for *The Linguistics of Olfaction*,
vol. ed. by Łukasz Jedrzejowski & Przemysław Staniewski

Olfactory words in northern Vanuatu

Langue vs. *parole*

Alexandre FRANÇOIS
CNRS–LaTTiCe, Paris ; A.N.U., Canberra
⟨alexandre.francois@ens.fr⟩

Abstract

This corpus-based study examines the lexical domain of olfaction in the Oceanic languages of northern Vanuatu. While a tropical ecology is sometimes believed to favor elaborate encoding patterns for smells, this does not appear to be the case in Vanuatu: most languages there show a rather limited array of lexemes, whether to refer to smelling events (active, passive, experiencer-based) or to the odors themselves. That said, sources based on speakers' competence (*langue*) rather than performance (*parole*) suggest that languages may in fact possess a latent elaborate olfactory lexicon, even if it surfaces rarely in ordinary speech. The low discourse frequency of specific terms may be explained by cultural factors, as smells appear to play a reduced functional role in traditional social practices of Vanuatu. Finally, my corpus of conversation and oral literature shows that when olfaction is mentioned, it is mostly associated, first, with the islands' natural environment; and second, with the existential constrast between death and life.

1 Olfaction in northern Vanuatu

1.1 The problem

Compared to other sensory modes, the domain of olfaction often appears to involve a less refined vocabulary, with fewer semantic distinctions. At least, this seems to be the case of the major European languages: while they have many terms for colors or sounds, they lack an equally sophisticated lexicon to describe smells (Lawless & Engen 1977; Wilson & Stevenson 2006).[1]

[1] This work relates to the axis *Typology and dynamics of linguistic systems* within the broader program *"Empirical Foundations of Linguistics"* (Labex EFL, ANR-10-LABX-0083) based in Paris. I wish to thank an anonymous reviewer for their advice on an earlier version of this paper.

Recent research has however revealed several languages in the world where the olfactory domain is in fact lexically rich, involving fine-grained distinctions and a semantic system that appears to be at least as elaborate as for other senses. One such language is Jahai, an Austroasiatic language of Malaysia described by Majid & Burenhult (2014). Another case in point is Cha'palaa, a language of Ecuador which even shows the rare feature of grammatical devices involving smell (Floyd, San Roque & Majid 2018).

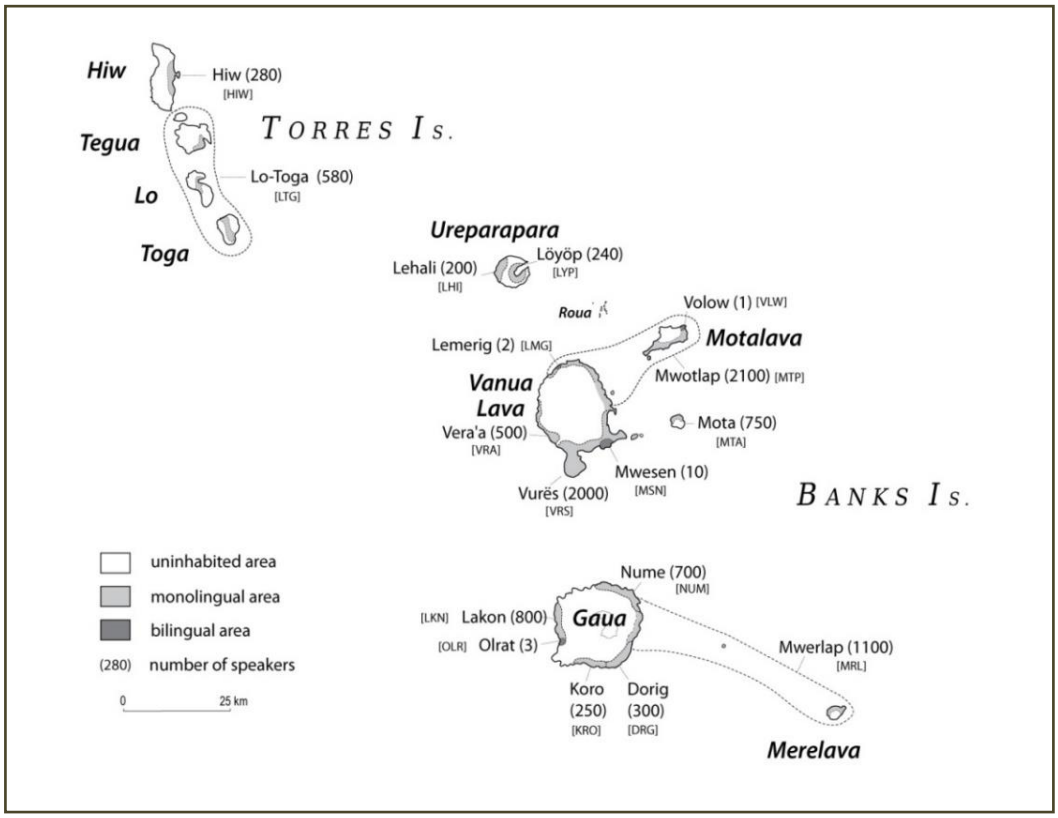
One commonality between the latter two cases is the natural environment: the Jahai of Malaysia and the Cha'palaa of Ecuador are societies of the tropical rainforest. Could this ecological factor explain why smells are culturally and linguistically prominent for human societies living there? One could perhaps hypothesize some sort of evolutionary correlation between a biodiverse environment on the one hand, and the linguistic elaboration of olfactory semantics. Also, due to their density, tropical forests tend to disfavor visual cues, and increase the importance of smells (cf. Floyd *et al.* 2018:177). One way to test that hypothesis would be to examine other languages spoken in a similar ecological context, and see if they confirm or contradict this proposal. One such tropical area is the archipelago of Vanuatu, in the South Pacific.

1.2 The languages of northern Vanuatu

Vanuatu – known as the New Hebrides until its independence in 1980 – is home to 138 indigenous languages, which makes it the country with the highest linguistic density in the world (Crowley 2000, François *et al.* 2015). Together with about 400 other languages of the Pacific, all the languages of Vanuatu are Oceanic – a branch of the Austronesian family. The name of their common ancestor is Proto Oceanic (POc), a reconstructed protolanguage spoken about 3,200 years BP (Pawley & Ross 1995).

I have mostly collected primary data on 17 languages of northern Vanuatu, in the island groups known as the Torres Islands and the Banks Islands [*Map 1*], the focus of the present study. With 17 languages for 9,300 inhabitants, the Torres–Banks area shows impressive linguistic diversification (François 2011). They do share some innovations together, which can be attributed to a local common ancestor, Proto Torres–Banks or PTB (François 2005, 2013, 2014). Several linguists have worked on the area, whether their focus was the grammar – see François (2001) for Mwotlap, Schnell (2011) for Vera'a, Malau (2016) for Vurës – or the lexicon – Codrington & Palmer (1896) for Mota; François (2016) for Mwotlap; Malau (f/c) for Vurës.

My total corpus consists of 4156 pages of handwritten notes, featuring 22 different languages. These field notes include: data elicited using a homemade conversational questionnaire (François f/c); snippets of daily conversation heard during participant-observer immersion in each community; and finally, a collection of texts (mostly narratives and sung poems) taken from my 962 audio recordings, transcribed and annotated in the presence of native speakers. Among these, 168 narratives were later typed, resulting in an electronic text corpus of 250,000 words, with the largest corpora being in Mwotlap, Lo-Toga, Hiw and Dorig.



Map 1 – The 17 languages of northern Vanuatu (Torres and Banks Islands)

Throughout this study, I will indicate the source of my examples using simple conventions.[1] Each language is represented by a three-letter abbreviation, shown in *Map 1*. Sentences taken from my 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].

1.3 The environment in Vanuatu

Vanuatu's human habitat takes the form sometimes of villages on the coast, and sometimes of smaller hamlets in mountainous areas. Houses in northern Vanuatu are generally made of plant material – wooden timber, bamboo walls and sago leaves – and villages are surrounded with a vegetal landscape, whether crop gardens, secondary forests or primary rainforest. The traditional economy combines the exploitation of land resources with practices of fishing and gathering in coastal areas.

Vanuatu people are exposed to a variety of smells in their natural environment – with a more prominent presence of scents from the forest (coconuts, rotting wood, some particular flowers…) on the one hand, and smells from the sea (fish, seashells, surf…) on the other.

[1] My audio recordings are freely accessible at *http://tiny.cc/Francois-archives*. My field notes are also archived online, at *http://www.odsas.net*.

Farming areas are home to pigs and poultry – and more recently, cattle. The wild fauna mainly consists of fish or other sea creatures, and birds. The flora is richer, with vines, palmtrees and coconut trees, trees with flowers and fruit. Cultivated crops consist mainly of tubers and roots of various sorts – including yam, wild yam, cassava, taro. These crops are sometimes grilled on the fire, but most often they are steamed in the traditional ground oven, or boiled. These vegetables are then served with grilled or cooked meat, which can be fish, octopus, turtle, crab, poultry, pork, more rarely beef. Cooking is often done using salt water from the lagoon, but involves neither grease or oil, nor spices in any form. Culinary practices seldom entail the mention of specific scents, other than simple phrases like 'good smell' or 'bad smell'.

Body hygiene is emphasized upon, and people bathe or wash in fresh water once or twice per day, resulting in a clean, odorless skin. Long hair is sometimes ointed with coconut oil; although this is scented, the primary function of that oil is not as a perfume, but as a hair conditioner. The only regular cultural occasion involving fragrance for its own sake, is arguably a modern habit: at the end of a celebratory day, typically a wedding, younger people dance energetically around the village area at the sound of "string band" feisty songs, while elderly villagers stand by and sprinkle perfumed talc powder over the dancers' hair, resulting in a white cloud of scents blending away with joyful voices. Other than this rare occasion, neither men nor women traditionally use perfume.

1.4 Two different approaches

All in all, daily life in Vanuatu brings forth few noteworthy odors or scents – at least, very few that are endowed with a prominent function in local cultures and discourse.[1] This may explain why the olfactory domain – as we shall see – shows rather limited elaboration in the lexicon of Vanuatu languages.

One should note an important methodological difference, though, between the present study and the ones mentioned earlier. Majid & Burenhult (2014), for example, was a systematic investigation centred on olfaction: using a kit of different substances and smells, they conducted specific sessions where they elicited lexical items describing particular smells – including terms that would show up rarely in discourse. The present paper is not based on such an investigation, but rather on participant-observer immersion in speaker communities. Rather than focusing on a particular semantic field, I carried out generic documentation of a broad array of domains – from grammar to pragmatics, from kinship to seafaring technology, from botanics to poetry and music. My corpus [§1.2] combined the recording of oral literature and narratives with random conversations in the village, documenting daily discourse.

Under these circumstances, it is only expected that highly specific vocabulary related to olfaction would slip under the observer's radar. Just like it would take a very large corpus of English for olfactory terms such as *acrid* or *floral* to show up, likewise, in order to identify

[1] This comes in contrast with Cha'palaa culture, in which smell plays a culturally significant role in a number of different contexts (Floyd *et al.* 2018).

specific smell-related lexemes in Vanuatu languages, it would be necessary either to collect many more texts, or to carry out systematic elicitation from this domain. This caveat should be borne in mind when comparing the present Vanuatu data with the Jahai of Malaysia, due to the difference in methodology and goal between the two approaches.

Rather than collecting as many lexemes as possible on smells, the point of the present study is thus to observe how much the olfactory domain is represented in daily speech and literary texts, compared with the lexical domains of other senses. Using this corpus-based approach, I will examine which semantic contrasts show up most frequently within the olfactory domain.

In sum, while specific studies centred on olfaction, such as Majid & Burenhult (2014), investigated the latent properties of a linguistic system – what Saussure (1916) called *la langue* – the present study will examine the manifestation of olfactory expressions in a corpus of spontaneous speech – i.e. *la parole*. As we shall see, the two approaches yield quite different results.

1.5 The present study

Section 2 will show that the number of roots relating to smell is limited in the northern Vanuatu area – or at least, those that show up in my corpus. A single etymon (a protoform **ᵐbuna*) takes the lion's share in the domain, whether for verbal or nominal uses [§2.1]; it is completed by a handful of other lexemes, nouns or verbs, for basic meanings [§2.2].

Section 3 will then discuss the apparent exception of Mota, as described in a detailed 1896 dictionary: the olfactory lexicon in that language seems much richer than in the rest of the area. I will propose that the contrast is not so much due to a difference between languages, but rather in the difference between data collection approaches: Mota's dictionary focused on native speakers' competence, while my corpora reflect their performance in particular circumstances.

Finally, Section 4 will explore some cultural connotations associated with the olfactory domain in my corpus. Smells are often mentioned in the contrast between life and death, between humans and evil spirits [§4.1]. The action of smelling or sniffing is linked – if only etymologically – to the act of kissing [§4.2]. Finally, we'll see how oral poetry can sometimes celebrate the perfumes of Nature [§4.3].

2 A corpus-based observation of olfactory words

2.1 One central root

The domain of olfaction in northern Vanuatu languages revolves mostly around a single root, which can be reconstructed as ****ᵐbuna*** at the level of Proto Torres–Banks. This root reflects – with an irregular change of vowel – the etymon **ᵐbona(s)* 'to smell, stink' that is reconstructed for Proto Oceanic (Osmond & Pawley 2016:505).

Following regular processes of sound change in the area (François 2005, 2011, 2013), the

languages of north Vanuatu reflect that etymon in various ways. In (1) below, each language name is followed by the form taken, in the Torres–Banks languages, by the verb **ᵐbúna* – first in the local orthography, then in phonetic transcription.

(1) ***ᵐbúna** 'smell':
Hiw *qune* [kʷunə]; Lo-Toga *qune* [kʷunə]; Lehali *qon* [kʷɔn]; Löyöp *qōn* [k͡pʷʊn]; Mwotlap *qōn* [k͡pʷʊn]; Lemerig *pōn* [pʊn]; Vera'a *bunō* [ᵐbunʊ]; Vurës *bōn* [ᵐbʊn]; Mwesen *pōn* [pʊn]; Mota *puna* [puna]; Nume *bun* [ᵐbun]; Dorig *bōn* [ᵐbʊn]; Olrat *pōn* [pʊn]; Lakon *pōn* [pʊn].

In spite of their different phonetic realisations, most of the properties of these related forms are so similar from language to language, that they can be described here along the same lines – as the next sections will show.

2.1.1 VERBAL USES

Throughout its different uses, the root **ᵐbuna* always refers to the domain of smell.

The form is rarely used as a transitive verb, taking the experiencer as its subject:

(I) ***ᵐbúna** [v.tr.] 'sniff, smell at (s.th.) actively'

I only have one example of such a transitive use for that root, in the language Mwotlap:[1]

(2) MTP **Qōnqōn** **egal** tog: itōk?
smell.at CONATIVE IMPER good
'Try to smell it: is it okay?' [Mtp.Iqet.Qasvay-TL.103]

As we shall see in §2.2.1, languages in north Vanuatu use other verbs to refer to the action of actively smelling something.

The most frequent use of the verb **ᵐbuna* is intransitive and stative. It takes as its subject the stimulus, i.e. the referent emitting a smell. When used without reduplication, the verb's default meaning is pejorative 'smell bad, stink':

(II) ***ᵐbúna** [v.intr.]:
1. 'stink, emit bad smell'. 2. 'rot'. 3. 'be dead, *espec*. for a long time'.

These meanings can be illustrated with examples of Lo-Toga, Vurës or Vera'a:

(3) LTG Ni *hiñevë* wë nōk, të "Mff! Ne metu ki na **qune** !"
3s:AO sniff like that QUOT EXCL ART coconut this STAT stink
'He sniffed at it like this, and said "*Yuck! This coconut really stinks!*"' [Ltg.Mrwh-canoe.045]

(4) VRS O ñe ine gō= **bōn**, gō= **bōn**.
ART Canarium DEM STAT stink STAT stink
'Those Canarium nuts smell really rotten.'
(*lit*. they smell, they smell!) [Malau, f/c]

[1] Example sentences are transcribed using each language's conventional orthography. The name of the language is indicated through a three-letter abbreviation (see *Map 1*): MTP = Mwotlap, LTG = Lo-Toga, etc.

(5) VRA Ma', m-on 'i kēnē. On on on va—van, di m-**bunō**.
die PRT_1-lie PRT_2 here lie lie lie CONTIN 3sg PRF-stink
'She died, and [her body] just lay there. It remained there for a long, long time – until it started rotting [*lit.* stinking].' [Vra.Tingtingbe.12]

Section 4.1 will discuss the links between the domain of smell and that of life and death.

The default interpretation of **ᵐbuna*, as a verb, is thus pejorative. This is consistent with observations made in other languages, that *to smell* tends to mean, by default, *to smell bad* (see Krifka 2010 for Germanic languages).

In order for this verb to take on a meliorative meaning, it needs to be qualified by a positive adverb – as in this Lakon sentence:

(6) LKN Tawäh rägä heg ga **pōn kere**, na ga marēs *pōni* avan ēhē.
flower plant this STAT smell well 1SG STAT like smell of ANAPH
'This flower *smells nice*, I really like its smell.' [LKN.q.Wud.032]

Another way to convert the negative meaning into a positive sense, at least for this root, is by use of reduplication (**ᵐbúna → *ᵐbunaᵐbúna*):

(III) ***ᵐbunaᵐbúna*** [v.intr.] 'smell nice, emit a pleasant smell'

(7) LTG Na **qunequne** gëwie.
STAT fragrant good
'It smells nice!' [Ltg.FP1-24b]

(8) MTP Na-kaskas gōh nō-**qōnqōn** lēs.
ART-flower this STAT-fragrant MELIOR
'This flower smells awesome!'

(9) MTP nē-bē **qōnqōn**
ART-water fragrant
'perfume, fragrance' (a modern item of toiletry)

In the languages of the area (e.g. François 2004, Schnell 2011:116-8, Malau 2016:172-197), reduplication is used for a variety of functions, including verbal aspect, pluractionality, detransitivisation, nominalisation, and so forth. The ability to change a pejorative meaning ('smell bad') into its opposite ('smell good') is only attested for this particular root **ᵐbuna*.

2.1.2 NOMINAL USES

The root **ᵐbúna* is also a noun, a generic word for smell:

(IV) ***ᵐbúna*** [N.] 'smell, odor'

(10) VRS Kēmi tō rōrōñ o **bōn** e, ino!
2pl PROG perceive ART odor DEF 1sg:FOC
'That odor you smelled, that was me.' [Vrs.Friends.47]

This noun can also be suffixed with a possessor.

(V) ***ᵐbuná-** [N.POSSESSED] ‘smell, odor of (s.th., s.o.)’

As far as the Proto Torres–Banks etymology is concerned, the possessed noun is nothing but the same root **ᵐbuna* followed by a possessive suffix. But due to phonological and morphological changes (François 2005:484–9), in several modern languages the possessed noun must be analysed, in synchrony, as a different lexeme from the unpossessed noun cited under (IV) above. Indeed, the presence of a suffix on the possessed form historically entailed a shift in stress (**ᵐbuná-* instead of **ᵐbúna*), which resulted in quite different vowel profiles for the nouns. Thus, the language Lemerig reflects **ᵐbúna* as an unpossessed noun ***pōn*** [pʊn] ‘odor’, but **ᵐbuná-* as an obligatorily possessed (“inalienable”) noun of the form ***pene-*** [pɛnɛ] ‘odor of’. Likewise, Hiw contrasts respectively ***qune*** [kʷunə] (<**ᵐbúna*) and ***qna-*** [kʷna-] (<**ᵐbuná-*). No morphological rule can derive one form from the other in the modern languages. These are best analysed as two separate lexemes in synchrony, forming an etymological doublet in each language: one is a monovalent, “intransitive” noun, while the other noun is bivalent or “transitive”.

A transitive noun can be suffixed directly by a pronominal suffix as in (11):

(11) HIW Noke në ñis ne **qna-ne**.
1SG STAT like ART odor.of-3sg
‘I like its smell.’ [Hiw.q.Wud.032]

It also commonly appears in a construct form,[1] followed by another noun (‘odor.of N’), as in (12):

(12) HIW ne **qnë** tayö te rē meřame
ART odor.of:CSTR person ORIG on World.of.Living
‘the odor of a human from this World’ [Hiw.Music.18]

Some languages combine the possessed and unpossessed nouns into a single phrase, literally ‘the odor of the smell’ (or with a negative meaning, ‘the odor of the stench’):

(13) LYP Yege en to ji sōw Löyöp e, Aö,
HUM:PL DEF dwell PROG down Div’s.Bay DEF Ureparapara

kyey m-yoñ n-**qēnē** **qōn** yon n-qo ene.
3pl PRF-perceive ART-odor.of:CSTR smell POSS ART-pig DEM
‘The people living down in Divers’ Bay, on Ureparapara island,
smelled the odor of the [dead] boar.’ [Lyp.Boar.106]
[*lit.* they perceived *the odor of the smell of the Boar*]

2.1.3 FORMS DERIVED FROM THE SAME ROOT

The root **ᵐbuna* is central to the olfactory domain in northern Vanuatu. In addition to the meanings we just saw, the same root is also the source of certain compounds or derived forms. Thus Hiw has a verb *qnoveñi* [kʷnɔβəŋi] [V.TR.] ‘smell s.th., actively or not’ whose root /kʷnɔ-/ goes back to **ᵐbuna*.

[1] The construct form often ends in /e/ or /ɛ/. It reflects a former suffix *-i (cf. François 2005:487): e.g. **ᵐbuná-**i** > Hiw *qnë* [kʷne], Löyöp *qēnē* [k͡pʷɪnɪ], Vurës *bune* [ᵐbynɛ]…

Vurës has a verb *rōñōbōn* [rʊŋʊᵐbʊn] ‘perceive a smell’ (Malau, f/c), which coalesces the noun *bōn* ‘smell’ with a vestigial verb **rōñ* < *roŋo ‘feel, perceive’. It also has a verb *sōbōn* [sʊᵐbʊn] ‘smell’ derived from **ᵐbuna* – see §2.2.1.

Finally, we will encounter the same root in the etymology of the word ‘kiss’ [§4.2], and in the language of poetry [§4.3].

2.2 Complementary roots

The previous section showed how central the root **ᵐbuna* is to the domain of olfaction, through its various reflexes across the whole northern Vanuatu area. That said, a number of other words are also found in some languages.

2.2.1 Active and passive smelling

In a way parallel to verbs such as ‘see’ or ‘hear’, it is common for languages to encode the act of smelling something using a transitive verb taking the experiencer as its grammatical subject. As we saw earlier, this is rarely done using the root **ᵐbuna*, which mostly encodes the properties of the stimulus (‘emit a smell’, ‘stink’, ‘be fragrant’…). Other roots are used instead, which differ across languages.

Lo-Toga has a verb *hiñevë* [hiŋəβɛ] ‘sniff, smell s.th.’, illustrated in (3) above. It is cognate with the verb *siñov* [siŋoɸ] of Mota ‘to set the snout, nose, to s.th.’.

Hiw has a verb *qnoveñi* ‘smell s.th.’, etymologically related to **ᵐbuna*:

(14) Hiw
Ne temët tō me, **qnoveñi** ne sov en rākñā-se,
ART ghost go:NPL hither smell ART smoke POSS mother-3NSG
nine ve vrēvrōv.
3SG IPFV IPFV~cook
‘Then came a ghost: he could smell the smoke of their mother who was cooking.’
[Hiw.Brothers.12]

Vurës distinguishes between active, [+control] sniffing on the one hand, and accidental, [-control] smelling on the other. The first is a verb *sōbōn*, glossed ‘smell, sniff scent, active sense of smell’ by Malau (f/c). The second word is a verb *rōñōbōn* ‘smell, passive sense of smell’ (ibid.).

Mwotlap also makes the same distinction between [+control] and [-control] smelling. The first verb is *hēmen* [hɪmɛn] ‘sniff, try to smell s.th.’:

(15) Mtp
No-tok mē-**hēmen** sas no-qo.
ART-dog PFT-sniff finding ART-pig
‘The dog found the pig by sniffing (its trace).’ [Mtp.AG4-15]

Mota has a cognate verb *soman*, glossed ‘put the nose to, smell’. Codrington & Palmer (1896: 177) explain it as a compound ‘put the nose’, from a verb *so* and the noun *manu-* ‘nose’.[1]

[1] Mota *manu-* ‘nose’ reflects Proto Torres–Banks **maⁿdu* (François 2005:496).

As for the [-control] sense of 'smell', it would be expressed using *mōkheg* [mʊkhɛɣ] 'breathe':

(16) MTP No mō-**mōkheg sas** nō-mōkhe hapqiyig vēñ.
1sg PFT-breathe finding ART-smell something burnt
'I'm smelling a burning odor.' [Mtp.AP09-23]

Both sentences (15) and (16) use the same construction <Verb + *sas*>. The postverb *sas*, glossed here 'finding', combines with various verbs in a serial-like pattern,[1] that constructs equivalents of English 'find/recognize (through a certain action)':

- *et sas* <look finding> 'find s.th. (by looking)',
- *yoñteg sas* <listen finding> 'recognize s.th. (by hearing)',
- *gen sas* <eat finding> 'recognize a taste (eating)',
- *van sas* <walk finding> 'stumble upon s.th. (while walking)'…

The difference between the two sentences above is that, in (15), *hēmen sas* refers to a dog finding an animal by actively sniffing, whereas (16) *mōkheg sas* expresses the act of recognizing a certain smell by accident, by merely breathing.

While the verbs cited above all belonged strictly to the olfactory domain, the majority of languages actually lack a dedicated transitive verb for 'smell'. Instead, they use a generic verb 'perceive, feel, hear' that is used for all non-visual senses. That verb reflects an etymon *roŋo (or its augmented form **roŋotaɣi*):[2] see its reflexes as Vurës *rōrōñ* in (10), Löyöp *yoñ* in (13), Lehali *yeñ* in (17), Mwesen *roñte* in (18):

(17) LHI Nö m-**yeñ** n-*qunu* e, ke ne *qōn* !
1sg PFT-perceive ART-odor.of fish 3sg STAT stink
'I'm smelling the odor of fish, it stinks!' [q.Fish.003]

(18) MSN Le masawre nē me pisis so no,
LOC moment 3sg PFT fart like that

nēr a **roñte** o *pene-gi*.
3pl AOR perceive ART odor.of-3sg:INAN
'As he farted like that, the others smelled the odor.' [Msn.Qet.067]

2.2.2 BREATH, SMELL

In all languages of northern Vanuatu, the generic noun for 'smell' is the root *^{m}*buna* we saw in §2.1.2. Yet one language, Mwotlap, assigns this meaning to the root *mōkhe* [mʊkhɛ].

The original meaning of *mōkhe* is 'breath', linked with the verb *mōkheg* 'breathe' we saw in (16). This word sometimes refers to the 'breath of life' (François 2008:211), as in this story of magical resurrection:

(19) MTP Kē me-wyeh kē, ma-tañ na-taybe-n, van i van e:
3sg PFT-blow 3sg PFT-touch ART-body-3sg go CONT$_1$ go CONT$_2$

[1] Similar constructions are found throughout the Torres–Banks area (François 2011:216-7).

[2] The longer form reflects an earlier applicative suffix *-*akin* (cf. François 2005:482). The radical itself is a well known Proto Oceanic etymon **roŋoR* 'perceive, feel, hear' (Osmond & Pawley 2016:516).

nō-**mōkha**-n ni-van lok me ēgēn.
ART-breath-3sg AO-go back hither now
'[The witch] blew over him, massaged his body, on and on,
until his *breath* came back to him.' [Mtp.Prince.63]

But the same transitive noun *mōkhe*, combined with an inanimate possessor, refers to the odor of something: see (16) 'a burning odor'.

In a way similar to (13) above, the two words *mōkhe* and *qōn* can combine in Mwotlap:

(20) MTP Kēy yoñteg qele kē: **nō-mōkhe** **qōn**.
3pl perceive like this ART-odor.of smell
'Suddenly they perceived a strong smell.' [Mtp.Roua.162]

2.3 Synthesis

Table 1 sums up our first observations on the basic vocabulary of olfaction – generic nouns for 'odor', generic verbs for 'smell'. The table shows a sample of three modern languages (Hiw, Mwotlap, Mota) together with their shared ancestor, Proto Torres–Banks (PTB). Grayed cells involve reflexes of the root *^{m}*buna*.

Table 1 – Generic lexical items referring to smells and smelling, in three modern Torres–Banks languages.

		PTB	Hiw	Mwotlap	Mota
a smell (espec. bad)	N.INTR	*^{m}búna	*qune*	*nō-qōn*	*puna*
the smell of X	N.TR.	*^{m}buná	*qna*	*nō-mōkhe*	*puna-*
smell bad, stink	V.INTR.	*^{m}búna	*qune*	*qōn*	*puna*
smell good, be fragrant	V.INTR.	*^{m}buna^{m}buna	*qunequne*	*qōnqōn*	*punapuna*
smell (actively)	V.TR.	*roŋo[tayi] + (other verbs)	*qnoveñi*	*hēmen*	*soman*
smell (accidentally)	V.TR.	*roŋo[tayi]	*qnoveñi, rōñ*	*mōkheg sas, yoñteg*	*roño[tag]*

The language of Mota will be further illustrated in §3.2 below.

3 Langue vs. parole: two different approaches

3.1 A reduced lexical domain?

Northern Vanuatu languages show a relatively diverse vocabulary related to the senses. As an example, the lines below list a number of meanings that are lexified in the language Mwotlap, and attested in my corpus (cf. François 2016).[1]

[1] For the sake of brevity, this section leaves out the lexical forms themselves.

Many words relate to the **visual** sense:

- verbs 'see, look', 'appear', 'disappear'
- adjectives of color: 'white', 'black', 'red', 'blue/green', 'yellow'
- other adjectives: 'shiny', 'clear', 'transparent', 'blurred', 'colorful', 'striped'

The sense of **hearing** is also well represented:

- verbs: 'shriek', 'burst', 'make rustling noise', 'thump', 'whisper'…
- adjectives: 'loud', 'deafening'
- terms related to speech, to music and singing (cf. François & Stern 2013)

The sense of **touch** is encoded by a few lexemes:

- verb 'reach out to, touch'
- adjectival pair 'hot' vs. 'cold' (cf. François 2015),
- adjectives 'smooth', 'rough', 'prickly', 'urticant', 'hard', 'soft'.

The domain of **taste** has a few words too:

- 'tasting bad, salty, bitter' vs. 'tasting good, sweet, tasty'
- 'raw', 'ripe', 'charred', 'nicely crispy', 'crunchy', 'brittle', 'too ripe'…

In comparison, the domain of olfaction is perhaps the least developed, lexically speaking. Within my 100,000-word corpus of Mwotlap narratives and conversations, the main vocabulary items that appear on a regular basis are the generic terms featured in *Table 1* above. As for items describing specific odors, my corpus includes only two:

- *nō-qōn-mañan* N. 'strong smell of fish'
- *taltalhō* ADJ. 'smelling of smoke' (cf. *hō* 'smoke')

… to which we may add a special intensifier for smells:

- *tañayñay* INTSF. intensifier for bad smells (*qōn*)

In sum, compared with the other senses, the lexicon of olfaction appears to be quite limited in everyday speech. Virtually no cultural practice involves the recognition, selection or description of smells. They are seldom commented upon even when cooking or discussing food. The reason for this, one might speculate, is that traditional cooking techniques lack any spice, and often consist in boiling meat, or steaming vegetables; the cooked food resulting from these practices often lacks much noticeable smell.

3.2 The apparent exception of Mota

In spite of the above, one language in the area has been described to have a much richer olfactory vocabulary, namely, Mota. The language of Mota was the object of a thorough dictionary by the missionary Robert Codrington and his aide John Palmer, at the end of 19th century (Codrington & Palmer 1896).

The present section recapitulates all the lexical items related to olfaction in the Mota dictionary. Table 2 lists the generic terms related to the domain – some of which were

already featured in Table 1 above. I also indicate the syntactic category of each entry, an information not provided by the original authors.

Table 2 – Semantically generic lexemes referring to olfaction, from the dictionary of Mota (Codrington & Palmer 1896)

Mota	categ.	gloss
puni-u	N.TR	'smell, scent'
puna-i	N.TR	'smell, scent'
sagia-i	N.TR	'the peculiar smell of things which hangs about them and remains on the hands of those that touch and handle them'
pun ~ puna	V.INTR	'to smell, active and neuter, stink'
punapuna	V.INTR	'generally of pleasant smells, by no means always'
punpun	V.INTR	1. 'generally of pleasant smells' 2. 'to snuff in the native way of kissing'
puna ilo	V.TR	[smell see] 'to try the smell, try by the smell'
[pu]pupun	V.TR	'to snuff at, in the native way of kissing an infant'
roño[tag]	V.TR	'to feel, hear, smell, taste, apprehend by senses'
roño puna	V.INTR	'to have the sense of smelling, discover by smell'
soman	V.TR	'to put the nose to, smell'
vapunas	V.TR	'to cause a smell to diffuse itself, to give a smell to a person'

The next two tables show descriptive words referring to particular smells. Table 3 lists unpleasant smells; Table 4 pleasant smells.

Table 3 – Semantically specific lexemes referring to unpleasant smells, from the dictionary of Mota (Codrington & Palmer 1896)

Mota	categ.	gloss
noasu	N	'the smell of smoke in food or water'
pun talatlat	N	'smell of stagnant water' (*talatlat* 'mosquito larvae')
punmao	N	'mildew, mold; primarily of the smell of it'
pun taligas	N	'smell of the liquor of fire, i.e. of the moisture carried up by the smoke of wood fire'
puna talota	N	'a bad smell from a man [who never washes]'
pun sagsagie gopae	N	'the smell of the odor of a sick person'
pune qalqalosur	N	'the smell of a thing that has been dead a long time, skeleton'

Mota	categ.	gloss
mañana	ADJ	'sickly, as some fruits in smell when ripe, as the smell of fish to woman lying in'
mañamañana	ADJ	'sickly in smell'
mañarñar	ADJ	'sickly smell of fish or swamp'
roma	V.INTR	'to taste or smell rank, putrid; to have bad after-taste in the throat'

Table 4 – Semantically specific lexemes referring to pleasant smells, from the dictionary of Mota (Codrington & Palmer 1896)

Mota	categ.	gloss
vakotokoto	ADJ	'very nice in smell, as gardenia'
lalañara	ADJ	'cloying sweet'
we pun lalañara	V.PHR	'smells sweet, but hurts the nose between the eyes'
puna gagavug	V.PHR	'to smell with a thick, abundant, diffused, scent'
soke	V.INTR	'sweet in smell'
sokesoke	V.INTR	'sweet in smell, pungent, what is agreeable in smell to natives'
pune sagsage-ta-marama	N	'all the sweet smells of the world; said of quantities of flowers, scented leaves'

The impressive number of lexemes thus collected by the authors begs the question: is Mota different from the languages around it, in showing a particularly rich elaboration of the smell domain? Or is the apparent peculiarity of Mota really a consequence of a difference in method for data collection?

Indeed, it appears that many entries of the Mota dictionary were written by native speakers: "*The examples which are given with some words are almost all written or dictated by natives.*" (Codrington & Palmer 1896:viii). That work was undertaken mostly at the Melanesian Mission on Norfolk Island, by Mota-speaking seminarists. In a separate work, Codrington (1885:100) explained in what exact conditions he collected his data on Mota:

> After some twelve years' acquaintance with the language, talking, teaching, and translating (…), and after having acquired more or less correctly a considerable vocabulary of Mota words, I began to buy words that I did not know at the rate of a shilling a hundred from the scholars at Norfolk Island. I left off when lists of three thousand words unknown to me had come in.

In doing so, speakers evidently appealed to their native *competence* – as opposed to a linguist's corpus-based survey, which mostly depends on speakers' *performance* in particular circumstances. This method of data collection explains the precious quantity and quality of lexical information in the published dictionary of Mota, notably in the domain of olfaction.

That contrast between competence and performance (cf. Lyons 1996), or what Saussure (1916) initially described as *langue* vs. *parole*, is crucial here. The data from the Mota dictionary strongly suggest the existence of a potentially elaborate lexicon of olfaction in northern Vanuatu languages – a lexicon which could be revealed through systematic

elicitation such as the one conducted, with appropriate equipment, by Majid & Burenhult (2014). However, much of those semantic contrasts tend to remain latent in daily discourse. Because smells are mentioned so rarely in ordinary social activities, the vocabulary capable of describing them can remain absent from even large corpora, and is only activated in rare occasions.

4 Connotations and cultural associations of smells

This final section will examine the semantic domains with which olfaction is often associated in conversations and stories – particularly, in my literary corpus. As we will see successively, smells are associated with (1) the notions of Life and Death; (2) kissing and affection; (3) the celebration of Nature.

4.1 Life and death

Besides my field notes taken from language immersion, my literary corpus includes a total of 263 narratives in 22 languages, of which 168 are transcribed electronically. These folk narratives are often stories of Life and Death: children fearing an Ogre; humans involved in warfare, or in a struggle against evil spirits; travel to the Underworld; stories of witchcraft and magical resurrection.

These stories provide the context where smells are most often mentioned in my corpus, due to the link drawn explicitly between smell and death. This connection is frequently found in Austronesian cultures (see Leenhardt 1947, Ogier-Guindo 2011 for New Caledonia; Howes 1988 for Western Melanesia), and is also well represented in northern Vanuatu folklore.

4.1.1 THE SMELL OF DEATH

Death is often associated with the root *^{m}*buna* ‘smell, odor’ – evoking the smell of a rotting corpse. One example was cited already in (5) above, but many others could be quoted. Some sentences clearly refer to the stinking odor of a dead body – such as (13) in §2.1.2 above, that followed the death of a giant boar.

By metonymy, the root *^{m}*buna* can refer to the very process of decay, in which the actual smell is semantically backgrounded:

(21) HIW

Tameṙën	on	n’	opē	tayö	on	**qune**,
moment	SBJV	ART	body.of	person	SBJV	decay

qune	pa	ton	ne	siṙ,	sise	viye	ne	siṙ.
decay	finish	from	ART	bone	3pl	collect	ART	bone

‘Whenever someone’s body would decay, once it finished decaying (?*stinking*) from the bones, people used to collect the bones.’ [Hiw.Religion.005]

Following a further step in semantic change (cf. [II] p.6), the root *^{m}*buna* can mean ‘be dead, *espec.* for a long time; be well and truly dead’ (serving as a sort of intensifier of the ordinary verb ‘die’):

(22) MTP Lō-qōñ tēvēlēm-negi e tō nēk ēh lok. Ba nēk mal
LOC-day five-ORDIN TOP then 2sg live again but 2sg CPLT

qōn; ba tō e nēk m-ēh lok ēgēn.
decay/be.dead but then TOP 2sg PFT-live REVERS now
'On the fifth day, you came back to life. You were already *well and truly dead!*
But then, eventually you became alive again.' [Mtp.Prince.117]

A story about Jesus explains how he rose from the dead, after only three days. His recent death is expressed by negating the verb *qōn* ('decay, be dead for a long time'):

(23) MTP Kē n-et lapgetō: na-taqm̄ē-n et-**qōn** te, tateh.
3sg ART-person still ART-body-3s NEG_1-decay NEG_2 no
'He was still a human: his body had not started decaying.' [Mtp.Iqet.JStil.040]

Interestingly, the absence of a bad smell is here correlated with the idea of being still human (*n-et lapgetō*). By contrast, the strong smell associated with the decay of death means that one is losing their human status, entering the world of the Dead, becoming a spirit (cf. François 2013).

4.1.2 THE SMELL OF LIFE

In a symmetrical fashion, the world of the living also has its own characteristic smell – at least, seen from the point of view of spirits and ogres. Many stories tell of how a man-eating bogeyman recognizes his preys – whether a child or an adult – through their pleasant smell:

(24) MTP Qeso no mō-**mōkheg** **sas** n-et aē
DUBIT 1sg PFT-breathe finding ART-person EXIST

me mi gēn gōh kē!
hither with 1inc:pl here DEIX
'I think I smelled a human amongst us here!' [Mtp.Hell.24]

The cosmology of northern Vanuatu (Codrington 1891, Vienne 1984) divides the universe into two parallel realities: **marama* 'World of the Living; *hence* world' vs. **^{m}banoi* 'World of the Dead, Underworld' (François 2013:229). The humans coveted by cannibal spirits are described as coming from 'Marama', from the World-of-the-Living:

(25) HIW Noke *qnoveñi* *ne* *qnë* *tayö* *te* *rē* ***merāme*** ti
1sg smell ART odor.of human ORIG upon World.of.Living PFT

pa noke yiñetog tom evo ne.
but 1sg not.know COMP where DEM
'I smelled the scent of a human from the World,
and I wonder where he is…' [Hiw.Music.18]

The scent of a living person can itself be described as 'the scent of *Marama*' ('the scent of the Living'). Whenever an Ogre visits a village of humans, he utters a particular formula, illustrated in (26) for Mwotlap:[1]

[1] The term *sesey* (or *sēysēy*) found in that formula has no known meaning or etymology: it is only found in this particular formula.

(26) MTP Hmm, ***nō-mōkhe sesey ta-myam*** gēn!
EXCL ART-odor.of (?) ORIG-World.of.Living DEM

Nō-mōkhe sesey ta-myam nōk a ne-sewsew!
ART-odor.of (?) ORIG-World.of.Living DEM REL STAT-warm
'Fee-fi-fo-fum, I smell the blood of a living man!
I smell the warm blood of the Living!' [Mtp.Two-princes.040]

Conversely, humans keep with them the smell of the Living, should they – like Ulysses or Orpheus – wander the abode of the Dead:

(27) VRS No kara mōl me ti den taval maram.
1sg TIM.FOC return hither PAST from other.side World.of.Living

Bune ta maram go tog vēti min no.
odor.of:CSTR ORIG World.of.Living STAT stay still with 1sg
'I just came back from the World of the Living.
The *smell of that World* is still upon me.' [Vrs.Friends.33]

From the point of view of the hungry ghost, the scent of the Living is fragrant (***bunbun***, cf. [III] p.7). Sentence (28) is taken from a famous Melanesian story, in which one live man visits the abode of the Dead to dance with them in the dark. Every time the ghosts recognize the scent of a human, they interrupt their dance and try to chase him:

(28) VRS Nēr a lak, a lak, nēr a rōñteg
3pl AO:NSG dance AO:NSG dance 3pl AO:NSG perceive

o **bune bunbun ta maram** gö luwō idian.
ART odor.of fragrant ORIG World.of.Living STAT big INTSF
'So they danced on and on, until they suddenly recognized
the *fragrant smell of the Living* hovering all around them.' [Vrs.Friends.34]

The smell of Death and the smell of Life thus form a mirror-like pattern in the olfactory cosmology of Vanuatu. While humans associate death with the stench of decay, the Dead, in return, praise the Living for their pleasant, mouthwatering scent.

4.2 From smell to kiss

An etymological connection exists between 'smell' and the expression of affection which can be described as 'kiss'. Indeed, the Proto Torres–Banks etymon that can be reconstructed for 'kiss' is a verb ****ᵐbuᵐbuna***, which appears to result from the reduplication of the root **ᵐbuna* 'smell':

(VI) ***ᵐbuᵐbuna** [V.TR.] 'kiss'
Mwotlap *pōpōn* [pʊpʊn];[1] Vurës *bōbōn* [ᵐbʊᵐbʊn]; Mwesen *pupun* [pupun];
Mota *pupun* [pupun], *punpun* [punpun].

[1] The form *pōpōn* contradicts the phonology of Mwotlap, which lacks a phoneme /p/: the expected reflex of **ᵐbu-* would be a labial-velar consonant [k͡pʷ] – see §2.1.1. The form can be explained either as a loan from Mota *pupun* (François 2001:69), or as an instance of "baby talk".

The action of kissing does not exactly pertain to the olfactory domain; so why should it be related to the root *^{m}*buna* 'smell'?

The reason lies with the way in which Melanesian cultures traditionally perform kisses – or rather, what would be the closest equivalent to a kiss. The practice in question is typically directed at young infants, and expresses affection. Rather than involving the lips as in Europe, the action involves physical contact between the kisser's nose and the kissee's face, along with a brief snuffing gesture (*Figure 1*). Codrington & Palmer (1896:124) thus gloss Mota *pupun* as "to snuff at, in the native way of kissing an infant".

The snuffing action is reminiscent of that of sniffing or smelling, which accounts for its connection with the verb 'smell'. The same pattern of colexification between 'kiss' and 'smell' is widespread in a large number of languages from Southeast Asia and Western Melanesia (Schapper, this volume), and has been observed elsewhere in Oceanic (Osmond & Pawley 2016:505). Northern Vanuatu has evidently kept traces of that areal pattern, albeit through an etymological connection.

Figure 1 – A Melanesian kiss
(photo A. François, 2012)

In modern Vanuatu languages, the verbs illustrated in (VI) have lost any conscious connection with the domain of olfaction. They are now exclusively linked to the expression of affection and tenderness, whether with children or with adults:

(29) MTP Kē ni-oytitin goy kē van qele gōh, ni-**pōpōn** kē…
3sg AO-hug around 3sg thither like this AO-kiss 3sg
[*A mother reunites with her toddler after a long separation.*]
'She hugged him like this, she kissed him…' [Mtp.Romanmangan.185]

The same verb is nowadays used as an equivalent to European concepts of lip-kissing, including in the romantic sense:

(30) MSN Na gate **pupun** nēk ga muul anan.
1sg NEG:REAL kiss 2sg STAT long.time INTSF
'I haven't kissed you for ages.' [Msn.12.10.06]

4.3 The fragrance of Nature

I will finish this study of olfaction in northern Vanuatu by looking at how smells are sometimes evoked in poetry. The oral literature of northern Vanuatu includes sung poems of various genres (François & Stern 2013:90–96). One particular genre, which goes by the name of *Titi* songs, shares some similaries with the Japanese *haiku*: it involves short, one-stanza poems rich in sensory images and feelings. During performance, *Titi* poems are sung by a group of musicians as they beat the rhythm for the dancers.

A *Titi* song will typically describe powerful emotions or sensations, through sensory perceptions of various sorts – whether involving sunlight or colorful birds, waterfalls or thunder, earthquakes or ocean waves (François & Stern 2013:112–117). These songs often celebrate the poet's feeling of awe before the beauty and power of Nature. One of these poems, recorded on Motalava island in 2003, evokes a particular smell.

A Titi song – "Liana flower"	
Tewes gaverur ē *ge bōnbōn ē ge bōn ē bōn e* *bōnen sav e?* *bōne ses row ē la ē* *O ē o o o e* *a e a e a e — o:*	Flowers of the great vine they smell lovely, o so lovely What do they smell of? They smell of seashells on the shore O e o o o e a e a e a e — o–

The language of the song is neither Mwotlap nor any other spoken language: it is a special lect reserved for sung poetry (Codrington 1885:309; François & Stern 2013:90–92). Note here the alliteration triggered by the syllable *bōn* [ᵐbʊn], repeated six times – even more if we take into account the repetitive structure of the actual sung performance.[1] The forms in the second verse (*bōnbōn*, *bōn e bōn*) reflect the reduplicated adjective **ᵐbuna-ᵐbuna* 'fragrant' (cf. [III] p.7), while the suffixed forms *bōne(-n)* correspond to the transitive noun **ᵐbuna-* 'odor of' (cf. [V] p.8).

While smells are mentioned rather rarely in the realm of cooking, they are more often commented upon in relation with the environment. This was already visible in sentences (3), (4), (6), (8) above, as well as in various glosses of the Mota words in §3.2 – e.g. 'sickly [of fruit, fish]', 'smell of flowers, scented leaves', 'smell of the moisture carried up by the smoke of wood fire', 'very nice in smell, as gardenia'… This sensitivity to the smells of Nature is precisely central to the poem *Liana flower*.

That poem unifies the two complementary worlds that form the universe of Pacific islanders (cf. Bonnemaison 1996): on one side, the realm of the forest, represented here by the 'flower of the great vine'; on the other side, the world of the ocean – evoked through the odor of 'seashells on the shore'. The song bridges these two worlds together by paying attention to a particular intoxicating smell, one that is shared between the forest and the sea.

5 Conclusion

Languages differ in the degree of semantic elaboration they assign to the lexicon of olfaction. While the ecological environment – in particular, the presence of tropical rainforest – may sometimes favor sophistication in this area, it is not necessarily a sufficient condition. Indeed, we saw that Vanuatu, a tropical archipelago, hosts languages in which the lexicon of smells seems to involve few semantic distinctions.

[1] The sung poem can be heard on track #27 *Liana flower* of our discographic publication (François & Stern 2013), performed by Ken Fraser and his musicians.

My corpus-based investigation suggested the lexicon of olfaction may have limited elaboration in this part of the Pacific: one pervasive root, a polycategorial (noun–verb–adjective) form reconstructable as *^{m}*buna*, is used for various meanings, and seems to be complemented only by two or three other lexemes in each language. When smells are mentioned in speech or stories, they tend to be culturally associated with two domains where human activities play a secondary role. Odors and smells are, first, linked with the mythological contrast between the World of the Living and the World of the Dead. Second, smells are frequently commented upon when paying attention to the scents of the environment, whether fish or seashells, young flowers or ripening fruit… It is as though Vanuatu cultures associated the olfactory domain, first and foremost, with the cosmological dimensions of Nature – as they pay attention to growth and decay, to life, and death. Other than those occasions, olfaction is seldom mentioned in conversation.

That said, the dictionary of Mota revealed the existence of numerous words describing smells, whether pleasant or unpleasant, in the vocabulary. This rich olfactory lexicon was made visible by Codrington's method of data collection, which had native speakers carry out introspection and venture lexical items from their own language competence. In sum, the key observation in northern Vanuatu is not the paucity of olfactory words – since there appears to be quite an elaborate lexicon that is latent in the language. Rather, what is crucial is the gap between underlying *langue* and actual *parole*, or *competence* and *performance*.

This low discourse frequency suggests that the olfactory vocabulary in northern Vanuatu languages is comparable to niche areas of the lexicon – similar to names of uncommon species, seldom-named winds, technical terms for navigation or architecture: the words do exist in the system, yet are rarely manifested in speech. On the one hand, the existence of specific lexical items entails that certain particular odors are "nameworthy" enough (Mithun 1984:848, 1997:367) to warrant being lexified and memorized by speakers. Yet on the other hand, the rare occurrence of odor names in discourse must be explained by the local communities' cultural practices, which give little prominence to specific smell terms. In this part of the world, smells are not saliently tied to any major social activity – whether culinary, medicinal, hygienic, recreational or ritual.

This preliminary study calls for a natural follow-up: namely, the systematic investigation of olfactory words in the lexicon (*langue*) of northern Vanuatu languages, ideally using the sophisticated elicitation kit described by Majid & Burenhult (2014). Such a methodology, if generalized across continents, could make results cross-linguistically comparable. Finally, besides listing olfactory words in each language's lexicon, the next step would be to identify what social contexts do favor the manifestation of these words in discourse (*parole*) – and hence, their acquisition by language learners. The situations involved in the description of specific odors are likely to differ considerably depending on which communities of practice (Lave & Wenger 1991, Wenger 1998) individual speakers belong to in the course of their lives. This is also an area of the lexicon that is likely to erode or evolve rapidly, as the communities' ways of life adapt to a fast changing world.

References

Bonnemaison, Joël. 1996. *Gens de pirogue et gens de la terre. Les fondements géographiques d'une identité. L'archipel du Vanuatu. Essai de géographie culturelle*. Paris: ORSTOM.

Codrington, Robert H. 1885. *The Melanesian languages*. Oxford: Clarendon.

— 1891. *The Melanesians: Studies in their anthropology and folklore.* Oxford: Clarendon.

Codrington, Robert H. & John Palmer. 1896. *A dictionary of the language of Mota, Sugarloaf Island, Banks Islands.* London: Society for Promoting Christian Knowledge.

Crowley, Terry. 2000. The language situation in Vanuatu. *Current Issues in Language Planning* 1, 47-132.

Floyd, Simeon, Lila San Roque, & Asifa Majid. 2018. Smell is coded in grammar and frequent in discourse: Cha'palaa olfactory language in cross-linguistic perspective. *Journal of Linguistic Anthropology* 28.2: 175-196.

François, Alexandre. 2001. Contraintes de structures et liberté dans l'organisation du discours. Une description du mwotlap, langue océanienne du Vanuatu. Doctoral thesis. 3 vol., 1078 pages. Paris: Université Paris-IV Sorbonne.

— 2004. La réduplication en mwotlap : les paradoxes du fractionnement. In Elizabeth Zeitoun (ed.), *Les langues austronésiennes*, 177-194. Paris: Ophrys.

— 2005. Unraveling the history of the vowels of seventeen northern Vanuatu languages. *Oceanic Linguistics* 44, 443-504.

— 2008. Semantic maps and the typology of colexification: Intertwining polysemous networks across languages. In Martine Vanhove (ed.), *From Polysemy to Semantic change: Towards a Typology of Lexical Semantic Associations*. New York, Amsterdam: Benjamins. 163-215.

— 2011. Social ecology and language history in the northern Vanuatu linkage: A tale of divergence and convergence. *Journal of Historical Linguistics* 1, 175-246.

— 2013. Shadows of bygone lives: The histories of spiritual words in northern Vanuatu. In Robert Mailhammer (ed.), *Lexical and structural etymology: Beyond word histories*. Berlin: DeGruyter Mouton. 185-244.

— 2015. Temperature terms in northern Vanuatu. In Maria Koptjevskaja Tamm (ed.). *The Linguistics of Temperature*. Amsterdam, New York: John Benjamins. 832-857.

— 2016. *Online Mwotlap–English–French dictionary*. Electronic files. Paris: CNRS. [http://tiny.cc/Mtp-E-F-dict]

— f/c. Elicited yet idiomatic data: A proposal for conversational questionnaires. In Aimée Lahaussois & Marine Vuillermet (eds.), *Questionnaires for linguistic description and typology*. Special issue of *Language Documentation & Conservation*.

François, Alexandre; Michael Franjieh, Sébastien Lacrampe & Stefan Schnell. 2015. The exceptional linguistic density of Vanuatu. In A. François; S. Lacrampe; S. Schnell & M. Franjieh (eds), *The Languages of Vanuatu: Unity and Diversity*. (Studies in the Languages of Island Melanesia, 5.) Canberra: Asia–Pacific Linguistics Open Access. 1–21.

François, Alexandre & Monika Stern. 2013. *Music of Vanuatu: Celebrations and Mysteries*. Ebook released with the CD album *Musiques du Vanuatu: Fêtes et Mystères – Music of Vanuatu: Celebrations and Mysteries*. Label Inédit, w260147. Paris: Maison des Cultures du Monde.

Howes, David. 1988. On the odour of the soul: Spatial representation and olfactory classification in Eastern Indonesia and Western Melanesia. *Bijdragen tot de Taal-, Land-en Volkenkunde*, 144:1, *Anthropologica* XXX, 84-113.

Krifka, Manfred. 2010. A note on an asymmetry in the hedonic implicatures of olfactory and gustatory terms. In Susanne Fuchs, Philip Hoole, Christine Mooshammer & Marzena Żygis (eds.), *Between the Regular and the Particular in Speech and Language*. Frankfurt am Main: Peter Lang. 235–245.

Lave, Jean & Etienne Wenger. 1991. *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.

Lawless, Harry & Trygg Engen. 1977. Associations to odors: Interference, mnemonics, and verbal labeling. *Journal of Experimental Psychology: Human Learning and Memory*, 3(1), 52-59.

Leenhardt, Maurice. 1947. *Do Kamo: la personne et le mythe dans le monde mélanésien*. Paris : Gallimard.

Lyons, John. 1996. On competence and performance and related notions. In Gillian Brown, Kirsten Malmkjær, John Williams (eds), *Performance and competence in second language acquisition*. Cambridge: Cambridge University Press. 11-32.

Majid, Asifa, & Niclas Burenhult. 2014. Odors are expressible in language, as long as you speak the right language. *Cognition* 130.2: 266-270.

Malau, Catriona. 2016. *A Grammar of Vurës, Vanuatu*. (Pacific Linguistics, 651.) Berlin: de Gruyter Mouton. ISBN 9781501503580.

— (forthcoming) *A dictionary of Vurës, Vanuatu*. Studies in the Languages of Island Melanesia. Canberra: Asia-Pacific Linguistics.

Mithun, Marianne. 1984. The evolution of noun incorporation. *Language* 60.4: 847-894.

— 1997. Lexical affixes and morphological typology. In Joan L. Bybee, John Haiman, Sandra A. Thompson (eds), *Essays on Language Function and Language Type: Dedicated to T. Givón*: 357–372.

Ogier-Guindo, Julia. 2011. Le pays invisible : Représentations de la mort dans les discours cérémoniels kanak (Nouvelle-Calédonie). In Sandra Bornand (ed.). *Paroles de jeux, paroles de crise*. Special issue of *Cahiers de Littérature Orale*, 69: 79-106. Presses de l'INALCO.

Osmond, Meredith & Andrew Pawley. 2016. Perception. In M. Ross, A. Pawley & M. Osmond (eds), 489–517.

Pawley, Andrew K. & Ross, Malcolm D. (1995). The prehistory of Oceanic languages: a current view. In Peter S. Bellwood, James J. Fox & Darrell Tryon (eds.), *The Austronesians: Historical and Comparative Perspectives* 39-80. Canberra: Australian National University.

Ross, Malcolm, Andrew Pawley & Meredith Osmond (eds). 2016. *The lexicon of Proto-Oceanic.* Vol. 5. *People: Body and mind*. A-PL 28. Canberra: Asia–Pacific Linguistics.

Saussure, Ferdinand de. 1916. *Cours de linguistique générale*. Text edited by Charles Bally, Albert Séchehaye & Albert Riedlinger. Paris: Payot.

Schnell, Stefan. 2011. A Grammar of Vera'a: an Oceanic language of North Vanuatu. PhD thesis. Kiel University.

Vienne, Bernard. 1984. *Gens de Motlav. Idéologie et pratique sociale en Mélanésie.* (Publication de la Société des Océanistes, 42.) Paris: Société des Océanistes.

Wenger, Etienne. 1998. *Communities of Practice: Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.

Wilson, Donald A., & Richard J. Stevenson. 2006. *Learning to smell: olfactory perception from neurobiology to behavior*. Baltimore: JHU Press.