Cenderawasih Bay region. Future investigations of the languages of the region may shed light on these questions, as well as, perhaps, give reason to modify and amend various aspects of the story presented here.

3.3 Diachrony informs synchrony: borrowing as criterion for macrofunctionality

Having made use of the detailed typologically-informed synchronic description of Roon *ve* in Section 2 in order to support a diachronic analysis of DO/GIVE coexpression in Sections 3.1 and 3.2, we may now turn the tables and invoke the historical analysis of DO/GIVE coexpression in order to further our understanding of the contemporary nature of Roon *ve* and its cognates in other SHWNG languages.

Specifically, the spread of DO/GIVE coexpression across the languages of Northwest New Guinea suggests that speakers borrowing such forms from one language to another treated them as unitary entities, instantiating something closer to macrofunctionality than to homophony. Recalling our English example from Section 2.2, while we would not be surprised if some language borrowing the *-d* suffix made use of it to denote a range of past tenses from recent to distant, we would not expect a language borrowing the *-s* suffix to employ it with more than one of its three functions — plural marker, possessive marker, and 3rd person singular simple present agreement marker; this is because *-s* is not a single entity in English. But as evidenced by the areal patterns discussed at length above, VE-cognates for DO/GIVE are indeed treated as a single entity with respect to borrowing, at least to the extent that the spreading involves the actual calquing of DO/GIVE coexpression as opposed to the borrowing of an underlying serial verb construction. This is perhaps most obvious in the case of Proto Western Yapen, in which a VE-cognate expressing both DO and GIVE functions was replaced whole hog by a borrowed ONG-cognate, preserving DO/GIVE coexpression. Thus, although as pointed out in Section 2.4.1 the semantic connection between DO and GIVE is hardly obvious, the borrowability of DO/GIVE coexpression provides strong support for the claim that it is not an accidental instance of homophony, but rather a single unit exhibiting polyfunctionality or macrofunctionality.

In such a manner, diachrony may also contribute to a better understanding of synchrony. This was captured in the criterion formulated in (14) above, to the effect that a single form is associated with a single function to the extent that it is borrowable as a single unit into some other language. The point is a general one, not restricted to the particular case under discussion here. It is well known that coexpression exhibits areal patterns, reflecting language contact and borrowing; see Koptjevskaja-Tamm and Liljegen (2017) and references therein. Such patterns may accordingly inform synchronic analyses of coexpression, by mitigating against the possibility of homonymy, while instead supporting their characterization as polyfunctional or macrofunctional.⁵⁹

⁵⁹ It should be acknowledged, however, that, like other criteria distinguishing between homonymy, polyfunctionality and macrofunctionality, the criterion proposed in (14) cannot be invoked in purely mechanistic fashion: cases do exist where patterns of homonymy appear to be replicated through borrowing. In at least some of these cases, however, what seems to be a single borrowing event may actually be shown, on closer inspection, to involve multiple events. For example, contemporary Hebrew has borrowed from English the word *tip* with two of its meanings, ‘gratuity’ and ‘advice’. Invoking criterion (14) leads to the conclusion that these two meanings must be related in the original English, but this does not seem right — they seem rather to constitute a case of accidental homonymy. Indeed, a

In summary, while it is possible, and for some purposes even desirable, for synchronic analyses to proceed independently of diachronic considerations, in other cases, as is shown here, historical factors may turn out to be relevant to the description of contemporary languages.

4. Conclusion

This paper told the story of Roon *ve* and DO/GIVE coexpression in Northwest New Guinea, though a literary critic might well object that it wasn't really a single story but rather a loosely strung together series of tales, lacking the Aristotelian unities of action, place and time, with different things happening in different locations at different eras. Still, the various tales accounting for the distribution of Roon *ve* and DO/GIVE coexpression shared a recurring theme, that of language contact.

The central plot involved the spread of serial verb constructions and concomitant DO/GIVE coexpression across four language families, Austronesian, East Bird's Head, Hatam and Yawa-Saweru. Subplots included, among others, the replacement of a DO/GIVE VE-cognate with a probable non-Austronesian ONG-cognate in the Western Yapen subgroup, the spread of the verbalizerVE-form across the non-Austronesian languages of the Bird's Head, the contact-induced word-order flip-flop of the reifier construction with a VE-cognate in Waropen, and the probable spread of a WANT/future VE-form across the non-Austronesian languages of the north coast of the Bird's Head all the way to Ambel. What all of these have in common is the horizontal diffusion of lexical and morphosyntactic features, with Austronesian languages acquiring various properties from their non-Austronesian neighbors while in turn bestowing on them some of their own characteristic features.

In conjunction, the various contact scenarios outlined in this paper reinforce a view of the Austronesian expansion into the Indonesian archipelago and New Guinea argued for by, among others, Donohue and Denham (2010, to appear), Blench (2012), and Gil (2015, to appear). In accordance with this view, the Austronesian expansion was of a diverse and heterogeneous nature, involving different kinds of events taking place in different places and times. In many of these events, language contact played a central role, leading to situations in which the spread of Austronesian languages was decoupled from the spread of associated genes and cultural packages, as is typically the case in processes such as metatypy and creolization.

Like other languages of the region, Roon bears testament to the complex nature of the Austronesian expansion. While most of its actual forms are Austronesian, much of the structure of its lexicon, as well as most of its grammar, are more similar to neighboring non-Austronesian languages than to proto-Austronesian. Thus, as argued in this paper, Roon *ve* has a nice Austronesian etymology, yet at the same time, much of its morphosyntactic behaviour, including in particular DO/GIVE coexpression, is clearly attributable to contact with some of the non-Austronesian languages of the region. While the genetic and cultural affiliations of Roon speakers are yet to be adequately

historical examination of Hebrew reveals that in the 1960s, *tip* had the 'gratuity' meaning but not the 'advice' one, which only occurs at a later date, possibly associated with the rise of social media. This suggests that the two meanings of *tip* in contemporary Hebrew result from two distinct borrowings that took place a few decades apart, each involving the form *tip* associated with a single unitary meaning. In this case, at least, the generalization to the effect that homonymy cannot spread from one language to another through a single borrowing event would thus seem not to be violated.

described, what is clear is that even linguistically, if the entirety of the language is taken into account, Roon seems as much non-Austronesian as it is Austronesian.

However, there is an alternative framing for the story of Roon *ve*. Following Enfield (2003:1–21), we may downplay the significance of individual languages and language families, and focus instead on specific linguistic features, viewing them as the major protagonists in the narrative. Within such an “epidemiological” perspective, the story of Roon *ve* told in this paper is, simplifying somewhat, the story of the coming together of two linguistic features: the first a form **bai* that was present, several thousand years ago, in Taiwan, the second an abstract pattern of DO/GIVE coexpression that was present, presumably also quite some time ago, in the New Guinea Bird’s Head. The form **bai* then spread, along with lots of other features, through the Philippines and across the Indonesian archipelago, reaching the north coast of New Guinea. DO/GIVE coexpression also spread, though much less extensively, remaining largely within the region of Northwest New Guinea. At some point, the two features met, after which the resulting combination continued to spread, ending up in various locations, including the island of Roon, where it can be observed to this day.

Abbreviations

1	first person	2	second person
3	third person	ANIM	animate
COS	change of state	DAT	dative
DEF	definite	DEIC	deictic
DEM	demonstrative	DIST	distal
F	feminine	IMP	imperative
INAN	inanimate	INCL	inclusive
NMLZ	nominalizer	OBL	oblique
PERS	personal	PL	plural
POSS	possessive	PRS	present
PST	past	SG	singular
TOP	topic		

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