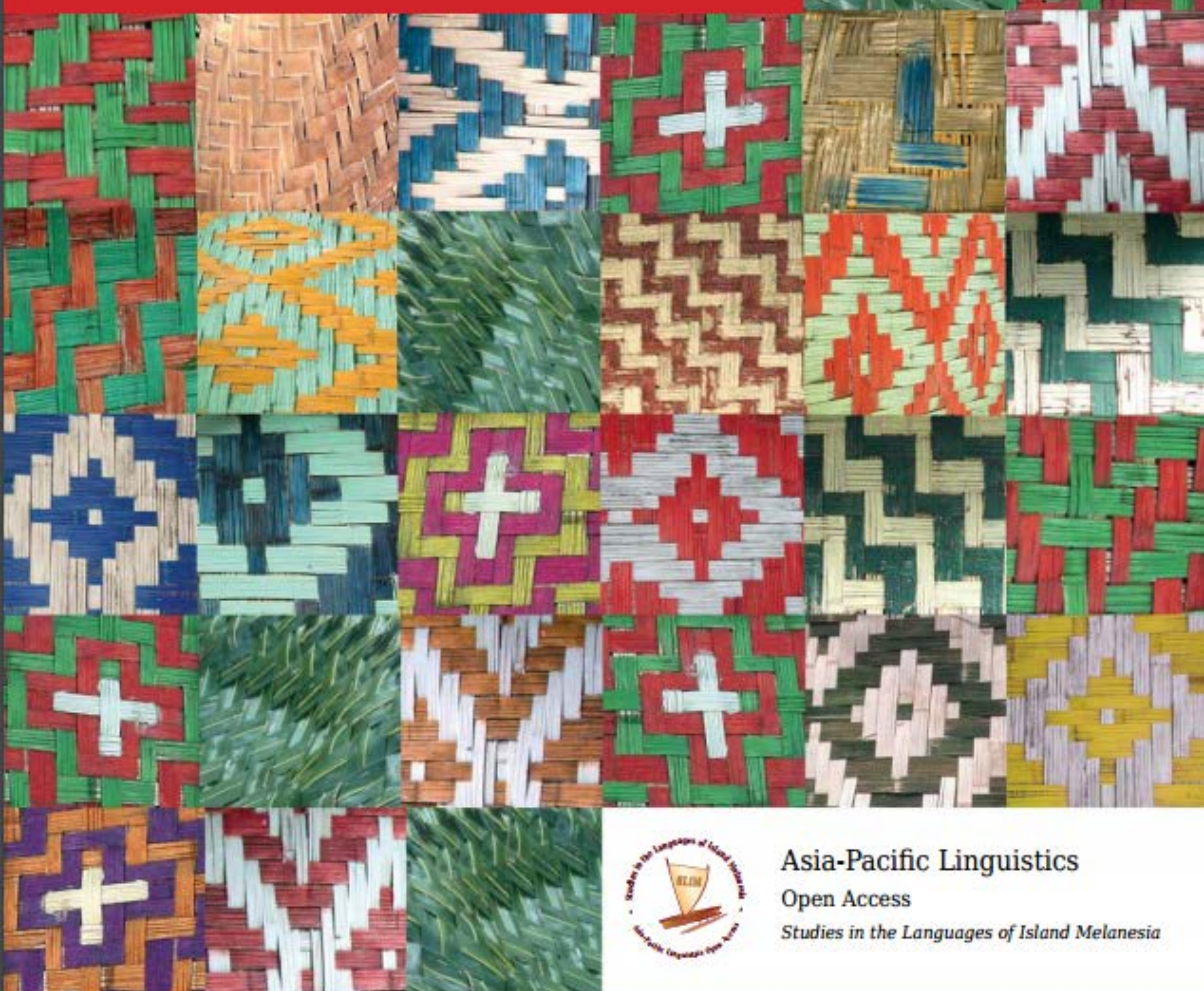


THE LANGUAGES OF VANUATU

UNITY AND DIVERSITY

Edited by
Alexandre François
Sébastien Lacrampe
Michael Franjieh
Stefan Schnell



Asia-Pacific Linguistics
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Studies in the Languages of Island Melanesia

The languages of Vanuatu: Unity and diversity

edited by

Alexandre François; Sébastien Lacrampe; Michael Franjeh; Stefan Schnell

With an estimated 138 different indigenous languages, Vanuatu is the country with the highest linguistic density in the world. While they all belong to the Oceanic family, these languages have evolved in three millennia, from what was once a unified dialect network, to the mosaic of different languages that we know today. In this respect, Vanuatu constitutes a valuable laboratory for exploring the ways in which linguistic diversity can emerge out of former unity.

This volume represents the first collective book dedicated solely to the languages of this archipelago, and to the various forms taken by their diversity. Its ten chapters cover a wide range of topics, including verbal aspect, valency, possessive structures, numerals, space systems, oral history and narratives. *The languages of Vanuatu: Unity and Diversity* provides new insights onto the many facets of Vanuatu's rich linguistic landscape.

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College of Asia and the Pacific
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The languages of Vanuatu

Unity and diversity

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The exceptional linguistic density of Vanuatu

Introduction to the volume

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Abstract

The Republic of Vanuatu, a small archipelago of island Melanesia, is home to 138 distinct Oceanic languages, for which we provide here a new list and map. This updated figure, obtained by combining earlier sources and more recent information from experts, makes Vanuatu the country with the highest language density in the world, whether compared to its land surface, or to its population. This modern density is not due to genealogical diversity, but reflects three millennia of *in situ* diversification from a single ancestor, Proto Oceanic. This historical process took the form of multiple linguistic innovations that spread across the dialect continuum in entangled patterns, bringing about the mosaic we know today. Vanuatu's linguistic diversity is now increasingly threatened by the spread of the national language, Bislama. The various chapters in this volume describe and discuss some of the cultural and linguistic features that make Vanuatu such a diverse archipelago.

Citation

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1 Studying the languages of Vanuatu

The present publication constitutes the first edited volume specifically dedicated to the languages of Vanuatu. With as many as 138 distinct languages [§2.1], this archipelago of the South Pacific still keeps many treasures hidden; yet the last two decades have seen a steady increase in the number of scholars dedicated to the exploration of these languages.

During the twentieth century, the languages of what was then known as the Condominium of the New Hebrides were initially documented by a handful of missionaries and early scholars, including Robert Codrington (1830–1922), Daniel MacDonald (1846–1927), Sidney Ray (1858–1939), Arthur Capell (1902–86). The 1970s saw renewed scholarship in the domain

with the publication, in 1976, of Darrell Tryon's *New Hebrides Languages*, a compendium of basic vocabulary lists in 179 distinct linguistic varieties (whether languages or dialects). About the same period, other scholars undertook the description of several languages – e.g. John Lynch in Tanna; Jean-Michel Charpentier in South Malakula; Terry Crowley in Paama; Ross Clark on Polynesian outliers. As the New Hebrides became independent in 1980 under the name *Vanuatu*, linguists would also increasingly pay attention not only to its many vernacular languages, but also to Bislama, the new country's national language [§3.3].

The early years of independence were followed by a moratorium on research, from 1985 to 1994 (Taylor & Thieberger 2011:xxviii). In 1995, encouraged by Ralph Regenvanu the new director of the Vanuatu Cultural Centre, the country opened up to foreign academics again. Many people were then aware of the useful role linguists could play in documenting the linguistic wealth of the archipelago, while its many languages were still being actively spoken. The following two decades have seen a sustained effort to describe and document the languages of Vanuatu, by an ever-increasing number of linguists. Many regions of Vanuatu, little explored until recently, are now being better known, improving our collective knowledge of Oceanic languages.

In November 2011, Alex François and Sébastien Lacrampe, then both attached to the Australian National University, organised the first *International Workshop on the Languages of Vanuatu*. On this occasion, as many as twenty-eight linguists were brought together – a testimony to the momentum currently enjoyed by academic scholarship in the domain. During this 2011 workshop, the idea of a joint publication specifically focusing on Vanuatu languages was first launched. Shortly thereafter, the online series *Studies in the Languages of Island Melanesia* was founded, as a venue for book-length academic manuscripts in the domain, based on the principles of peer-reviewing and of free and open access. Today, we are happy to publish this volume, the fruit of these joint efforts by a team of enthusiastic scholars. The purpose of the present chapter is to serve as an introduction to the book, by presenting the impressive linguistic density of this small archipelago of the Pacific.

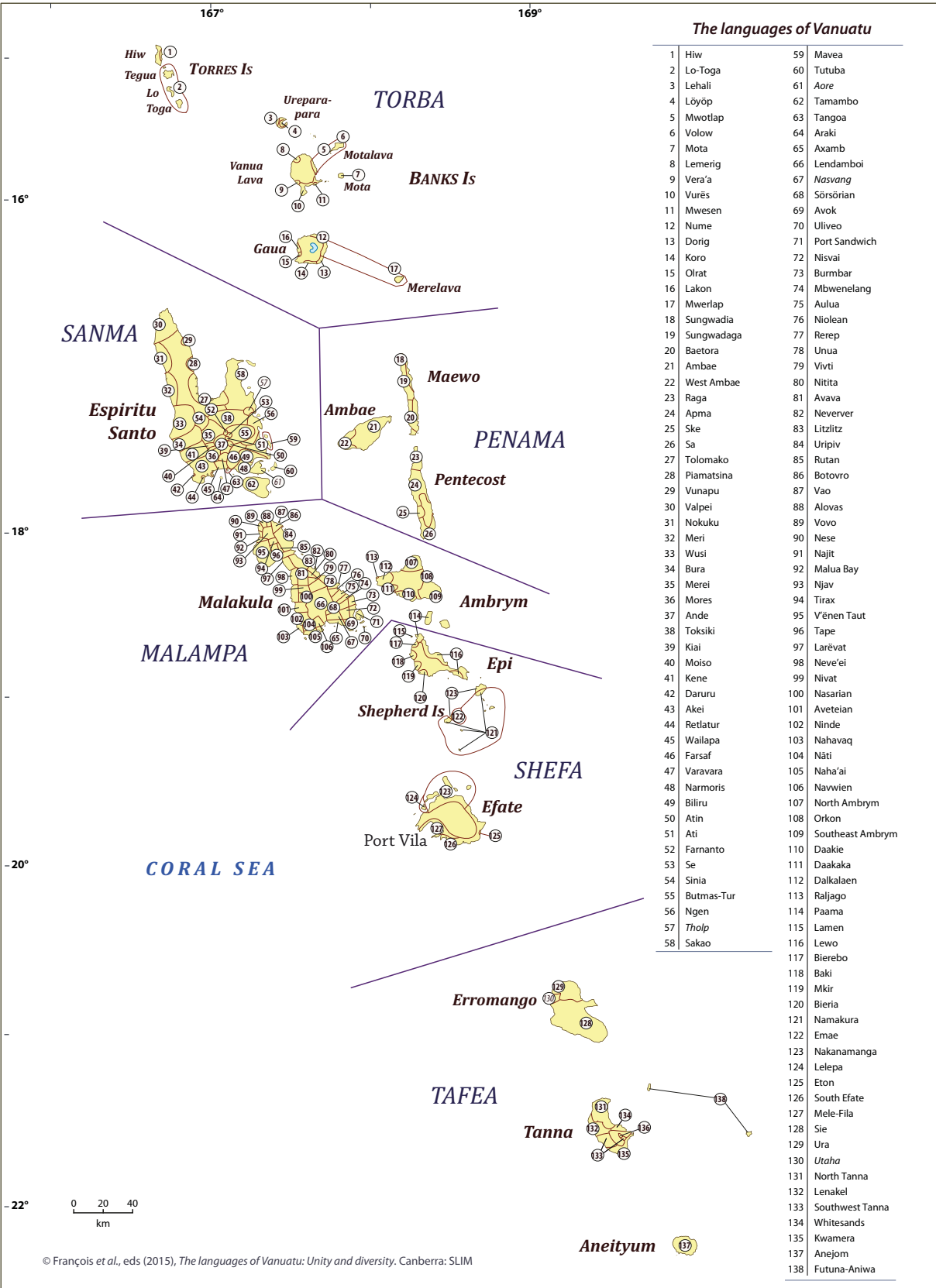
2 The languages of Vanuatu

The Republic of Vanuatu is home to 80 inhabited islands, and to a population of 243,000 (2009 census, see VNSO 2009).¹ The country's three official languages – Bislama [§3.3], French and English – were all introduced during European colonisation. Yet the archipelago is also home to a wealth of vernacular languages which were inherited from pre-colonial times, and are still spoken to this day. Altogether, the country counts 138 distinct vernacular languages – according to a new assessment we are proposing today. Adding the *lingua franca* Bislama brings to 139 the total of languages indigenous to Vanuatu.

Figure 1 provides a new reference map of Vanuatu's 138 languages (map created in March 2015 by Alexandre François and Benjamin Touati). As a complement to the map, the list of all known languages for the country will be given in *Table 2*, in the appendix.

¹ The homepage of VNSO (<http://www.vnsso.gov.vu>) provides a “live” counter of the population of Vanuatu, revealing how rapidly it grows. As of 2 May 2015, the total number was 278,005.

Figure 1 — A reference map of Vanuatu’s 138 vernacular languages



Both the table and the map incorporate knowledge from earlier sources (especially Tryon 1976, 1996a, 2010; Lynch & Crowley 2001; plus studies targeted at individual areas), and were cross-checked with primary data provided by field experts.¹

2.1 Counting languages

2.1.1 Methodological issues

As is often the case in such linguistic landscapes, it is difficult to assess when two local speech traditions, or “communalects” (to use the useful term coined by Pawley & Sayaba 1971), constitute separate languages, as opposed to dialects of a single “language”. The criterion of mutual intelligibility is often mentioned (e.g. Tryon 2010:286), but is notoriously difficult to assess with certainty: in the case of close languages, the notion of intelligibility is a gradient one, largely dependent on social and subjective perceptions. While this criterion remains essential to the assessment, it must be adjusted based on more controllable criteria – as we will see below.

Tryon (1976) chose to avoid this difficulty by using as his sole criterion the rates of lexical cognacy in his lists of basic vocabulary: communalects sharing more than 81 percent of basic lexicon should be considered dialects of a single language. Later, Lynch & Crowley (2001:3) used the same wordlists and the same method, yet decided to lower the threshold to 70 percent of shared lexicon. This new arbitrary figure resulted in lumping together a number of languages which Tryon had previously distinguished. While the lexicostatistical method has the advantage of being measurable, it rests on a threshold which is but an arbitrary convention. Furthermore, it looks exclusively at rates of lexical cognacy in a short list of about 200 terms, and disregards the various other linguistic criteria which could otherwise inform our judgment, and might possibly lead to different conclusions.

To take one example, the languages called *Lehali* and *Löyöp* (#3 and 4 on the map) have a basic-lexicon cognacy rating of 77.6% (Tryon 1976:95): this results in Lynch & Crowley (2001:38) classifying them as two dialects of a single language, which they call *Ureparapara*. And indeed, being relatively close languages, there is a reasonable degree of mutual intelligibility between them (roughly comparable to Spanish and Portuguese); this proximity is reinforced by longstanding traditions of intermarriage and bilingualism. However, lumping Lehali and Löyöp together as one single language solely based on lexicostatistics would fail to acknowledge the many differences between the two systems, whether in their phonologies (François 2011a:194, 198), their personal pronouns (François 2009:178), their space systems (François, this volume), and so on. Historically, Lehali shares innovations with Lo-Toga [#2] to its west, while Löyöp really subgroups with Mwotlap [#5] to its east (François 2014:183). In sum, even though they do share some vocabulary and are partly intelligible to each other, Lehali and Löyöp clearly constitute two distinct languages² – a view which happens to be confirmed by the social perceptions of the speakers themselves. Of course, an approach purely based on lexicostatistics may be justifiable when the only data available are basic

¹ We wish to thank Kilu von Prince, Ken Nehrbass, Liz Pearce, Benjamin Touati – and especially John Lynch and Ross Clark, for providing data and insights on their areas of expertise.

² This conclusion is reflected in our map and list, where Lehali and Löyöp were counted as separate.

vocabulary lists; but careful examination, whenever possible, should incorporate other dimensions, including phonology or grammar.

Sometimes, by contrast, local perceptions have to be overridden by the informed judgment of the linguist outsider. For instance, in the southern half of the Torres group, islanders insist that *Lo* and *Toga* constitute separate languages, each spoken on the island of the same name; that statement will sometimes be backed by an example or two, where word forms differ – like the 1sg possessive, which is [minɔ] in *Lo* and [minɛ] in *Toga*. However, closer investigation reveals that *Lo* and *Toga* can only be distinguished by a handful of such shibboleths, and are perfectly identical in all other respects. In such cases, it is justified to consider these two communalects as simply local varieties of a single language (called *Lo-Toga*), in spite of the popular perceptions that tend to count a separate “language” for each island.³ This problem is particularly relevant in cases of dialect continua, which abound in Vanuatu – especially on Ambae, Pentecost (see Schneider & Gray, this volume), Santo, Efate, Tanna.

As we elaborated the list and map of Vanuatu languages, we thus relied, whenever possible, upon the informed judgment of expert linguists, and their view of how distinct each communalect was from its neighbours. Such an in-depth investigation can only be carried out by scholars who have patiently accumulated knowledge upon entire areas. The more is known about Vanuatu languages in the future, the more it will be possible to refine our judgments on these matters.

2.1.2 About the total number of languages

These methodological issues partly explain the fluctuation observed, in the scientific literature, with respect to the total number of languages in Vanuatu.

Tryon (1976) first identified 179 communalects – corresponding to his 179 basic-lexicon wordlists. Then, by merging together close varieties based on a lexicostatistical criterion, he arrived at the final number of **105** distinct languages for the whole country (1976:87).

Lynch & Crowley (2001), using a lower lexicostatistical threshold, often treated as dialects what Tryon had considered separate languages. But while this approach tended to decrease the total number for the country, their volume also documented a number of previously unacknowledged languages, most of them moribund, especially from Malakula.⁴ As a result, the total figure given by Lynch & Crowley (2001:4) ends up being quite similar to Tryon's 1976 assessment, with **106** languages – including 8 extinct, 17 “moribund”, and 81 “living languages still actively spoken”.

After his 1976 study, Darrell Tryon revised his own estimate, and would regularly cite a higher total of **113** languages for Vanuatu (Tryon 1996a, 2006); this number of 113 has been the most frequently cited by scholars in the last decades. In 2009 however, the same Darrell

³ Obviously, another way to interpret speakers' statements is to point out that the term used locally to designate each local variety is not meant to be translated as *language* (as opposed to *dialect*), but simply refers to what we would otherwise call *lect* or *communalect*. In that sense, speakers are of course correct in assigning two separate lects (*vavetēme*) to the islands of *Lo* and *Toga*.

⁴ This reassessment of Malakula languages resulted mostly from fieldwork undertaken in 1999–2001 by Terry Crowley, whose findings were also to be reported in his four posthumous grammars (Crowley 2006a, b, c, d).

Tryon circulated among colleagues an unpublished map that listed as many as **125** languages. The increase in number was mostly due to his more recent survey of Espiritu Santo, which he published separately as Tryon (2010).

Our estimate of **138** languages is thus, to date, the highest number ever proposed for Vanuatu. This high number may be explained in two ways. First, it reflects our propensity to count as distinct languages those communalects that are locally identified as separate, and confirmed by a linguist expert to form a system of their own [§2.1.1]. The second reason for our high number is that it brings together knowledge accumulated by several experts over the last decades: it incorporates the surveys of Malakula by Terry Crowley and John Lynch, but also those of Santo by Tryon (2010) and by Ross Clark (pers. comm.); those by François (2011a, 2012) in the Torres and Banks Is; those by von Prince (2015) on Ambrym, etc. In each case, in-depth exploration has revealed the existence of more languages than were previously thought — albeit, most of the time, languages on the verge of extinction.

2.1.3 *Living, moribund and extinct languages*

The end of the 19th century and the beginning of the 20th saw a sudden downturn in the archipelago's demography, due to the spread of new diseases, combined with a depopulation due to forced labour (Crowley 1997; François 2012). These tragic episodes made numerous languages and dialects suddenly vulnerable, and often resulted in their extinction. Here is what the Anglican missionary and anthropologist Robert Codrington wrote in 1885 about the island of Vanua Lava in the Banks islands:⁵

“On the island itself, each of the districts or groups of villages has its own dialect, viz. *Pak*, *Lusa*, *Sasar*, *Leon*, *Vatrat*, *Vuras* (Avreas), *Mosina*, *Lomrig*, *Nawono*, *Alo Teqel*, *Qatpe*, *Tolav*, and *Qe'i*. Some of these are, no doubt, very much alike, but the natives themselves thought them different; and between, for example, *Pak* and *Mosina* the difference is considerable. The dialect of *Nawono*, Port Patteson, is lost, the labour trade having destroyed the population, at one time considerable.” (Codrington 1885:331)

Codrington cites as many as thirteen communalects for the sole island of Vanua Lava, where only four languages are spoken today – including the moribund Mwesen and Lemerig. This gives an idea of the drastic language loss which must have occurred since the end of the 19th century.

In many areas of Vanuatu, people still remember the names of former communalects, which have gone extinct during the last few generations. Quite often though, they recollect little more than the mere existence of those speech traditions, and too little information can be gathered to assess whether these were languages of their own, or mere local variants of existing languages. Such cases were not counted in the table or the map.

In a few cases, however, it has been possible to collect some data on a moribund language before it stopped being used – at least enough to assess its status. Three languages are in this situation: they are included in *Table 2* (#57, 61, 130), and shown in italics on the map. As a result, the total number of languages currently spoken in Vanuatu is closer to 135.

⁵ In this citation, I italicise the names of communalects whose existence is still remembered, and underline those which are still alive today. Note the correspondences of language names: *Lomrig* = Lemerig (#8 on our map), *Vatrat* = Vera'a (#9), *Vuras* = Vurès (#10), *Mosina* = Mwesen (#11).

In fact, it is difficult to say for sure how many languages, among the 138 of Vanuatu, are still alive. The reason is that many languages were already in the verge of extinction when they were discovered: they were only spoken, or rather remembered, by a handful of people, sometimes less than 10 or 15 individuals, usually of very old age. Lynch & Crowley (2001) counted 17 of these “moribund” languages, and our own inventory includes 18 [§2.2]. When such languages were discovered 15 years ago, it is difficult to know with certainty whether they should be counted today, or not, among the living languages of Vanuatu.

2.2 Language demography and vitality

While a few languages have speakers numbering in the thousands, the majority are spoken by smaller communities. Based on *Table 2* (p.18 sqq.), *Figure 2* gives an overview of Vanuatu’s 138 vernacular languages, ranked by size of their speaker communities.⁶ The three most spoken languages in the country are Uripiv (#84), Nakanamanga (#123), and Lenakel (#132) – with 9,000; 9,500; and 11,500 speakers respectively.

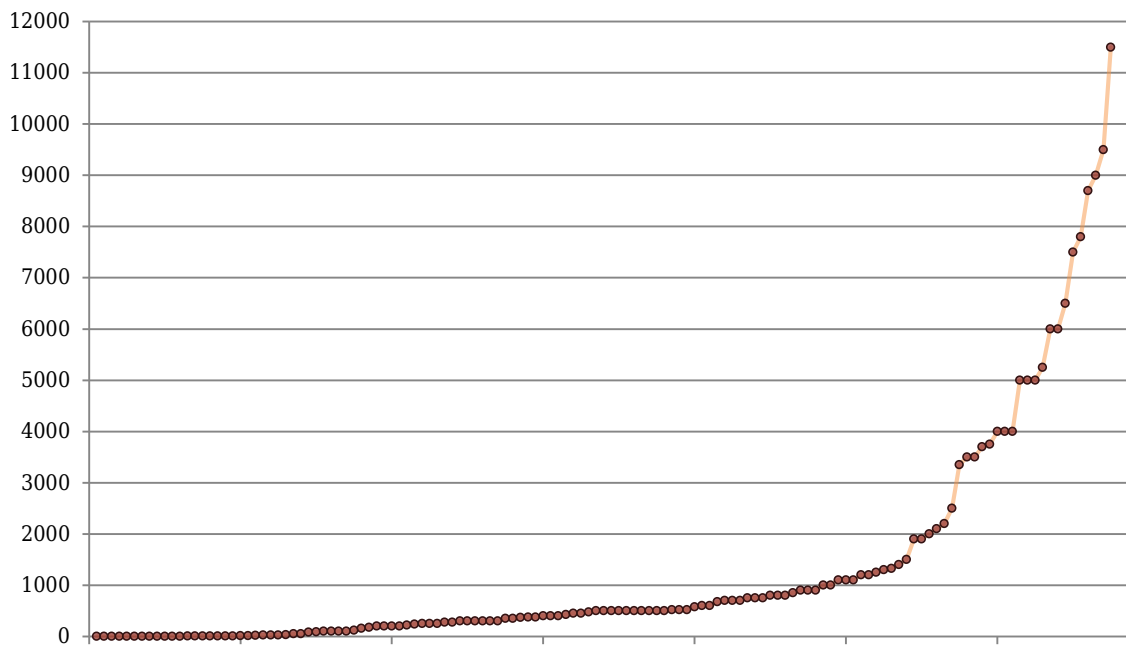


Figure 2 — The languages of Vanuatu, ranked by number of speakers (each dot is a language)

Figure 3 groups languages by categories of size: for example, the third column states that 20 languages are spoken by a group of between 101 and 300 speakers. The first bar counts moribund languages, spoken today by less than 15 speakers — not counting the four that are already extinct. The number of these moribund languages (18, about 13% of the total) shows how much of Vanuatu's linguistic diversity has already started to erode in the last few generations.

⁶ Vanuatu’s official census does include some data on languages, yet it does so by contrasting “Bislama” with “local language” (see *Table 1* p.17), without specifying which vernacular language is involved. As a result, the statistics on speaker numbers for individual languages can only be assessed by linguists in the field, sometimes in conditions that only allow them to provide rough estimates.

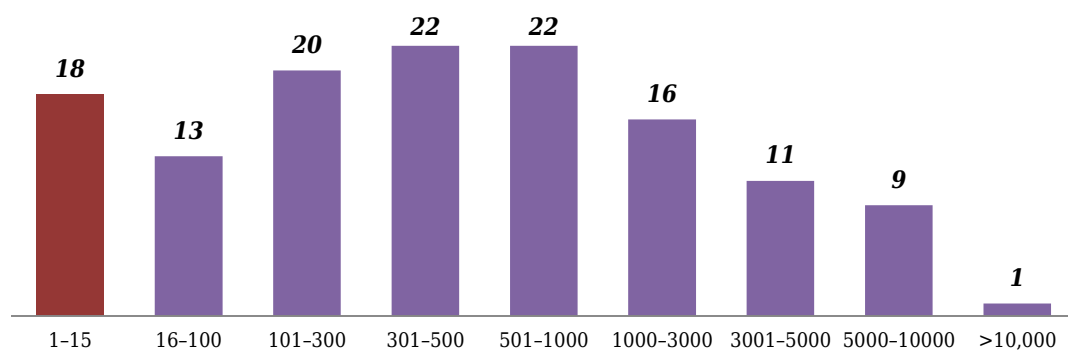


Figure 3 — The size of speech communities in Vanuatu (in number of speakers)

Languages with less than 15 speakers are clearly doomed to become extinct in the years to come: they are the descendants of earlier language communities that were once thriving, yet have receded drastically in the last generations under the pressure of other languages. That said, one should be cautious before painting too dark a picture of Vanuatu's languages, just based on demographics. While a few hundred speakers is definitely a low number by world's standards, it doesn't necessarily entail a language's fragility. Evidently, the language ecology of traditional Vanuatu was always built around language communities that would typically have the size of one or two villages with no more than a few hundred members, and still be in their full strength (François 2012). Most of Vanuatu's languages are in fact still healthy today, because – except for the moribund ones – they are still transmitted to children. In this regard, they are safe from immediate endangerment (Crowley 1995, 2000).

2.3 An exceptional density

With a total land area of 12,189 sq km, Vanuatu has an average of 88 sq km per language: this is presumably the densest linguistic landscape in the world. By way of comparison, the geographical density of languages in Papua New Guinea – another Melanesian country renowned for its linguistic wealth – has been estimated to be of one language every 900 sq km (Pereltsvaig 2012:167). The author considered the latter density rate to be “unparalleled elsewhere”, a statement obviously contradicted by the Vanuatu data.

Another way to assess a country's linguistic density is by referring to its demography. Compared to its current population of 243,000 inhabitants (VNSO 2009), the figure of 138 languages entails an average of 1760 speakers per language. Again, this constitutes the world's highest density in number of languages *per capita* (Crowley 2000).

In fact, the numbers are even more extreme if one remembers what the country's population used to be during last century. We mentioned already the drastic depopulation which affected the whole archipelago at the turn of the 20th century [§2.1.3]. The first census of the then New Hebrides was carried out in 1967, and counted a total population of 77,988 (Tryon 1996b:1374) – that is, 3.1 times smaller than it has become today.⁷ The 138 languages we count today in Vanuatu had to live through that demographic bottleneck of last century.

⁷ By 1967, the country's population had already begun to bounce back from its lowest point, which Vienne (1984:63) situates around 1940 (at least for the north). Language density was then at its peak.

At that point, the average size of a language community in Vanuatu was thus as low as 565 speakers per language – a world record for sure.

The extreme density of Vanuatu is consistent with general attitudes observed throughout Melanesia in general (Pawley 1981, Unseth & Landweer 2012), whether regarding linguistic or cultural diversity. While all communities share a cultural background typical of Pacific societies in general, they also like to emphasise the many details that differ among them: this may be differences in food items and recipes, rules of marriage and kinship, artistic practices, oral literature, and so on. A conspicuous example is the diversity of musical traditions: musical instruments, poetic genres, dances, melodies and rhythms, form a variegated mosaic across the whole Vanuatu archipelago (François & Stern 2013). This taste for diversity results in each island, or even each village, having its own recognisable identity, distinct from its immediate neighbours.

3 The linguistic history of Vanuatu

By contrast with a country like Papua New Guinea, the impressive linguistic density of modern Vanuatu is not caused by deep-level genetic diversity. Indeed, all its languages belong to the same family: Oceanic, the eastern branch of the Austronesian phylum.

Among them, three languages (Emae, Mele-Fila, Futuna-Aniwa) are Polynesian outliers – that is, members of the Polynesian subfamily of Oceanic that are spoken west of their Tonga-Samoa homeland (Clark 1994); they likely arrived in the country during the last millennium. As for the non-Polynesian languages of Vanuatu, they historically developed *in situ* from the speech of the archipelago's first settlers. Archaeological evidence suggests that these early settlers were bearers of the cultural complex known as *Lapita* (Kirch 1997; Bedford 2003), who reached the shores of Vanuatu around 3100–3000 BP (Bedford *et al.* 2006; Bedford & Spriggs 2008). The language spoken by these early Lapita settlers is generally understood to be Proto Oceanic, the language ancestral to all Oceanic languages of the Pacific (Pawley & Green 1984; Pawley 2007).

3.1 Internal subgrouping hypotheses

There have been attempts to subgroup Vanuatu languages — apart from the Polynesian ones, that is. If conceived under the tree model, such subgrouping takes the form of intermediate nodes cascading down from Proto Oceanic to modern languages. Essentially, two proposals have been made in the literature.⁸ The first hypothesis was developed by Clark (1985:219; 2009), and separates two subgroups: *South Vanuatu* vs. *North-Central Vanuatu*, the latter in turn splitting into North vs. Central Vanuatu.⁹

An alternative hypothesis was formulated by Lynch (2000a). He proposed to group Vanuatu and New Caledonia together, under a node called *Southern Oceanic* (see also Lynch & Ozanne-Rivierre 2001, François 2011b). The latter would split into *North Vanuatu* vs. all the rest (called *Nuclear Southern Oceanic*); and this southern group would, in turn, include

⁸ See Clark (2009:3–9) for a review of earlier proposals.

⁹ On our map, *SV* includes the ten languages numbered #128 to 137. As for *NCV*, it encompasses all other languages apart from the three Polynesian ones (122, 127, 138).

Central Vanuatu languages on one hand, and *Southern Melanesian* on the other — itself the parent of *South Vanuatu + New Caledonia*. Lynch's ideas were summarised by Ross *et al.* (2008:8) in their overview of recent Oceanic subgrouping hypotheses, in the form of *Figure 4* (see also Lynch *et al.* 2002:113).

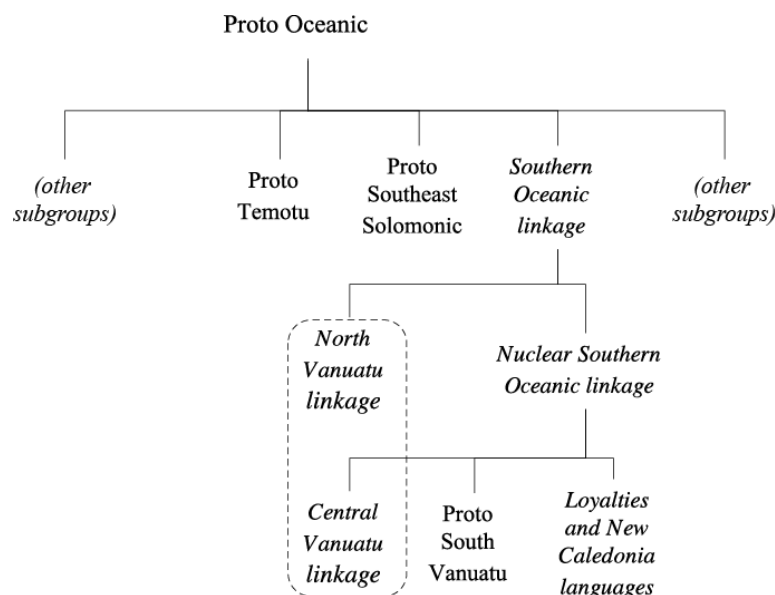


Figure 4 — A possible tree for the Oceanic family, showing the distribution of Vanuatu languages across three separate subgroups (Ross *et al.* 2008:8, citing Lynch 2000a)

One notable feature of *Figure 4* is the dotted line that circles around *North Vanuatu* and *Central Vanuatu*: it reflects the many innovations which these two “dialect networks” shared together as they were “reintegrated” together (Ross *et al.* 2008:10). Such cases of reintegration are clearly problematic for the tree model (see Pawley 2012): how can two subgroups share innovations together, when they do not fall under the same node? Does the dotted line also represent relations of genealogy, in the same way as the genetic ties ordinarily represented on a tree? If so, we would be here faced with a case of *intersecting subgroups*, as CV would belong to a CV-SV(-Caled.) subgroup on one side, and to an NV-CV subgroup on the other side. Yet the concept of “intersecting subgroups” is at odds with an orthodox view of a family tree: under a strict approach, only one of the intersecting sets of shared innovations can be seen as genuinely genealogical in nature, while the other set would have to be ignored somehow, e.g. by deciding that it reflects “language contact”. A problem with such a reasoning is that it forces us to arbitrarily dismiss a large number of relevant data, mostly to salvage the central assumption of the tree model – namely, that genealogical subgroups should not be allowed to crosscut.

3.2 A non-cladistic view of language genealogy in Vanuatu

A solution to this conundrum can be achieved quite simply, by realising that the demands inherent to the tree model are in fact illegitimate: the ban against intersecting subgroups is merely an artefact of that model, and corresponds to nothing in the real history of languages (see Heggarty *et al.* 2010). In a dialect chain or continuum, it is common for innovations to form entangled patterns, and for genealogical subgroups to intersect — a pattern which trees

are unable to capture (François 2014). The history of Oceanic languages is thus better represented using a non-cladistic method, i.e. not based on the tree analogy.

Some authors have described the frequent crosscutting of isoglosses among Vanuatu languages. Clark (1985) spoke of “groups, chains, clusters and waves”. Tryon (1976:55, 80; 1996) proposed a “classification” of Vanuatu languages in the form of intersecting clusters.

Such an approach is encapsulated in the concept of *linkage*, proposed by Ross (1988, 1997): a *linkage* is a set of related languages whose internal genealogy cannot be represented by a tree, because it arose through an accumulation of intersecting innovations (see Lynch *et al.* 2002:92). In Figure 4 above, several subgroups were already labelled *linkages*. As a whole, Vanuatu is best understood as a “linkage of linkages”, that is, a vast dialect chain composed of smaller chains. This non-cladistic view of language genealogy is summarised in Figure 5. An exploration inside the diagram’s smaller units (e.g. the “North Vanuatu linkage”) would, again, reveal the same chain-like structure at all levels of observation, in a recursive way – all the way down to individual languages.¹⁰

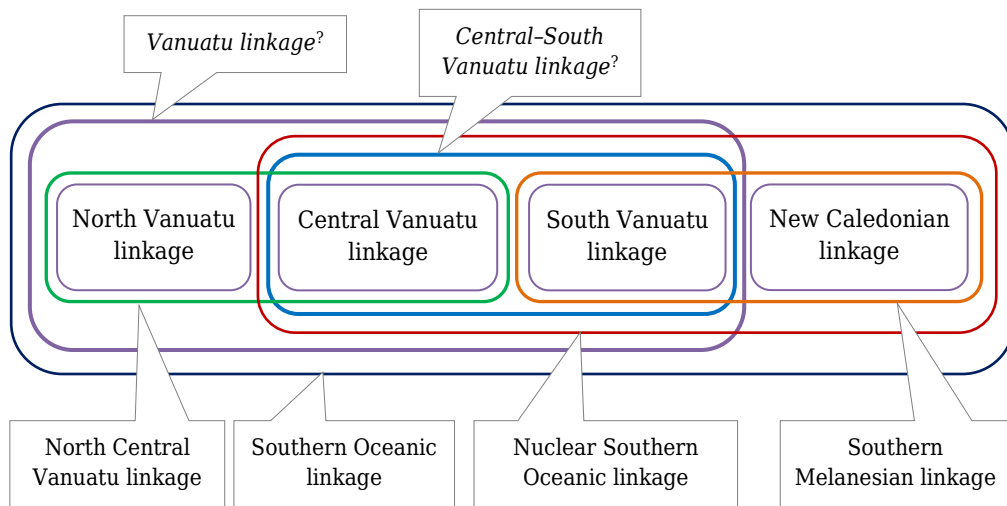


Figure 5 — A possible non-cladistic genealogical diagram of the Southern Oceanic linkage

In Figure 5, labels in plain characters refer to subgroups which have been already proposed in the literature; those in italics are linkages which have never been proposed, but could possibly be shown to exist, based on patterns of shared innovations. The figure mostly aims to illustrate how genealogical subgroups, identified using the Comparative method, can be represented in a non-tree fashion, in a way consistent with the concept of *linkage*. As for claiming the factual accuracy of this particular diagram, this could only be done by

¹⁰ Such a non-cladistic approach is demonstrably the key to some problems encountered in subgrouping studies. For example, the South Efate language has been sometimes subgrouped with (*North*)-*Central Vanuatu* (Lynch 2000b, 2004), and sometimes with *South Vanuatu* (cf. Lynch 2001), due to conflicting evidence in favour of either hypothesis. While unsolvable in a tree-based model, this conundrum is solved by considering that South Efate simply belongs to these two genealogical subgroups simultaneously, and lies at their intersection.

demonstrating that each linkage is supported by at least one individual isogloss; such an endeavour would be useful, but goes beyond the scope of this chapter.¹¹

In sum, the linguistic diversity observed today in Vanuatu results from three millennia of diversification from what was once a single language spoken across a vast social network – in a way similar to the fragmentation of Latin into a multitude of Romance languages and dialects. During the centuries following its initial settlement, Vanuatu formed a vast dialect continuum in which communalects remained in constant contact through trade, interisland marriage and other forms of alliances. Every time a linguistic innovation emerged somewhere in the network, it would diffuse to a more or less extended portion of the network. The isogloss it defined was sometimes limited to just a village, sometimes to several islands, and sometimes swept through even larger territories as it expanded across entire archipelagoes. Rather than yielding neat subgroups, this wave-like process of diversification naturally resulted in a map of constantly intersecting isoglosses. The modern outcome is an entangled web of linguistic linkages: a long chain where languages get gradually different as one travels across the territory.

3.3 The modern pressure of Bislama

Vanuatu's linguistic diversity has shown remarkable resilience as it lived through the 19th and 20th centuries, with limited damage. Some languages have gone extinct, but many have survived to this day.

So far, the country's traditional social ecology has mostly resisted the global pressure towards linguistic levelling, typical of the modern world. However, times are changing fast, and the Republic of Vanuatu is undergoing rapid urbanisation – a corollary of which is the decline of its linguistic diversity. The urban centres, Port Vila and Luganville, constitute a new setting, where internal immigrants quickly abandon their vernacular languages, and shift to the country's national language, Bislama (Vandeputte-Tavo 2014). This English-based pidgin/creole¹² has been adopted since the beginning of the 20th century as the country's *lingua franca* (Tryon & Charpentier 2004), and became Vanuatu's national language upon its independence in 1980.

Even though French and English, the colonial languages, are still officially the languages of instruction, the pressure to abandon Vanuatu's vernacular languages really comes from Bislama, and its solid association with modern life. Based on raw statistics from the 2009 census, François (2012:104) calculated that only 63.2 percent of the national population declared using a heritage language at home – compared to 33.7 percent who favour Bislama. This figure, incidentally, represents a dramatic ten-point drop from the 73.1 percent which had been recorded just ten years earlier. The results of that study are reproduced in *Table 1*.¹³ The comparison of figures from 1999 and 2009 goes a long way in highlighting the growing influence of Bislama, and the speedy erosion of the country's linguistic diversity.

¹¹ For a rigorous, quantitative method based on the concept of linkage, see the presentation of *Historical Glottometry* in François (2014) and Kalyan & François (f/c).

¹² The term “pidgincreole” proposed by Bakker (2008:138) suits well the status of Bislama.

¹³ The table includes detailed statistics for each province, which are shown on our map (*Figure 1* p.7).

Table 1 — Main language used at home, by regional province:
percentages comparing 1999 and 2009 census data

Province (N to S)	1999			2009		
	Local language	Bislama	other	Local language	Bislama	other
TORBA	90.6	8.3	1.1	85.6	13.8	0.6
SANMA	60.1	36.2	3.7	51.1	46.5	2.4
→ incl. Luganville	23.8	67.2	9.0	14.0	81.9	4.1
PENAMA	94.1	5.3	0.6	91.8	7.6	0.6
MALAMPA	83.0	16.0	1.0	74.4	24.8	0.8
SHEFA	50.4	39.2	10.4	39.7	53.4	6.9
→ incl. Port Vila	31.2	52.4	16.4	22.4	67.8	9.8
TAFEA	95.6	3.6	0.8	91.2	8.0	0.8
National, rural	85.3	13.3	1.4	77.1	21.7	1.2
National, urban	29.3	56.4	14.3	20.5	70.9	8.6
National	73.1	23.3	3.6	63.2	33.7	3.1

4 Presentation of the volume

The linguistic landscape of Vanuatu is thus one in which all the languages share a common ancestor, yet have gone through three millennia of steady diversification from that ancestor. As a result, its languages and cultures show a complex blend of *unity* and *diversity*. Whether we look at phonology or morphosyntax, semantics or pragmatics, oral traditions or social practices, the typical observation combines some features which are shared (almost) everywhere in the country – whether due to their common inheritance, or to later convergence – and other features which were only developed in one particular area.

The present volume, titled *The languages of Vanuatu: Unity and diversity*, brings together nine case studies of Vanuatu languages and cultures. Each chapter will mention facts which are common throughout the country, but will also concentrate on patterns peculiar to one specific area, or even to a single language. The chapters will follow a cline: from strictly grammatical topics, to studies where languages are analysed in light of their social environment – and finally, to topics of a more ethnographic nature, discussing oral traditions.

The first chapter, by **Elizabeth Pearce**, examines aspect marking in Unua, a language of Malakula (#78 on the map). In this chapter, the author takes a formal approach to account for the position and scope of a number of Unua markers, whose function is to encode various values of event boundedness (perfect, perfective, terminative, result). The Unua data is compared to Mandarin Chinese; and while these two languages are unrelated and typologically dissimilar in many ways, they both rely on similar strategies to encode certain aspects. The author then discusses how these strategies fit the *hierarchy of functional projections* (Cinque 1999) – a hypothesis whereby sentential constituents follow an underlying ordering. Pearce shows that both Unua and Mandarin Chinese conform to Cinque’s hierarchy, yet with some necessary terminological adjustments.

Pete Budd investigates the structural and multi-functional properties of the form *ka* in Bierebo (Epi island, #117). A reflex of POc **akin[i]*, this morpheme *ka* shows variable structural distributions associated with various functions: it occurs as the head of instrumental PPs, as an oblique marker in so-called ‘pseudo-transitive’ constructions, and as an applicative suffix deriving transitive from intransitive verbs. Budd demonstrates how these variable properties are structural, and functionally related to each other. The preposition *ka* is also involved in the typologically rare construction of ‘instrumental shift’ where the instrumental NP appears in a frontal position for the purpose of foregrounding the instrument participant.

Looking at Sakao in northern Espiritu Santo (#58), **Benjamin Touati** examines a prefix whose phonological form copies the vowel of the radical, and which he calls “the initial vowel copy”: e.g. *q-ra* ‘pig’, *ε-remrem* ‘thought’. This vowel copy is a morpheme, whose grammatical functions recall those of articles in neighbouring languages. While it is occasionally found on verbs, it is mostly prefixed on nouns – or at least, on *common nouns*, as opposed to personal nouns which go unprefixes. Touati shows that the copying prefix’s contribution is to provide their host with a number of syntactic functions which they cannot access otherwise.

The difference between common and personal nouns in Oceanic is also a key to **Michael Franjeh**’s chapter on North Ambrym (#107). In possessive phrases of the type ⟨Possessed Possessor⟩, the possessed noun takes a construct suffix *-n* when the possessor nominal is a common noun, yet it is absent when the possessor is a personal noun. Franjeh argues that the construct suffix developed from the POc 3SG possessor suffix, and shows that it also appears in three other construction types: bound prepositional, verbal prepositional, and verbal constructions. In these constructions, the construct suffix also marks objects which, similarly to possessors, are also common nouns. Franjeh concludes by arguing that this construct suffix replaced the original POc object markers that occurred in verbal prepositional and verbal constructions.

Moving across the Selwyn Strait from North Ambrym to South Pentecost, **Murray Garde** investigates variation within the different numeral systems of Sa (#26). He argues that the selection of a numeral system is influenced by the social and cultural differences between speech community members. On the one hand, adherents to the *Kastom* ideology, and to the traditional cosmology, use a compound system that combines an imperfect decimal counting system, a vestigial decimal system, and a third paradigm reserved to monetary use. On the other hand, followers of Christianity and of Western habits, or *skulan*, make use of a more simple numeral system similar to those found in other Central Vanuatu languages: a combination of an imperfect decimal system with Bislama borrowings.

The relationship between languages and their environment also plays a key role in the chapter by **Alexandre François**, a study of the space systems used in the Torres and Banks Islands (#1–17 on the map). The 17 languages spoken there share a paradigm of space directionals, encoding such meanings as ‘up’, ‘down’, ‘in’, ‘out’, ‘across’, etc.; and everywhere, these basic spatial meanings are mapped onto the landscape to encode geocentric directions such as ‘southeast’, ‘inland’, ‘oceanwards’, among others. Yet crucially, this mapping shows considerable cross-linguistic diversity, with as many as ten different systems attested in the region. After describing these ten systems synchronically, François proposes a unified theory to reconstruct their historical development, from what was initially a single ancestral system.

Cindy Schneider and Andrew Gray present a detailed outline of phonotactic, lexical, and morphosyntactic differences between the dialects of the Apma language (#24) spoken on Pentecost island. The authors argue that this kind of language variation deserves to be the object of detailed language documentation; they discuss how such findings can be incorporated into language description, which to date often focusses on the purely systemic aspects of a single variety, neglecting the systematic variation observed between dialects.

The last two chapters of our volume look at the traditions of verbal art and oral literature which are still lively today in the archipelago. **Dorothy Jauncey** describes the art of storytelling in Tamambo (#62), on Malo island. She documents four different genres of oral narratives: histories of ancestors; stories of supernatural characters; etiological tales, telling about the origin of certain aspects of the natural world; and stories from the mythical times. For each genre, a complete story is presented in bilingual format, and provided with an analysis of their form as well as their contents. Through her analysis of Tamambo oral narratives, Jauncey draws links between the *rules* they follow and the *roles* they play in the construction of the community's identity and morals.

Finally, **Nicholas Thieberger** examines a small corpus of texts from the oral tradition of South Efate (#126), highlighting links with Erromango, the next island to the south. The stories cited by the author strongly suggest sustained contact between South Efate and Erromango people. This observation, incidentally, aligns with the most recent subgrouping hypotheses regarding South Efate and southern Vanuatu (Lynch 2001, 2004).

Obviously, the topics tackled in this collection of studies are but a drop in the ocean, compared to the wealth of subjects that could be inspired by the languages and cultures of Vanuatu. Yet they already provide a valuable overview of the country's linguistic diversity, with a geographical coverage ranging from the far north to the southern islands. They also discuss a large array of issues, ranging from morphology and syntax to pragmatics, dialectology, folkloristics and oral history. Altogether, this volume gives a fair idea of the research currently undertaken by the community of linguists working on Vanuatu; it will hopefully inspire more research projects in the years and decades to come.

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6 Appendix: A new list of Vanuatu languages

The table below provides information on an updated list of Vanuatu languages. The sources and principles followed to establish this list were presented in Section 2.

For each language listed in *Table 2*, the first column indicates its number on our map (*Figure 1* p.3). The second column indicates the language name as recommended by experts, often based on the preferences of the local speaker community. The third column lists the alternative names that are also used to refer to the same language, either by the community or by the scientific literature. This is followed by the number of speakers; the language's ISO 639-3 code when it exists; the region or island where the language is spoken.

Table 2 — Data on the 138 vernacular languages of Vanuatu

MAP	LANGUAGE	OTHER NAMES	SPKRS	ISO	REGION
1	Hiw	Hiu	280	hiw	Torres Islands (Hiw)
2	Lo-Toga	Loh, Toga	580	lht	Torres Islands (Lo, Toga, Tegua)
3	Lehali		200	tql	Banks Islands (Ureparapara)
4	Löyöp	Lehalurup	240	urr	Banks Islands (Ureparapara)
5	Mwotlap	Motlav	2100	mlv	Banks Islands (Motalava)
6	Volow	Valuwa	1	mlv	Banks Islands (Motalava)
7	Mota		750	mtt	Banks Islands (Mota)
8	Lemerig	Sasar	2	lrz	Banks Islands (Vanua Lava)
9	Vera'a	Vatrata	500	vra	Banks Islands (Vanua Lava)
10	Vurës	Vureas, Mosina	2000	msn	Banks Islands (Vanua Lava)
11	Mwesen	Mosina	10	msn	Banks Islands (Vanua Lava)
12	Nume	Tarasag	700	tgs	Banks Islands (Gaua)
13	Dorig	Wetamut	300	ww	Banks Islands (Gaua)
14	Koro		250	krf	Banks Islands (Gaua)
15	Olrät		3	olr	Banks Islands (Gaua)
16	Lakon	Lakona; Vurë	800	lkn	Banks Islands (Gaua)
17	Mwerlap	Merlav	1100	mrn	Banks Islands (Merelava)
18	Sungwadia	Marino; North Maewo	500	mrn	Maewo
19	Sungwadaga	Central Maewo	1400	mwo	Maewo
20	Baetora	South Maewo, Sungaloge	1330	btr	Maewo
21	Ambae	Lolovoli; Aoba	5000	omb	Ambae
22	West Ambae	Duidui	8700	nnd	Ambae
23	Raga	Hano	6500	lml	Pentecost
24	Apma		7800	app	Pentecost
25	Ske	Seke	600	ske	Pentecost
26	Sa	Saa	2500	sax	Pentecost
27	Tolomako	Bigbay	900	tlm	Espiritu Santo
28	Piamatsina		250	ptr	Espiritu Santo
29	Vunapu		380	vnp	Espiritu Santo
30	Valpei		300	vlp	Espiritu Santo
31	Nokuku		250	nkk	Espiritu Santo
32	Meri	Tasmate, Oa	300	tmt	Espiritu Santo

MAP	LANGUAGE	OTHER NAMES	SPKRS	ISO	REGION
33	Wusi	Kula	350	ws	Espiritu Santo
34	Bura		300		Espiritu Santo
35	Merei	Tiale, Lametin	400	lmb, mnl	Espiritu Santo
36	Mores	Ko	200	mrp	Espiritu Santo
37	Ande	Morouas	500		Espiritu Santo
38	Toksiki	Soisoru, Roria	200	rga	Espiritu Santo
39	Kiai	Fortsenal	450	frt	Espiritu Santo
40	Moiso		100		Espiritu Santo
41	Kene		300		Espiritu Santo
42	Daruru		100		Espiritu Santo
43	Akei	Tasiriki	4000	tsr	Espiritu Santo
44	Retlatur		100		Espiritu Santo
45	Wailapa	Ale	500	wlr	Espiritu Santo
46	Farsaf	Narango, Nambel	400	nrg	Espiritu Santo
47	Varavara	Amblong, Aje	300	alm	Espiritu Santo
48	Narmoris		220	plb	Espiritu Santo
49	Biliru	Tambotalo	3	tls	Espiritu Santo
50	Atin		120		Espiritu Santo
51	Ati	Polonombauk, Meris	85		Espiritu Santo
52	Farnanto		100		Espiritu Santo
53	Se	Fanafo	20		Espiritu Santo
54	Sinia	Navut	520	nsw	Espiritu Santo
55	Butmas-Tur	Ati, Farafi	520	bnr	Espiritu Santo
56	Ngen	Shark Bay	450	ssv	Espiritu Santo, Litaro
57	Tholp	Nethalp	0		Espiritu Santo
58	Sakao	Hog Harbour, Nkep	4000	sku	Espiritu Santo
59	Mavea	Ma'vea, Mafea	34	mkv	Espiritu Santo, Mavea
60	Tutuba		500	tmi	Espiritu Santo, Tutuba
61	Aore		0	aor	Espiritu Santo, Aore
62	Tamambo	Malo, Tamabo	4000	mml	Espiritu Santo, Malo
63	Tangoa	Movono	370	tgp	Espiritu Santo, Tangoa
64	Araki		8	akr	Espiritu Santo, Araki
65	Axamb	Ahamb	750	ahb	Malekula
66	Lendamboi	Small Nambas, Letemboi	800	nms	Malekula
67	Nasvang		275		Malekula
68	Sörsörian		3		Malekula
69	Avok		500		Malekula, Avok
70	Uliveo	Maskelynes	1100	klv	Malekula, Maskelynes
71	Port Sandwich	Lamap	1200	psw	Malekula
72	Nisvai	Vetbon	200		Malekula
73	Burmbar	Banam Bay, Vartavo	900	vrt	Malekula
74	Mbwenelang		<10		Malekula
75	Aulua		750	aul	Malekula

MAP	LANGUAGE	OTHER NAMES	SPKRS	ISO	REGION
76	Niolean	Repanbitip	90	rpn	Malekula
77	Rerep	Pangkumu, Tisman	380	pgk	Malekula
78	Unua	Onua	520	onu	Malekula
79	Vivti		<5		Malekula
80	Nitita		<5		Malekula
81	Avava	Katbol, Navava; Bangsa'	700	tmb	Malekula
82	Neverver	Lingarak, Nevwervwer	1250	lgk	Malekula
83	Litzlitz	Naman	15	lzl	Malekula
84	Uripiv	Uripiv-Wala-Rano-Atchin, Northeast Malakula	9000	upv	Malekula, Atchin, Uripiv
85	Rutan		?		Malekula
86	Botovro	Mpotovoro	430	mvt	Malekula
87	Vao		1900	vao	Malekula, Vao
88	Alovas		?		Malekula
89	Vovo		475		Malekula
90	Nese	Matanvat	160		Malekula
91	Najit		<5		Malekula
92	Malua Bay	Middle Nambas	500	mll	Malekula
93	Njav		10		Malekula
94	Tirax	Mae, Dirak	1000	mme	Malekula
95	V'ënen Taut	Big Nambas	3350	nmb	Malekula
96	Tape	Maragus	15	mrs	Malekula
97	Larëvat	Laravat, Larevat	680	lrν	Malekula
98	Neve'ei	Vinmavis	500	vnm	Malekula
99	Nivat		<10		Malekula
100	Nasarian		5	nvh	Malekula
101	Aveteian	Dixon Reef	50	dix	Malekula
102	Ninde	Labo	1100	mwi	Malekula
103	Nahavaq	South West Bay, Siesip	700	sns	Malekula
104	Nāti		25		Malekula
105	Naha'ai	Malvaxal, Malfaxal	600	mlx	Malekula
106	Navwien		5		Malekula
107	North Ambrym		5250	mmg	Ambrym
108	Orkon	Fanbak	30		Ambrym
109	Southeast Ambrym		3700	tvk	Ambrym
110	Daakie	Port-Vato	1300	ptv	Ambrym
111	Daakaka	South Ambrym, Baiap	1200	bpa	Ambrym
112	Dalkalaen		1000		Ambrym
113	Raljago	West Ambrym, Lonwolwol	<10	crc	Ambrym
114	Paama	Paamese	6000	paa	Paama
115	Lamen	Lamenu, Varmali	850	lmu	Epi, Lamen
116	Lewo	Varsu	2200	lww	Epi
117	Bierebo	Bonkovia-yevali	800	bnk	Epi

MAP	LANGUAGE	OTHER NAMES	SPKRS	ISO	REGION
118	Baki	Burumba, Paki	350	bki	Epi
119	Mkir	Maii	180	mmm	Epi
120	Bieria	Bieri, Vovo, Wowo	25	brj	Epi
121	Namakura	Makura, Namakir	3750	nmk	Efate, Shepherds (Tongoa, Tongariki)
122	Emae	Makatea	400	mmw	Shepherd Is (Emae)
123	Nakanamanga		9500	llp	Efate, Shepherd Is (Nguna, Tongoa)
124	Lelepa	Havannah Harbour	400	lpa	Efate, Lelepa
125	Eton		500	etn	Efate
126	South Efate	Erakor	6000	erk	Efate
127	Mele-Fila	Ifira-Mele	3500	mxe	Efate, Mele, Ifira
128	Sie	Se, Sie, Erromanga	1900	erg	Erromango
129	Ura		6	uur	Erromango
130	Utaha		0	iff	Erromango
131	North Tanna		5000	tnn	Tanna
132	Lenakel	Netvaar	11500	tnl	Tanna
133	Southwest Tanna	Nawal	5000	nwi	Tanna
134	Whitesands	Narak	7500	tnp	Tanna
135	Kwamera	Nafe, Nife	3500	tnk	Tanna
137	Anejoñ	Aneityum	900	aty	Aneityum
138	Futuna-Aniwa	West Futuna	1500	fut	Futuna, Aniwa

The ins and outs of *up* and *down*

Disentangling the nine geocentric space systems of Torres and Banks languages

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Abstract

The 17 languages spoken in the Torres and Banks Islands of northern Vanuatu commonly encode spatial relations by means of geocentric (absolute) systems of directionals. These systems all have in common a single cardinal axis oriented northwest-southeast, and at least a second topographical axis, contrasting inland-seawards. While this general profile is typical of Oceanic, a detailed comparison of the 17 languages reveals their internal diversity, with as many as nine distinct geocentric systems represented in this small region. The aim of this study is to describe and analyse these nine systems, by examining the semantic connections between the space directionals that encode them. Adopting a canonical approach to cross-linguistic comparison, I show that each system is a variation between two equally simple canons, namely Gaua and Mwotlap. Finally, I reconstruct the historical development of these systems since Proto Oceanic: this reveals that Gaua is the most conservative of all systems, and Hiw the one which has been most affected by the accumulation of innovations.

Citation

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1 The geocentric use of directionals

1.1 Space strategies across languages

All known languages make use of spatial expressions in one form or another – that is, linguistic devices whose main function is to encode a direction or a location in the three-dimensional space. However, typological studies have revealed substantial cross-linguistic variation regarding the parameters that govern the internal organisation of spatial systems.

Figure 1 summarises the typology of linguistic space strategies as outlined by Levinson (1996b:359).¹

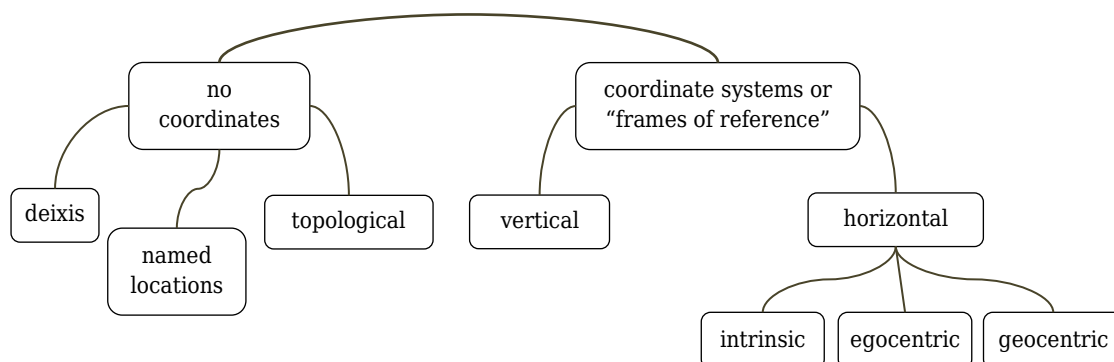


Figure 1 – A typology of space strategies (after Levinson 1996b:359)

While deictic or topological strategies (e.g. *in this house*; *close to the tree*), as well as vertical coordinates, appear to be encoded in all languages, cross-linguistic variation concerns mostly the strategies used on the horizontal plane. As Levinson (1996b, 2003) shows, languages can encode horizontal vectors by potentially resorting to three frames of reference:

- the INTRINSIC frame bases coordinates upon the spatial orientation of a ground object taken as reference: e.g. *the ball is in FRONT of the house* (where the ground object *house* is itself provided with a certain intrinsic orientation)
- the EGOCENTRIC (or “relative”) frame defines coordinates relative to a ground object in its relationship to a human observer: e.g. *the ball is in FRONT of the tree* (where the ‘front’ of the tree is only defined by its position with respect to an observer)
- the GEOCENTRIC (or “absolute”) frame of reference encodes directions based on a system of fixed coordinates which are defined externally, and do not depend on any particular anchor in the speech situation. In a sentence such as *my house is SOUTH of the river*, the direction of the ‘south’ vector is defined irrespective of the intrinsic orientation of the house, or of the location of an observer.

Crucially, several studies (Brown & Levinson 1992, 1993; Haviland 1993; Levinson 1996a-b, 2003; Pederson *et al.* 1998) have pointed out that these different frames of reference are diversely represented in the world’s languages. English knows the three strategies, but uses the geocentric frame only for larger scales (e.g. *northern England*, *western suburbs*); for shorter distances, it can only employ the intrinsic and egocentric frames. By contrast, a language like Mopan Maya relies heavily on the intrinsic strategy (Pederson *et al.* 1998:572; Danziger 2011); and Tenejapan Tzeltal in Mexico (Brown & Levinson 1992) use a combination of intrinsic and geocentric reference, including for short distances.

¹ In this paper – starting with Figure 1 – I adopt Levinson’s Frames of Reference approach, yet follow the now widespread habit of using more transparent labels than the ones he initially used. Thus, the frame he called *relative* is here labelled *EGOCENTRIC* (after Le Guen 2011a:274); and Levinson’s *absolute* frame will be called *GEOCENTRIC* (Le Guen 2011a:275, 2011b:932 – see also Haviland 1993:5; de León 1994; Dasen & Mishra 2010).

1.2 Geocentric space reference in northern Vanuatu languages

The present study will describe and analyse the different systems of space reference found in the 17 Oceanic languages of the Torres and Banks Islands, in the northernmost part of the Vanuatu archipelago.

Even though these languages do have words for *right* and *left*, or *in front* and *behind*, these refer to sides of the body, and are never used to project coordinates so as to encode spatial location. Torres-Banks languages are in fact typologically quite extreme in making virtually no use either of the INTRINSIC frame of reference (as in **behind the house*), or the EGOCENTRIC one (as in **behind the tree*). Just like for most other Oceanic or Austronesian languages (Senft 1997, Palmer 2002),² the only acceptable strategy in northern Vanuatu, in order to locate a referent, is to employ GEOCENTRIC coordinates. This yields sentences such as (1), in Mwotlap (François 2003:420):³

(MTP.1) Kē mi-tig lō-tōti beg, ba lok **hōw**.
 3sg PFT-stand LOC-trunk breadfruit but side (west)
 (liter.) ‘She’s standing at the breadfruit tree, on the western side.’
 [situational equivalent of *She’s standing behind the tree.*]

Unlike European languages, Oceanic languages employ their geocentric systems for any distance, and it is common to hear sentences such as this one, also in Mwotlap:

(MTP.2) na-bankēn mey hag tō lok **hag**
 ART-mug REL sit PRSTV side (east)
 ‘the mug on the east side (of the table)’

Geocentric strategies in the world are often based on a simple system of four fixed cardinal quadrants such as *North-West-South-East* (see Haviland 1993 for Guugu Yimithirr), usually based on the path of the sun. By contrast, those found in Oceanic languages have only one cardinal axis oriented NW-SE; the latter is combined with a topographic axis *land-sea*, whose absolute orientation in compass terms varies with the shape of the shoreline (Palmer 2002, François 2004). Within the Oceanic family, we’ll see that Torres and Banks languages can show even more complex mechanisms, involving paradigms of 3, 4, 5 or 6 geocentric directionals.

I will focus on one syntactic category that is found in all the languages under study, namely *space directionals*. As we will see in §2.3, these morphemes are pervasive in discourse. The vectors encoded by these directional paradigms are of three types:

- PARTICIPANT-oriented coordinates, glossed ‘hither’–‘thither’ [→§2.4.1];
- TOPOLOGICAL coordinates, e.g. ‘in’–‘out’, ‘up’–‘down’ [→§2.4.2];
- GEOCENTRIC coordinates, e.g. ‘uphill’–‘downhill’, ‘southeast’–‘northwest’... [→§2.4.3]

² Various publications have described the space systems of Oceanic languages: see papers in Senft (1997) or Bennardo (2002), as well as Ozanne-Rivierre (1999), François (2004), Cablitz (2006), Palmer (2007). Descriptions of space systems in languages of Vanuatu have been few so far, but include Hyslop (2002) on Northeast Ambae; François (2003) on Mwotlap; Paviour-Smith (2009) on Aulua; Johnson (2014) on Ske.

³ All forms in this study are transcribed using the languages’ practical orthographies, which are spelled out in an appendix (§7.2).

Crucially for this study, the directional particles that encode geocentric space reference always have other, non-geocentric meanings in the same language. The typical case is that a given directional encodes topological coordinates as well as geocentric ones, following non-trivial patterns of correspondences. For example, all languages express *northwest* as *down*; some languages encode *seawards* as *down*, others as *out*; and so on. Even though all northern Vanuatu systems share a number of general properties, the attested combinations define quite distinct systems of directionals.

In order to get a sense of this local diversity of geocentric systems, the paradigm of directionals in Dorig (Table 1) can be compared with the one in Hiw (Table 2).⁴

Table 1 — The directional system of Dorig (Gaua island)

<i>Directional</i>	<i>PARTICIPANT-ORIENTED</i>	<i>TOPOLOGICAL</i>	<i>GEOCENTRIC</i>
ma	hither	—	—
āt	thither	—	—
vak	—	across	parallel to shore in any direction, for short distances
sag	—	up; in	landwards, inland, uphill; (long-distance) parallel to shore towards SE
ror	—	down; out	seawards, downhill; parallel to shore towards NW

Table 2 — The directional system of Hiw (Torres islands)

<i>Directional</i>	<i>PARTICIPANT-ORIENTED</i>	<i>TOPOLOGICAL</i>	<i>GEOCENTRIC</i>
me	hither	—	—
vēn	thither	—	(on land) parallel to shore towards SE
ag	—	—	landwards, inland; (navigational) towards SE
iy	—	in	—
řōw	—	out	seawards
vēn	—	up	uphill
uw	—	down	downhill; (any distance) towards NW

The geocentric directions can be plotted on a figure representing an island. In order to make systems comparable, I choose to represent all systems based on a single representation of the typical island landscape (see §2.1, 2.4.3). Figure 2 maps the geocentric directionals of Dorig, which also corresponds to that of other languages on Gaua island (Table 1); Figure 3 those of Hiw (Table 2). The geocentric meaning of each vector (last column of the tables) is symbolised by an arrow, and is therefore not repeated there; instead, each arrow is tagged with a gloss representing the *non-geocentric* meaning associated with the same term.⁵ For example, the geocentric direction “*along the shore towards southeast, on land, for long distances*” is encoded in Dorig by a term that also means ‘up’, and in Hiw by a word that is otherwise best glossed ‘thither’.

⁴ Throughout this study, forms will be given using the local orthographies. The appendices provide a key to spelling and pronunciation (§7.2), as well as notes on the etymology of directionals (§7.3).

⁵ The only case when this is not possible is with the form *ag* in Hiw and Lo-Toga, which is only used geocentrically (see §4.6, 4.7.1).

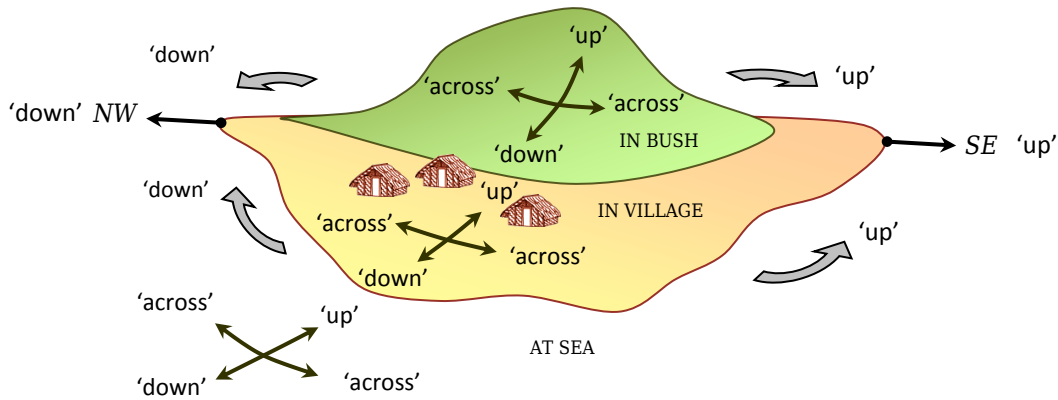


Figure 2 – The system of geocentric directionals in Dorig and other Gaua languages

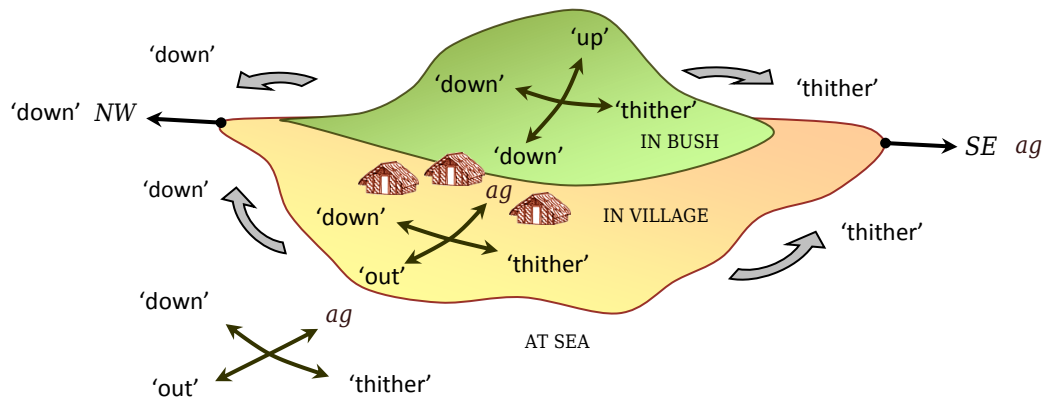


Figure 3 – The system of geocentric directionals in Hiw

These figures set the scene for the main point of this study, which is to analyse and understand the various patterns of correspondence found in these languages between geocentric and non-geocentric vectors.

1.3 Making sense of the diversity: synchrony and diachrony

Insofar as geocentric and non-geocentric meanings are mapped differently in Dorig and in Hiw, these two languages can be said to represent two structurally distinct systems. Out of seventeen languages spoken in the area, I have found that the various configurations of space directionals define a total of nine systems. In comparison with the stability of spatial systems found across entire regions like Europe, the diversity found in northern Vanuatu is impressive; it confirms a marked tendency towards linguistic divergence that can be otherwise observed in this language mosaic (François 2011, 2012). Of these nine systems, some – like the one used on Gaua – are relatively straightforward and easy to explain; others – like Hiw – can only be understood based on a complex investigation.

This article will unfold as follows. Section 2 will present the Torres and Banks Islands and introduce their systems of space directionals, by situating them in their social and linguistic context. The core of the study will consist in a description of directional paradigms in the area's 17 languages, which are all (except Mwotlap) documented here for the first time. The systematic comparison of these languages will highlight some properties which are shared throughout the region: in particular, section 3 will focus on the *northwest-southeast* cardinal

axis, and show that it is handled in similar ways, for long-distance reference, by all languages. Section 4, in turn, will uncover greater cross-linguistic diversity as it describes how directionals are used on the local scale, for shorter distances. I will show that the apparent profusion of modern space systems is better handled through a “canonical” approach in which the systems of Gaua and Mwotlap constitute two equally simple yet opposite canons, and all other systems form structural hybrids between these two poles.

While section 4 is to describe and compare geocentric systems from a synchronic point of view, the final discussion (Section 5) will recapitulate our findings from a historical perspective, and propose a unified scenario to account for the diversity attested today. The system of Gaua – one of our two canons – will be shown to be the most conservative of the ancestral system; as for other northern Vanuatu languages, they reflect the accumulation of several local innovations, which have diffused to various parts of the linguistic area. After reconstructing the individual innovations that led to modern systems, their projection on a map will reveal that they define coherent areas of linguistic diffusion, much in line with what we know of the region’s historical dialectology.

2 Paradigms of directionals in Torres and Banks Islands

2.1 Northern Vanuatu landscapes

The Torres and Banks Islands are two small archipelagoes located in the northernmost part of Vanuatu, with a total land surface of 882 km² (see Map 1). Most islands are of volcanic origin,⁶ with active volcanoes on Vanua Lava and Gaua. Their steep relief, covered in thick bush, rises up to relatively high cone-shaped summits, both in the Banks Islands – Vanua Lava (921 m), Merelava (833), Gaua (767), Ureparapara (764), Mota (411), Motalava (243) – and in the Torres Islands – Hiw (366), Tegua (300), Toga (240), Lo (115). Several of these mountainous islands are surrounded by a more or less broad band of coral reef. Due to a geological process of uplift (Ballu *et al.* 2011), some islands even include accreted coral as their terrain for a fair portion of their surface. The flat, horizontal shape of these coral-based areas contrasts with the steep slopes of the central mountains. This landscape can be represented in a stylised fashion, similar to the one given in Figures 2 and 3 above; throughout this study, this diagram will constitute a useful background for the comparison of geocentric systems.⁷

The 9400 inhabitants of the Torres-Banks islands (VNSO 2009) are distributed across twelve of these islands, and approximately fifty villages. Some villages, especially on the higher islands, are located inland, on the slopes of the mountains where the soil is most fertile. But the majority of the population reserves the uphill areas for their subsistence

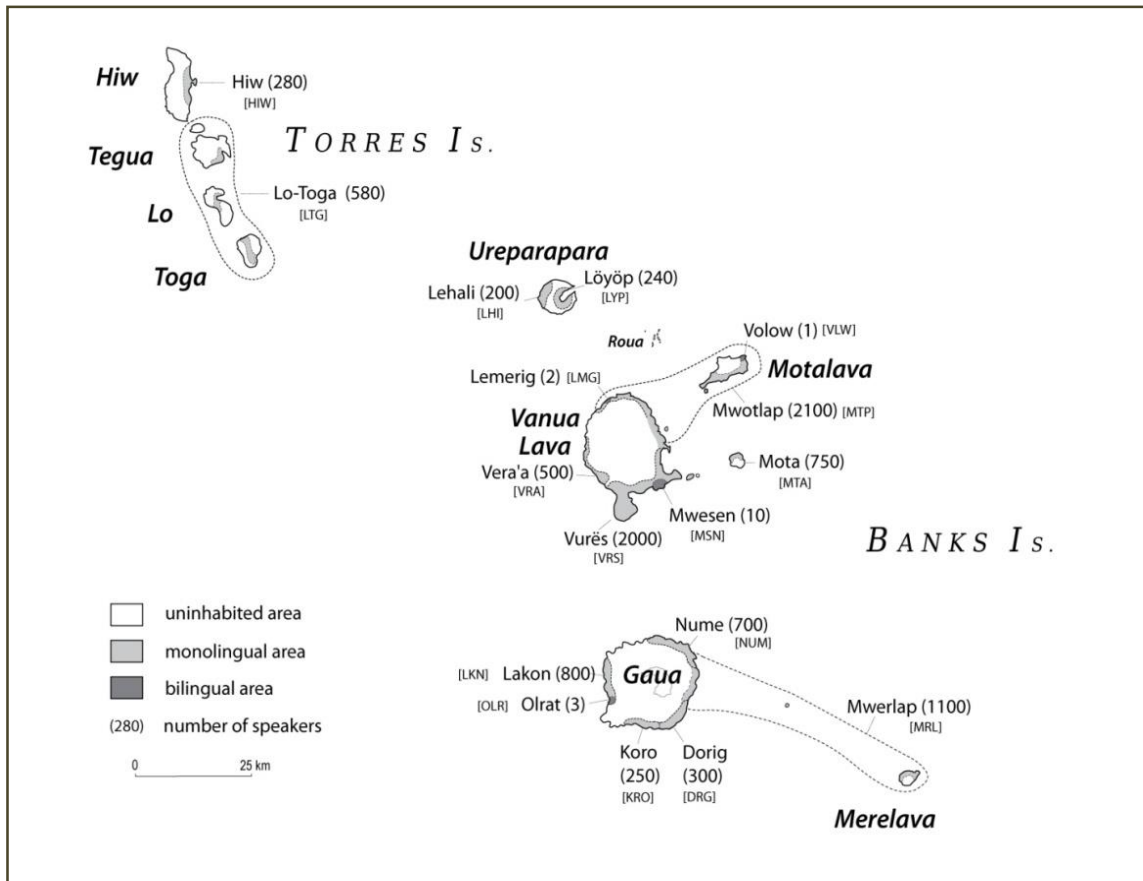
⁶ The only non-volcanic islands of the area are a group of low coral atolls known as Roua, or Reef islands. Though once inhabited, they were abandoned by their population in the middle of the 20th century (François 2012:97). The absence of any modern population there – apart from occasional fishermen from the neighbouring islands – makes it difficult to study the way geocentric directionals would be (or used to be) employed on these atolls, despite the obvious interest of such questions (Palmer 2007).

⁷ I will discuss these diagrams again in §2.4.3, and in fn.14 p.168.

gardens, and dwells in coastal areas – a convenient location where marine and land resources can easily be accessed. The last 150 years have seen a trend for the population to abandon inland hamlets, and settle in larger coastal villages (Vienne 1984:23; François 2012:96-99).

2.2 The languages of the Torres and Banks Islands

The Torres and Banks Islands are home to 17 different languages. The present study rests on primary data which I collected during a number of field trips in northern Vanuatu (since 1997 for the languages Mwotlap, Mwesen, Vurës; since 2003 for other languages).⁸ Map 1 shows the territory covered by the various language communities; clearly, coastal villages are the dominant form of settlement. Each language is given an approximate number of speakers, as well as a three-letter abbreviation.



Map 1 - The 17 languages of northern Vanuatu (Torres and Banks Is)

These 17 languages are all Oceanic (Austronesian), and thus descend from Proto Oceanic. Together, these languages form the Torres-Banks “linkage” – that is, they are the modern descendants of what initially developed as a dialect continuum (François 2014; cf. Ross

⁸ Throughout this study, I will indicate the source of my examples using simple conventions. Sentences taken from my 263 recorded texts will note the language, the story and the sentence number – e.g. [Hiw.Meravtit.051]. Sentences obtained through elicitation refer to my field questionnaires – e.g. [LHI.d12:12]. Spontaneous speech heard during language immersion has a reference to my notebooks – e.g. [FP3-28b]. (My field notes are archived online, at <http://www.odsas.net>.)

1988). During the three millennia of their *in situ* development, the communalects have diverged so much as to lose mutual intelligibility. However, these processes of diversification have always gone along a tradition of egalitarian multilingualism and social contact (François 2012), in ways which favoured various forms of cultural and linguistic diffusion. This dialectic between divergence and convergence will be central to the historical discussion of this study, when I reconstruct a number of structural innovations related to geocentric systems, and map their patterns of diffusion across the area (see §5.4).

2.3 A special paradigm of space directionals

Oceanic languages in general vary as to whether they express directional meanings using motion verbs (e.g. ‘go up’, ‘go down’) or directional particles (‘up’, ‘down’). Ross (2004, 2007: 269) suggests Proto Oceanic may have had lexemes with dual membership, e.g. **sipo* was both a verb ‘go down’ and a particle ‘down’.

The languages of northern Vanuatu distinguish lexically between three word classes: they have directional verbs (e.g. Mwotlap *hēw* ‘descend, go down’); directional adverbs (Mwotlap *tēqēl* ‘downwards’); and a separate word class of directional particles (Mwotlap *hōw* ‘down’). Although the three categories can perfectly combine in the same clause (e.g. *hēw tēqēl hōw* ‘go down’), the default strategy is to encode vectors using just the directional particle (e.g. *van hōw* ‘go down’, with *van* ‘go’). This study will occasionally mention directional adverbs (§2.4.2, 4.1.2), but its main focus will be the systems of directional particles – or “DIRECTIONALS” for short – as they have properties of their own.

Space directionals are pervasive in discourse, both in daily conversation and in narratives. To take the example of Mwotlap, a selection of 52 narratives from my transcribed corpus has 9936 clauses, and 89,386 words. In that corpus, I numbered the tokens of space directionals to be 7187 in total:⁹ this may be interpreted by saying that 72.3 percent of clauses include a space directional; or that on average, a directional is present once every 12.4 words in connected speech.

Grammatically, directionals form a subset of the larger class of *locatives*. As such, the syntactic functions of Torres-Banks directionals may include that of locative predicate (of the type *She’s DOWN in the cellar*), of verb modifier (*he walked DOWN to the lake* – see (3) below), and of NP modifier (*the people DOWN there* – see (4) below). While the morphosyntactic profile of directionals is generally parallel in all languages in the region, there are also some language-specific peculiarities which will be mentioned here when relevant.¹⁰

Semantically speaking, the primary function of directionals is to construct a spatial path or vector. Sometimes, this vector reflects the direction followed by (a participant in) the reported event itself – as is the case in (3), from the language Lehali:

⁹ Broken down to individual morphemes, the results are: *me* ‘hither’ 2136; *van* ‘thither’ 2583; *hag* ‘up...’ 719; *hōw* ‘down...’ 724; *hay* ‘in...’ 491; *yow* ‘out...’ 534. Note that these statistics do not distinguish between the geocentric and the non-geocentric uses of these space directionals when they are encoded by the same lexical form. Telling them apart in such a large corpus would be possible, yet would require a time-consuming analysis, carried out sentence by sentence.

¹⁰ For example, the intricate morphology of directionals in Mwerlap will be described in an Appendix (§7.4).

(LHI.3) Koyo m-kal **ila ma** l-eñ ti m-en **how**, ti m-mutuy.
 3du PFT-cross **in hither** in-house then PFT-lie **down** then PFT-sleep
 ‘They came (**in**) into the house, lay **down**, and fell asleep.’ [LHI.Stepmother.63]

In (3), the direction of the first motion event *kal* ‘cross [threshold]’ is encoded as ‘inwards’ (vector defined in topological, non-deictic terms) as well as ‘hither’ (vector defined in deictic terms). The second event *en* ‘lie’ is vectorised as a ‘downward’ movement.

These same directionals are also used to refer to static locations, in which case their role is to define a vector between the deictic centre (‘origo’) and that target location:

(LHI.4) Qösö lē-vno **how** e tev lavēt.
 HUM:PL in-village **down** DX IPFV celebrate
 ‘People in the village **down** there are celebrating.’ [LHI.d12:12]

In (4), the directional *how* ‘down’ does not encode the direction of a motion event, but the orientation of the abstract vector that leads from the origo (‘here’) to the location referred to.

Whether directionals encode a motion path as in (3), or serve to identify a static location as in (4), their function is always to delineate a vector in a three-dimensional space.

2.4 The three semantic types of space directionals

Directional systems in northern Vanuatu are best divided into three types of coordinates: participant-oriented vs. topological vs. geocentric coordinates. I will describe them successively in this section, before I zoom in on the geocentric type.

2.4.1 Participant-oriented directionals

All 17 languages have a pair of directionals that can be conveniently glossed ‘hither’ and ‘thither’. The forms are given in Table 3, with languages ranked geographically from northwest (Hiw) to southeast (Mwerlap).¹¹

Table 3 — Pairs of participant-oriented directionals in Torres-Banks languages

	HIW	LTG	LHI	LYP	VLW	MTP	LMG	VRA	VRS	MSN	MTA	NUM	DRG	KRO	OLR	LKN	MRL
‘hither’	me	me	ma	me	me	me	me	ma	me	me	ma	ma	ma	ma	ma	ma	mē
‘thither’	vēn	vēn	van	van	va	van	wēl	suwō	net	nat	at	at	āt	āt	at	at	ot

The glosses ‘hither’ and ‘thither’ are but a convenient shortcut. To be more specific, the definition of these two directionals normally includes the reference to a *participant*, typically animate, which provides the target of the spatial vector. The pairs operate along a deictic divide that contrasts two general orientations, which may be labelled *egotropic*¹² vs. *allotropic*:

- gloss ‘hither’ = ‘towards speaker’: an *egotropic* direction, targeted towards the speaker, or a participant to which the speaker morally associates him- or herself.
- gloss ‘thither’ = ‘towards non-speaker’: an *allotropic* direction, targeted towards any participant that does not belong to the speaker’s sphere.

¹¹ I thank Stefan Schnell (pers. com.) for confirming the Vera’a form for ‘thither’.

¹² The term *egotropic* I am coining here (‘motion directed towards *ego*’) is distinct from the term *egocentric* we saw in §1.1 (‘a set of spatial coordinates calculated on the basis of *ego*’s own position’).

2.4.2 Topological directionals

The category of TOPOLOGICAL directionals deserves to be presented for itself, before we examine how they have also developed GEOCENTRIC uses.

As far as northern Vanuatu is concerned, the domain of topological directionals includes two pairs of vectors. The pair *in*–*out* is defined by reference to a closed shape interpreted as a container or enclosure: house, canoe, basket, pocket, etc. The second pair *up*–*down* is defined with reference to the vertical axis.¹⁴ Table 4 provides the forms of the topological directionals for the 17 Torres–Banks languages.

Table 4 — Topological directionals in Torres–Banks languages

	HIW	LTG	LHI	LYP	VLW	MTP	LMG	VRA	VRS	MSN	MTA	NUM	DRG	KRO	OLR	LKN	MRL
‘in’	iy	il	ila	say	ha	hay	sar	sar	sar	sar	sage	sa	sag	sa	saa	hag/roka	sar/seag
‘up’	vên	vin	vên	sa	hag	sag	sag	siag	sag								
‘down’	uw	iw	how	sōw	hō	hōw	sōw	suwō	sōw	sōw	swo	ror	ror	ror	roy	hōw/rōkōw	sōw/row
‘out’	rōw	rōw	yow	yow	yo	yow	row	rōw	rōw	row	rowo						

Most of the systems have four topological directionals. Mwesen is such a language:

- (MSN.8) E Qet ni le o gepen no, mop *kal* **sag** le ak.
 PERS (hero) 3s:AO take ART sail DEF put upwards **up** LOC canoe
 ‘Kpwet took the sail and put it **up** on the canoe.’ [MSN.Qet.031]
- (MSN.9) Me rov~rov o parpar, qēs **sōw** le qiti ak no.
 PFT IPFV~raise ART axe smash **down** LOC head canoe DEF
 ‘He raised his axe, and smashed it **down** onto the canoe’s prow.’ [MSN.Qet.085]
- (MSN.10) Kal *telñor* **sar** le gemel, nē ni on le tenepa-n.
 cross inwards **in** LOC dwelling 3sg 3s:AO lie LOC bed-3sg
 ‘He walked **into** his dwelling, and lay down on his bed.’ [MSN.Varvang.50]
- (MSN.11) Ni o~o~on le lo gemel, ni row *lō* **row** le sar.
 3s:AO DUR~lie LOC inside dwelling 3s:AO rush outwards **out** LOC clearing
 ‘He remained in his home for a while,
 but suddenly rushed **out** to the frontyard.’ [MSN.Varvang.47]

While this study focuses on the paradigm of directionals proper, these examples also give us the opportunity to notice, in passing, the optional presence of *verb-modifying adverbs* with similar semantics: *KAL sag* in (8); *TELÑOR sar* in (10); *Lō row* in (11). The function of these adverbs is only to specify the path of a motion event, never to define a static location – contrary to directionals which can have both functions (§2.3). These verb modifiers are not

¹⁴ In the terminology used by Levinson (1996b) and illustrated in Figure 1 above, the term “topological” only refers to the first of these pairs (*in*–*out*), whereas the vertical dimension is treated separately. However, the languages of northern Vanuatu treat the two pairs of directionals as members of a single subparadigm, and it is therefore legitimate to group them under a single category, for which the label ‘topological’ is well adapted. Levinson himself (1996b:360) acknowledges that “the VERTICAL dimension is special in various ways and is an angular specification that creeps into essentially nonangular TOPOLOGICAL specifications” (my emphasis).

attached to any spatial strategy in particular: for example, the one glossed ‘upwards’ (*kal* in Mwesen) can be used with a vertical meaning, but also with the geocentric functions attached to ‘up’, such as the cardinal ‘up’ pointing to southeast (§3.3). When adverbs and directionals are used in the same clause, the normal situation is for them to semantically align (‘outwards’ with ‘out’, ‘upwards’ with ‘up’...) with only a few exceptions (François 2003: 426). This observation will be useful later in this study, when directional adverbs meaning ‘crosswise’ help us confirm the semantics of the directional glossed ‘across’ in the languages of Gaua (§4.1.2).

As Table 4 shows, some languages have fewer than four topological directionals. In the case of Volow, a language variety very close to Mwotlap, the collapse between ‘in’ and ‘up’ seems to be due to a more general pattern of morphological truncation which has deleted the final consonants of all the directionals (**hōw* → *hō*; **yow* → *yo*; **van* → *va*). This has resulted in the loss of distinction between ‘in’ (**hay* → *ha*) and ‘up’ (**hag* → *ha*) – see also §4.4.1.

This accident of historical morphology in Volow contrasts with the situation in the five languages of Gaua, for which the colexification¹⁵ is systematic, on the one hand, between ‘in’ and ‘up’; and on the other hand, between ‘out’ and ‘down’. Only the context makes it clear which of the two coordinate axes is being meant in a particular utterance. To take an example from Orlat, the directional *saa* corresponds to a vertical ‘upwards’ movement in (12) (cf. ‘lift’, ‘lintel’); but in (13), it means ‘(look) inwards’:

(OLR.12) Ni mō sēj rakat ni **saa** lē mataalol.
 3sg PFT hang lift 3sg **up/in** LOC lintel
 ‘He hanged (the ogress) **up** above the doorway.’ [OLR.Ogress.082]

(OLR.13) Nōrō tē pipira ti nōtam, nōrō mō pipleñ **saa** lē vuvuy.
 3du IPFV1 play IPFV2 outside 3du PFT peer **up/in** LOC house
 ‘As the two boys were playing outside, they looked **into** the house.’ [OLR.Eel.36]

In a similar way, the reverse polysemy characterises the Lakon directional *hōw* ‘down/out’: in (14), it is used vertically to mean ‘down’, but in (15) it refers to an outward movement:

(LKN.14) Ni tē tārā rāgā neñ tē sēv **hōw** lē tanē.
 3sg SEQ chop tree DEF SEQ fall **down/out** LOC ground
 ‘He chopped the tree, which fell **down** on the ground.’ [LKN.d07:03]

(LKN.15) Ni ‘n saplāg tōpō-n ni tē rowol **hōw** matumä.
 3sg PFT carry.child grandchild-3sg 3sg SEQ cross.door **down/out** frontyard
 ‘She took her grandchild in her arms and walked **out** to her frontyard.’ [LKN.d02:28]

This pattern of polysemy is also found in a number of other languages in the Oceanic family. For example, Ozanne-Rivierre (1997:86; 1999:79) reports that in languages of New Caledonia, “the up/down oriented axis is used to express (...) *inside the house* vs. *outside the house* and, when one is inside the house, *towards the interior of the house* vs. *towards the door*.” Historically, it is likely that these colexifications ‘up/in’ and ‘down/out’ were characte-

¹⁵ The concept of *colexification* refers to the case when a language lexifies two or more senses with the same form (François 2008): for example, Orlat colexifies ‘up’ and ‘in’ using a single form *saa*. I will comment on this concept again in §2.4.5 below.

ristic of Proto Oceanic itself. Indeed, Ross (2007) does not reconstruct any form for ‘(go) in’ or ‘(go) out’, and states “It is reasonably clear that the ‘inside’/‘outside’ opposition found in European languages did not occur in POC” (2007:255). I would reword this idea by saying that the contrast *inside*—*outside* did in fact exist for Proto Oceanic speakers (as witnessed with other parts of speech, e.g. **lalom* ‘inside’, **lua* ‘outside’: Ross 2007:235, 240), yet within the paradigm of *directionals*, the contrast was lexified using the same directionals as *up*—*down*, respectively **sake* ‘(go) up’ and **sipo* ‘(go) down’.

As for the etyma **saro* ‘in’ and **rowo* ‘out’ which can be reconstructed for the Torres-Banks area (see §7.3), they do not seem to be attested anywhere else in Oceanic languages. All this suggests that the languages of Gaua, with their two-term system ‘up/in’ vs. ‘down/out’, may in fact be conservative of the system of Proto Oceanic – at least with respect to the topological subsystem of directionals.¹⁶ The four-term systems showing separate lexification of ‘in’ and ‘out’, in turn, reflect a local innovation, which must have diffused across the whole Torres and Banks area, leaving Gaua untouched (§5.3.1).

Finally, Mota presents a hybrid and unusual situation. It shares with other Banks languages the innovative directional *rowo* ‘out’, yet it behaves like Gaua in lacking a specific directional for ‘in’, which it still colexifies with ‘up’:

(MTA.16) Tamate ilon ni me sarovag pata **sage** lele iña.
ghost DEF 3sg PFT enter inwards up/in inside house
‘The ghost came into the house.’

[MTA.GhostSister.28]

This asymmetry in the topological domain will be reflected in the structure of Mota’s geocentric system (§4.5.2).

More generally, the polysemies found in the topological system had some impact upon the semantics of the geocentric directionals from which they are derived. As we will see later, the lexical innovation whereby *in-out* directions came to be distinguished from *up-down*, was to be later harnessed in processes of relexification in the geocentric paradigm, as new distinctions were made possible (§4.2, §5.3.1).

2.4.3 Geocentric directionals

Northern Vanuatu languages resort to the geocentric strategy to encode horizontal vectors when the two other strategies (participant-oriented, or topological) are not contextually available. The principal axes found to operate in their geocentric domain include:

- a fixed cardinal axis oriented southeast-northwest
- a land-sea axis running orthogonal to the shore, employed on land or at sea
- an axis running parallel to the shore, whose general orientation ($\pm 90^\circ$) is either SE or NW
- an axis oriented *uphill* vs. *downhill*, and used in the higher areas of certain islands

On top of these geometric distinctions, some systems introduce lexical contrasts based on scale: for example, some have different directionals for ‘towards SE’ depending on distance.

These different vectors are not all encoded with separate forms, but show patterns of colexification, i.e. are grouped together under a single form. For example, we saw in §1.2 that

¹⁶ Interestingly, we will see later that Gaua languages are also perfectly conservative when it comes to the geocentric subsystem of directionals (§5.1).

Dorig [Table 1] uses the same directional *sag* for ‘in’, ‘inland’ and ‘parallel to shore, towards SE’; as for Hiw [Table 2], it lexifies differently ‘in’ (*iy*) from ‘inland’ (*ag*), but conflates lexically ‘parallel to shore towards SE’ with ‘thither’ (*vĕn*). In order to make these complex systems cross-linguistically comparable, I will follow a structural approach to polysemy (such as the one exposed in François 2008), and represent each potential vector as an atomic sense in an “etic grid”; this will enable us to observe how these senses are being grouped by each language, i.e. what are the *emic categories* created by each spatial system in this region.

Table 2 provides a synchronic overview of all directional systems in Torres and Banks Islands.¹⁷ It contains the results of my empirical research, and the core of the present study.

All three domains of use are mentioned in the table: the rows numbered #1 and 2 reproduce the PARTICIPANT-ORIENTED directionals we saw above (see Table 3); those with shaded headings (#3, 7, 14, 18) correspond to the TOPOLOGICAL directions (§2.4.2); and all other rows correspond to the various GEOCENTRIC vectors which are lexified in these languages.¹⁸ The rows are organised in such a manner that all the senses colexified in a given language should be adjacent in the table.¹⁹

For future reference, Figure 4 shows the correspondences between the different rows of Table 2 (number codes, marked with ‘#’) and the vectors used on the graphic representation of directional systems (see Figures 2-3 p.141). Its objective is to facilitate the reading of Table 2, and associate each vector with the corresponding forms. For example, vector #5, “inland (as used typically in the context of a coastal village)”, is lexified as shown in row #5 of Table 2: *ag* in Hiw, *il* in Lo-Toga, *ila* or *la* in Lehali, *say* in Löyöp, etc.

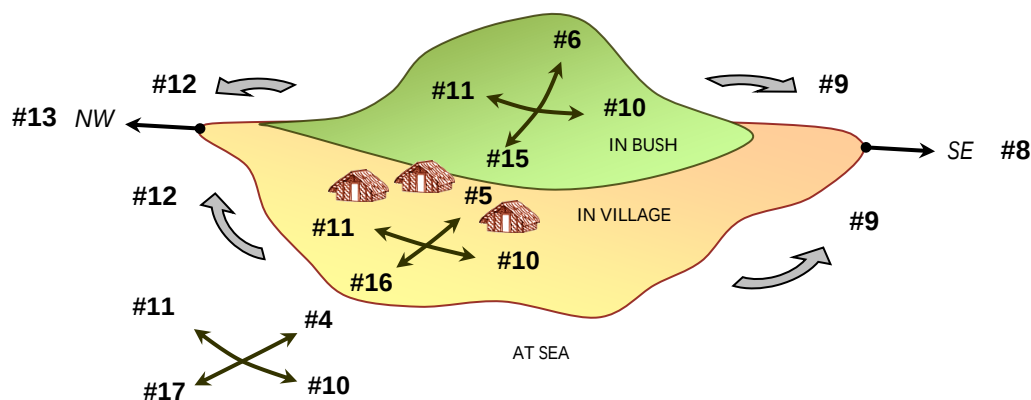


Figure 4 – An etic grid of spatial vectors relevant to the description of Torres-Banks geocentric systems (Number codes match the rows of Table 2).

¹⁷ The first column indicates the system of Proto Oceanic, the common ancestor of the modern languages; it will be discussed later (§3.2, §5.1).

¹⁸ The abbreviation “// shore” means ‘parallel to the shore’.

¹⁹ The only exceptions to this principle are: the row for ‘thither’, which shows certain polysemies in some languages (see §4.7.2); and the Hiw form *ag*, which is indeed idiosyncratic in its meaning (§4.7.3).

Table 5 – Systems of space directionals of Torres and Banks languages: the synchronic data
(Languages are ranked geographically from northwest to southeast)

	Proto Oceanic	Hiw	Lo, Toga	Ureparapara	Motalava		Vanua Lava				Mota	Gaua					Mere-lava			
#	POc	HIW	LTG	LHI	LYP	VLW	MTP	LMG	VRA	VRS	MSN	MTA	NUM	DRG	KRO	OLR	LKN	MRL		
1. <i>HITHER</i>	*mai	me	me	ma	me	me	me	me	ma	me	me	ma	ma	ma	ma	ma	ma	mē		
2. <i>THITHER</i>	(...)	vën	vën	van	van	va	van	wël	suwō	net	nat	at	at	āt	ät	at	at	ot		
3. <i>IN</i>		iy																		
4. <i>landwards (from sea)</i>		ag	il	(i)la	say	hay				sar	sar	sar	sar						sar	
5. <i>inland (village)</i>																				
6. <i>uphill (bush)</i>		*sake	vën	vin	vën	ha							sage	sa	sag	sa ~ sag	saa	hag ~ roka		
7. <i>UP</i>																				
8. <i>towards SE (navig)</i>		ag	sa			hag		sag	sag	siag	sag									
9. <i>// shore to SE (far)</i>		vën	(i)ag	ha																
10. <i>// shore to SE (close)</i>		*pano								wël	wōl	wōl	wol	vano	van	vak	vak	vak	päh	van
11. <i>// shore to NW (close)</i>																				
12. <i>// shore to NW (far)</i>																				
13. <i>towards NW (navig)</i>		uw	iw	how	sōw	hō		hōw	sōw	suwō		sōw	sōw							
14. <i>DOWN</i>									swo										sōw	
15. <i>downhill (bush)</i>		*sipo												ror		ror	ror	roy	hōw ~ rōkōw	
16. <i>seawards (village)</i>																				
17. <i>to ocean (from sea)</i>		rōw	rōw	yow	yow	yo		yow	row	rōw	rōw	row	rowo						row	
18. <i>OUT</i>																				

2.4.4 Unity and diversity

It is not the case that these 17 languages define 17 different systems. The five languages of Gaua, for example, operate the same structural contrasts, regardless of whether the forms of their directionals are cognate or not. If one decides to distinguish directional systems on the basis of their structural contrasts rather than on the actual forms of their words, then one must conclude that the 17 languages of the Torres-Banks islands define a total of nine different systems of geocentric space reference.¹

The present study intends to highlight and explain the structural diversity found in the region. The Torres and Banks languages alone constitute a microcosm of the diverse space systems that have been reported for the Oceanic family as a whole (Palmer 2002, François 2004). More cross-linguistic surveys would be welcome to assess whether any other area in the Pacific, or elsewhere, can be found to have so many distinct space configurations for such a small population.

That said, the various systems displayed in Table 2 also show a family resemblance, and one may be sensitive to the amount of characteristics that are shared by all these languages. This basic similarity is made clear by the possibility to chart all the systems on a single *etic grid* (the leftmost column of Table 2), and to represent them on the same background diagram (Figure 4). The profound unity of geocentric reference in the region will be particularly obvious in Section 3, as we examine the way geocentric reference works on the navigational scale.

2.4.5 On glossing and polysemy

In terms of glossing, these uninflected, usually monosyllabic directionals are appropriately rendered by English particles such as *up*, *down*, *in*, *out* – at least for their topological meanings.

Throughout this paper, interlinear glosses in example sentences will usually indicate a directional's "literal" or non-geocentric sense (e.g. 'up', 'out', 'across'...), even in those cases when it is used with a geocentric value. As for the geocentric meaning, it will be clarified in the free translation that follows. Here are examples from Dorig and Mwtlap:

- (DRG.24) Nēk so sō swēl lala mlē **rōr** le lam ni.
 2sg POT₁ paddle downwards POT₂ also **down** LOC deep.sea INSTR
 'You can even paddle it further *down* (=oceanwards)
 towards the deep sea.' [DRG.d07:14]
- (MTP.28) No m-et nō-mōmō ni-sey **hay**, ni-sey **yow**.
 1sg PFT-see ART-fish 3sg-move.in.shoal **in** 3sg-move.in.shoal **out**
 'I saw a shoal of fish moving *in* (=landwards),
 and suddenly moving *out* (=oceanwards).' [BP5-34a]

This choice of presentation is partly motivated by the mere convenience of short glosses, to avoid cluttering the gloss line with such long strings as 'down/oceanwards' or 'in/land-

¹ If one includes the directional *mul* which has been reported for the language Vera'a, the number of distinct geocentric systems might even rise to ten – see §4.4.2.2.

wards’. But the main motivation is the very point of this study, which is to observe the connections that languages draw between geocentric and non-geocentric meanings; the combination of literal glosses and free translations should help the reader see the patterns more readily than if each line of translation used only geocentric glosses.

This choice does not mean, however, that I believe *yow* in Mwotlap synchronically only means ‘out’, as though modern speakers just had to derive spontaneously its geocentric meaning ‘oceanwards’ from its literal, topological meaning. As the contrast between Dorig and Mwotlap shows, the link between a geocentric sense and a specific directional is conventionalised differently in each language, and non-predictable. Directionals like *ror* or *yow* form cases of POLYSEMY rather than monosemy: their geocentric and non-geocentric meanings are both language-specific, and are stored independently in the lexicon. Were it not for the purpose of this study, it would otherwise be legitimate to gloss *ror* in (24), and *yow* in (28), with the geocentric meaning they have in that context, namely ‘oceanwards’.

The precise nature of the psychological link between topological and geocentric meanings is not a simple matter. Sometimes it is self-evident: for example, when Hiw uses *up* and *down* for *uphill* and *downhill* on the island’s slopes (Figure 3 p.141), one could question whether it even makes sense here to distinguish topological (*up* on the vertical axis) from geocentric (*up* supposedly defined on the “horizontal” plane), since in this case they simply coincide. Such a configuration could be analysed as a case of monosemy.

But we’ll also meet the reverse case, where the connection between the two meanings has clearly been lost in the minds of speakers. Thus, when Mwotlap speakers employ *up* on the horizontal plane for southeast directions parallel to the coast, they are evidently unable to draw any semantic link with their vertical *up*; for all purposes, they treat this case as they would mere homophones. That certain patterns of correspondences have become psychologically arbitrary can become manifest in speakers’ errors or hesitations (§3.4.2), or in historical processes of lexical splits (§4.6, 5.3.2).

In sum, when the same directional encodes both geocentric and non-geocentric uses, it is sometimes difficult, not to say purely speculative, to decide whether we are dealing with a case of monosemy, polysemy or homophony. To avoid this problem – which is not essential to our investigation anyway – I prefer using the neutral concept of *colexification*, which is precisely agnostic in this respect (François 2008:166). Throughout this study, I will for example observe that a given directional form in a certain language “colexifies” (i.e. can correspond to) a number of different meanings, without needing to take sides on the cognitive relationship between these meanings.

3 The navigational scale and the NW-SE cardinal axis

3.1 Local scale vs. navigational scale

In accordance with earlier studies of similar Oceanic systems (Ozanne-Rivierre 1997; Hyslop 2002; Palmer 2002:128; François 2004; Ross 2007:229), it is necessary to draw a preliminary distinction between two scales of geocentric reference, as they typically involve distinct directional subsystems.

On the one hand, the LOCAL SCALE corresponds to those vectors, locations and directions, that belong within a radius of about 200 meters around the origo – most often in the setting

of the village. On the other hand, the NAVIGATIONAL SCALE corresponds to long-distance vectors, prototypically those defined at sea, or across islands.

This section focuses on the navigational scale, and in particular the use of the cardinal axis oriented NW-SE. The local scale will be the focus of section 4. As for the INTERMEDIATE SCALE – the one that involves, for example, the distances between two villages on the same island – it essentially pertains to the navigational domain, yet its anchoring on land entails some specific characteristics distinct from its use across islands; Section §3.4 will examine how languages adapt the cardinal axis to the shape of islands.

3.2 The navigational scale in Oceanic languages

Based on earlier scholarly work, François (2004) proposed a systematic comparison of sixteen Austronesian languages (including Mwotlap) and their space systems, and outlined their commonalities and differences; these will be summarised here.

Oceanic languages show remarkable consistency regarding the navigational scale. Virtually every Oceanic language employs a single cardinal axis that is oriented *northwest* – *southeast*. Everywhere, this single cardinal axis is lexified *up* (southeast) vs. *down* (northwest), using the terms used for vertical coordinates. Modern speakers are unable to explain the reason for such a pattern. Some scholars have suggested a possible connection with the rising and setting of the sun; however, both the orientation of the axis (SE-NW rather than E-W) and the semantics of the *up-down* contrast argue in favour of an alternate analysis in terms of winds (Ozanne-Rivierre 1997:85; François 2004:11). In the terminology of ancient Oceanic navigators, the difficulty of sailing against the southeast trade winds was assimilated to travelling ‘upwards’, as opposed to the easy ‘downward’ navigation that was done towards northwest, following the wind.² In other words, the vertical terms *up* and *down* in Oceanic languages were given the same semantic extension as the one found with English *upwind* and *downwind*. In the remainder of this paper, I will occasionally refer to the terms *up* and *down* of this cardinal axis using their English glosses *upwind* and *downwind* – even though the original connection with seafaring terminology has been forgotten by modern speakers.

Based on this observation of modern Oceanic languages, François (2004) reconstructed the space system of Proto Oceanic. As far as the navigational scale is concerned,³ a single cardinal axis oriented NW-SE was lexified using the vertical terms **sipo* ‘(go) down’ and **sake* ‘(go) up’ – see Figure 5. In such a navigational system, the world is divided in two halves: with respect to any point in the South Pacific, all islands located in the northwest half will be located ‘down’, and those located southeast will be ‘up’. This pair was possibly supple-

² The archaeologist Geoffrey Irwin has highlighted the key role played by the *upwind*—*downwind* contrast in the sailing strategies of the Lapita navigators who peopled the Pacific islands. In his view, they consistently favoured an “upwind trajectory” by sailing southeast, following the “northwesterly winds of the summer monsoon” (NW→SE); in case they became lost in the ocean, they always had the option of letting the prevailing trade winds (SE→NW) push them back to their point of origin, “downwind”. “Evidently, the migration trajectory was against the trade winds. [...] Lapita migrants did not know what land was to be found to the southeast; however, they would have known that, by searching in that direction using monsoonal westerlies, they would maximise their chances of returning safely with the trade winds” (Irwin 2006:72-73).

³ The system of Proto Oceanic on land will be discussed in §5.1.

mented by the verb **pano* ‘move in a transverse direction’ (Ross 2007:279) for directions that were neither ‘up’ nor ‘down’.

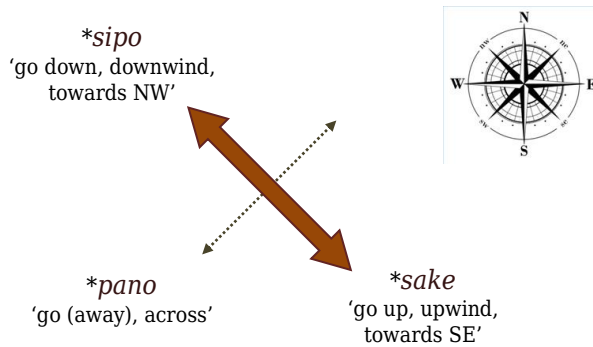


Figure 5 — The unique cardinal axis of Proto Oceanic (after François 2004:20)

3.3 The cardinal axis in northern Vanuatu

The 17 Torres and Banks languages have preserved the cardinal axis of their ancestors. Everywhere, it takes the form of a single axis oriented NW-SE, and lexified using the vertical directionals ‘down’ and ‘up’.⁴

In order to limit the impact of a particular island’s local topography, the best way to observe this cardinal axis is done by locating oneself on one island, and pointing towards other islands. Figure 6 illustrates the situation that obtains for a speaker of Löyöp on Ureparapara, with its pair of directionals *sa* ‘up’ vs. *sōw* ‘down’.⁵ The directional *sa* ‘up’ is used when pointing to any island located in the southeast half of the world; *sōw* ‘down’ when pointing northwest.

Occasionally, this NW-SE orientation of the cardinal axis shows up in the toponymy. Thus in the Hiw language (Torres Islands), the traditional name given to the Banks group is *Sag*, etymologically from POc **sake* ‘up’:

(HIW.17) Ne ya-ne pe “ne tapego te **Sag**”.
 ART name-3sg FOC ART mat from Banks
 ‘It is called the *mat* from the Banks Islands.’

[HIW.Hades.48]

The very name of the island *Hiw* etymologically means ‘down’ (**hiw* < POc **sipo*). Indeed, from the perspective of the other islands with which Hiw people commonly interact, travelling to Hiw always means heading ‘northwest’, i.e. *down* on the cardinal axis.⁶

⁴ In one case, the semantic connection between ‘up’ and ‘southeast’ is only etymological: see §4.6, 5.3.2 for Lehali, Lo-Toga and Hiw.

⁵ See similar maps in Hyslop (2002:49) for Ambae, François (2003:433) for Mwotlap.

⁶ The languages of Vanikoro, an island of the Solomons located just north of Hiw, use their cardinal axis in much the same way as Torres-Banks languages (François 2009:117). In the main language Teanu, the term *Iura* – literally ‘upwards’ – designates the Torres-Banks group and the rest of Vanuatu further south. The capital Honiara, as well as other places located NW from Vanikoro, are located ‘down’ (*tev’ tawo*).

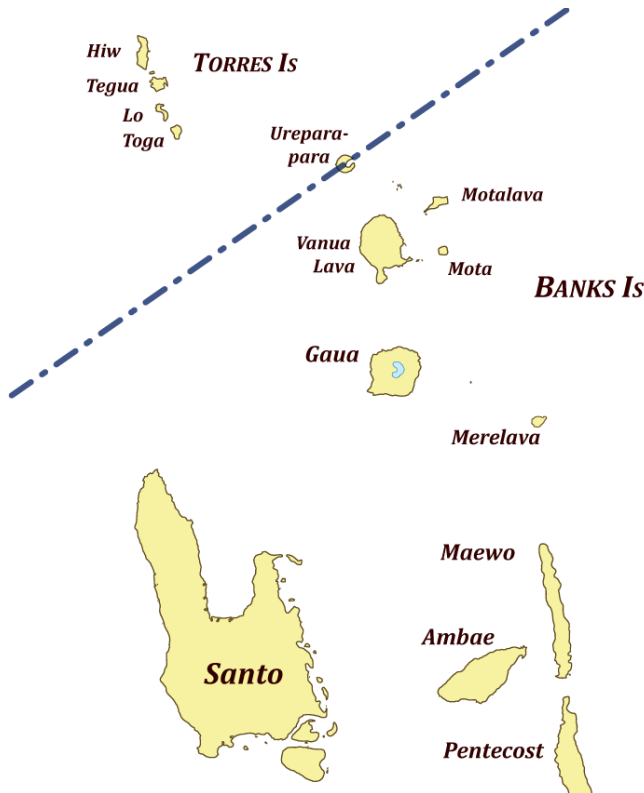


Figure 6 — The cardinal axis for referring across islands: ‘up’ and ‘down’ directions for a speaker located on the island of Ureparapara

One occasion when these cardinal directionals are mentioned is in traditional narratives. For example, the famous mythological hero Qat (cf. François 2013:220) left his home on Vanua Lava, and sailed *down* to Vava – the ancient name of the Torres Islands – where he bought the Night; then he sailed back *up* to his island. Likewise, the origin myth of the yam as it is told in the Torres Islands tells how it grew in Hiw, and how its creeper vine went *up* to the Banks, all the way *up* to Pentecost and Malakula in the south.

These narratives, combined with everyday conversation about people’s travels, constitute the context in which knowledge of the *up-down* cardinal axis is transmitted from one generation to the next. Indeed, while scientific investigation can demonstrate the historical link between this axis and the main trade winds that used to be so significant to ancestral navigators, this association of directionals with winds has today been lost virtually everywhere in north Vanuatu, where long-distance voyaging practices have long gone out of use. Speakers on Motalava grow up in a social environment where the island of Gaua is always associated with the directional ‘up’ (*hag Alkon*), and Ureparapara always with ‘down’ (*hōw Nōybaybay*), following patterns of lexical collocation which are entrenched in discourse, and repeated as such. Knowledge of the most frequent collocations allows them to abstract away a general orientation of the *up-down* axis, without ever having to refer to the direction of the wind, the sun or any other bearing other than actual islands and places.

Like the European cardinal directions, the cardinal axis is unbounded. On the ‘up’ side are all the other islands to the south, including the towns of Santo and the capital Vila. Western countries – France, Britain, Australia, Japan... – are all located ‘up’ (Mwotlap *van hag Japan* ‘travel *up* to Japan’), even when their actual location is northwest from Vanuatu. While this is

a paradox if one looks at a map, the explanation simply has to be sought in the geography as it is *perceived* by social actors. Indeed, the common experience of Torres-Banks people is that the only way to go to or come from these foreign countries involves a trip via the capital Port Vila, which is located south: anyone leaving the island in order to go abroad will first have to head south, i.e. ‘up’. By contrast, the Solomon Islands – the only foreign country which can notoriously be reached by sea travel, heading northwest – will be located ‘down’ (e.g. Hiw *Take-siw-uw* ‘the Solomons, LITER. the side that goes *down*’; Mwotlap *van hōw Bēkyepnō* ‘travel *down* to the Solomons’).

3.4 Adapting the cardinal axis on land

The use of the cardinal axis at sea, or across different islands, is straightforward: everywhere, the axis is oriented NW-SE. Things become more intricate on land. Section 4 below will examine the different systems on the *local* scale, i.e. the directionals used for short distances (e.g. within a single village); as we’ll see, some languages make use of the cardinal axis in that context, while others do not. But first I propose to discuss not the local scale, but the “*intermediate*” scale: namely, those directions that still involve long distances, yet take place within the same island.

Long-distance navigation within one island is expressed essentially using two axes. The most salient axis on land is the *land-sea* axis, a variable direction that radiates from the centre of the island, in all directions, towards the sea. If I am standing in an inland hamlet and I refer to a village down on the coast, chances are I will be using the directional for ‘seawards’ – either *out* or *down*, depending on the language – and vice versa. But villages on one island tend to be typically located on the same altitude, whether along the coast or on a plateau. In this case, the type of vectors needed to encode the direction from one village to another will involve vectors *parallel to the shore*, on what may be called the COASTAL AXIS. All Torres-Banks languages express these directions using the cardinal axis *up-down*. The corresponding forms can be seen in Table 2 (p.18), on rows #9 and #12. These can be compared, respectively, with rows #8 and #13: in almost all languages, the cardinal terms used for long distances on land are identical – not too surprisingly – to the ones used at sea.⁷

3.4.1 Skewing of cardinal directions on land

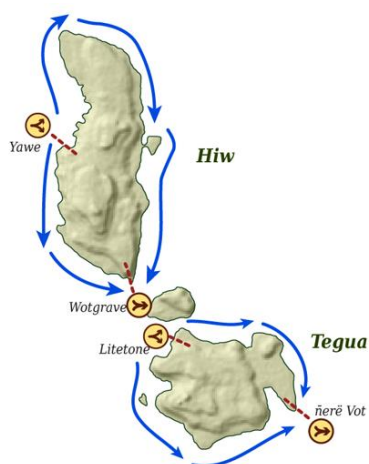
In principle, the cardinal axis on land should have the same orientation, in compass terms, as the NW-SE axis that is used *across* different islands (§3.3). However, one major difference is that, on land, spatial orientation is preempted by the contrast between *land* and *sea*: due to its high perceptual salience (Palmer 2002:114), the *land-sea* axis is always the primary axis of the orientation system. As for the cardinal axis, it only receives a secondary status on land (François 2004:12-14): its orientation is always redefined so as to run orthogonal to the main land-sea axis. For long distances, the *coastal axis* thus follows the definition in (18).

⁷ The only exception is Hiw, which has *ag* for cardinal SE across islands, but *vēn* (lit. ‘thither’) for cardinal SE on land (see also Figure 3 p.145). I will come back to this complex system in §4.7.

- (18) The COASTAL AXIS aligns with the cardinal axis NW-SE,
 $\pm$ the amount of skewing ($\leq 90^\circ$) needed for it to run orthogonal to the land-sea axis,
 i.e., parallel to the shore.

The necessary skewing explains why the directional 'up' can point due South in some points, due East in others, or even ENE or SWS elsewhere. The following maps indicate the orientation of the cardinal axis *up-down* on the eight main inhabited islands of the Torres and Banks area. All arrows point towards cardinal *up*; cardinal *down* is not indicated, as it simply corresponds to the reverse direction along the same arrows. The other symbols I use will be explained below.

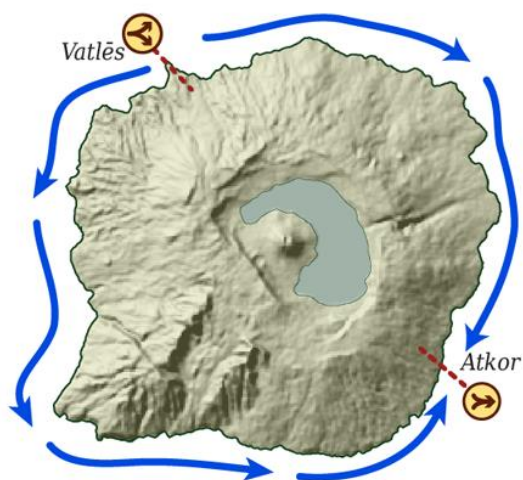
Collecting this sort of navigational data often involved walking along the paths of each island, asking my companions for the directions of different villages from various points. I would also pay attention, in daily conversation, to the way people described their journeys or mentioned other villages, as in examples (4), (30), (35).



Map 2 - UP[wind] directions
in **northern Torres Is**



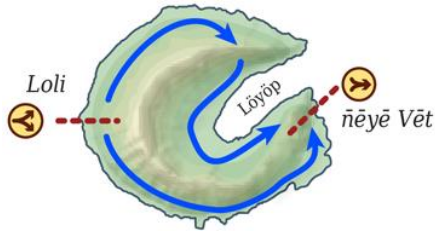
Map 3 - UP[wind] directions
in **southern Torres Is**



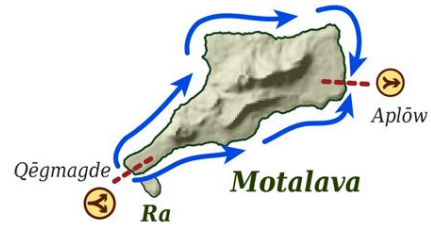
Map 4 - UP[wind] directions on **Gaua**



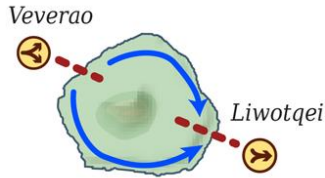
Map 5 - UP[wind] directions on **Vanua Lava**



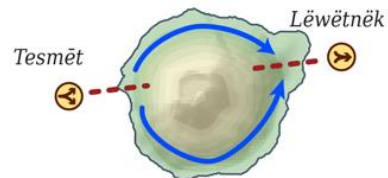
Map 6 – UP[wind] directions on **Ureparapara**



Map 7 – UP[wind] directions on **Motalava**



Map 8 – UP[wind] directions on **Mota**



Map 9 – UP[wind] directions on **Merelava**

3.4.2 The paradox of cardinal convergence and divergence

The maps above make use of two adhoc symbols:⁸

-  focus of convergence of two DOWN cardinal directions;
= focus of **divergence** of two UP directions
-  focus of **convergence** of two UP cardinal directions;
= focus of divergence of two DOWN directions

Figure 7 shows what a *focus of convergence* looks like on the ground: two directionals referring to the same cardinal coordinate (here *up* for ‘southeast’), yet adapted so as to fit onto two different portions of the coast, converge at a particular point. Atkor on the island of Gaua, for example, is a place where two *up* directions converge; by the same token, it is also a place where two *down* directions diverge.

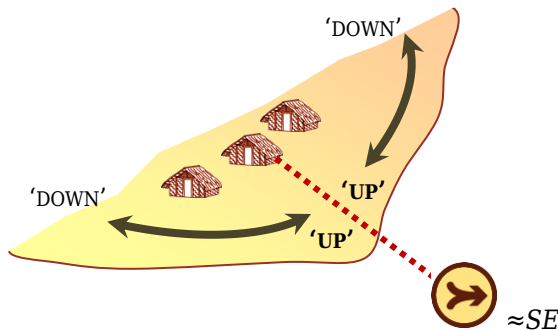


Figure 7 – A focus of cardinal convergence

⁸ For the sake of consistency, I follow everywhere the arbitrary convention of choosing the UP direction as the reference. This is why the first of these two icons represents *divergence*, and the second one represents *convergence*.

The geographical nature of these foci of cardinal convergence is diverse: some refer to capes and promontories (e.g. *Wotgrave*, *Ñerë Vot*, *Ñëyë Vêt*, *Ñus Ñereqô...*), others to hamlets or villages (e.g. *Liwoṭqei*, *Tesmēt*, *Loli*, *Qëgmagde*, *Päk...*). As for their location, it follows a rule which is apparently simple, yet is often far from obvious for people on the ground. The default locations of the *down* focus 📍 and the *up* focus 📍 are, respectively, at the *northwest* and *southeast* tips of an island. This is typically true of round islands (Mota, Gaua, etc.), whose circular shape favours the default case. But if the geography of the island displays a prominent feature (cape, promontory) that is not exactly located on the NW-SE axis, then this feature tends to attract the focus of convergence, resulting in its apparent skewing with respect to compass terms. This is visible on Merelava, where the eastern cape of Lëwëtnëk skews the axis towards ENE; on Ureparapara, where the southeastern cape of Ñëyë Vêt has locally forced the cardinal axis almost into a NE direction; on Motalava, which is oriented WSW-ENE instead of NW-SE; and so on. The language Lo-Toga, which is spoken on two different islands, is well-behaved on the island of Lo, yet quite skewed on neighbouring Toga. In spite of the rotation observed, it can always be shown that the system's cardinal axis remains underlyingly NW-SE, even when it is oriented otherwise in the community's main territory (see François 2003:426-434 for Mwotlap). As a rule, the rotation of the axis never shifts more than 90° away from the underlying SW-NE cardinal axis.

The mechanism of these foci of convergence results logically from the combination of two elements: a single cardinal axis with a binary contrast *up-down*; and a principle specific to its use on land, whereby this axis must be redesigned so as to always run parallel to the shore. However, from the perspective of an individual walking along the coast, these points of cardinal convergence constitute paradoxes, as they entail that two opposite directions will make use of the very same cardinal directional. This is a paradox not only for outsiders, but also for the islanders themselves, who are sometimes confused, or amused, by these tipping points where both directions along the coast are 'up', instead of the normal situation in which one way is 'up' and the other way 'down'. The configuration would not be so unusual if we were dealing with VERTICAL *up* and *down*: indeed, someone on the top of a hill crest will have no difficulty realising that all directions radiating from that point are located 'down'. But in the case of CARDINAL *up* and *down*, it appears that modern speakers never draw any connection, even metaphorically, with verticality – as they would do if the island were somehow assigned a “conceptual slope” (Levinson 1996b:371) with a cardinally “highest” and “lowest” points. The connection that existed in the past – the metaphor behind *upwind* and *downwind* as used by ancestral sailors – has long fallen into oblivion. Moreover, some islands impose a cognitive dissociation between the abstract NW-SE cardinal axis of the navigational scale, and the direction of the cardinal axis when mapped onto the shoreline: for example, if Mwotlap speakers are asked to show the direction of *up* (*hag*), they will not point in the same direction if the question means ‘on Motalava island’ or ‘between separate islands’.⁹

⁹ Hyslop (2002:64) reports a similar mismatch for the island of Ambae further south (see Figure 6): “the absolute distinction made when describing motion within the island [is essentially SW vs. NE]. Note that the distinction made for travel between islands is on a different axis, with islands to the south and east distinguished from those in the north and west.” While she describes this mismatch as “a curious variation in the division of absolute direction”, I believe it reflects a situation very similar to the case

This double dissociation (coastal $\neq$ cardinal $\neq$ vertical) means that modern speakers are often left with no clues for inferring how exactly they are supposed to use their coastal axis – in particular, where on the coast they are supposed to reverse the coastal directionals. Today, the mapping of cardinal *up* and *down* on flat terrain is perceived as an arbitrary convention which has lost any natural motivation, an arcane aspect of the language that is often commented upon, as it needs to be learnt on a case-by-case basis. Witness to this arbitrary nature are the many discussions I heard, during my surveys, among speakers who were disagreeing on which directional should be used on certain segments of the shoreline – typically, those located in unfamiliar areas of an island, where directions have to be extrapolated from more familiar settings. For instance, speakers of Vera’a or Vurës, who are used to locations on the west coast of Vanua Lava, are often puzzled when they have to adapt their systems to the east coast, upon visiting the administrative center of Sola. Younger speakers, accustomed to using ‘up’ (*siag*, *sag*) as they walk along the south coast in a counterclockwise direction (Map 5 p.158), spontaneously extend it to the eastern coast, until a more experienced speaker corrects them, and explains where the directions must be reversed.¹⁰ I once heard a Mwesen speaker comment, with amusement, on the “strange” way in which some of his Vurës neighbours employed directionals on the east coast:

(MSN.19) I rate ta Vures nēr ga tul~tul ga mēnē sasa.
 ART PL from Vurës 3pl STAT orientate~HAB STAT DIMIN strange
 ‘Vurës people have a rather weird way of orientating themselves.’
 (= of using their geocentric directionals)

[EP1-23a]

The locations indicated on Maps 2 to 9 reflect my informants’ conclusions after they would reach a consensus.

4 The local scale: Two canonical systems and their variations

Section 3 was concerned with the way in which the 17 Torres-Banks languages encode geocentric directions on the *navigational scale*, i.e. for space reference involving longer distances (rows #8-9, #12-13 in Table 2 p.18). In spite of apparent or superficial differences, the general observation was one of a profound homogeneity, as far as that scale is concerned, among all languages of the area. As we shall see now, the domain of the *local scale* presents much more cross-linguistic diversity, and defines nine different systems.

Languages differ in the way they lexify the land-sea axis (some use a contrast *up-down*, others a pair of directionals *in-out*), but also how they treat the coastal axis (some use the cardinal axis, others have a separate directional reserved for the local scale). Also, some

of Motalava, with ultimately the same underlying NW-SE cardinal orientation. This is confirmed by the existence – apparent from her map of Ambae (2002:62) – of a focus of cardinal *up* convergence towards Lolosangga, on the middle of the eastern coast of the island.

¹⁰ A handful of Austronesian languages have been reported to work around a “circular system”, where directionals encode a *clockwise-counterclockwise* contrast (see Lichtenberk 1983 for Manam, Dixon 1988 for Boumaa Fijian). Such systems, which are rare (François 2004:15-16), are not found in northern Vanuatu.

languages have developed different subsystems depending on distance contrasts, or on location within the island – in the village vs. in the bush.

These systems will be described one after the other, in order of increasing complexity. The present section will start with Gaua (§4.1) and Mwotlap (§4.2), two equally simple yet quite distinct systems of the region. I will propose (§4.3) that Gaua and Mwotlap can be taken as two opposite “canons”, with respect to which the more intricate space systems of northern Vanuatu can be described. Among these, Section 4.4 will examine Volow, southeast Vanua Lava, and Vera’a, three systems which are non-canonical mostly on their *coastal axis*. Section 4.5 will describe Löyöp, Mota and Mwerlap, three systems whose peculiarities lie mostly on the *land-sea axis*. Section 4.6 will describe the more complex system shared by Lehali and Lo-Toga, before Section 4.7 finally attempts to unravel the quirkiest of all languages in the region: Hiw.

The description will first adopt a synchronic point of view. It will be up to the final discussion of this study (Section 5) to propose a unifying diachronic hypothesis, so as to explain how such a diversity can have arisen historically.

4.1 Gaua languages: two *up-down* axes and a traverse

One of the two simplest systems of geocentric reference found in the Torres-Banks group is the one used on the island of Gaua – already mentioned briefly for Dorig (§1.3). As Table 2 showed, exactly the same structural organisation is found in the five indigenous¹¹ languages of this island: Nume, Dorig, Koro, Olrat, Lakon. The reader is referred to Figure 2 p.141 for a preliminary representation of the Gaua system, before I refine it below.

4.1.1 Two distinct *up-down* axes

An analysis of Figure 2 shows that Gaua languages use vertical directionals *up-down* for geocentric reference with two very different meanings.

First, these define the cardinal axis used on the navigational scale (§3.4), whether across islands (cf. rows #8, 13 in Table 2) or across distant villages spoken on the same island (rows #9, 12); this *up-down* pair originates historically in a contrast *upwind* vs. *downwind*. The same languages also use the vertical directionals on the local scale, both in the bush (rows #6, 15) or on the coastal area where most villages are (rows #5, 16); but this time, this encodes the land-sea axis. Here are some examples from Lakon and Nume:

(LKN.20) We gēē tē van *ajew* ***hag*** le vanō.
 and 3pl SEQ go upwards up LOC village
 ‘(They landed on the shore) and began to walk *up* towards the village.’ [LKN.Qat:060]

(NUM.21) Bas nen, ni tov rev *tēqēl* wak ***ror*** le won.
 end TOP 3sg SEQ pull downwards canoe down LOC sand
 ‘Then he dragged the canoe *down* to the beach.’ [NUM.d07:13]

In the language Lakon, the directionals *hag* vs. *hōw* have a free variant, respectively *roka* ‘up’ and *rōkōw* ‘down’:

¹¹ The community of about 400 Mwerlap speakers who have settled on Gaua use a different system, adapted from the one used on their home island: see §4.5.3.

- (LKN.22) Nē 'n gih nē tē ol mē lē umä **rōkōw** rek.
 3sg PFT seize 3sg SEQ enter with.it LOC house down DIST
 'He grabbed (the knife) and brought it in that house *down* there.' [LKN.d05:20]
- (LKN.23) Magte neñ ēn hag suu hōw, **roka** neñ a Liwsal.
 old.woman MED PFT sit downwards down up MED LOC Liwsal
 'The woman sat down in the river, *up* there¹² in Liwsal.' [LKN.Origin.Lake.16]

The *up-down* pair not only encodes the direction from the hinterland to the coast (*uphill* vs. *downhill*), but also extends at sea along the same axis, to contrast 'towards the island' with 'towards the open sea' (rows #4, 17). Here is an example from Dorig:

- (DRG.24) Nēk so sō swēl lala mlē **rōr** le lam ni.
 2sg POT₁ paddle downwards POT₂ also down LOC ocean INSTR
 'You can even paddle it further *down* (*oceanwards*) towards the deep sea.' [DRG.d07:14]

Even though the latter vectors are necessarily horizontal, the use of vertical terms here is due to an extension of the declivity contrast to the flat plane of the lagoon, reflecting the overall continuity of the axis {heights→lowlands→shore→lagoon→ocean}. In fact, the whole Torres-Banks area behaves the same in this respect. In all languages, the directionals used in a coastal village can also function at sea: for someone on a canoe, paddling 'up' or 'in' involves coming closer to land, whereas paddling 'down' or 'out' means going further away towards the ocean. This pattern is visible from Table 2 p.18: in all languages, the directionals for 'landwards' and 'oceanwards' at sea (rows #4 and 17) are identical with those contrasting 'inland' and 'seawards' on land (rows #5 and 16).

The two *up-down* axes of Gaua languages run orthogonal to each other, and are obviously distinct. Occasionally, the polysemy may trigger some confusion: for example, *sō rōr* 'paddle down' can mean 'go out towards the ocean' as in (24), but it can also mean 'travel on a canoe towards northwest' (cf. Figure 6 p.156).¹³ The risk of confusion is somewhat limited by the fact that, in principle, the two *up-down* axes never really cross: the wind-based contrast belongs to the navigational scale, whereas the axis based on the declivity of the ground pertains to the local scale. For directions parallel to the shore involving short distances, Gaua languages never use their cardinal coordinates, but resort to an undifferentiated traverse axis.

4.1.2 The undifferentiated traverse axis

On Gaua, the coastal axis uses the same directional on both sides. This is visible from Table 2, which shows that Gaua languages use the same form for #10 '*parallel to the shore towards SE (close)*' and #11 '*parallel to the shore towards NW (close)*'. I describe the axis as "undifferentiated", using the term proposed by Palmer (2002:127): "a derived axis for which a language does not lexically distinguish the opposing directions". In a way, this configura-

¹² Notice, in (23), the rare combination of two opposite directionals in the same clause: *hōw* referring to the motion of the event ('sit down'), and is here used topologically; *roka* locates that event in the geography of the island ('up there inland'), and is here used geocentrically.

¹³ Systems involving two distinct *up-down* axes have been reported for other Oceanic languages (Hyslop 2002; Palmer 2002:128). This is in fact the system reconstructed for Proto Oceanic (§5.1).

tion whereby two opposite directions along the coast use the same directional is reminiscent of the cases of *cardinal convergence* we saw in §3.4.2. The difference is that foci of convergence constituted isolated exceptions within a more general rule of differentiation *up-down* on the navigational scale; whereas it is an inherent property of the traverse axis to be undifferentiated, wherever it is used on the island.

A convenient gloss for this directional is ‘across’, as it crosses the primary axis. Etymologically, some of these forms (Nume *van*, but also Mota *vano* or Mwerlap *van*) reflect a POC verb **pano* ‘move in transverse direction’ (cf. Figure 5 p.155); other forms (*vak*, *päh*) reflect local innovations (§7.3.3).

(DRG.25) Dār s-van barbar **vak** seg dār s-ñor **vak** sa?
 1inc:du IRR-go crosswise across here 1inc:du IRR-sleep across there
 ‘Why don’t we walk (*across*) over there and have a nap?’ [DRG.Heron.17]

(LKN.26) Miini neñ, tē van *päätag* gēn **päh**.
 child that PRSTV go crosswise FOC:there across
 ‘That child, there he is, heading over there (*along the beach*).’ [LKN.d05:34]

Interestingly, the transverse directional is sometimes preceded by a spatial adverb (§2.4.2) which also has the meaning ‘crosswise, orthogonally’ (as in ‘lie across the bed’) – e.g. Dorig *barbar*, Lakon *päätag*. This confirms the choice of glossing the directional ‘across’.

The undifferentiated traverse axis is only used on the local scale, for distances shorter than about 100 or 200 m. For longer distances on land, directions parallel to the shore make use of the cardinal axis, as we saw in §3.4. At this scale, the coordinates on each side become differentiated again, in the form of another contrast *up-down*. This cardinal axis is typically used for distances across villages, out of sight, along the coast.

4.1.3 An emic view of the Gaua system

Figure 2 above represented the various vectors used in the languages of Gaua. The discussion has established that some of these vectors follow a single logic: for example, the use of *down* at sea (‘towards deep sea’) is merely an extension, on the horizontal plane, of the underlying meaning *down(hill)*. In other words, the vectors #15-16-17 of Figure 4, which are lexified separately in some other languages (§4.5), are colexified in the languages of Gaua, and treated as three instances of a single emic category. Put together, the various emic categories of Gaua directionals make up the system represented on Figure 8.¹⁴

¹⁴ In order to facilitate comparison across systems, the figure will follow the arbitrary convention of always representing NW on the left and SE on the right: that is, it will always represent an island seen from its western coast, regardless of the actual location of the speech community under discussion. For example, Figure 8 gives a realistic account of the system used in the language of Lakon, because Lakon happens to be spoken on the western coast of Gaua (Map 1 p.147). As for Nume, which is primarily spoken on the northeast coast of the island, a realistic representation of the way in which it is used in its native area would normally require reversing Figure 8, with SE (‘up’) pointing left and NW (‘down’) pointing right. However, this increase in realistic accuracy may result in confusion for the comparison of similarities and differences across languages. I prefer to adopt everywhere a standardised view of a fictional island seen from its western coast, for all languages – even when their community is actually located on an eastern coast. One reason for considering this decision legitimate is the fact that language speakers are geographically mobile, and regularly adapt their own space

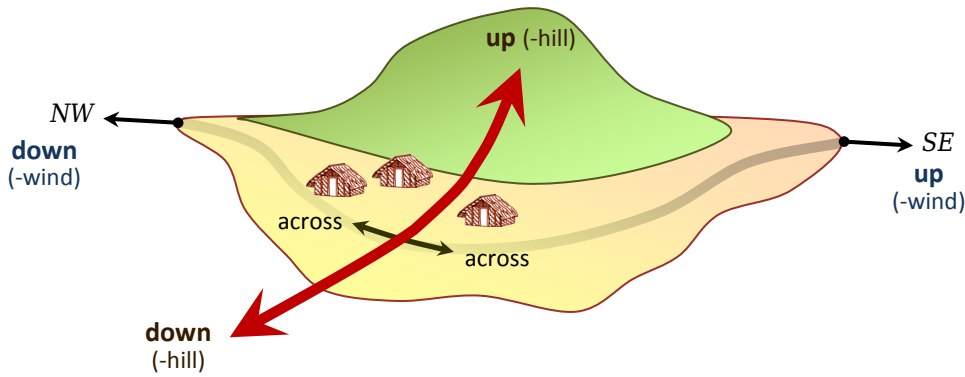


Figure 8 – The system of geocentric directionals in Gaua languages (emic representation)

In sum, the system used on Gaua involves only three axes: one cardinal axis *up(wind)*–*down(wind)*; one topographical axis *up(hill)*–*down(hill)*; and one undifferentiated traverse *across*.

4.2 Mwotlap: two axes, *up-down* vs. *in-out*

Compared to Gaua, Mwotlap shows quite a different configuration.¹⁵ The only agreement between them – as well as all other languages of the region, for that matter – is the use of the *up-down* cardinal axis on the navigational scale (§3). But all other features are different.

First, the way Mwotlap encodes its coastal axis is not done with an undifferentiated traverse as on Gaua; it uses the cardinal axis *up-down* everywhere on land, not only for long distances across villages (§3.4), but even for short distances. Sentences like (1)–(2) above would be impossible in Gaua languages, yet are perfectly common in Mwotlap.

The second major difference between Mwotlap and Gaua is that the land-sea axis is never encoded by the vertical directionals *up-down*, but by a contrast between *in* and *out*, for which Mwotlap has separate forms (cf. Table 4 in §2.4.2). Sentence (27), from a traditional story, takes place as the main character Venventey, who lives on a coastal village, comes down to the beach to welcome his brother who’s arriving on a canoe. Out of the six directionals used here, three encode the land-sea axis: first as Venventey walks down to the beach, second as they both carry the canoe to the beach, before finally walking up to the village:

- (MTP.27) Kē ni-van **yow** tō ni-tēy van ni-siok nonon tō,
 3sg AO-go **out** then AO-hold thither ART-canoe his then
 kōyō hah kal **hay** tō, leveteg van lē-vēthiyle.
 3du lift upwards **in** then put.down thither LOC-sand
 Kōyō hatig *hag* tō, van **hay** l-ēm ēgēn.
 3du rise up then go **in** LOC-house now
 ‘So he walked down to the shore [LITER. went **out**], took hold of his canoe; they
 both carried it up **in(land)**, and put it down on the sand. Finally, they left
 the place and walked **in(land)** towards their house.’ [MTP.Venventey.WS.072]

system to other environments, even outside their home village (cf. François 2003:428). In this sense, a representation such as Figure 8 portrays accurately any language, not just those that are typically spoken on a western coast.

¹⁵ For a detailed description of Mwotlap’s space system, see François (2003).

Contrary to Gaua languages, Mwotlap cannot use ‘up’ and ‘down’ here, but resorts to **hay** ‘in’ and **yow** ‘out’. In encoding the land-sea axis with a contrast *in—out*, Mwotlap represents the whole island as an enclosure: walking away from the sea into the more bushy areas of the island is going ‘in’ (cf. Eng. **inland**) whereas walking away from the bush and towards the sea is equivalent to going ‘out’ (cf. Eng. **out to sea**). Mwotlap keeps the same contrast at sea. As long as a landmass is salient to the observer, the land-sea contrast will be encoded as *in—out* – even when referring to a shoal of fish in the water:

(MTP.28) No m-et nō-mōmō ni-sey **hay**, ni-sey **yow**.
 1sg PFT-see ART-fish 3sg-move.in.shoal **in** 3sg-move.in.shoal **out**
 ‘I saw a shoal of fish moving *in* (=landwards),
 and suddenly moving *out* (=oceanwards).’ [BP5-34a]

By comparison with the two *up—down* axes and the third traverse found in Gaua languages, a system like Mwotlap ultimately involves only two axes: one cardinal axis lexified *up—down*, employed everywhere on land for the coastal axis (see Map 7 p.159); one land-sea axis running orthogonal to it, lexified *in—out*. The Mwotlap system is represented in Figure 9. It is, arguably, the simplest system of all northern Vanuatu languages.

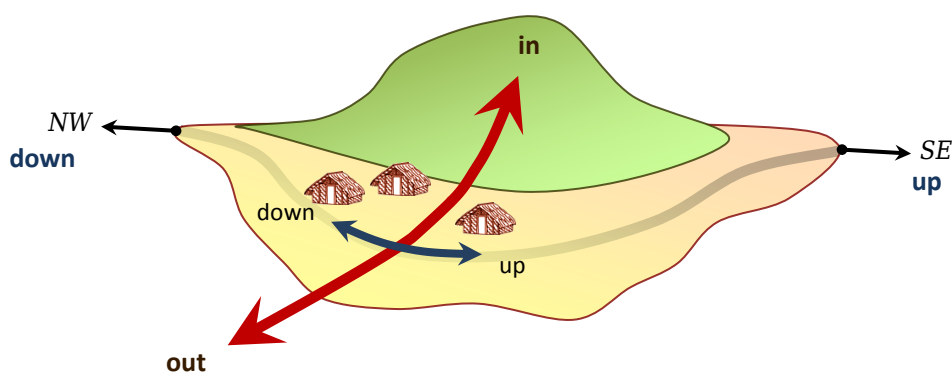


Figure 9 – The system of geocentric directionals in Mwotlap

4.3 Two canonical systems and a number of hybrids

I propose that the space systems of northern Vanuatu can be described by positing Gaua and Mwotlap as two opposite “canons”,¹⁶ each of which displays a coherent set of space-related properties. By comparison with these two canons, the other languages of the region present hybrid systems, i.e. systems which are closer to one of the two canons, yet deviate from it in ways that make it resemble the other canon.

For example, we will see that Mota has almost the same system as Gaua, except that it uses a directional ‘out’ when pointing seawards, in a way similar to Mwotlap. Symmetrically, Löyöp is almost like Mwotlap, except that it uses the *up—down* contrast (like Gaua) in the steeper areas of the island. Because the comparison between systems involves several

¹⁶ While the term *canon* is ultimately inspired by Corbett’s (2007) *canonical typology*, the sort of typology defined in this section does not claim universal scope, but is rather a case of (micro-) *areal typology*.

parameters, it is not possible to rank them using a unidimensional scale, whereby languages would simply placed in a linear order between the two poles Gaua and Mwotlap. Instead, each language deviates from the canons following a number of dimensions.

Derived from the data in Table 2 p.18, Table 6 lays out the relevant parameters whereby languages differ in their directional systems.

Table 6 — The systems of Gaua and Mwotlap constitute two canons; all other northern Vanuatu systems can be analysed as hybrid between these two.

System	COASTAL AXIS					LAND-SEA AXIS			
	navigational		local up-down		traverse	up-down		in-out	
	'up'	'down'	'up'	'down'	'across'	'up'	'down'	'in'	'out'
Gaua lgs	+	+	—	—	+	+	+	—	—
Mota	+	+	—	—	+	+	(+)	—	(+)
Mwerlap	+	+	—	—	+	(+)	(+)	(+)	(+)
Vera'a	+	+	—	—	—	—	—	+	+
Vanua Lava lgs	+	+	—	+	(+)	—	—	+	+
Hiw	—	+	—	+	(+)	(+)	(+)	—	(+)
Lehali, Lo-Toga	—	+	—	+	—	(+)	(+)	(+)	(+)
Löyöp	+	+	+	+	—	(+)	(+)	(+)	(+)
Volow	+	+	+	+	—	(+)	—	(+)	+
Mwotlap	+	+	+	+	—	—	—	+	+

From the first to the last column, the relevant parameters can be defined as follows:

- for directions PARALLEL TO THE SHORELINE:
 - whether the navigational subsystem used for long distances on land (§3.4) employs the cardinal directionals 'up' [#9] and 'down' [#12];
 - whether the local subsystem used for short distances [#10, #11] employs those same cardinal directionals 'up'-'down', or an undifferentiated traverse;
- for directions ORTHOGONAL TO THE SHORELINE:
 - whether the land-sea axis [#4-5-6] employs the vertical directionals *up-down* or *in-out*.

White cells refer to features closer to the Gaua canon; cells with darker shading refer to features closer to the Mwotlap canon. Cells with lighter shading, and with a sign "(+)" in brackets, indicate when the answer to these questions is not straightforward, or depends on certain conditions. For example, we'll see that Mota uses sometimes *down* when pointing to the sea, and sometimes *out*, depending on how steep the slope is. Likewise, the languages of Ureparapara and the Torres Islands encode the land-sea axis as *up-down* in the bush, but as *in-out* in the lower parts of the island. Other examples of hybrid configurations will be detailed below. In almost all cases – except for some peculiarities of Hiw – the languages of north Vanuatu can be shown to pattern partly like Gaua, and partly like Mwotlap.

4.4 Variations on the coastal axis

4.4.1 Volow: Accidental homophony

Volow is a communalect spoken on the eastern side of Motalava island, where Mwotlap is also spoken. Even though it is now quasi extinct, some valuable narratives were recorded in

1969 by the anthropologist Bernard Vienne with the late Wanhan, the last fluent speaker of the language; I transcribed them in 2003 with the help of Wanhan's son.

The data from Volow in Table 2 p.18 show a threefold organisation of geocentric directionals: the two forms **hō** 'down; northwest along the coast' and **yo** 'out; seawards' stand in contrast to a single polysemous directional **ha** 'up, southeast; in, inland'. The ambiguity of the latter form can be represented with a gloss 'up/in'. This pattern of colexification 'up/in' is also found in the Volow system of topological directionals (§2.4.2), and is therefore imported into the geocentric system. Figure 10 lays out the system of Volow.

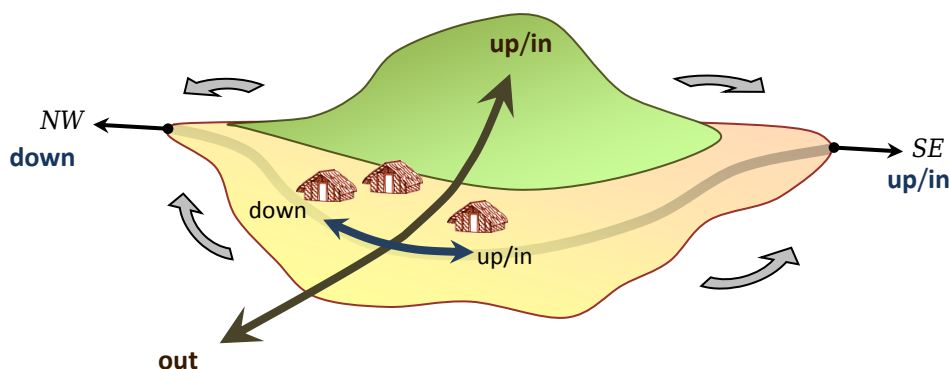


Figure 10 – The system of geocentric directionals in Volow

Those who can understand the Volow recordings today point out systematic correspondences between their ancestors' space system and that of the dominant language Mwotlap, which they have now shifted to, and which we used as our contact language. Thus, in spite of the apparent ambiguity of the two **ha** directionals in (29), these speakers can associate each token with the corresponding directional of Mwotlap. The first **ha** is here glossed 'in, inland' (MTP *hay*), and the second one is 'up, southeast' (MTP *hag*):

- (VLW.29) N-tēqē mine yiwes **ha** qē gēs, taval tō, teyeg **ha**.
 ART-garden my close **up/in** FOC here beyond hill side **up/in**
 'My garden is close this way (*inland*), it's on the other side of the hill,
 towards *southeast*.'

[VLW.d01:16]

Considering how close Volow is from Mwotlap in all other respects (François 2014:182), it is likely that Volow once had the same four-member system as Mwotlap (see Figure 9 p.166). Simply, its directionals underwent the deletion of their last consonant (**hōw* → *hō*; **yow* → *yo*; **van* → *va*), which resulted in the accidental homophony of two directionals **ha**, one meaning 'up, southeast' (< **hag*), the other meaning 'in, inland' (< **hay*).¹⁷ Today, it is difficult to observe how modern Volow would have dealt with such a homophony. Due to its moribund status, the semi-speakers of Volow tend to simply map the distinctions made by Mwotlap onto their own system of directionals.

¹⁷ The colexification of 'up' and 'in' in Volow was already mentioned as we examined the topological directionals (§2.4.2).

4.4.2 The languages of Vanua Lava

Vanua Lava is the largest and the highest of the Torres and Banks islands (§2.1). If one sets apart the relatively recent colonisation by Mwotlap speakers on its northeastern coast, the island is home to four distinct languages: Vurës, Vera’a, Mwesen and Lemerig. These share an identical system of space reference – with perhaps an extra twist for Vera’a (§4.4.2.2).

4.4.2.1 An asymmetry on the transversal axis

The system of Vanua Lava is identical to that of Mwotlap (Figure 9 p.166), except for a single vector: the one that points southeast for directions parallel to the shore, on the local scale. Long distances along that vector are encoded with cardinal ‘up’ (*siag* in Vurës, *sag* in other languages). However, unlike the canonical Mwotlap system which generalises this use of ‘up[wind]’ to all distances on land, Vanua Lava languages reserve it for long distances, and make use of a distinct directional for distances shorter than about 200 meters – see the forms in Table 2 p.18 (row #10).

The two following sentences, taken from narratives in Lemerig, illustrate the contrast between the two directionals pointing southeast along the coast: *sag* for long distances, *wël* for nearby locations.

- (LMG.30) Ē Qet tār e ’og~’og **sag** sā Lēseper ow.
 PERS (hero) 3pl DEF IPFV~stay up/SE:far FOC₁ L. FOC₂
 ‘Kpwet was living over there (*southeast*) in Leseper.’ [LMG.Qet.003]
 [story told in Lalñetak village on Vanua Lava, about 10 km north of Leseper]

- (LMG.31) Ti m-’ār pa’ **wël** kē ge mälägläg.
 3sg PFT-stand hidden (SE:near) place STAT dark
 ‘He stood hiding over there (*southeast*) in the dark.’ [LMG.Rock.048]

Oddly enough, three languages (Lemerig, Vurës and Mwesen – see below for Vera’a) display this distance-based contrast only in one direction. As for the opposite direction, it employs the directional ‘down’ whatever the distance – just like Mwotlap. As an illustration, the following excerpt mentions the four directionals that constitute the local-scale subsystem of Lemerig: *wël*¹⁸ ‘parallel to the shore, SE side’ – *sōw* ‘down; parallel to the shore, NW side’ – *sar* ‘in; inland’; *row* ‘out; seawards’. Notice here the absence of *sag* ‘up’.

- (LMG.32) Ti m-sëk. Sëk lu **wël** nē, sëk lu **sōw** nē,
 3sg PFT-seek seek around (SE:near) there seek around (down/NW) there
 sëk lu **row** nē, sëk lu **sar** nē — ti ’esgö’ qäl’ä.
 seek around out there seek around in there — 3sg find NEG
 ‘So he began to search. He searched *southeast*, he searched *northwest*,
 he searched *seawards*, he searched *inland* — but he couldn’t find it.’ [LMG.Qet.072]

The coastal axis of Lemerig is thus asymmetrical, because a pair of distinct terms used in one

¹⁸ One peculiarity of Lemerig is that the directional *wël*, which here encodes a geocentric direction pointing southeast, is also used as a participant-based allotropic directional ‘thither, towards non-speaker’ (§2.4.1): the latter contrasts with *me* ‘hither’, and can point to any direction. By contrast, the cognate forms in the three other languages of Vanua Lava (*wōl*, *wol*) are restricted to their geocentric use.

direction (*wēl* vs. *sag*) contrasts with a single term (*sōw*) on the opposite direction.

The system of Vanua Lava directionals is shown on Figure 11. The gloss ‘across’ given for the short-distance vector pointing southeast (#10) will be explained in §5.2.1.

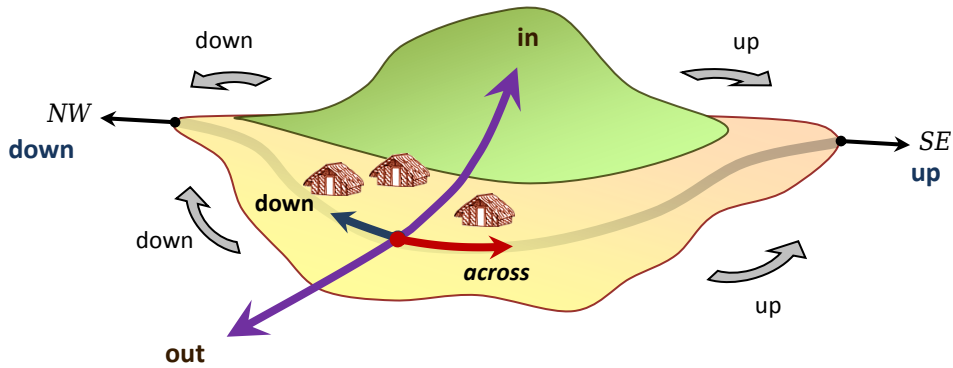


Figure 11 – The system of geocentric directionals in Vanua Lava languages

If we compare Figure 11 with Figures 8 and 9 above, it becomes clear that Vanua Lava can be described as a hybrid between the canonical systems of Gaua and Mwotlap.

4.4.2.2 The special case of Vera'a

I personally recorded the same system (Figure 11) for the four languages of Vanua Lava island, including Vera'a. My colleague Stefan Schnell (pers. com.) later told me that he noticed an extra directional for Vera'a, formally *mul*, corresponding apparently to vector #11 'parallel to the shore towards NW (close distances)'. If this is the case, then Vera'a constitutes another geocentric configuration again, bringing the total number of space systems in northern Vanuatu to *ten* rather than nine – see Table 2 p.18.

The resulting system is shown in Figure 12. Following the principle of other figures, I propose to gloss each vector with the directional's original meaning in the same language: in this case, the vector #10 is glossed 'across' (*wōl*), and #11 is glossed 'back' (*mul*). Indeed, the form *mul* originates in the motion verb *mul(ō)* 'go back, return'.

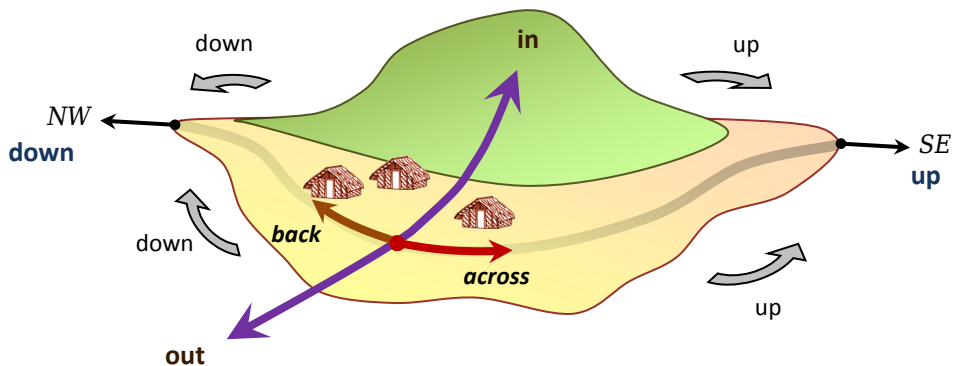


Figure 12 – The system of geocentric directionals in Vera'a (after Schnell, pers. com.)

Unfortunately, I have no example of this *mul* directional in my Vera'a corpus. A search through the 86-page collection of Vera'a texts published by Vorēs & Schnell (2012) found 73 instances of *suw(ō)* 'down, NW (remote)', 66 of *sag* 'up, SE (remote)'; 68 of *sar* 'in, inland', 44 of *rōw* 'out, seawards'; as well as 8 instances of *wōl* 'SE:near <across>'. However, I found

zero instance of any directional of the form *mul* ('NW:near <back>'). Based on the evidence available to me, I am thus unable to confirm the existence of a distinct geocentric system for Vera'a.

4.5 Variations on the land-sea axis

4.5.1 Löyöp: Depending on the slope

Löyöp, the language spoken on the eastern side of Ureparapara, shares with its neighbour Mwotlap the extension of the cardinal axis *up-down* on the coastal axis. Löyöp also aligns with Mwotlap – and with Vanua Lava languages – in using the two directionals *in-out* to encode the land-sea axis:

- (LYP.33) Yege oñ e m-van me, m-van me, m-van me; m-ol kal
 PL ship DEF PFT-go hither PFT-go hither PFT-go hither PFT-land upwards
say me, lilwon, m-qēt me. Kyeyjöl m-van **yow**.
in hither on.beach PFT-complete hither 3trial PFT-go **out**
 'The ships kept coming closer, closer, closer, until they landed [*in*] on the beach,
 one after the other. The three boys walked [*out*] (towards them).' [LYP.Pig.117]

However, contrary to its neighbours, Löyöp reserves these directionals *in-out* to the flatter parts of its island, namely the coastal villages and the sea. By contrast, it employs the vertical directionals *up-down* in the forest and steeper parts of the island, where the declivity of the ground is more salient. The following sentence, taken from a traditional narrative, shows how Löyöp can use its vertical directionals to lexify the *land-sea* axis. The story mentions a hamlet located in the mountain:

- (LYP.34) Kyeyō m-yēm kal n-wutwut, van van van en:
 3du PFT-climb upward ART-hill go go go TOP
 kalō **sa** lipnō yo-yō.
 arrive up in.village POSS-3du
 'They climbed the hill all the way up,
 until they reached [*up*] their hamlet.' [LYP.Ogres.18]

Löyöp has thus preserved the possibility to use its vertical directionals on the land-sea axis, as soon as the declivity of the slope warrants it. This system is hybrid between the two canonical systems of Mwotlap and Gaua (§4.3): it resembles Mwotlap in the island's lower areas, yet is closer to Gaua in the heights. The system of Löyöp is represented on Figure 13.

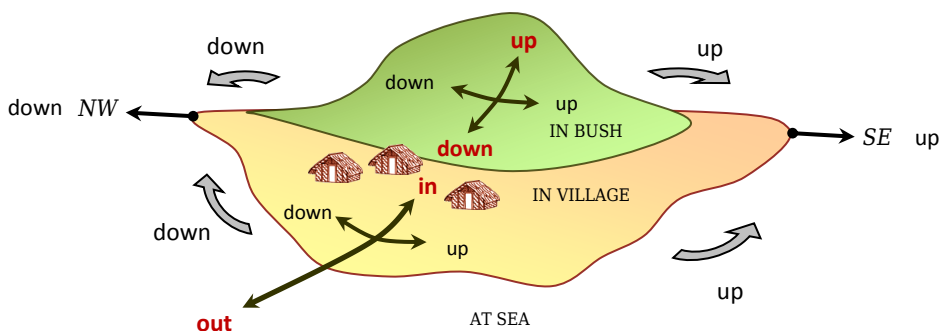


Figure 13 – The system of geocentric directionals in Löyöp

The other systems that remain to be presented in this section all form, in turn, variations of the Löyöp case. Whether it is Mota, Mwerlap, Lehali, Lo-Toga or Hiw, all the languages yet to be examined show a similar lexical split within the land-sea axis, where they employ sometimes the vertical directionals *up-down*, and sometimes the topological *in-out*.

4.5.2 Mota: An asymmetrical system

The small island of Mota, located east of Vanua Lava (see Map 1), uses a directional system that is essentially similar to the Gaua languages. Mota uses two *up-down* axes: one corresponding to the land-sea axis (but see below), and one for cardinal directions mapped onto the shoreline (§3.4). Sentence (35) illustrates a dialogue that would take place in a western village of the island, such as Veverao, pointing towards the southeastern hamlet Liwotqei (see Map 1 p.3):

- (MTA.35) Ka va~va i vea? — Na va~va iake **sage** a Liwotqei.
 2s:AO IPFV~go ALL where 1s:AO IPFV~go here up LOC (village)
 ‘Where are you going? — I’m going *up* (southeast) to Liwotqei.’ [FP1-40b]

On the local scale, the land-sea axis is crosscut by an undifferentiated transverse axis lexified *vano* ‘across’:

- (MTA.36) Na va gap iake **vano**.
 1s:AO go just here across
 ‘I’m just going this way (level, parallel to shore).’ [FP1-41b]

Mota shares with Löyöp a lexical split of the land-sea axis. In the higher parts of the island, the vertical directionals *up-down* are used; but the lower areas, namely the coastal village and the sea, employ different terms. One notable difference with Löyöp, though, is the asymmetry of Mota directionals. The lexical split concerns only the *seaward* direction, the one that runs from the island’s top towards the ocean: it is encoded **swo** ‘down’ in the bush, and **rowo** ‘out’ elsewhere. Similarly, the directional used at sea, when pointing towards the ocean (#17), is never ‘down’ like in Gaua, but always *rowo* ‘out’. As for the opposite direction *inland*, it is consistently lexified **sage** ‘up’ regardless of the slope, or of the location on the island. The system of Mota is represented in Figure 14.

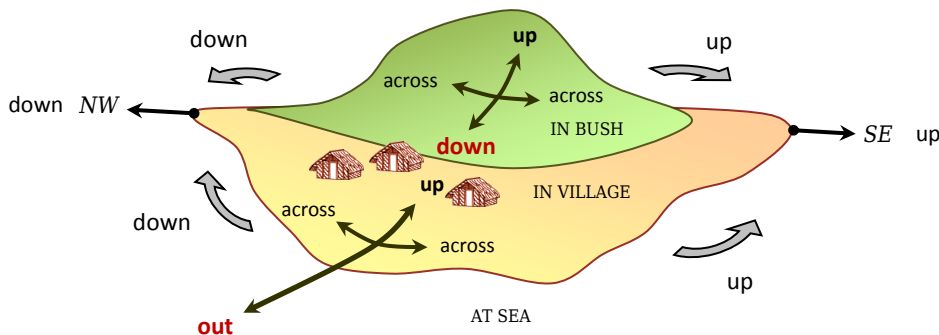


Figure 14 – The system of geocentric directionals in Mota

Example (37), taken from a narrative, illustrates the lexical split of the land-sea axis. After they finished carving their wooden canoe in the bush, the characters brought it *down* (#15) all the way to the beach; at which point they took it *out* (#16-17) to the ocean:

- (MTA.37) Rave sur o nati aka **swo**, me vega kalo
 pull downwards ART small canoe down PFT climb upwards
 i vawo nati aka, neira me va **rowo** ilo lama.
 ALL top small canoe 3pl PFT go out ALL open.sea
 ‘So they dragged their small canoe (*down*) to the shore, climbed upon it,
 and *out* they went into the ocean.’ [MTA.Snake.34]

Keeping in mind the canonical analysis exposed in §4.3, one could say that Mota patterns everywhere like the canon Gaua, except for seawards directions on flat terrain (#16–17 vectors in Table 2 p.18), for which Mota follows the same strategy as the other canon Mwotlap.

One would expect that the directional ‘out’ should contrast with its antonym ‘in’, like in the symmetrical systems of Löyöp or Mwotlap; however, this is not what we find in Mota, where *sage* ‘up’ is used in all cases. The following examples, based on the kinetic presentative *veta* (+directional),¹⁹ illustrate the asymmetry:²⁰

- (MTA.38) Nea ilunia veta **sage**.
 3sg there PRSTV up
 a) <COASTAL> ‘There he is, walking towards southeast (along the shore).’
 b) <LAND–SEA> ‘There he is, walking uphill (on a slope).’
 c) <LAND–SEA> ‘There he is, walking inland (on flat terrain).’ [FP1-41b]
- (MTA.38’) Nea ilunia veta **swo**.
 3sg there PRSTV down
 a) <COASTAL> ‘There he is, walking towards northwest (along the shore).’
 b) <LAND–SEA> ‘There he is, walking seawards (on a slope).’
- (MTA.38”) Nea ilunia veta **rowo**.
 3sg there PRSTV out
 <LAND–SEA> ‘There he is, walking seawards (on flat terrain).’

This asymmetry of geocentric directionals simply mirrors the same asymmetry in the *topological* domain: as we saw in §2.4.2 (Table 4), Mota has innovated a lexical contrast between ‘down’ (*swo*) and ‘out’ (*rowo*), but has kept the original polysemy of *sage* (<**sake*), which means both ‘in’ and ‘up’ – see (16) p.149.

4.5.3 Mwerlap: A distance-based lexical split

Mwerlap, the language spoken on Merelava island, can also be described as a hybrid between the two canons of Gaua and Mwotlap. Like Gaua, Mwerlap uses an undifferentiated traverse (‘across’) on the local scale, and sometimes encodes the land-sea axis as *up-down* (***seag-sōw***); however it shares with Mwotlap, at least in some cases, the lexification of that same land-sea axis as *in-out* (***sar-row***).

¹⁹ The *kinetic presentative* is a presentative particle that points to an individual in motion (e.g. person walking, ship sailing, etc.); it is always followed by a directional encoding the path of the motion. For a description in the neighbouring language Mwotlap, see François (2003:156-162).

²⁰ The asymmetry is reminiscent of the one we saw for Vanua Lava languages in §4.4.2.1; for the latter, it was a property of the coastal axis (Figure 11 p.174), whereas Mota is asymmetrical on the land-sea axis.

Based on these preliminary observations, one could propose to see Mwerlap simply as a variant of Löyöp. But such an analogy would fail to take into account an ingredient specific to Mwerlap: namely, that the variation is not based on the slope, but on physical distance. The pair of directionals *in-out* must be used for very local reference, within a radius of about 20 metres on each side; whereas *up-down* remain the relevant directionals for farther distances. The resulting system is represented in Figure 15.

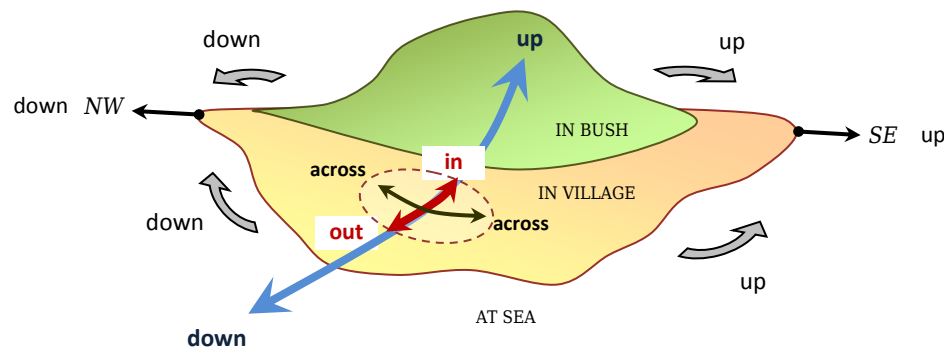


Figure 15 – The two nested subsystems of geocentric directionals in Mwerlap

Mwerlap thus involves two nested subsystems. On the one hand, long distances employ two distinct *up-down* axes (as in Gaua languages); on the other hand, short distances in the local setting resort to a different set of axes: *in-out* for the land-sea axis, and *across* for the traverse that crosscuts it. In terms of actual distances, estimates by my consultants mentioned a radius of about 20 m for *in-out*, but a longer array of perhaps 200 m each side for the use of *across*. In other words, the “local” subsystem is less of a circle than an ellipse or strip parallel to the shoreline.

Table 7 — The distance-based lexical split of Mwerlap directionals on the land-sea axis

SHORTER DISTANCES (<20 m)	LONGER DISTANCES (>20 m)
(MRL.39a) Pas ser=lēg ! pass in =thither 'Pass (him) the ball inland!' [BP3-21a]	(MRL.39b) Pas sege=lēg ! pass up =thither 'Pass (him) the ball inland!'
(MRL.40a) Pas ru=mē ! pass out =hither 'Pass (me) the ball seawards!'	(MRL.40b) Pas su=mē ! pass down =hither 'Pass (me) the ball seawards!'

Sentences (39-40) in Table 7 exemplify the spatial configuration of Mwerlap. Such utterances can be heard during popular ball games such as soccer or volleyball. The forms of the morphemes themselves are explained in a separate Appendix (§7.4) on the morphology of Mwerlap directionals. What matters here is to illustrate the idiosyncratic organisation of Mwerlap geocentric directionals on the land-sea axis.

Despite its differences with Löyöp and Mota (compare Figure 15 with Figures 13 and 14), overall the system of Mwerlap can also be said to ultimately revolve around declivity, in its own particular way. Indeed, the island of Merelava is a very steep, conical volcano, so

relatively flat areas will always be narrow strips of gentle slope within a general shape of strong declivity.²¹ In this regard, the *distance*-based system of Mwerlap bears some similarity with a *declivity*-based system such as that of Löyöp.

The manner in which Mwerlap structures its directionals based on distance is not found anywhere else in the area. While physical distance commonly results in different terms on the coastal axis (see §3.1), Mwerlap is the only language for which distance also governs the choice of directionals on the land-sea axis.

4.6 Lehali, Lo-Toga: a partial asymmetry

Even though they are spoken on three different islands, Lehali and Lo-Toga share the same geocentric system (henceforth the “LLT system”). At first glance, it can be seen as a variant of Löyöp (Figure 13 p.171): like Löyöp, the cardinal axis is used everywhere on land, for directions parallel to the coast; like Löyöp, the land-sea axis shows a lexical split between two strategies depending on the location on the island: *in-out* directionals are used on lower areas of the island, and *up-down* in the steeper parts.

However, compared with Löyöp, the LLT system has a peculiarity: its directional ‘south-east’ has lost any formal connection with the vertical axis. The vertical *up* of the topological domain (#7: LHI *vēn*, LTG *vin*) can only be used geocentrically to encode ‘uphill’ when one is in the bush [#6]. While all other Banks languages also use *up* for ‘southeast’ on the cardinal axis, the modern LLT system makes use of a separate directional, for all distances, on all scales [#8, 9, 10]. Considered in a purely synchronic perspective, this directional (LHI *ha*, LTG *ag* ~ *iag*) has no other meaning than this geocentric one, and can only be glossed ‘south-east’. Among all Torres-Banks languages, this is the only case of a directional that is purely geocentric, and doesn’t also have a non-geocentric meaning in synchrony (cf. fn.5 p.140). Oddly enough, this lexical dissociation of the cardinal axis with verticality has only disrupted the link between ‘southeast’ and ‘up’; in the other direction, the form for ‘down’ (#14: LHI *how*, LTG *iw* ~ *w*) still colexifies today ‘downhill’ [#15] and ‘northwest’ on all scales [#11, 12, 13]. The asymmetrical configuration of the modern LLT system is represented in Figure 16.

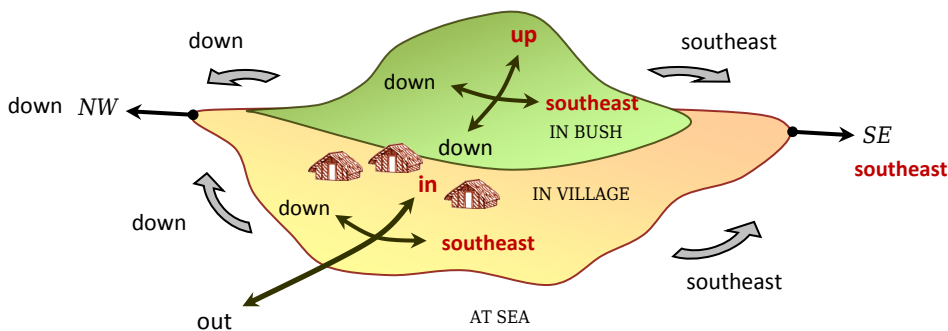


Figure 16 – The system of geocentric directionals in Lehali and Lo-Toga

²¹ The colony of Mwerlap speakers who have established themselves on the east coast of Gaua island use the same system as on their home island of Merelava.

The following Lo-Toga examples illustrate the LLT system. Pointing ‘inland’ from a location at sea, or on the flatter parts of the island, involves the directional **il** ‘in’. When it has its geocentric meaning, the directional is often better translated using adverbial locative phrases in English (such as ‘on the beach’, ‘ashore’, etc.):

- (LTG.41) Pahwēne nihe ge= vēn **il** me, Merawehih v=**il** hag.
 then 3pl AO:pl= go **in** hither (hero) IPFV=**in** sit
 Ni= itē nihe ge= rōw **il** me, nie ni= vē **rōw** me
 AO:3s= see 3pl AO:pl= rush **in** hither 3sg AO:3s= go **out** hither
 ni= ere teletale n=ēke.
 AO:3s= smash:SG in.pieces ART=boat
 ‘As they were *coming in* (= paddling closer to the island), Merawehih was waiting **in** (= on the beach). As soon as he saw them landing **in** (= ashore), he *came out* (= walked down towards them), and suddenly smashed their boat into pieces.’
 [LTG.Merawehih.053]

But the *inland* direction is encoded with **vin** ‘up’ if it points to the bushy areas of the island:

- (LTG.42) Ne=lete mi kemor na in revtē, vet ne **vin** in.
 ART=garden POSS 1ex:du STAT lie close place REL **up** lie
 ‘Our garden is very close, this way *up(hill)*.’
 [LTG.d01:15]

In this context, the opposite term is not **rōw** (‘out’) any more, but **iw** ‘down’:

- (LTG.43) Kemē ve=toge deh=**vin**, pa hegere ha ve=toge dih=**iw**.
 1ex:pl IPFV=stay side=**up** but HUM:PL other IPFV=stay side=**down**
 ‘We live *uphill*, but there are other people who live *downhill*.’
 [FP1-13a]

When the directional **iw** ‘down’ means ‘downhill’ (*land-sea* axis) it contrasts with **vin** ‘up, uphill’, as in (43). Yet when it takes its cardinal meaning ‘northwest < downwind’, it contrasts with (i)**ag** ‘southeast’, whose meaning is purely geocentric:

- (LTG.44) N=ēñwe mēhe ve=tu vet ne v=**ag** in,
 ART=house their IPFV=stand place REL IPFV=**southeast** lie
 si vet ne **w’** in?
 or place REL **down** lie
 ‘Is their house located on the southeast side, or the northwest side?’
 [FP1-13a]

The same situation, *mutatis mutandis*, prevails for the language Lehali.

This asymmetrical configuration of the LLT system needs to be accounted for. In the historical discussion below, I will explain it as a lexical split among vectors formerly lexified as ‘up’ – itself the result of a lexical innovation affecting the verb ‘go up’ (§5.3.2). A similar process took place in the neighbouring language Hiw, yet with further intricacies again.

4.7 The puzzle of Hiw

4.7.1 A quirky system

The most intricate of all geocentric systems found in Torres-Banks languages is no doubt the one used on Hiw, the northernmost island of Vanuatu. It stands out, to begin with, if one considers its organisation in Table 2 p.18. Hiw is the only language of the whole area that has a directional ‘in’ distinct from ‘up’, yet never uses it for any geocentric vector. It is the only

language in which the cardinal directional for ‘southeast’ used on land for long distances (#9 *věn*, originally ‘thither’) differs from the one used across islands (*ag* #8). Besides, this directional ***ag***, which is only used geocentrically, shows an odd pattern of colexification between #8 ‘southeast (across islands)’ and #4-5 ‘inland (on flat terrain)’ which is found nowhere else, and can hardly be given a simple gloss. All these oddities constitute puzzles that need to be solved.

The geocentric system of Hiw is represented in Figure 17, reproduced from Figure 3 p.141. Notice that the directional **ag** appears twice, and has no label: it can neither be associated with a non-geocentric function, nor can it receive any simple gloss.

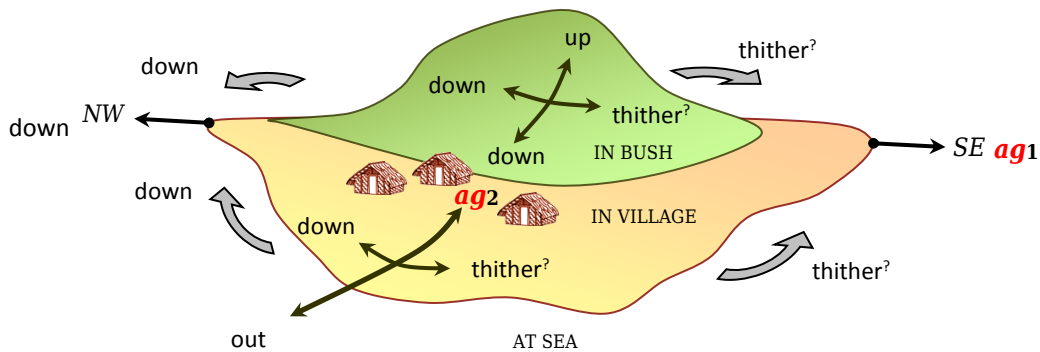


Figure 17 - The system of geocentric directionals in Hiw

The impression of oddity left by the Hiw system depends, of course, on the point of comparison. For example, Hiw has very little in common with the languages of Gaua (§1.2, 4.1): except for the use of *down* for ‘northwest’ and ‘downhill’, everything else is different. The difference becomes less extreme if Hiw is compared with its immediate neighbours, such as Lo-Toga or Löyöp. In the historical discussion (§5), I will argue that the system of Hiw, aberrant as it is in synchrony, can be accounted for by reconstructing a number of innovations, most of which also took place in other northern Vanuatu languages.

4.7.2 Colexification between 'thither' and 'southeast'

Figure 17 tentatively assigned to vectors #9-10 a label ‘thither’. This is justified by the principle underlying these representations (§1.2), which consists in linking a geocentric directional with the non-geocentric meaning it also has in the same language, considered in synchrony. That said, the semantic connection is far from clear, and still needs to be explained. The present section will first establish that polysemy of **vēn**, based on evidence from my corpus; the explanation will be given in the historical discussion (§5.2.2).

4.7.2.1 /Nën/ as a participant-oriented directional

Vën exists in Hiw as a participant-oriented directional (§2.4.1; row #2 in Table 2). Its meaning is allotropic, i.e. it is semantically directed at a participant outside the speaker's sphere, and typically translates 'to you/him/them...'. In (45), *vën* gives the instruction to retrieve a participant from the context, namely the mother. Had nobody been in the pit, the speaker would have resorted to a non-personal strategy such as *uw* 'down' (see also the pair of sentences (7)-(7') above):

- (HIW.45) Sōrō giy ne=qeṛōñ tēn, giy tēvēkqō, rē= suṛ i ṛakña-se
 3du dig ART=hole ground dig deep AO:du= install DOM mother-3NSG
 uw yōne. Viye nōn ṛakña-se yite, ne= gengon,
 down inside take:PL POSS mother-3NSG firewood ART= food
 viye **vēn** eyō qeṛōñ tēn.
 take:PL **thither** LOC hole ground
 ‘The [brothers] dug a pit in the ground, a deep pit, and installed their mother [down]
 inside. They gathered firewood for her as well as food, and brought it all *to her*
 [LITER. took it *thither*] in the pit.’ [HIW.Brothers.07]

In this deictic use, *vēn* ‘thither’ contrasts with *me* ‘hither’:

- (HIW.46) Viye qē **me** ti noke! Noke viye **vēn** ti ne= sōgē =kye on gon.
 take:PL SUGG hither DAT 1sg 1sg take:PL thither DAT ART= pig =my SBJN eat
 ‘Give [the scraps] to me! I’ll give them to my pig for food.’ [HIW.d09:41]

Despite their phonetic similarity, *vēn* [βen] ‘thither’ and *vēn* [βm] ‘up’ are two distinct directionals. Both are found in (47), where a motion is first described in topological terms (‘climb up’) and then explicitly anchored to a participant (‘climb towards him’):

- (HIW.47) Nine yō ne=megoye kkē in **vēn** sag.
 3sg see ART=child small DEF up sit
 Nine vēn **vēn**, vēn wate **vēn**.
 3sg climb up climb reach **thither**
 ‘He saw the small boy sitting *up* (in the tree).
 So he climbed *up*, he climbed all the way (*to him*).’ [HIW.Music.19]

This allotropic use of *vēn* may correspond to any vector in spatial terms.

4.7.2.2 /Vēn/ on the coastal axis

The same form **vēn** is also found with a geocentric meaning, in which case it constructs a vector parallel to the coast, specifically oriented southeast (#9-10 in Figure 4 p.150).

- (HIW.48) N=ēñwe =ma owēte **vēn** tage.
 ART=house =1ex:pl PRSTV (southeast) stoop
 ‘Our house is over there *this way* (southeast).’ [EP2-17b]
 (HIW.49) Sōrō tō vēn ñwē ne, rē= tō wōywōy vaviyi **vēn**.
 3du go:NPL up like this AO:du= go:NPL crosswise side (southeast)
 ‘They walked uphill like this, and then veered towards southeast.’ [FG2-14b]

In this geocentric sense, *vēn* contrasts with *uw* ‘down; northwest’:

- (HIW.50) Ike tati sesō **uw**! Ike sō **vēn** ti ne= Yugemēne.
 2sg NEG paddle:RED down 2sg paddle (southeast) DAT ART= (village)
 ‘Don’t paddle NW! You should paddle SE, towards Yugemēne.’ [FG2-14b]

Note that *vēn* is used for any southeast vector on the local scale, whether in the village (48), in the higher areas of the island (49) or on the sea along the coast (50).

Considering the contrast with *uw* ‘down’, and the observation that southeast is encoded as ‘up’ in all other northern Vanuatu languages, the Hiw strategy is puzzling. The phonetic closeness of this [βen] with the vertical ‘up’ [βm], which some younger speakers initially

described as mere homophones, confused the picture even more in the earlier phases of my exploration. However, elder speakers confirmed that the directional used for southeast on land was distinct from ‘up’, and instead homophonous with ‘thither’.

The only way to interpret this synchronic configuration, in my view, is by analysing it as an *etymological doublet*. This will be the object of the historical discussion in §5.2.2.

4.7.3 Colexification between ‘southeast’ and ‘inland’

The second puzzle of modern Hiw is its directional **ag**. It does not come with a gloss in Figure 17, because the term is only ever used with a geocentric meaning, and is found nowhere else in the language. Admittedly, the same could be said of the homophonous directional **ag** in the language Lo-Toga (or *ha* in Lehali); yet the latter was provided with a specific gloss ‘southeast’ in Figure 16, because its synchronic semantics were clear enough.

The reason why Hiw **ag** cannot be given any consistent glossing is because it colexifies two directions which have nothing in common: on the one hand, **ag** encodes ‘southeast’ for long-distance navigation across islands (vector #8 in Figure 4 p.150); on the other hand, it is the directional used on the land-sea axis on flat terrain, i.e. #4 ‘landwards’ at sea, or #5 ‘inland’ in a village. There is no reason why these two directions should be merged, as their underlying definition is quite distinct, and they seldom align. From a strictly synchronic point of view, the only reasonable decision is to posit two homophones: **ag**₁ ‘southeast on the navigational axis’ (#8), and **ag**₂ ‘inland, on flat terrain’ (#4-5).

The navigational **ag**₁ contrasts with *uw* ‘down > downwind, northwest’; it is illustrated in (51). Even though this **ag** differs in synchrony from the directional *vēn* ‘up’, it follows the logics of the ‘up(wind)’ directional described for other languages (Figure 6 p.156):

- (HIW.51) Kema peon vën vaviyi **ag** Gawe.
 1ex:pl FUT go side (navig:SE) Gaua
 ‘We’ll be travelling southeast, to Gaua.’ [FG3-39b]

The second directional **ag**₂ ‘inland’ is illustrated in (52).²²

- (HIW.52) Vë—n vën, se= vën **ag** net-venyö kkë.
 go:DUR go 3pl:AO= go:PL (inland) DIMIN-island small
 Se= yë **ag**: ne=tayö ñot v= **ag** tu.
 3pl:AO= look (inland) ART=person INDF IPFV= (inland) stand
 “Tekñwa, pa yë v= **ag** tu rë?”
 people but who IPFV= (inland) stand DIST
 ‘After a while, they came closer (*landwards*) to a small islet.
 They looked (*inland*): someone was standing there (*on the shore*).
 “Hey guys, who’s that standing over there (*inland*)?”’ [HIW.Meravtit.111]

The opposite of this **ag**₂ is **rōw** ‘out’:

- (HIW.53) Sise vën se=řav ne=wake kkë =sa, on řav wate **rōw** yö pëgone.
 3pl go:PL 3pl:AO=drag ART=boat small =their SBJN drag reach **out** LOC sea
 ‘They dragged their canoe all the way *down* [LITER. *out*] to the sea.’ [HIW.Meravtit.051]

²² The sentence is taken from the Hiw version of a story which I also recorded in other languages. It may be compared with the parallel passage in Lo-Toga, (LTG.41) above.

In the steeper areas of the bush, ‘inland’ is encoded **vēn**, which also means ‘up’:

(HIW.54) Ne= sov =en ye **vēn** es~os rē?
 ART= smoke =POSS who **up** IPFV~smoke DISTAL
 ‘Whose smoke is smoking over there *inland* [LITER. *up*]?’ [FP3-28b]

This is parallel to the use of Lo-Toga *vin* in examples (42) and (43) above.

A strictly synchronic approach to Hiw would have a hard time explaining why the same directional **ag** is used for these two very different geocentric functions – respectively **ag**₁ #8 ‘southeast (across islands)’ and **ag**₂ #4–5 ‘landwards (at sea) ~ inland (on flat terrain)’. This puzzle will be solved in the next section, where I will show we are dealing here, again, with an etymological doublet (§5.3.2).

5 Historical interpretation: A layering of innovations

The central section of this study detailed the nine systems of geocentric directionals found in the 17 Torres and Banks languages, considered synchronically. While their general architecture is similar across languages, the various configurations attested also reveal a degree of diversity which still needs to be accounted for.

Knowing that these languages descend from a common ancestor, how can we explain this amount of historical divergence in such a small area? Previous publications have already reported on the extreme linguistic diversification of this language group, whether in the phonological, lexical or grammatical domains (François 2005, 2011, 2012). What these studies showed was that the modern diversity reflects the accumulation of individual innovations which can often be identified using the Comparative Method. Each of these innovations emerged locally and diffused to a different portion of the Torres–Banks archipelago, with isoglosses often forming intersecting patterns (François 2014).

As far as space directionals are concerned, the question that arises is whether the attested array of geocentric systems can be broken down to individual innovations, that could be identified in the modern languages. Can the canonical approach adopted in §4.3 help reconstruct the history of these nine systems? Could a diachronic analysis shed light on unsolved problems, such as the puzzling system of Hiw? This is the object of this final section.

5.1 Identifying the point of departure

Faced with the mosaic of modern systems, there is no obvious way of identifying which system is innovative or conservative. Luckily, this becomes possible if we complement our northern Vanuatu data with our knowledge of Oceanic languages outside the area, and what can be reconstructed of their common ancestor, Proto Oceanic (François 2004).

POc’s geocentric system was reconstructed not only for the navigational scale (§3.2), but also for the *local scale*. The etymological forms for the directionals are the same as the ones given earlier (Figure 5 p.155): **sake* ‘up’, **sipo* ‘down’, **pano* ‘across, in transverse direction’. Their spatial configuration is given in Figure 18.

Structurally speaking, the system reconstructed for POc is identical with the one that is still employed today in the languages of Gaua (Figure 8 p.165): two *up–down* axes (*upwind–downwind*, *uphill–downhill*) plus an undifferentiated traverse. The system of Gaua, which served as one of two “canons” in our synchronic analysis, has preserved the same structural

contrasts as its remote ancestor: it is thus the most conservative of the whole Torres-Banks area, in the GEOCENTRIC as much as the TOPOLOGICAL domain (§2.4.2).²³ In comparison with the conservative languages of Gaua, the remaining geocentric systems of Torres and Banks Islands result from an accumulation of innovations, which can now be unravelled successively.

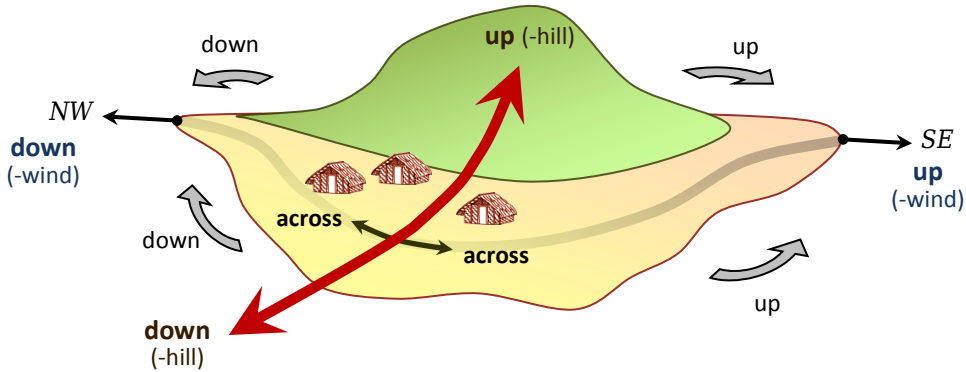


Figure 18 – The system of geocentric directionals reconstructed for Proto Oceanic, the ancestor of all Torres-Banks languages (after François 2004)

5.2 Innovations affecting the coastal axis

A fair part of the differences found across northern Vanuatu systems revolve around one important innovation: the loss of the undifferentiated traverse axis ('across' – see §4.1.2), and its replacement by the cardinal axis.

As was made clear in the canonical approach (Table 6 p.167), the generalisation of the cardinal axis *up*–*down* to all distances on land was complete in some languages, but only partial in others. One language which brought this innovation to its logical completion is Mwotlap (§4.2): the undifferentiated traverse was lost there leaving no trace, and cardinal *up* and *down* are now used everywhere on land, whatever the distance. Other languages in the same case are Volow, Löyöp, Lehali and Lo-Toga.²⁴ The rationale for this innovation was the functional advantage of the cardinal axis. Indeed, the inherited traverse axis had one communicative weakness: that of being undifferentiated, and thus prone to ambiguities. Every time the sole use of 'across' on the local scale would have been ambiguous, it was tempting to make the most of the cardinal axis – already used for larger distances anyway – for the sake

²³ The only notable innovations of Gaua languages took place in the *lexification* of these categories. While all languages reflect **sake* 'up' (> *sa, saa, hag...*), four languages of Gaua went through the relexification of their word for 'down': **sipo* was replaced by another lexeme **roro* (> NUM/DRG/KRO *ror*, OLR *roy*), whose original meaning can be reconstructed as 'go deep, sink; be deep, be low' (François 2010:139). This is one example where languages can prove conservative in their structures, even though the lexical material used to lexify them may itself have gone through local innovations (François 2010, 2011:226). See also the Appendix (§7.3).

²⁴ In Table 2 p.22, this innovation is manifest by the colexification of vectors #8–9–10 for *up*, and of #11–12–13 for *down*. Lehali and Lo-Toga historically took part in that expansion of cardinal *up* on land, but the connection with *up* was later blurred by a lexical innovation (see §5.3.2).

of disambiguation (François 2004:25). This is how the cardinal axis came to be generalised on land to all scales.

Crucially, this innovation didn't need to happen on both sides: any change that would result in the differentiation of the two sides would have been sufficient for this purpose. And indeed, some languages – those of Vanua Lava on the one hand, and Hiw on the other hand – went through a similar process of extending the cardinal axis on land, yet for some reason, only did so on the *northwest (down)* side; as for short distances in the *southeast* direction, they kept a trace of the former traverse axis.

5.2.1 *The memory of the lost traverse in Vanua Lava*

This is how, in my view, one can explain the asymmetry of the Vanua Lava system (Figure 11 p.170), which shows a distance-based contrast between short and long distances, only on the southeast side of the local scale: e.g. Lemerig has *wēl* for #10 but *sag* for #9.

This historical hypothesis can even be refined through the etymology of the #10 directional (Vurēs/Vera'a *wōl*, Mwesen *wol*, Lemerig *wēl*). Knowledge of regular sound correspondences points towards a protoform **volo*, whose meaning can be reconstructed as 'crosswise, across' (§7.3.3).²⁵ A plausible scenario would propose that the ancestor of Vanua Lava languages, at a time when the undifferentiated traverse was still used like in Proto Oceanic, first went through a simple process of relexification by replacing **pano* with **volo*, a form with a similar meaning 'across'. For a while, this **volo* must have been used for encoding both SE and NW, as in Gaua. Later on, cardinal *down* was extended from the navigational scale onto the local scale, and replaced **volo* for its NW direction [#11], while **volo* became restricted to the SE side. The lexical replacement resulted in the differentiation of the local traverse between NW (originally 'down') and SE (**volo*, originally 'across').²⁶ This reconstruction explains the labels I have used in Figure 11 p.170, to represent the non-geocentric meanings of directionals.

5.2.2 *The memory of the lost traverse in Hiw*

This scenario may also be the key to one of the oddities of Hiw. Section 4.7.2 established that the directional *vēn* of Hiw colexifies two quite different meanings, namely 'southeast (on land)' and 'thither' (participant-oriented directional, allotropic) – see Figure 17 p.177.

My hypothesis is that the two directionals *vēn* form an etymological doublet rooted in the original polysemy of its etymon **pano*, of which *vēn* [βen] is the regular reflex. Proto Oceanic **pano* can be reconstructed as a directional verb, whose meanings included 'go away; move in a transverse direction' (Ross 2007:279); it was used on the navigational scale (Figure 5 p.155) as well as the local scale, to encode the undifferentiated traverse (§5.1). The ancestor of Hiw used **pano* to lexify both sides of the traverse axis (#10, #11), just as it still does in Mota (*vano*) or Nume (*van*). Later on, Hiw went through the same innovation as Vanua Lava languages, namely the extension of the *down* (NW) directional to all distances on land,

²⁵ Cognates with **volo* include Hiw *wōywōy* 'crosswise' in ex.(49), as well as Mota *wolowolo* '[ADV] crosswise; [N] a cross' and Vurēs *wōlōwōl* '[N] a cross; a crossbeam' (François 2013:195).

²⁶ In addition, it appears that Vera'a may have replaced *down* on the local scale with an innovative directional *mul*, from *mul(ō)* 'go back': see the discussion in §4.4.2.2.

resulting in the lexical differentiation of the traverse axis. The use of *vën* for #10 is thus merely conservative of **pano*, the original directional for the former traverse axis.²⁷

The second part of the scenario is the observation that while POc **pano* evidently had the meaning ‘move in a transverse direction’, it can also be reconstructed with a sense ‘leave, go away (from speaker)’ (Ross 2007:279). The deictic component of this meaning (‘away from speaker’) explains why the six northernmost languages of the Torres-Banks area have grammaticalised **pano* into a participant-oriented directional ‘towards non-speaker’ – as shown in Table 3 p.145. This is the source of the allotropic directional in Mwotlap (*van*), Lo-Toga (*vën*) as well as Hiw (*vën*).²⁸

In sum, the two modern senses of Hiw *vën* originate in the polysemy of its etymon **pano*. This situation is summarised in Table 8. Glosses for POc reconstructions come from Ross (2007). I compare Hiw with two other languages, Mota and Mwotlap.

Table 8 — Explaining the homophony of ‘thither’ and ‘southeast along the coast’ in Hiw

POc etymon	Mota	Hiw	Mwotlap	DIRECTIONAL GLOSS
<i>*pano</i> ‘move in transverse direction’	→ vano	↓ vën	(CARDINAL)	‘across, along the coast’ ‘along the coast, SE side’
<i>*pano</i> ‘go away (from speaker)’	→ at	→ vën	van	‘thither, to non-speaker’
<i>*watu</i> ‘go to addressee’	→ at			

Hiw is the only language that has kept reflexes of **pano* both for the coastal axis (like Mota) and for the allotropic directional (like Mwotlap). Hiw is partly conservative like Mota regarding #10 ‘along the coast, SE side’, and partly innovative like Mwotlap regarding #2 ‘thither’: this explains the presence of this etymological doublet in the system of Hiw.

5.3 Innovations affecting the *land-sea* axis

5.3.1 The relexification of the *land-sea* axis

In sum, all the changes affecting the coastal axis revolve around one major innovation: the extension (complete in five languages, partial in five others) of the cardinal *up-down* axis from the navigational scale to the local scale, presumably as a functional reaction to the ambiguity of the original undifferentiated traverse.

²⁷ An extra twist in Hiw was the expansion of *vën* to all southeast vectors on land, including on the “intermediate scale” of long distances on a single island. As a result, Hiw is the only northern Vanuatu language that encodes southeast for long distances on land (*vën* < **pano*) differently from southeast across islands (*ag* < **sake* ‘up, upwind’): compare the rows #8 and 9 in Table 2 p.22.

²⁸ For the same meaning, the nine southernmost languages of the Banks from Vurës down to Mwerlap (Table 3) reflect another deictic directional verb of POc, namely **watu* ‘go towards addressee’ (Ross 2007:275) – e.g. Lakon *at*, Vurës *net*, etc.; in doing so, they broadened its semantic scope not just to the addressee (**watu* ‘towards you’) but to any participant outside the speaker’s sphere (‘towards you/him/her/them...’).

This extension had an important impact on the whole system. As the cardinal *up-down* axis (originally *upwind-downwind*) came to be used onto the local scale, it started a competition with a different *up-down* axis, this time coding ‘inland’ vs. ‘seawards’ (i.e. *uphill-downhill*). As long as the two homophonous pairs of directionals were being used on different scales, as they still do on Gaua, the homophony was not a major problem (§4.1.1); but the overlap of two separate *up-down* axes within the same local scale was likely to create a functional conflict, with a high risk for misunderstanding.²⁹ This conflict was solved by a second innovation: the creation of a new pair of topological directionals *in-out*.³⁰

In all Torres-Banks languages outside Gaua, this new contrast *in-out* was harnessed in the lexification of the land-sea axis, and competed with the inherited pair *up-down*. In Mwotlap and Vanua Lava, this resulted in the wholesale redesign of the system, and the complete replacement of *up-down* by *in-out* along the entire axis. In other languages, the replacement was only partial: several languages preserved the *up-down* contrast in those parts of the island where verticality was cognitively salient (typically, in the higher slopes of volcanic islands) while they relexified the axis to *in-out* in the flatter parts of the island, or the land/sea interface. What resulted were hybrid systems, in which the land-sea axis is sometimes lexified *in-out*, and sometimes *up-down* (Mota, Mwerlap, the languages of Ureparapara and the Torres Is).

5.3.2 The lexical split of up, and resulting asymmetries

The system of Hiw presented two main puzzles. One was the colexification of #2 ‘thither’ and #10 ‘southeast (close)’ with the same form *vën*: I showed this constitutes an etymological doublet, ultimately due to the polysemy of its etymon **pano*. I now turn to the second puzzle of Hiw, namely the colexification of #8 ‘southeast (across islands)’ with #4-5 ‘landwards (at sea) ~ inland (on flat terrain)’. As we saw in §4.7.3, these two vectors are both encoded with a form *ag*, which in modern Hiw only has these two geocentric meanings. I propose that this unexpected colexification is, again, a case of etymological doublet.

The configuration of Hiw is partly reminiscent of the case of Lehali (*ha*) and Lo-Toga (*iag*), presented in §4.6. In all three languages, the modern form is a regular reflex of POc **sake*, originally ‘(go) up’ (POc **sake* > **saχ* > **haχ* > LHI [ha], LTG/Hiw [au]). The semantic link between vertical *up* and the vectors mentioned (*uphill*, *upwind*) dates back to POc, and is unproblematic. The only difference with other Oceanic languages is that Lehali, Lo-Toga and Hiw have lost **sake* for the vertical direction, and replaced it with a local verb **vene* ‘climb > go up > upwards, up’ (**vene* > LHI/Hiw [βim], LTG [βin]).³¹ This lexical replacement in the topological domain resulted in a lexical split in the geocentric domain. The form taken by this split is highly instructive, because it reflects a cognitive contrast, I believe, between a geocentric subdomain in which verticality is still salient, and another one where it has lost any relevance for modern speakers. On the one hand, the vector #6 ‘uphill (in the island’s heights)’,

²⁹ See François (2004:22-26) for a similar reasoning regarding other Oceanic languages.

³⁰ Remember that Proto Oceanic (like the conservative languages of Gaua) did not seem to have any separate directional for ‘in’ and ‘out’, which were originally colexified with ‘up’ and ‘down’ (§2.4.2).

³¹ The verbal use of **vene* ‘climb, ascend’ was illustrated in (47) for Hiw.

formerly associated with **sake*, underwent replacement to **vene*,³² because this is the vector most obviously associated with verticality. On the other hand, reflexes of **sake*, while losing any synchronic connection with ‘up’, remained attached to two vectors which are less obviously tied to verticality: (1) the cardinal axis, and (2) the *inland* vector on flat terrain.

Lehali and Lo-Toga only preserved reflexes of **sake* for the cardinal axis, with the meaning ‘southeast’ (Figure 16 p.175). By contrast, the originality of Hiw is that it has preserved its directional **ag** (<**sake*) in two separate corners of its geocentric system. The navigational **ag**₁ originates in the cardinal sense of **sake* ‘up > upwind > southeast’. As for **ag**₂, its origin lies in the ancient connection of ‘inland’ with **sake* ‘up’, which is still preserved in Gaua. While such a connection ‘up’/‘inland’ is to be expected in the general context of Oceanic languages, it is nevertheless surprising in the local Torres–Banks context. Indeed, we saw that the ten northernmost languages of Vanuatu have consistently lost their directional ‘up’ when referring to ‘inland’ in a village context, and instead they have all shifted to a contrast ‘in’-‘out’.³³ The fact that Hiw uses **rōw** ‘out’ for the ‘seawards’ direction – as in (53) above – reinforces the expectation that the ‘inland’ vector should have been encoded as ***iy** ‘in’ – just like in Hiw’s neighbour, Lo-Toga. Instead, what we observe is the unexpected retention of **sake* at a point in the system where – judging by what happened for all of Hiw’s neighbours – it should have long disappeared.

What results is another etymological doublet – on top of the one exposed in §5.2.2 – involving two vestigial directionals **ag**. The situation is summarised in Table 9, which displays modern reflexes of POC **sake* in a selection of five languages: Mota, Mwotlap, Löyöp, Lo-Toga and Hiw. Forms not cognate with **sake* are given in brackets. The two traces left by **sake* in Hiw are semantically discontinuous, and constitute a doublet.

Table 9 — Reflexes of POC **sake* ‘go up’ in a subset of northern Vanuatu languages

POC etymon	DIRECTIONAL GLOSS	MTA	MTP	LYP	LTG	Hiw
<i>*sake</i> ‘go up’ → ‘upwind’	#8 ‘upwind = SE (inter-island)’	sage	hag	sa	ag	ag ₁
	#9 ‘upwind = SE (on land)’	sage	hag	sa	ag	(vēn)
<i>*sake</i> ‘go up’ (vertical)	#7 ‘up (vertical)’	sage	hag	sa	(vin)	(vēn)
<i>*sake</i> ‘go up’ → ‘uphill’	#6 ‘uphill = inland (mountain)’	sage	(hay)	sa	(vin)	(vēn)
	#4-5 ‘uphill = inland (sea, village)’	sage	(hay)	(hay)	(il)	ag ₂

Considered for itself, the system of geocentric directionals in Hiw (Figure 17 p.177) seems idiosyncratic, with asymmetries and cases of homophony which a language-internal analysis might have found difficult to explain. However, its quirkiness can be unravelled by comparing Hiw to its neighbours, and by reconstructing the various innovations that transformed the original POC system of space reference into the modern systems attested today.

³² See ex. (42)–(43) for Lo-Toga, and (54) for Hiw.

³³ This was visible in Table 2 (p.22), which shows that all languages that have a specific directional for ‘in’ (row #3) also use it for ‘inland’, at least in the lower areas of their island (row #5).

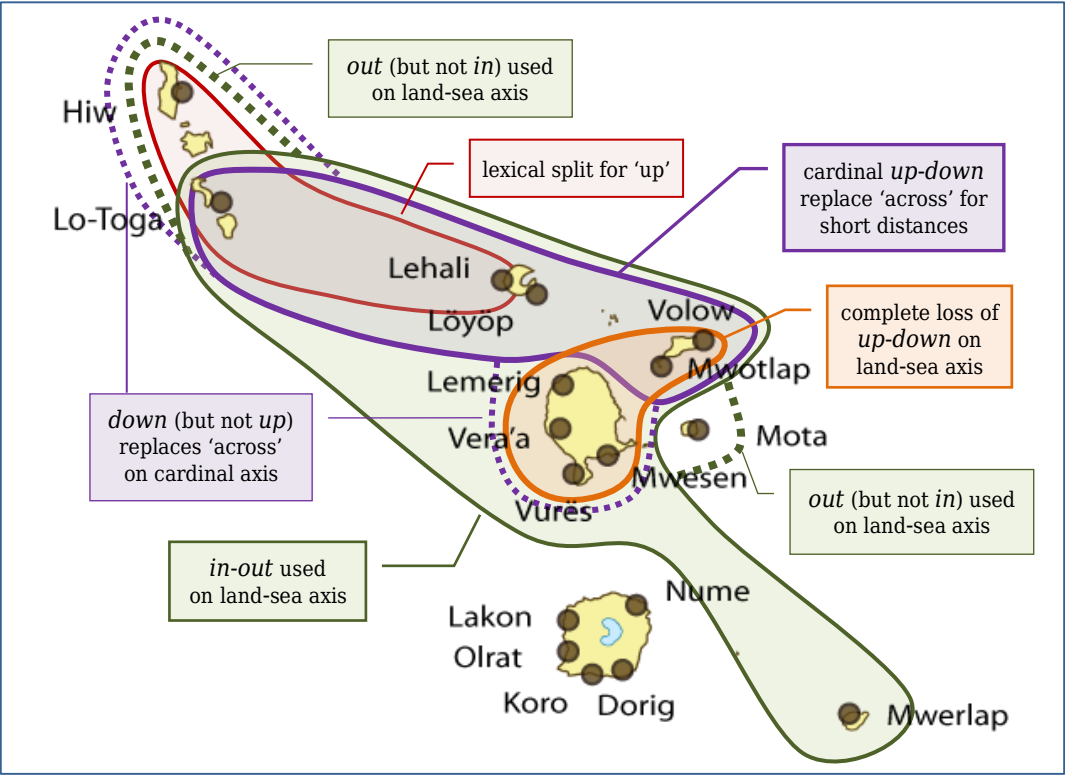
5.4 The dialectological perspective: Entangled isoglosses

While Table 6 p.167 had adopted a synchronic approach, Table 10 organises the north Vanuatu data following a historical perspective: it lists the six principal innovations involved in the make-up of modern systems, from the very conservative languages of Gaua (zero structural innovation from Proto Oceanic) to the more innovative languages in the north.

Table 10 — Main historical innovations involved in the development of modern geocentric systems in Torres-Banks languages.

	COASTAL AXIS		LAND-SEA AXIS			
	DOWN replaces across (NW)	UP replaces across (SE)	IN used for 'inland'	OUT used for 'seawards'	total loss of UP-/DOWN-hill	lexical split of UP
5 Gaua lgs	—	—	—	—	—	—
Mota	—	—	—	+	—	—
Mwerlap	—	—	+	+	—	—
4 Vanua Lava lgs	+	—	+	+	+	—
Mwotlap	+	+	+	+	+	—
Volow	+	+	+	+	+	—
Löyöp	+	+	+	+	—	—
Lehali, Lo-Toga	+	+	+	+	—	+
Hiw	+	—	—	+	—	+

Map 10 - The modern diversity of Torres-Banks geocentric systems results from the accumulation of post-POc innovations that diffused across neighbouring languages



Evidently, innovations were shared across neighbouring languages. The resulting isoglosses are represented in Map 10. Dotted lines reflect those cases when a new structure was adopted only partially, resulting in asymmetry. For example, while the solid purple line refers to the adoption of both cardinal *up* and *down* on the local scale, the dotted purple lines set apart those languages (Vanua Lava, Hiw) which generalised *down* but not *up*.

The isoglosses intersect – a common situation in the northern Vanuatu linkage (François 2011, 2014; Kalyan & François f/c). This can only be explained by processes of diffusion, whereby speech patterns – in this case, the internal structure of paradigms of space directionals – spread from community to community, via social and linguistic contact. Sometimes, neighbouring languages aligned their systems perfectly, whether they were spoken on the same island (Vanua Lava) or on different islands (Lehali and Lo-Toga). In other cases, the alignment was partial, as only some aspects of one system ended up leaking from one language to the other.

In sum, the history of space systems in the archipelago follows a pattern similar to what can be observed in the historical dialectology of these languages (François 2011:201). The modern linguistic fragmentation, which today takes the form of *divergence*, ultimately reflects the layering of multiple innovations, each of which diffused – via a process of *convergence* – to a certain portion of the social network. Each community shared its innovations sometimes with one neighbour, sometimes with the other, ultimately resulting in the language mosaic that prevails today.

6 Conclusion

Considered in each modern language separately, the mechanism of geocentric space reference is stable: speakers agree on a set of forms, which they use consistently within their community, with relatively little variation. However, systematic cross-linguistic comparison changes radically the perspective, as it casts light on the fluidity and internal dynamics, on the long term, of these spatial systems.

The comparative approach proves particularly helpful when attempting to interpret languages whose synchronic description unveils asymmetries and paradoxes. They ultimately appear for what they are: mere moments in a history of constantly evolving configurations, as though each language community kept searching for the right compromise between two contradictory canons. These adjustments all constitute possible answers to the various pressures that weigh upon the success of communication when referring to space: the avoidance of confusion, the need to adapt to new landscapes, the tendency for analogical levelling, or the entrenched cross-linguistic diffusion of innovations. Sometimes, along with their innovative trends, modern languages also exhibit vestigial memories of earlier systems, which have been preserved against the odds of history.

Besides their intrinsic interest for a typology of space strategies, the geocentric systems of northern Vanuatu also provide an excellent vantage point for observing how languages are constantly reshaped by the populations who use them.

7 APPENDICES

7.1 Abbreviations

7.1.1 Languages

The abbreviations for language names appear on *Map 1*, and are repeated below.

DRG	Dorig	LMG	Lemerig	MTP	Mwotlap	VRA	Vera'a
HIW	Hiw	LTG	Lo-Toga	MSN	Mwesen	VRS	Vurës
KRO	Koro	LYP	Löyöp	NUM	Nume	POC	Proto Oceanic
LHI	Lehali	MRL	Mwerlap	OLR	Olrat	PTB	Proto
LKN	Lakon	MTA	Mota	VLW	Volow		Torres-Banks

7.1.2 Interlinear glosses

Example sentences are glossed according to the Leipzig rules. More specific abbreviations are listed below.

ALL	allative case	NEG	negation
AO	Aorist (≈narrative) aspect	NPL	non-plural
ART	article	NSG	non-singular
DEF	definite	PERS	personal article
DIMIN	diminutive	PFT	perfect
DIST	distal demonstrative	POSS	possessive classifier or linker
DOM	differential object marker (human object)	POT	potential
DX	deictic	PROH	prohibitive
EXIST	existential predicate	PROX	proximal demonstrative
FOC	focus marker	PRSTV	Presentative aspect
HAB	habitual aspect	RED	reduplication
HUM	human article	REL	relativiser
INDF	indefinite	SBJN	Subjunctive mood
INSTR	instrumental	SEQ	Sequential aspect
IPFV	imperfective	STAT	Stative aspect
IRR	irrealis	SUGG	suggestive (polite)
LOC	locative case		imperative
MED	medial demonstrative	TOP	topicaliser

7.2 Orthography and pronunciation

Forms in this study are given using the practical orthographies adopted for northern Vanuatu languages. Many conventions are unproblematic, and reflect their expected phonetic value: this is the case of *p, t, k, l, r, m, n, s, h, w*, as well as *a, i, u*, etc.

Several conventions are shared throughout the region:

- *g* is a voiced velar fricative [ɣ], realised as approximant [w] syllable-finally
- *n̄* is [ŋ]; *m̄* is [ŋm^w]; *j* is [tʃ]; *y* is [j]

Some conventions are specific to some languages:

- *b, d, ġ* represent prenasalised stops [ᵐb], [ᵐd], [ᵐg]; but *d* is a voiceless laminal stop [t̪] in Lo-Toga

- *q* is [k^w] in Hiw, Lo-Toga, Lehali and Mwerlap; [k^hp^w] elsewhere
- *q̄* in Volow is [ᵑḡb^w]; *r̄* in Hiw is [ḡɫ]
- *v* is [v]~[f] in Vera'a, Mota, Mwerlap; [β]~[v] elsewhere
- in the Banks, *e* is [ɛ]; *ē* is [œ]
- in the Torres, *e* is [ə]; *ē* is [ɛ] in Lo-Toga, [e] in Hiw
- *ē* is [e] in Lo-Toga, [ɪ] everywhere else
- *ō* [ʊ] contrasts everywhere with *o* [ɔ]
- *ō* is [ɒ] in Lehali, [ø] elsewhere
- *ā* is [ɒ] in Lemerig, [a:] in Dorig
- *ä* is [ɛ̃a] in Koro, [æ] elsewhere

These rules can be illustrated with some of the directionals given in Table 2 p.18. Thus *ma* is [ma]; *me* is [mə] in Hiw and Lo-Toga, but [mɛ] elsewhere; *mē* is [mɪ]. Lo-Toga *vēn* is [βen]; in Hiw, *vēn* is [βɪn] ‘up’ and contrasts with *vēn* [βen] ‘thither’. Likewise, *how* is [hɔw], *hōw* [hɔw], *sōw* [sɔw], *suwō* [suwɔ]; *sag* [sau], *seag* [sɛau], *hag* [hau], *ag* [au]; *vēn* [βɪn]; *wēl* [wœl], *wōl* [wɔl]; *row* [rɔw], *rōw* [ḡɫɔw]; *pāh* [pæh].

7.3 Etymological notes

Even though this study intends to describe the paradigms of space directionals following a synchronic approach, reference is occasionally made to etymologies. This appendix recapitulates what is known of the origin of modern directionals, based on the knowledge of regular correspondences in the area (François 2005, 2013). All the forms mentioned here were presented in Table 2 p.18; their phonetic transcription was given in §7.2.

7.3.1 Hither

All northern Vanuatu languages encode ‘hither’ using a regular reflex of POc **mai*:

- (I) POc **mai* ‘come; hither’: HIW *me*; LTG *me*; LHI *ma*; LYP *me*; VLW *me*; MTP *me*; LMG *me*; VRA *ma*; VRS *me*; MSN *me*; MTA *ma*; NUM *ma*; DRG *ma*; KRO *ma*; OLR *ma*; LKN *ma*; MRL *mē*.

7.3.2 Thither

What I gloss ‘thither’ for a shortcut is the allotropic participant-oriented directional (§2.4.1); a longer gloss would be ‘towards non-speaker’, i.e. ‘towards you ~ him ~ her ~ it ~ them’.

Several modern forms reflect POc **watu* ‘(go) towards addressee’ (Ross 2003:279):

- (II) POc **watu* ‘go towards addressee’ → PTB **atu* ‘towards non-speaker, thither’: VRS *n|et*; MSN *n|at*; MTA *at*; NUM *at*; DRG *āt*; KRO *āt*; OLR *at*; LKN *at*; MRL *ot*.

Other northern languages reflect POc **pano* ‘go away (from speaker)’ (Ross 2007:279):

- (III) POc **pano* ‘go away (from speaker)’ → PTB **vano* ‘towards non-speaker, thither’: HIW *vēn*; LTG *vēn*; LHI *van*; LYP *van*; VLW *va*; MTP *van*.

See the discussion in §5.2.2.

For the same meaning ‘thither, towards non-speaker’, Lemerig uses its directional *wēl* (also ‘across’), and Vera'a its directional *suwō* (also ‘down’).

7.3.3 Across

As discussed in §4.1.2 and §4.7.2, the same POC verb **pano* is not only the source of the allotropic participant-oriented directional ('thither') in some languages, but also of the directional 'across' used on the transverse axis in the local scale (§4.1.2). While this meaning can be reconstructed as far back as Proto Oceanic (§5.1), it is only reflected in four languages of the Torres-Banks area:

- (IV) POC **pano* 'move in transverse direction'
 → 'following a direction parallel to the shoreline':
 HIW *vēn*; MTA *vano*; NUM *van*; MRL *van*.

The languages of Gaua have non-cognate directionals *vak* and *pāh*, of unknown origin.

Finally, the languages of Vanua Lava show evidence of a lexical replacement of **pano* with a local etymon **volo* 'crosswise, across' (François 2013:195):

- (V) **volo* 'crosswise, across' → 'following a direction parallel to the shoreline':
 LMG *wēl*; VRA *wōl*; VRS *wōl*; MSN *wol*.

The latter etymon later underwent semantic narrowing to 'parallel to shoreline towards southeast (for short distances on land)' – see the discussion in §5.2.1.

7.3.4 Up

The following forms reflect Proto Oceanic **sake* 'go up; up' (and related meanings):

- (VI) POC **sake* 'go up; up': HIW *ag*; LTG *ag* ~ *iag*; LHI *ha*; LYP *sa*; VLW *ha*; MTP *hag*;
 LMG *sag*; VRA *sag*; VRS *siag*; MSN *sag*; MTA *sage*; NUM *sa*; DRG *sag*;
 KRO *sa* ~ *sag*; OLR *saa*; LKN *hag*, *rok|a*; MRL *seag*.

Three languages have created a new directional for 'up', from a verb 'climb' which can be reconstructed as **vene*:

- (VII) **vene* 'climb' → 'up': HIW *vēn*; LTG *vin*; LHI *vēn*.

This process of lexical replacement, and its impact, are explained in §4.6 and 4.7.3.

7.3.5 Down

The counterpart of **sake* in POC was **sipo*. However, only two north Vanuatu languages show unproblematic reflexes of **sipo* in their form for 'down', namely Lo-Toga and Mota:

- (VIII) POC **sipo* 'go down; down': LTG *iw*; MTA *swō* ~ *siwo*.

Other Torres-Banks languages reflect **sipo* as a verb, but not as a directional. Their directionals for 'down' point to a protoform that would can be reconstructed as **suwo* at the level of Proto Torres-Banks (PTB). This form is of unclear origin: it might be an irregular reflex of POC **sipo* (> **siwo* > **suwo*, showing rounding of /i/ before /w/), unless it reflects another lexeme.

- (IX) PTB **suwo* 'down': HIW *uw*; LHI *how*; LYP *sōw*; VLW *hō*; MTP *hōw*; LMG *sōw*; VRA *suwō*;
 VRS *sōw*; MSN *sōw*; LKN *hōw*, (*rōk*)*ōw*; MRL *sōw*.

Four Gaua languages have innovated a new directional 'down' from an etymon **roro*, demonstrably a stative verb meaning originally 'go deep, sink; be deep, be low' (François 2010:139):

- (x) PTB ***roro** ‘sink, be deep, be low’ → ‘down’: NUM *ror*; DRG *ror*; KRO *ror*; OLR *roy*.

This case of total relexification is mentioned in fn.23 p.181.

7.3.6 In

Following the discussion in §2.4.2, it seems that Proto Oceanic did not have any lexemes for ‘in’ and ‘out’. These two directionals are thus local innovations only found in northern Vanuatu; they are absent from the conservative languages of Gaua.

Most Torres-Banks languages with a directional for ‘in’ reflect a local protoform ***saro**:¹

- (XI) PTB ***saro** ‘enter, go in’ → ‘in’: LYP *say*; VLW *ha*; MTP *hay*; LMG *sar*; VRA *sar*; VRS *sar*; MSN *sar*; NUM *sar*; MRL *sar*.

This form ***saro** must have been originally a verb meaning ‘enter, go in’. Its suffixed form ***sarovaxi** (reflecting the POC applicative ***-akin**) is reflected in Mota and Mwotlap as a verb with the same meaning [cf. examples (MTP.7), (MTA.16)]:

- (XI') PTB ***sarovaxi** ‘enter, go in’: MTP *hayveg*; MTA *sarovag*.

Three northern languages have innovated a different directional for ‘in’; these reflect an etymon ***ila**, of unknown origin:

- (XII) PTB ****ila** ‘??’ → ‘in’: HIW *iy*; LTG *il*; LHI *ila* ~ *la*.

7.3.7 Out

All northern Vanuatu languages unanimously reflect a protoform ***rowo** for ‘out’. This directional is most probably cognate with the verb ***rowo** in the same languages, meaning ‘dash, move swiftly, escape’, itself a regular reflex of POC ***Ropok** ‘dash, fly’.

- (XIII) POC ***Ropok** ‘dash, fly’ → PTB ***rowo** ‘dash, move swiftly, escape’ → ‘out’:

HIW *rōw*; LTG *rōw*; LHI *yow*; LYP *yow*; VLW *yō*; MTP *yow*; LMG *row*; VRA *rōw*; VRS *rōw*; MSN *row*; MTA *rowo*; MRL *row*.

This lexical innovation is not reflected in Gaua languages, which preserve the colexification of ‘out’ with ‘down’ inherited from Proto Oceanic (§2.4.2).

7.4 Morphology of directionals in Mwerlap

Section §4.5.3 presented how the geocentric system of Mwerlap is organised. Another intricacy of Mwerlap is the actual form taken by the directionals themselves; due to its complexity, this morphological excursus was better placed in an Appendix.

Most languages of northern Vanuatu have a single set of directionals, usually monosyllables, which are all formally invariant; these are the forms given in Table 2 p.18. By contrast, Mwerlap directionals vary morphologically depending on whether they define a

¹ In several languages (Löyöp, Vurës, Mwesen, Mwerlap), this directional ‘in’ is homophonous with the noun meaning ‘village clearing, dancing area in the centre of the village’. This similarity is purely accidental: the directional reflects ***saro**, whereas the noun reflects an etymon ***zara** ‘sweep, broom’ (Clark 2009:238).

static location or a motion path (cf. §2.3), and also on their combination with deictics (Table 11).

Table 11 — Morphology of directionals in Mwerlap

	topological meaning	directional + deictic	Kinetic use		Static use	
			EGOTROPIC	ALLOTROPIC	EGOTROPIC	ALLOTROPIC
'inland' (<20 m)	'in'	ki ser (<i>kē</i>)	ser = <i>mē</i>	ser = <i>lēg</i>	kere= ser = <i>mē</i>	ka(ra)= sar
'seawards' (<20 m)	'out'	kor (<i>kē</i>)	ru = <i>mē</i>	ru = <i>lēg</i>	kere= ru = <i>mē</i>	ka(ra)= row
'// shore' (<200 m)	'across'	ki vel (<i>kē</i>)	<i>mē</i>	vel = <i>lēg</i>	kere= <i>mē</i>	ka(ra)= van
'inland' (>20 m)	'up'	ki sea (g) (<i>ñē</i>)	sea (g)= <i>mē</i>	sege = <i>lēg</i>	kere= sea (g)= <i>mē</i>	ka(ra)= seag
'seawards' (>20 m)	'down'	kos (<i>ñē</i>)	su = <i>mē</i>	su = <i>lēg</i>	kere= su = <i>mē</i>	ka(ra)= sōw
'to SE' (>200 m)	'up'	—	sea (g)= <i>mē</i>	sege = <i>lēg</i>	sea (g)= <i>mē</i>	seag
'to NW' (>200 m)	'down'	—	su = <i>mē</i>	su = <i>lēg</i>	su = <i>mē</i>	sōw

7.4.1 Static locations

The forms given in Table 2 for Mwerlap (namely **sar** 'in', **row** 'out', **seag** 'up', **sōw** 'down', **van** 'across') are the same as the rightmost column of Table 11; however, the basic forms are seldom used alone, and normally combine with other particles.

When preceded by the particle *ka* or *kara*, the directional defines a vector pointing to a static location, and deictically oriented away from the speaker ("allotropic") — e.g. *ka(ra) seag* 'up there', *ka(ra) van* 'over there [parallel to shore]', etc.

(MRL.76) Gil *kara* **row**!
 dig STATIC out
 ('digging a hole') 'Dig further away [from me], towards the sea.' [BP3-20b]

When the vector defined by the static location is deictically oriented towards the speaker (Eng. 'up here, up this way'), the phrase is followed by the enclitic **=mē** 'hither'. This use is not problematic *per se*, and simply corresponds to the "egotropic" use of the deictic directional 'hither' that was presented in §2.4.1 above. But the peculiarity of Mwerlap is that this clitic **=mē** triggers leftward *vowel harmony* upon its host phrase, resulting in allomorphic forms of the directionals with raised vowels. Thus *kara sar* [kara'sar] 'over there inland' becomes *kere ser=mē* [kɛɾɛsɛr'mɪ] 'over here inland'; *kara row* [kara'rɔw] 'over there seawards' becomes *kere ru=mē* [kɛɾɛɾu'mɪ], etc.

(MRL.76') Gil *kere* **ru** **=mē**!
 dig STATIC out =hither
 'Dig a bit more this way, towards the sea.' [BP3-20b]

Because the directional 'across, parallel to shore' is lexified with **van** 'thither' which is originally allotropic (§2.4.1), its egotropic counterpart is not **kere ven=mē*, but simply *kere mē* 'this way'.

7.4.2 Motion paths

When the directional vector defines a motion path followed by a participant, the directionals combine with the enclitic **=mē** for egotropic orientation (*su=mē* 'down this way') and **=lēg** when allotropic (*su=lēg* 'down that way'). The forms for 'up' are unpredictable, respectively

sea=*mē* and **sege**=*lēg*. The ones for ‘across, parallel to shore’ are **vel**=*lēg* (‘thither’) if allo-tropic, and simply *mē* (‘hither’) if egotropic.

This kinetic use of directionals was illustrated in sentences (39-40) above, in which the motion path outlined by the directionals was the one followed by the ball.

7.4.3 Combination with deictics

Finally, Mwerlap directionals show special forms when combined with a demonstrative. The rich system of Mwerlap demonstratives include **kē** ‘PROXIMAL’ (with variants *kēkē*, *kēlē*...) as opposed to **ñē** ‘DISTAL’ (with variants *ñēñē*, *ñea* ...). Vowel harmony in the locative phrase sometimes triggers the raising of the directional’s vowel (e.g. *ki ser kē* ‘inland here’). As Table 11 above shows, some forms are unpredictable, such as {*ki+row*=} **kor** ‘out’ and {*ki+sōw*=} **kos** ‘down’.

The following examples illustrate the directionals when they are combined with a demonstrative.

- (MRL.77) i Edga *ki vel kēlē*.
 PERS Edgar LOC across PROX
 ‘Edgar is over there this way (parallel to shore).’ [BP3-20b]
- (MRL.78) i Edga **kor** **kē** verē.
 PERS Edgar LOC:out PROX outside
 ‘Edgar is (out) here outside.’ [BP3-20b]
- (MRL.79) Sean *mē-lē sar lē eañ kos ñē*.
 3sg PFT-take in LOC house LOC:down DIST
 ‘He took it [the knife] into that house *down* over there (seawards).’ [MRL.d05:20]
- (MRL.80) Ne-tedun *irō se-velvelēlē vel ñē lē sar*.
 ART-person two IPFV-argue across DIST LOC clearing
 ‘Two people are arguing over there in the middle of the village.’ [MRL.d08:02]

The rich system of Mwerlap would certainly deserve further investigation.

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