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On the external relations of Purepecha : an investigation into classification, contact and patterns of word formation

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5. OLFACTORY LANGUAGE IN PUREPECHA¹⁰⁶

*“You should try reading your shirt, it’s probably a novel by Victor Hugo.”
(Rimmer to Lister, ‘Waiting for God’)*

Abstract

Smell has traditionally been considered a difficult, or even impossible, sense to express linguistically. Yet various languages possess distinct morpho-syntactic means for describing smells in an abstract way, not simply in relation to the source of an odour, as is common in western languages. Purepecha can be considered one of these ‘olfactory cultures’, which are found in the Americas, Africa and Southeast Asia. In this chapter I present a three-way typology of olfactory language in Purepecha, comprising: (i) basic terms, composed of one of 14 perception roots and the smell-specific ‘spatial couplet’ morphology *-k’u* and *-nti*; (ii) descriptive terms whose root conveys another state or event (e.g. to burn) plus the spatial couplet morphology; and (iii) the source of the odour (a noun) plus the generic verb ‘to smell’ *ja-*. I discuss how different elicitation methods obtained varying proportions of these three types of smell predicates, as well as the distribution of the three generic roots referring to the concept of smelling following Viberg’s (1984) typology. This presentation of synchronic language use in the olfactory domain is expanded with the historical perspective. Here I consider the references to smell in the two extant written works available to us for 16th century Purepecha. The same three-way typology of smell terms can be identified in these works, suggesting that the Purepecha ‘smell canon’ appears relatively stable, albeit with some changes to the spatial couplet morphology. This chapter therefore provides new insight into a previously unstudied topic, as well as indications for future research into issues of word formation and language change.

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5.1. Introduction

Arnold Rimmer, the only hologram aboard the Jupiter Mining Corporation spaceship *Red Dwarf*, enters his sleeping quarters to find his bunkmate Dave Lister running his nose along the pages of a battered hardback book, sniffing enthusiastically as he goes. Rimmer stops in the doorway and asks, incredulously, “What are you doing?”. “I’m reading,” comes the reply from Lister. “What, with your nose?” the questioning continues. “Yeah, it’s a cat book,” Lister explains, “they don’t use marks, they use smells. You run your nose along the line and all the different smells are released. It’s really good.” Rimmer reacts in typical negative fashion: “What a pathetic idea,” (Grant & Naylor, 1988).

While the idea of a human language composed entirely of smells may seem more preposterous than pathetic, it is nonetheless true that the study of olfaction has lagged behind the study of other senses, especially sight and touch (McHugh, 2012: 9). Where olfaction has been studied, it has often been subject to negative aesthetic judgements, such as being placed at the bottom of the sense hierarchy (Corbin, 1982). Classified by Kant (2006) as a secondary, subjective sense (see also Enríquez Andrade, 2010: 140), smell has traditionally been considered difficult, or even impossible, to express in words (see references in Majid & Burenhult, 2014; Wnuk & Majid, 2014). Of the five senses, olfaction is widely considered to be confined to the periphery of our sensory expression. In many Western languages, terms for smells are drawn from the source of the smell itself, or a similar smell, such as ‘smoky’ (i.e. ‘of’ or ‘from smoke’) or as an ostensive statement such as ‘like bacon’ or ‘bacon-y’ in English. Alternatively, smell terms may constitute hedonic statements that can be applied to all kinds of sources, for example ‘disgusting’ or ‘delicious’. As these hedonistic adjectives indicate, in many languages terms for smells may be shared across the senses, enabling something (or someone) to look, feel, taste, smell or sound ‘lovely’ (see Section 5.3.2).

Yet olfaction is unique amongst the senses when it comes to both perception and reception. Odours can be carried and perceived from afar, as well as from near,

making smell both a remote and a contact sense (McHugh, 2012: 25). In contrast, objects cannot be touched or tasted at a distance and, while sounds can be heard from afar, they do not interact physically with the human body as the particles contained within odours do. This uncontainable, or transgressive, property, of smell alone was considered both fantastic and dangerous in early Christian writings, for example: When writers from this period wished to evoke a divine presence in concrete terms, they did so with olfactory imagery, whereby invisible odours could cross the boundary of heaven and earth (Harvey, 2006: 53). Conversely Tertullian, an early Christian theologian from Carthage, considered the uncontainable fumes and fragrances from pagan rites to be dangerous to Christians since one cannot block out olfactory stimuli as one can visual or auditory stimuli, for to do so is to stop breathing (Harvey, 2006: 38). Yet as we will see in the next section, many languages have developed distinct mechanisms for expressing this “elusively ambiguous” and potent sense.

5.1.1. A survey of “smell languages”

Unlike English or French, for example, not all languages suffer from a “baffling poverty” (Corbin 1982: iv) when it comes to talking about odours.¹⁰⁷ In the past 70 years, various anthropological and linguistic studies have brought to the fore a number of so-called “olfactory cultures” (Almagor, 1987: 107), which will be reviewed in this section. It should be noted that I will focus on languages possessing distinct olfactory terminology rather than those in which smell plays an important cultural role, such as the Kwoma of New Guinea, who consider smell to be a more enduring sense than sight, but do not encode it in a specific way linguistically (Howes, 2003).

In Africa, several Western Nilotic languages possess dedicated terms for expressing smells (Storch, 2014 and references therein). In Nuwo of centre-west Sudan, for example, smell words constitute a separate word class on morphosyntactic grounds. These words are not semantically related to any other nouns, verbs or adjectives in the language, and possess a multiplicity of meanings not found in any

¹⁰⁷ For a contrary position, see McHugh (2012: 65), who claims that in English people do not have difficulties talking about smell. He argues that English speakers’ frequent recourse to ostensive descriptions, such as ‘lotus-like’, is also mirrored when talking about colour (i.e. vision), as in terms such as ‘custardy-yellow’. What English, and languages like it really lack, then, is olfaction-specific vocabulary that does not rely on sources, comparisons or terms from other senses (see Section 5.3.1).

other set of quality words, such as those expressing sounds or textures (Storch, 2014: 51). For Kuteb (also Kutep, Jukanoid, east-central Nigeria) Koops (2009: 62) lists thirteen “unusual” olfactory terms, all of which refer to unpleasant smells, mostly described in terms of comestibles, e.g. *nuy ashwáe* ‘to smell of fermented cassava, guinea corn sprouts’. In the same language family branch, Blench and Longtau (1995) present the main odour terms of Tarok (east-central Nigeria), highlighting their unique grammatical properties with respect to other word classes, including ideophones, another frequently under-described word class cross-linguistically. Hombert (1992) offers a comparative table of basic smell terms in five Bantu languages of Gabon: Wanzi, Nzebi, Sangu, Tsogo and Fang. He also notes that some of the smell terms seem to correspond to the primary odours (linked to human secretions and specific anosmias) identified by Amoore and colleagues, namely urine, sweat, sperm, musk, fish, malt, camphor and mint (Hombert 1992: 62-3).

In Kambaata, a Highland East Cushitic language of Ethiopia, there are two basic evaluative smell verbs: *anj-* ‘to smell good (intr.)’ and *bob-* ‘to smell bad (intr.)’. This pair is supplemented with a more specialised, but equally basic, term, namely *toon-* ‘to smell burnt (intr.)’ (Treis, 2010: 326). The Kapsiki language of north-east Nigeria and north Cameroon (where it is known as Higi) contains many ideophones, including 14 smell ideophones. But perhaps more important than their presence in the language is the differential interpretation of these terms by blacksmiths and non-smiths, an interpretation that relates to the perceived edibility of the referents. Each group defines edibility in their own way but, in short, the non-smiths consider the smiths to smell bad as a result of their diet as well as their social roles and functions, which include forging iron and burying the dead (Van Beek (2010, 1992). Another example of one group defining itself in relation to a perceived malodorous ‘other’ can be found in Almagor’s (1990, 1987) studies of the Dassanetch (also Daasanach, East Cushitic, south-west Ethiopia). The pastoralist Dassanetch groups distinguish themselves from neighbouring pastoralist or agricultural groups, as well as some of their own fisherman groups by each one’s respective smells, which reflect the

predominant mode of subsistence.¹⁰⁸ While “[t]he smell of everything connected with cattle is good, [...] the smell of those engaged in fishing is considered bad, to the point of revulsion” (Almagor, 1987: 109). This repugnance stems from the notion that fish are antithetical to cattle, and cattle are central to the culture and livelihood of the Dassanetch pastoralists. The Cangin-speaking Sereer Ndut (North Atlantic, west Senegal) also identify certain groups as smelling of particular odours, such as white people as smelling of urine (Dupire, 1987: 8). The odour of the soul is at the centre of their socio-religious and medical representations; the only attribute babies share (until weaning) with the ancestor-protectors they reincarnate as is the odour of the immortal soul. Odour terms in Ndut take a binary classification according to animacy whereby human (*kiili*) odours contrast with non-human or animal (*nget*) odours. Perceptible odours in these two categories can be further classified into five domains: urine, rotten, milk and fish, all acidic and disagreeable odours, and all agreeable odours (Dupire, 1987: 12).

In Mexico two ‘smell languages’ have also been identified, namely Papantla Totonac and Seri.¹⁰⁹ In Papantla Totonac (Totonacan, Veracruz), Aschmann (1946) identifies eight separate stems pertaining to the many distinctions of smells that the language must express in the absence of a generic verb meaning ‘to smell’ (cf. Levy, 1992 for a list of ten physical property adjectives relating to smell). Each stem possesses a core smell meaning, e.g. *ha-* ‘medicinal and aromatic smells’, which may be hard to define adequately given the range of referents covered.¹¹⁰ However, these stems may also be used to express meanings related to taste and desirability (Aschmann, 1946: 187), thus they perhaps should not be considered basic smell terms (see Section 5.3.1). On the contrary, Seri (isolate, Sonora) possesses seven monomorphemic and two multimorphemic smell verb roots. These terms are abstract

¹⁰⁸ Note also the parallel in early Christian writings, notably those of the Greek grammarian Athenaeus, who observed that “gender, social class and moral disposition were all marked by distinct smells,” (Harvey, 2006: 30-31).

¹⁰⁹ On the basis of terms collected from dictionaries, Enríquez Andrade (2010) identifies nine other languages in Mexico that have specific terms to refer to odours, namely Chinantec, Ch’ol, Chontal de Tabasco, Huastec, San Mateo del Mar Huave, Maya, Mazatec, Tlapanec and Zapoete. However, he provides no morpho-syntactic analysis of the forms, nor any comparison with the elements in the lexicon to which the smell terms refer. As such, I will not consider these languages smell languages per se, but leave the way open for a more detailed analysis of the terms presented in future studies.

¹¹⁰ We will see a parallel with the generic smell verb *ja-* ‘to be’ in Purepecha, in Section 5.3.1.

in that they “appear to distinguish different qualities of smells, [... but] do not lexicalise the source of the odor and are not used with one particular referent” (O’Meara & Majid, 2016: 115). The case of Seri also highlights how smellscape can change over time; olfactory language in Seri is under threat as a result of cultural transformations imposed by increasing globalisation (see also Section 5.5).

Additionally, in South America we find more examples of ‘smell cultures’ who use odour as a means of social classification. The Desana (Tucanoan) of the Colombian Amazon categorise each tribal group, including themselves, in terms of their own characteristic odour, which is in part inherited and in part influenced by the type of food they consume. Each group’s territory is therefore permeated by a *máhsa seriri* ‘tribal odour, tribal feeling, sympathy’; similarly they characterise areas of the jungle in terms of the odours emitted by the animals that live there. These areas can be cross-cut by ‘wind threads’ of plants and fruits, which lead to their source (Classen, Howes & Synnott, 1994: 98-99). Two indigenous groups of the Mato Grosso region of Brazil, the Suyá (Jê) and the Bororo (Bororoan), also exhibit a complex system of olfactory classification. The Suyá place humans, animals and plants into one of three classes - bland-smelling, pungent-smelling and strong-smelling - on the basis of their relative danger to human society: “the stronger-smelling the class, the more potentially dangerous its members” (Classen, Howes & Synnott, 1994: 101). The Bororo assign virtually everything in the world to one of eight odour classes, which range from *jerimaga*, a musky, rotten smell at one end, to *rukore*, a sweet smell at the other. These two opposing odours also represent life’s two basic forces, life and spirit, a binary division that provides the foundation for Bororo beliefs and practices (Classen, Howes & Synnott, 1994: 101-102).

The most systematic research into olfactory language to date has been conducted by Asifa Majid and collaborators, whose in-depth cross-cultural studies of a number of Aslian (Austroasiatic) languages of south-east Asia has considerably expanded our understanding of the limits of the smell lexicon, as well as its role in cultural beliefs and practices. Take for instance the Jahai, a small group of rainforest foragers living on the Malay Peninsula, who possess around a dozen abstract, but everyday, terms for describing odours (Burenhult & Majid, 2011; see also Majid &

Burenhult, 2014). These terms can be categorised in terms of their pleasantness, with unpleasant connotations accounting for the majority (two-thirds) of terms. A similar preference for unpleasant terms has been found for Formosan languages (Lee, 2015, 2010), while certain similarities with referents of ‘stink’ terms in Seri (Sonora, Mexico) are also suggestive of this overall preference (O’Meara & Majid, 2016; see also Enríquez Andrade, 2010). Maniq, an Aslian language spoken in southern Thailand is also rich in abstract smell terms, possessing around 15 phenomenon-oriented descriptions (Wnuk & Majid, 2014). These terms can be characterised along two principal dimensions: pleasantness as with the Formosan languages, but also in terms of dangerousness, reflecting the primary and secondary axes of odour perception (Wnuk & Majid, 2014: 133 and references therein; see also McHugh (2012) for an extensive discussion of the fundamentally binary aesthetics of olfaction in Medieval Southeast Asia). Adding further support to the claim that smell terms can be reconstructed for the shared proto-language of this family, Semai (Malay Peninsular) has around 25 distinct smell terms, 15 of which adhere to a sensory template structure, which provides information on a type of perceptual notion not limited to olfaction (Tufvesson, 2011: 88).

Purepecha also appears to be one of these olfactory languages. Friedrich (1984, 1971a) was the first scholar of the language to note that it possesses an unusually large number of terms translated as ‘to stink’, and that these terms display a particular, and uncommon, morphosyntactic pattern. However, until now, this observation has slipped under the radar of olfactory language researchers. In this chapter I aim to fill this gap by offering the first classification of odour terms in Purepecha. To do so, I draw on data from Friedrich’s published and unpublished materials (*idem.*; Friedrich, unpublished), a late sixteenth century Purepecha-Spanish dictionary (Anonymous, 1991) and my own fieldwork data from 2014 to 2016, gathered using the language of perception elicitation kit (Majid, 2007), interviews, freelisting, a written translation exercise, and reactions to real sources or ‘smell jars’.

The rest of this paper is structured as follows: In Section 5.2 I introduce Purepecha, including a brief history of scholarship on the language as well as some key aspects of its morphosyntax. This acts as context for Section 5.3, where I present

a three-way typology of odour terms, that is morphosyntactic ways of describing smells, supplemented by a description of taste predicates as a means of introducing the notion of under-specification of roots, an interpretation that is pursued in more depth in Chapter 6. In Section 5.4 I offer an historical perspective of olfactory terms by discussing the forms present in the two main early historical sources of the language: the *Diccionario Grande*, an extensive Purepecha-Spanish dictionary, and the *Relación de Michoacán*, the earliest written record of the prehistory of one Purepecha social group. The historical discussion demonstrates the temporal stability of basic odour terms in Purepecha, and simultaneously introduces the role of odours or fragrances in prehispanic religious practices. Section 5.5 presents the conclusions and avenues for future research.

5.2. Introduction to Purepecha

Purepecha is spoken by around 125,000 people (INEGI, 2010) in the highlands of Michoacán, centre-west Mexico (see Chapter 1, Map 1). Speakers are currently located in four non-contiguous regions, which also constitute the four main dialect groupings. Dialectal differences can be observed in the phonology and lexicon (Chamoreau, 2005; Friedrich, 1971b), although the extent of syntactic variation remains unclear due to a continued lack of research (Chamoreau, in press). Estimates state that around 15,000 Purepecha speakers are living in the USA (Lewis et al., 2016), although that figure may be somewhat higher. The language is widely regarded as an isolate (e.g. Campbell, 1997), and a peripheral member at best of the Mesoamerican linguistic area (Chamoreau, 2017; Campbell, Kaufman & Smith-Stark, 1986). The majority of Purepecha speakers are bilingual with Spanish, the national, dominant language of Mexico, with only around a quarter of children learning the language in the home (Chamoreau, 2000: 14). As such, the language is under considerable pressure from Spanish, the results of which can be observed not only in general language shift but also in innovative grammatical constructions in Purepecha, such as the introduction of new comparative phrases based on the Spanish model (see Chamoreau, 2012, 2007).

The modern language is relatively well described; references include two descriptive grammars (Chamoreau, 2000; Foster, 1969), a learner's grammar (Chamoreau, 2003 for the French version) and a multiplicity of books and articles on more specific aspects of the language (e.g. Capistrán Garza, 2015 on multiple object constructions; Monzón, 2004 on spatial location morphemes; Friedrich, 1971a also on spatial morphemes). A Purepecha-Spanish dictionary (Velasquez Gallardo, 1978) and a sketch dictionary (Lathrop, 2007 [1973]) also exist, although neither work offers analysis at the morpheme level. Researchers also benefit from a considerable number of historical sources, notably a very early colonial grammar and dictionary (Gilberti, 1987 [1558], 1975 [1559]), and an impressive two volume Spanish-Purepecha, Purepecha-Spanish dictionary, estimated as originating from the late sixteenth century (Anonymous, 1991). This latter source in particular enables a comparative historical perspective to also be taken in this chapter.

Purepecha is a wholly suffixing, agglutinating language, with nominative-accusative alignment, seven nominal cases and a preference for dependent marking (cf. Chamoreau, 2017). The language is characterised by its rich verbal morphology and a large set of between 30 and 50 spatial location morphemes, depending on the variety. The verb, or what Friedrich (1984) rather underwhelmingly refers to as the 'long word', in its maximum expression has 12 slots following the verb stem (see Figure 11; see also Section 2.5.1). It is not possible to fill all slots simultaneously, and rarely do words contain more than four or five suffixes, with a functional maximum of seven (Friedrich, 1984: 65). Moreover, suffixes occurring in the same slot cannot co-occur, with two exceptions to be discussed in Section 5.2.1.

√	1	2	3	4	5	6	7	8	9	10	11	12
Stem	Derivational suffixes							Inflectional suffixes				
√	SF	LOC	DIR	CAUS	VCE/ VAL	DES	ADV	3PL.O	ASP	TNS	IRR	Mood

Figure 11: Maximum verb template in Purepecha

5.2.1. Spatial location suffixes¹¹¹

The spatial location suffixes play a pivotal role in the formation of both nouns and verbs in Purepecha, and constitute a vital component of the basic smell terms (see Section 5.3.1; see also Section 1.5.2). Spatial location morphemes are of two types: (i) those expressing extracorporeal reference only (1a), and, more frequently, (ii) those with both corporeal and extracorporeal reference (1b-c). Foster (1969: 93) notes that “[b]ody suffixes may be applied to non-body areas but not vice versa.” Indeed this latter sub-set can have abstract as well as concrete reference, in some cases also demonstrating considerable metaphorical and semantic extensions (Chamoreau, 2017). The suffix *-narhi* ‘flattish area’ in examples (1b-c), for example, can also refer to feelings of fear and the sun (idem.). Note also that there is no formal or functional relationship between the spatial location suffix and the nouns for the locations or areas they represent, such as *-nu* ‘on the patio’ vs. *ekwarhu* ‘patio’ in (1a) and *-narhi* ‘principal, flattish area (1b) vs. *tsintsikata* ‘stone wall’ (1c).¹¹²

- (1a) waxa-**nu**-x-ti
sit-**SP.LOC.patio**-AOR-3.S.ASS
'He sat on the **patio**.' (Adapted from Chamoreau, in press)
- (1b) jupa-**narhi**-xa-p-ka=ri
wash-**SP.LOC.flattish.area**-PROG-PST-1/2.S.ASS=2.S.SG
'You were washing your **face**.' (Adapted from Chamoreau, in press)

¹¹ These suffixes are also known as suffixes of locative space (Friedrich, 1971a) or *morfemas espaciales* ‘spatial morphemes’ (Monzón, 2004). I will use the term ‘spatial location’ suffix or morpheme, in the spirit of Monzón, to avoid possible confusion with the locative case marker *-rhu*.

¹¹² However it is worth noting that in an alternative word for 'patio' *terunukwa* or *terunukwa* the SP.LOC for 'principal, flattish objects' *-nu* is clearly observable (Chamoreau, 2003: 223; Velasquez Gallardo, 1978: 76). This term can be analysed as comprising the root *teru-* 'to be in the middle' (Friedrich, unpublished), the SP.LOC for 'patio' and the nominaliser *-kwa*. A similar situation is found in the term *kánarhikwa* 'face' (Chamoreau, 2003: 232), where the SP.LOC *-narhi* can be observed directly after the root *ká-*, here probably in the sense of 'to have something on the body part' (Friedrich, unpublished).

- (1c) *jupa-narhi-ta-xa-p-ka=ri*
 wash-**SP.LOC.flattish.area**-NCR-PROG-PST-1/2.S.ASS=2.S.SG
 ‘You were washing the **wall**.’ (Adapted from Chamoreau, in press)

Aside from the voice/valency suffixes, whose combinatory properties are limited to causative plus one other suffix of the same category (Chamoreau, 2017), the spatial location suffixes are the only morphemes that can co-occur in the same verb slot (see also Section 2.5.1 for a more detailed discussion of the verb template in Purepecha). While the single occurrence of a spatial location suffix is more common, certain combinations of two suffixes are attested, although the same suffix is never reduplicated. Friedrich (1971a: 71-73; see also Monzón, 2004: 46-51) identifies three major (2a) and five minor (2b) spatial suffix combinations which, as a group, he names the ‘coupled spatial’.

- (2a) Major coupled spatial (Friedrich, 1971a: 71-72)
- (i) -*cha* ‘narrowing, usually of a longish object at an intersection’ + -*nti* ‘interior surface of angle on vertical axis’
 e.g. *p’amo-cha-nti-ni* ‘to covet the food another is eating’
 - (ii) -*k’u* ‘manual’ + -*nti* ‘interior surface of angle on vertical axis’
 e.g. *kuri-k’u-nti-ni* ‘to smell foully’ (see Section 5.3.1)¹¹³
 - (iii) -*nh(a)* ‘interior enclosure, cavity’ + -*cha* ‘narrowing, usually of a longish object at an intersection’
 e.g. *arhi-nh(a)-cha-ni* ‘to speak enviously of another’

¹¹³ Note that the smell spatial couplet is intransitive, whereas the two other major coupled spatial integrate an external argument, as reflected in the ‘other’ or ‘another’ in the translation. I will not elaborate further on valency-increasing operations, but instead refer the reader to Capistrán Garza (2015) and Monzón (2004, esp. ch. 3) for more details.

(2b) Minor coupled spatial (Friedrich, 1971a: 72-73)

- (i) *-marha* ‘taste’ + *-nti* ‘interior surface of angle on vertical axis’
e.g. *ampa-marha-nti-ni* ‘to clear up (as of the sky)’ (cf. Section 5.3.1.1)
- (ii) *-mi* ‘edge-orifice’ + *-cha* ‘narrowing, usually of a longish object at an intersection’
e.g. *iki-m(i)-cha-ni* ‘to hate or curse someone else’
- (iii) *-mi* ‘edge-orifice’ + *-nha* ‘interior enclosure, cavity’
e.g. *iki-m(i)-nha-ni* ‘to be angry, enraged’
- (iv) *-pa* ‘hearth, field, social “front”’ + *-nharhi* ‘flattish surface, often interior’
e.g. *t’i-pa-nharhi-ni* ‘to roast corn’
- (v) *-tsi* ‘lower surface seen from above’ + *-mu* ‘edge-orifice’¹¹⁴
e.g. *teru-tsi-mu-ni* ‘to cross a threshold’ (idiomatic or archaic)

As we saw in the single-occurrence examples in (1a-c), the meanings of spatial location suffixes can range from the concrete (i.e. a body part or area) to the abstract (e.g. ‘fear’ or ‘fright’), and the pathway of semantic change may not be easily reconstructible, if at all. A similar situation holds for the coupled spatial.¹¹⁵ As Friedrich (1971a: 71) notes, “their meaning ranges from the sum of two constituents to something considerably different from that of either.” The verb cited in (2b-iv) is a fine example of compositional semantics, since its literal translation is reflected in its component parts, namely: to heat (*t’i-*) the interior surface (*-nharhi*) allofactively¹¹⁶

¹¹⁴ Note that both *-mi* and *-mu* refer to the area identified by Friedrich (1971) as ‘orifice edge’.

¹¹⁵ I follow Friedrich’s (1971a) glosses for the spatial location suffixes, which are similar, but not identical, to those given by Chamoreau (2017, following Chamoreau, 2009), Foster (1969) and Monzón (2004) for other varieties of Purepecha. I consider the semantics to be similar enough across authors to be able to follow one author only. Seeing as Friedrich was the first to identify the spatial couplet, I follow his terminology.

¹¹⁶ Allofactive voice here refers to an action that is carried out by an agent towards an object that is external or distinct from it (Friedrich, 1971a: 8). Middle and reflexive stems, on the other hand, are instances of the “non-allofactive voice”, which comprises “actions and states that are somehow immanent in or referring to the subject” (Friedrich, 1971a: 8–9); that is, the event remains in the domain of the subject. (Capistrán Garza, 2015: 206).

in the hearth area (*-p'a*).¹¹⁷ Examples (2a-ii, iii) instantiate the non-compositional type, where the meanings of the spatial location suffixes do not logically combine to produce the meaning of the derived verb. I will offer a more detailed analysis of the spatial couplets relating to smell (2a-ii) and taste (2b-i) in Section 5.3.1.

5.3. Smell terms in Purepecha

Purepecha speakers have three verbal means at their disposal for describing smells; this is more than English speakers or indeed Spanish speakers which, being bilingual, the Purepecha also are. The first set of terms constitutes roots that only refer to odours when combined with a particular pair of spatial location suffixes. They can be considered abstract in the sense that they are not related semantically or lexically to the sources they describe. As such, I refer to this set as basic terms (see Berlin & Kay, 1969), although when these roots combine with a different spatial location suffix, they then refer to tastes (see Section 5.3.1.1). The second set of terms takes an intransitive root, such as ‘to burn’, and optionally combines with the spatial couplet morphology that is obligatory for the first set to describe the smell indicated in the root. I label these descriptive terms, following, for example, Burenhult and Majid (2011), and Lee (2015). The third set comprises the root *ja-* ‘to be; smell’ often combined with the spatial couplet morphology for smell and the source of smell in the form of a noun, often marked in the objective case with *-ni*. I simply call this third set source terms or source-based terms. See Table 16 for an overview of the three types of smell terms.

Smell term type	Morphosyntactic properties
Basic	Smell root + reduplication + spatial couplet
Descriptive	Intransitive root (+ reduplication) + spatial couplet
Source-based	Generic smell root + source noun (+objective case)

Table 16: Smell term types in Purepecha

¹¹⁷ The terminal suffix *-ni* ‘non-finite’ does not need to be translated for these examples to make explanatory sense thus it is omitted.

In the sub-sections that follow, I will outline the morphosyntactic properties and semantic boundaries of each set of terms, as well as their relative frequencies in the different types of elicitation methods used to collect data on the language of smell in Purepecha.

5.3.1. Basic terms

Basic smell terms are formed according to a specific morphological template, comprising a reduplicated smell root, the spatial couplet of *-k'u* ‘manual’ and *-nti* ‘interior surface of angle on vertical axis’ followed by a combination of context-appropriate verbal morphology, such as tense, mood and person marking (T-M-P), see Figure 12.

Root	Reduplicated	Spatial couplet	Spatial couplet	T-M-P
	root	(1)	(2)	

Figure 12: Basic smell term template

These basic terms behave as intransitive verbs when grammatically complete. This template is presented in examples (3a-d), which are citation forms of a subset of the eight terms found in the Paul Friedrich Papers at the University of Chicago (Friedrich, unpublished).¹¹⁸ Note that examples (3a-c) refer to an unpleasant odour, whereas (3d) refers to a pleasant one.

- (3a) kini-kini-k'u-nti-ni
 stink-RD-SP.LOC.manual-SP.LOC.interior.surface-NF
 ‘to stink (e.g. from body dirt, especially of unwashed person)’

¹¹⁸ Note that examples from all sources have been adapted to fit the orthographic conventions used in this thesis.

- (3b) k'witsi-k'witsi-k'u-nti-ni
 stink.bad-RD-SP.LOC.manual-SP.LOC.interior.surface-NF
 'to stink badly (e.g. as bar when men have vomited and urinated the night before)'
- (3c) uchu-uchu-k'u-nti-ni
 stink-RD-SP.LOC.manual-SP.LOC.interior.surface-NF
 'to smell (e.g. of fish, soup, etc. after eating, of bad meat, bad breath)'
- (3d) p'untsu-p'untsu-k'u-nti-ni
 smell.good-RD-SP.LOC.manual-SP.LOC.interior.surface-NF
 'to be fragrant, aromatic (e.g. of grilled meat, after rain)'

We can call these terms 'basic' insofar as they bear no formal or functional relation to their prototypical referents or sources. For example, the terms *kurucha* 'fish' and *churipu* 'soup' show no similarity to the verb *uchu-uchu-k'u-nti-ni* 'to smell of fish, soup, etc.' in example (3c), likewise *xiwani* 'to vomit' and *jarhatsini* 'to urinate' are not related to the smell root *k'witsi-* in (3b). The olfactory medium of perception of the root qualities seems to be provided by the spatial couplet, yet this interpretation does not fall out logically from their individual semantics, namely *-k'u* 'manual' and *-nti* 'interior surface of angle on vertical axis' (but see Section 5.1.1. for the more transparent case of taste morphology). The main issue lies in the manual nature of the first suffix. While the second suffix could potentially apply to the region under the nose (although not the septum directly, more the general area in which smell might be perceived), the first has no obvious application or extension to that region since hands, fingers, wrists - and its semantic extensions of leaves and material - are not involved in the olfactory experience. How the manual suffix came to contribute to the expression of olfactory experience in Purepecha remains an open question for the moment.

Table 17 lists the 14 basic smell terms¹¹⁹ identified to date, where they are attested (under the heading ‘Ref’, where PF stands for Paul Friedrich archive and KB for data gathered by the author), their meaning, and typical sources.

¹¹⁹ The term *nuranurak'untini* (which has the root *nura-*) ‘when something smells like a cloud, or doesn’t smell of anything, such as water’ was provided at a later date by Armando Lorenzo Camilo, an informant and collaborator in Tacuro, a village in the *Cañada*. Since the term was not attested by any participants during the data collection phase, I leave it as an additional term to be investigated further.

Root	Ref	Meaning	Typical source
janha-	PF, KB	to smell bad all over, to smell intense (bad or good)	Not specific ¹²⁰
jio-	PF	to smell bad, stink	Grasses (unpleasant), butter/lard/fat, pig, goat
jore- ¹²¹	KB	to smell bad	Fried onion
kini-	PF, KB	to stink	Things unwashed, mainly people (body dirt) but also plates, etc.
k'witsi-	PF, KB	to stink badly	Vomit, urine (also places where these have occurred)
one-	KB	to smell bad	Food that is on the turn
p'untsu-	PF, KB	to be fragrant, aromatic	Grilled meat, fresh wet earth/ground/clay, perfume, flowers
sīncho-	KB	to smell bad	Smoke, burning
sīpi-	PF, KB	to stink (foully), smell bad	Old sweat, unclean/unwashed things (including clothes, house, animals) wound, urine, woman's sexual parts, rotten things
sīwi-/tsīwi-	PF, KB	to smell strongly	Acrid fumes, mainly toasting chilli, dust
tose-	KB	to smell fatty	Fatty foods, fish, meat
tsike-	KB	to smell strongly	Chilli, something hot or acrid that gets up your nose (like <i>xīwi-</i> , this variant is found in Santo Tomás)
tso-/ts'o- ¹²²	PF, KB	to have a strong smell, to give off fumes. vapour that smarts or bothers/to have a strong smell (usually but not necessarily bad)	Chilli and onion, when cutting or cooking, onions on breath, etc.
uchu-	PF, KB	to stink	Fish, soup, chicken, etc. (mainly after eating), bad meat, bad breath, sexual fluids

Table 17: Basic smell terms in Purepecha

¹²⁰ There is an argument for moving *janha-* to the generic category described in Section 5.3.1.1, since it is clearly composed of *ja-* 'to be; smell' and the spatial locative *-nha* 'interior enclosure, cavity', and also has a much less specific set of prototypical referents. It should also be noted that it is a marginal form, having only been elicited from one participant. As such, it will remain in this category with the aforementioned caveats attached.

¹²¹ It is not clear whether the similarity of this form to the root *jorhe-* 'to be hot' is notable.

¹²² Friedrich (unpublished) states that these two roots differ as a function of individual variation, although also offers different translations for each one.

It is noteworthy that the terms in Table 17 refer to bad or unpleasant smells in all but three instances: *p'untsu*- 'to be fragrant, aromatic' has overtly positive connotations, while *tose*- 'to smell fatty' is neither positive nor negative, and *janha*- 'to smell strongly or all over' can apply to both positive and negative odours. Nonetheless, this preference for negative smell terms is a pattern found in many other olfactory languages (Lee, 2015; Wnuk & Majid, 2014; see also Section 5.1.1). It is also worth noting that two of these basic roots can also take certain derivational morphology to form a noun that expresses an object that is either odorous or produces odour. From the root *k'witsi*- 'to stink badly' we find, notably, the noun *k'witsi-ki* 'skunk', where the suffix *-ki* is a fused nominalising or classifying morpheme (see Section 6.4). From *sipi-/xipi*- 'to stink foully' there is both *xipi-a-ti* 'medicine' and the less explicable in terms of semantic extension *xipi-mi* 'mosquito'.

It is notable that these basic terms proved quite difficult to elicit from native speakers in an experimental setting. Indeed, the first attempt at exploring basic olfactory terms fell flat on its face. In this task, Purepecha speakers (N = 12) smelled the 12 scents stored in The Brief Smell Identification TestTM booklet. To release the odour, the participant scratched the brown patch on each page of the booklet with a sharp pencil, and then responded to the question *na jak'untini?* 'how does it smell?' (see Majid, Senft & Levinson, 2007 for the full protocol). This procedure yielded 119 valid tokens, of which 19 (16%) were descriptive (as described in Section 5.3.2) and an overwhelming 100 (84%) were source-based (as found in Section 5.3.3). No basic terms were elicited.

However, it did not prove impossible to elicit basic smell terms from Purepecha speakers. In a follow-up task, participants (N = 13) performed a freelisting exercise, where they were asked to list as many terms for smells that they knew, having just done the same for both colours and body parts. Of the 66 terms (mean = 5) produced by the speakers, 26 (almost 40%) were basic terms, almost half were descriptive terms, while only 7 (11%) were source-based terms. Twelve different basic roots were produced, with only *janha*-, *tipa*- and *jore*- missing from the full list provided in Table 17. The most popular roots were *p'untsu*- and *uchu*-, occurring four times each. This switch in preference for the type of term used may be related to the

nature of the task. The freelisting task allows the speaker more freedom to produce personally or culturally relevant terms and is not constrained by specific odours as it is not odour-oriented. The Basic Smell Identification KitTM tests for odours that are considered common in the USA (and the West more generally) and as such, they may not be so familiar to the Purepecha speakers. Alternatively (or additionally) these odours may invoke associations with cultural imports, such as *pinoli* ‘pine floor cleaner’ or *duvalina* ‘type of dessert’, both brand names that were produced.

Basic terms were also elicited in the ‘smell jar’ experiment, in which the same participants from the freelisting exercises were given ten plastic jars in succession, each one containing a prototypical odorous source, as identified in Friedrich’s (1984, unpublished) work. Despite the preference for bad odours in the basic smell terms, the substances given to the participants to smell were relatively balanced between odours considered positive (grilled meat, fresh wet earth, perfume, flowers, maize and smoky wood) and negative (butter, toasting chilli, cooked onions and fish) to avoid an overwhelmingly unpleasant sensory experience. Naturally certain previously reported odour sources could not be used as stimuli in this experimental setting, including vomit, urine and old sweat. All participants were given the jars in the same order and were asked the same question after opening each jar and sniffing its contents: *na jak’untisti?* ‘how does it smell?’. The results were not dissimilar, in terms of distribution of response type, to those elicited from the freelisting exercise. Basic terms comprised 33 of the 124 responses (27%), descriptive terms 55 (44%) and source terms 35 (28%); in both experiments descriptive terms proved the most frequent. Similar to the previous task, 11 separate basic roots were elicited, with *p’untsu-* again the most popular, alongside *sīwi-*, both occurring eight times each. An overview of the three experiments and their respective results, in terms of response type is presented in Table 18.

Experiment	Total no. responses	Type 1 (Basic)	Type 2 (Descriptive)	Type 3 (Source)
Brief Smell ID Kit	119	0 (0%)	19 (16%)	100 (84%)
Freelisting	66	26 (40%)	33 (50%)	7 (10%)
Smell jars	124	33 (27%)	55 (44%)	35 (28%)

Table 18: Type of smell term response elicited by experiment

The smell jars elicited the largest number of responses, closely followed by the booklet. The most basic terms were elicited through freelisting, with descriptive terms quite evenly balanced between the freelisting and smell jar tasks. Source-based terms are overwhelmingly linked to the scratch-and-sniff test, indicating it is the least useful for investigating the specific morpho-syntactic properties of the domain of olfaction with this population.

5.3.1.1. A matter of taste

As indicated above, what I have been calling basic terms are, in a sense, not strictly basic. On the one hand, the roots in this set are monolexemic; they can apply to multiple sources and are not formally related to the words for these sources, rendering them basic. On the other hand, not only can two of the roots take nominal morphology to form odour-related nouns (*k'witsi-* and *sipi-/xipi-*), but most also serve as taste predicates by removing the root reduplication and replacing the spatial couplet of *-k'u* and *-nti* with *-marha* 'taste'. In this sense, then, they are not basic terms as the root can form part of a verb that refers to a sense other than olfaction. However, it seems reasonable to posit that the root is basic in its semantics, as it is the addition of the spatial suffixes that changes the locus of perception from the nose to the mouth (see the discussion of *-marha* below). I propose that the consequence of this interpretation is that the root should not be translated as 'to stink' or 'to smell bad' but rather be represented by a concept of PERCEIVED FOULNESS or PERCEIVED UNPLEASANTNESS (rendered orthographically in SMALL CAPS to reflect the conceptual nature rather than direct translation of the entry), along with examples of its typical referents, such as

‘fish’, ‘soup’ or ‘unwashed body’. I develop this proposal of word formation and its implications for the notion of word class in Purepecha in more detail in Chapter 6.

It is likely that the disyllabic suffix *-marha* can be deconstructed into the spatial locatives *-ma* ‘presence of liquid or, in its absence, concave space’ and *-rha* ‘central frontal area external or internal to the secondary volume; central frontal area of an inanimate body or of a surface’ (Monzón, 2004: 194-195, my translation). Friedrich does not explicitly state this to be the case in his published work, and Monzón (2004: 192) decides to leave *-marha* out of her list of spatial morphemes, perhaps to avoid the discussion of its internal composition. However, in an unpublished presentation of taste verbs, Friedrich claims that *-ma* and *-rha* are indeed separate morphemes that, when combined, refer to ‘the having of taste’, with the specific meaning of whatever has the taste being covered by the root. He further relates the *-ma* segment to the set of *m*- stem spatial location suffixes, which all relate to the mouth/chin/jaw area when referring to the human body (see also Chamoreau, 2000: 296-298). A further example of this *m*- stem is the, here reduplicated, root plus spatial locative *tso-tso-mi*- ‘to have a bad or acrid taste, like a strong chilli’ (Friedrich, unpublished).

In the same way that there are three ways of talking about odours in Purepecha, there are also three ways of talking about tastes. The first is the basic term, as described in Section 5.3.1 for smell, where one of a limited number of specific roots combines with a spatial couplet, here *-ma-rha-*, as in *jio-ma-rha*- ‘to taste bad’. The difference in the case of taste is that the root is not obligatorily reduplicated. A list of basic taste predicates, adapted from Friedrich’s (1971a: 204) list of roots taking *-ma-rha* ‘taste, speech, oral’ is found in Table 19.

Taste predicate	English translation
jio-ma-rha-ni	to have a bad taste
kwata-ma-rha-ni	to taste well
shunha-ma-rha-ni	to taste unpleasant, as of unripe fruit, vegetables
sīncha-ma-rha-ni	to taste charred, burnt
sīra-ma-rha-ni	to have a bad taste, of smoke and fumes
tsere-ma-rha-ni	to taste somewhat bitter
tsīre-ma-rha-ni	to taste badly, especially of badly baked bread
uri-ma-rha-ni	salty

Table 19: Basic taste predicates in Purepecha¹²³

In the list on which Table 19 is based, Friedrich (1971a) also mentions *tse-ma-rha-ni* ‘to speak well, courteously’, although in his unpublished dictionary he states that the same root can combine with *-marhi* ‘orifice-edge’ or *-ntira* ‘jaw, teeth, chin’ and still produce the same meaning. We may be dealing here with dialectal variation, although note that all forms relate to the mouth area, where tasting and speaking both occur. Note also the form *tse-n-tse-ma-rha-* ‘to speak softly, gently, but clearly’, where the root is reduplicated for emphatic reasons, and an epenthetic *-n-* inserted. In addition, he includes separately two instances that contain the *-ma-rha* couplet but do not fit into the set as they have no taste/speech/oral connotations: *amba-ma-rha-nti-ni* ‘to clear up, said of sky’ from the root *amba-* ‘good, well’ and *warhi-ma-rha-nti-ni* ‘to be partly depopulated, with many dying’ from the root *warhi-* ‘ideas of death’. It is likely that the lack of taste or speech association stems from the addition of a second (in Friedrich’s terms, a third in mine) spatial location suffix, in both cases *-nti* as seen above. The latter term is also an excellent example of the difficulties inherent in assigning concrete meaning to a bare root.

Second, descriptive terms comprise roots referring to more generic sensory qualities such as *xarhi-* ‘to be sour, tart’, *te-* ‘to be sweet’, *tipa-* ‘to burn, itch’, see

¹²³ I have removed *te-ma-rha-ni* ‘to taste salty’ from this list of basic terms as it clearly stems from the root *te-* ‘RELATING TO SWEETNESS’. It is likely, moreover, that this translation is incorrect. The root *te-* clearly relates to sweetness, so the translation would more appropriately be ‘to taste sweet’. I can only assume this was an accidental oversight on Friedrich’s part.

(4a-b). Note that loanwords from Spanish are underlined in the examples where they occur.

- (4a) xarhi-marha-ni mas bien
 sour-SP.LOC-NF more well
 ‘Better, it tastes sour.’

- (4b) isiku pera-ma-rha-ni
 like.this pucker.unpleasantly-SP.LOC-SP.LOC-NF
 isĩ ja-ma-rha-ti
 like.this be-SP.LOC-SP.LOC-3.S.ASS
 ‘Like this, it tastes unpleasant (sour)’

Third, the source of the taste, usually a noun optionally marked with the objective case marker *-ni*, is introduced with a generic perception verb *ja-* (discussed in more detail in Section 5.3.3) and combined with the spatial couplet morphology *-ma-rha*, as in *remedioni jamarhati* ‘it tastes like medicine’ (where *remedio* is a loan from Spanish expanded with the Purepecha objective marker). See also example (5) and the second half of (4b).

- (5) isiku etu-mi-ni isĩ
 like.this salt-SP.LOC-OBJ like.this
 ja-ma-rha-ti
 be-SP.LOC-SP.LOC-3.S.ASS
 ‘Like this, it tastes salty.’

Many languages conflate perceptual categories, whereby the same verb may refer to multiple senses, as in Luo (Western Nilotic) where ‘hear’ also covers touch, and with modification, taste and smell (Levinson, Majid & Enfield, 2007: 11-12). Moreover, in premodern India, odourous objects were also potentially audible due to their being carried by the wind and indeed ‘wind’ means ‘odour carrier’ in Sanskrit (McHugh,

2012: 58). Yet although olfaction and taste share the same roots in Purepecha, the presence of different spatial couplet morphology clearly delineates the two senses, both semantically and formally. It cannot be claimed, as is the case for Luo, that a smell predicate is being used as a taste predicate or *vice versa* since neither term is derived or adapted from the other in Purepecha. Rather the root itself is basic, requiring further morphology (here spatial location suffixes) in order to be interpretable. I therefore argue against a conflation of the senses linguistically speaking, emphasising instead, and again, how word formation in Purepecha proceeds from a seemingly semantically underspecified root coupled with specific, also sometimes also semantically opaque, suffixes (see Chapter 6).

5.3.2. Descriptive terms

Descriptive terms in Purepecha are somewhat analogous to the English constructions of the type ‘it smells burnt’ or ‘it smells sweet’. This set of terms takes as its base a root that can refer to an event or state not restricted to smell, such as *kurhi-* ‘to burn’, or *te-* ‘to be sweet’. These roots also optionally combine with the spatial couplet of *-k’u* and *-nti*, followed by the required inflectional morphology to form a smell predicate that refers to something that smells like the root suggests, e.g. *kurhi-kurhi-k’u-nti-ni* ‘to smell badly, like buzzard, burnt feathers, unwashed old man’, see also (4).

- | | | | |
|-----|---|--------------|-------------|
| (4) | isīku | enka=ksī | arhi-ka |
| | like.this | that=1/3PL.S | say-1.S.ASS |
| | xarhi-xarhi-k’u-nti-ni | | arhi-ni |
| | sour-RD-SP.LOC-SP.LOC-N F | | say-NF |
| | ‘Like this when I say [it] smells sour’ | | |

A list of the terms identified in the literature, through elicitation and from a follow-up list compiled by collaborator Armando Lorenzo Camilo is presented in Table 20.

Root	Root meaning	Olfactory meaning
jikwa-	to wash	to smell washed, e.g. something clean or something brand new
k'ame-	to be bitter/sour	to smell very bitter/sour
kurhi-	to burn	to smell badly, like buzzard, burnt feathers, unwashed old man
kw'itu-	to be splashed, spattered with mud, dirt	to smell of grime, dirt, e.g. a person who hasn't washed or dirty clothes
porho-/purhu-	to boil	to smell rotten
(t)pu-	fluffy mould	to smell rotten or mouldy
te-	to be sweet	to smell sweet
tipa-	to burn, itch	to smell acrid, as when toasting chillies
ts'uni	to flatulate	to smell of fart, e.g. gas
xarhi-	to be sour, acidic	to smell sour, acidic

Table 20: Descriptive smell predicates in Purepecha

These descriptive roots possess more clearly independent semantics than the basic term roots, a connection that is observable in the similarity of meaning between the second and third columns of Table 20. Nonetheless the roots still require derivational suffixes for further specification, when used as smell or other predicates, as exemplified here using *kurhi-* ‘to burn’ and *kurhu-* ‘to burn, singe’. This specificity can alter the transitivity of the verb, as in (5a-b), where the suffixes *-p'i* and *-p'a* indicate the intransitive or transitive nature of the action respectively.¹²⁴

- (5a) ch'kari kurhu-p'i-s-ti
 wood burn-SP.LOC.hearth-AOR-3.S.ASS
 ‘The wood burned (down)’

¹²⁴ Note that some spatial location suffixes, such as *-p'i* and *-p'a-* here, as well as *-ta* as in *mi-ta-kwa* ‘key’ (lit. ‘thing that makes open’, where *-ta* is a causative marker) also have a valency function, see Section 1.5.2.

- (5b) tataka kurhu-p’a-s-ti juata
 young.man burn-SP.LOC.hearth-AOR-3.ASS hill
 ‘The young man burned the hill (down)’
(Adapted from Chamoreau, 1998: 203)

Spatial location suffixes can also specify the location of an action or state, here burning. The location can either be on the body (6a) or outside it (6b-c), as demonstrated neatly with the almost minimal pair with *-k'u* (of spatial couplet fame, here appearing alone) in (6a-b).

- (6a) kurhi-k'u-xa-ka=ni (jak'i-rhu)
burn-SP.LOC.manual-PROG-1/2.ASS=1/2 (hand-LOC)
'I am burning my hand' (Adapted from Chamoreau, 2003: 121)
- (6b) kurhi-k'u-ku-x-ti (ch'kurhi-ni)
burn-SP.LOC.manual-NCR-AOR-3.ASS (leaf-OBJ)
'He burns the leaf' (Adapted from Chamoreau, 2003: 121)
- (6c) kurhi-tsi-ni
burn-SP.LOC.downwards-NF
'To burn underneath, as of beans in a pot'
(Adapted from Friedrich, 1971a: 240)

More idiomatic and less compositional interpretations are also possible with these semantically heavier roots, as demonstrated in (7), where the concept of accusing is difficult to derive from the causative suffix *-ra* in combination with a root referring to burning. One could speculate that the action of accusing might figuratively make the accused burn, perhaps of embarrassment, which could be manifested through blushing, as in the burning of the cheeks.

- (7) kurhi-ra-ni
burn-CAUS-NF
'To accuse another'

Moreover, these descriptive roots can take word-class changing morphology to function in an adjective-like fashion (see also Section 1.5.2 for a discussion of adjectives in Purepecha) as the complement of the generic verb *ja-* 'to be, to smell' (8a), contrasted with the descriptive structure in (8b). I will discuss the form and semantics of this and other generic smell verbs in more detail in Section 5.3.3.

- (8a) sani xarhi-pi-ni isĩ
very sour-ADJ-NF like.this
ja-k'u-nti-sĩn-ni
smell-SP.LOC-SP.LOC-HAB-NF
'Like, it smells very sour.'

- (8b) este es un alimento descompuesto
DEM be.3SG a foodstuff rotten
xarhi-xarhi-k'u-nti-ni
sour-RD-SP.LOC-SP.LOC-NF
'This is a rotten foodstuff, it smells sour.'

The case of *xarhi-* 'sour, tart' (8a-b) again highlights the multivalent nature of both the root and the spatial couplet, here *-k'u-nti*, with the same statement also holding for the taste spatial couplet *-ma-rha*. The structure presented in (8a) can also include a noun instead of an adjective-like word, as in (9), where the contrast between a nominal complement, here 'chocolate', of the generic smell verb, as well as the descriptive term *sensu strictu* (i.e. *te-* 'to be sweet') can be observed.

- (9) *i* *isiku*¹²⁵ *chocolati*-ni *ja-k'u-nti-sin-ti*
and like.thi chocolate-OBJ smell-SP.LOC-SP.LOC-HAB-3.S.ASS
sesi *te-te-k'u-nti-ni*
 well sweet-RD-SP.LOC-SP.LOC-NF
 'And like this it smells like chocolate, very sweet.'

Descriptive terms constituted the most common response type in both the freelisting and smell jar elicitation tasks (see Table 18). They were also the only other response type offered in the Brief Smell Identification TestTM task aside from source-based terms, albeit with a low frequency of only 16% of total tokens. I will now turn to these source-based terms.

5.3.3 Source terms

Source terms are similar to the ostensive constructions familiar to English speakers, such as 'it smells of bacon' or 'like bacon' (see McHugh, 2012: 64). In short, they refer to the object that emits the odour being described. In Purepecha the source is generally a noun that appears in the objective case preceding or following (recall that constituent order is flexible) the generic verb root *ja-* 'to be; to smell'. This root takes the spatial couplet morphology for smell (*-k'u-nti*) to form a generic intransitive smell verb. See examples (10a-d).

- (10a) *i* *isiku* *urhusi-ni*
and like.this Montezuma.pine-OBJ
ja-k'u-nti-sin-ti
 be-SP.LOC-SP.LOC-HAB-3.S.ASS
 'And this smells of Montezuma pine.'

¹²⁵ Note that the terms *isi* and *isiku*, both 'like this', are used interchangeably.

- An additional, and very neat, example of the multivalent nature of Purepecha suffixes is illustrated in (11). Here the descriptive root *k'ame-* ‘to be bitter’ is nominalised and combined with the generic smell verb (including the smell spatial couplet), followed by its descriptive use. Both types are linked with a Spanish coordinator (here acting more as a filler) *como* ‘like’.

- As indicated in Section 5.3.1, source-based terms comprised the vast majority (84%) of responses to the Brief Smell Identification Test™. Within this set 60% were loanwords, overwhelmingly nouns, from Spanish. Where applicable, the loanwords were generally adapted to Purepecha morphology, notably with the addition of the -

¹²⁶ Note that the infinitive is used frequently instead of a conjugated verb when the subject is obvious or has already been introduced (see Chamoreau, 2016).

ni objective suffix to nouns, e.g. *chicli-ni* ‘chewing gum’, and/or to Purepecha phonology, especially salient in the raising of /o/ to /u/ and /e/ to /i/, as in *sigaru* from *cigarro* ‘cigarette’, *perfumi* from *perfume* ‘perfume’ and *aceiti* from *aceite* ‘oil’.¹²⁷

5.3.3.1. Generic verbs meaning ‘to smell’

In contrast with the types of terms presented in Sections 5.3.1 (basic) and 5.3.2 (descriptive), the source of an odour in Section 5.3.3 is indicated by the noun for this source, introduced by the root *ja-* combined with the spatial couplet morphology *-k’u-nti-*. However it is not the only root that can be used in a more generic sense. Two more roots can also refer to olfactory experiences or states, namely *p’untsu-* and *sipi-*, although these do not obligatorily take the olfactory spatial couplet morphology, nor are they reduplicated as basic roots are. Recall that all three of these roots appear in Table 17 as basic terms whose semantics are largely evaluative, that is they express a hedonic statement regarding the odour such as ‘to stink’ or ‘to smell fragrant’. In the more generic sense presented in this section, these terms do not explicitly reflect a hedonic statement but rather three different event types.

Viberg (1984, see also Viberg, 2015) identifies three main components for distinguishing between verbs of perception (not only olfaction): activity, experience and state (copulative). An activity refers to “an unbounded process that is consciously controlled by a human agent, whereas experience refers to a state (or inchoative achievement) that is not controlled” (Viberg, 1984: 123). With reference to vision, for example, ‘to look’ is an activity whereas ‘to see’ is an experience, since the former implies agentivity while the latter does not. Both activities and experiences are experiencer-based, whereby the subject of the perceptual predicate is a conscious, animate being, e.g. ‘the boy is looking at the birds’. A source or phenomenon-based verb, on the other hand, source-based (also known as phenomenon-based) verb takes the experienced entity as its subject, as in ‘the man looks weird’ (Viberg, 1984: 124).

In order to investigate the distribution of the three basic roots that can also be used in a more generic olfactory sense, I distributed a questionnaire based on the

¹²⁷ Note here that I use the orthography provided by the respondents, thus it contains a certain amount of inconsistency.

sentences in Viberg's (1984: 125) basic paradigm for verbs of perception. The 20 target sentences (five per sense) were first translated into Spanish and the names changed to make the questionnaire both more culturally relevant and less repetitive. The original sentences, their Spanish translation and the predicate type, according to Viberg's (1984) typology are presented in Table 21.

English sentence	Spanish translation	Predicate type
Peter smelled the cigarette (to see if he could smoke it)	Jorge olió el cigarrillo (para ver si podría fumarlo)	Activity
Peter was smelling the cigarette (to see if he could smoke it)	Ivan olía el cigarrillo (para ver si podría fumarlo)	Activity
Peter smelled cigarettes in the room	Abril olió cigarrillos en la habitación	Experience (state/inchoative)
Peter smelled good	Ana olía bien	Source-based: Copulative (state)
Peter smelled of cigarettes	Humberto olía a cigarillos	Source-based: Copulative (state)

**Table 21: Target sentences for olfaction verbs translated into Spanish
(following Viberg, 1984: 125)**

Participants (N = 13) translated the sentences from Spanish into Purepecha, following the only instruction 'in the most natural way possible'. This exercise yielded 65 roots, distributed between *ja-* (9), *p'untsu-* (17) and *sipi-* (31; also written as *süpi-*, *xipi-* and *xupi-* due to orthographic variation amongst speakers), as presented in Table 21. The grey shaded areas indicate 0-3 tokens of that root for a particular verb type, indicating it is either not used for that type or is marginal.

Type of verb	Root		
	ja-	p'untsu-	sipi-
Activity	0	5	8
Activity	0	4	9
Experience (state/inchoative)	0	4	9
Source-based (copulative)	7	3	3
Source-based (copulative)	10	1	2
Total	9	17	31

Table 22: Olfactory verb types and their expression by root in Purepecha

The results from Table 22 indicate that *ja-* has a more limited distribution than *p'untsu-* and *sipi-*. It can only be used in source-based constructions without an animate agent or experiencer, as in the two target sentences *Ana olía bien* ‘Ana smelled good’ and *Humberto olía a cigarillos* ‘Humberto smelled of cigarettes’, see (12a-b) for examples from two Purepecha speakers.

- (12a) Ana sesi ja-k'u-nti-xa-p-ti
 Ana well be-SP.LOC-SP.LOC-AOR-PST-3.S.ASS
 ‘Ana smelled good.’

- (12b) Humbertu sīgaru ja-ma-rha-xa-p-ti=ni¹²⁸
 Humberto cigarette be-SP.LOC-SP.LOC-AOR-3.S.ASS=1.SG
 ‘Humberto smelled of cigarettes.’¹²⁹

This usage mirrors that which we observed in Section 5.3.3, where the odour source, here indirect in (12b), should be explicitly stated. It should also be noted that the *ja-* responses were split almost equally between those expanded with *-k'u-nti-*, the spatial couplet for smell (e.g. (12a)), and those expanded with *-ma-rha-*, the spatial couplet for taste (e.g. (12b)). It is possible that this variation stems from the proximity of the

¹²⁸ The use of the first person subject clitic =ni here is non-standard but retained for authenticity.

¹²⁹ Note the Purepechisation of the Spanish word *cigarro* as introduced in the previous section.

The roots *p'untsu-* and *sipi-* were also attested for source-based verbs, but their frequency was low: 4/26 (15%) and 5/26 (19%) respectively. However it is noteworthy that the participants who used these two roots differentiated less between the verb types. Three participants used the same root (two for *sipi-* and one for *p'untsu-*) for all sentences relating to olfaction, two used one root each to translate all the sentences except that in (12b), where they used the other, and one participant used all three roots, with no apparent consistency.

The root *p'untsu-* is used for all three verb types, activity, experience and source-based, but is most commonly used with activity verbs (53%), where the subject is an animate agent, consciously smelling the odorous object. In addition, it is used equally with experiencer and source-based verbs (23.5% each), as noted above for the latter. Examples of the more canonical usage can be found in (13a-b).

- | | | | |
|-------|-----------------------------------|------------------------------|-------------------------------|
| (13a) | Jorge | p'untsu-ru-s-p-ti | <u>cigarru</u> |
| | Jorge | smell-SP.LOC-AOR-PST-3.S.ASS | <u>cigarette</u> |
| | 'Jorge smelled the cigarette' | | |
| (13b) | Ivani | itsutakwa-ni | sipi-ru-sa-an-ti |
| | Ivan | cigarette-OBJ | smell-SP.LOC-PROG-PST-3.S.ASS |
| | 'Ivan was smelling the cigarette' | | |

Experiencer verb types were also attested with *p'untsu-*, but only as a minority, see (14a), as were a small number of source-based verbs (14b).

- | | | | | |
|-------|---|------------------------------|------------------------------|------------|
| (14a) | Abril | cigarru | p'untsu-ru-p-s-ti | cuartu-rhu |
| | Abril | cigarette | smell-SP.LOC-PST-AOR-3.S.ASS | room-LOC |
| | 'Abril smelled cigarettes in the room.' | | | |
| | | | | |
| (14b) | Ana | p'untsu-ru-p-s-ti | sesi | |
| | Ana | smell-SP.LOC-PST-AOR-3.S.ASS | well | |
| | 'Ana smells good' | | | |

The most frequently attested root was *sipi-*, representing 31/65 (48%) of all responses. It too was most frequently used with activity verbs (17/31, or 55%), see example (15a), but it was also the most common root for experience-type verbs (15b). Its use as a source-based verb has already been mentioned. Note also the common use of the spatial locative *-r(h)u*¹³⁰ ‘point, projection of something longish’, which can refer to the nose, forehead, point, flower or seed, (Friedrich, 1971a: 16) suffixed to both *p’untsu-* and *sipi-*. This suffix is not used with the basic or descriptive terms, which are intransitive verbs, but seems to be used here to derive transitive verbs from the generic roots by adding an argument (contrast this with the ‘smell of X’ construction in 5.3.3).

- | | | | | |
|-------|---|-----------------------------------|---------------|---------------|
| (15a) | Ivan | xipi-ru-xa-p-ti | | itsutakwa-ni |
| | Ivan | smell-SP.LOC.nose-AOR-PST-3.S.ASS | | cigarette-OBJ |
| | 'Ivan was smelling the cigarette.' | | | |
| | | | | |
| (15b) | Abrili | sipi-ru-ø-ti | itsutakwa-ni | troja-rhu |
| | Abril | smell-SP.LOC.nose-PST-3.S.ASS | cigarette-OBJ | room-LOC |
| | 'Abril smelled cigarettes in the room.' | | | |

¹³⁰ Friedrich (1971a) renders this suffix with the retroflex tap, but many of the participants in the perception questionnaire used the simple flap /r/. I take them to be the same suffix.

In addition to these roots, Friedrich (unpublished) mentions the activity root *t'unú-* 'to sniff, as of dogs, with any body part suffix for body part that can be sniffed', although this root was not elicited in any of the fieldwork tasks.

To sum up, Purepecha makes use of three roots - *ja-*, *p'untsu-* and *sipi-* - to express the three categories of olfactory experience as defined by Viberg (1984): activity, experience, and source. These three roots demonstrate a certain amount of overlap, especially *p'untsu-* and *sipi-*, with the latter being almost twice as popular as the latter. Both roots are attested for all three verb types although considerably less for source-based verbs, which are dominated by *ja-*, in combination with the spatial couplet for smell or taste equally. This root is the only one of the three with very clear-cut semantic boundaries, since it is not attested for activity or experience verbs. The flexibility of the other roots may be facilitated by the ability of both to take the spatial locative *-r(h)u*, which refers to the nose and thus offers greater olfactory emphasis as well as an apparent valency-increasing function. Having presented the contemporary situation with respect to olfactory language, I will now turn to its role in early modern Purepecha.

5.4. Historical perspective

In his impressive work on the evolution of odour representation in pre-modern South Indian religious texts, McHugh (2012) claims that the vocabulary used to describe smells is contingent on a certain time, place and culture, introducing the idea that different 'canons' of smells exist in different periods of time, represented for him by periods of texts. With regard to South India, he notes that references to and associations of more 'natural' odours, such as fish, lotus, meat, and earth, remained relatively constant over time, whereas those related to aromatics evolved (McHugh, 2012: 87). As such, we could expect to find changes, or an evolution in the smellscape in earlier forms of Purepecha. Indeed the notion that different odours can dominate in different periods leads to the consultation of the two main early historical documents on the Purepecha language: (i) an extensive, two-volume dictionary from the late sixteenth century, known as the *Diccionario Grande* (Anonymous, 1991), and (ii) the *Relación de Michoacán* (henceforth RM), a description of the prehistory of the

Wakusecha, the dominant group within the prehistoric Tarascan State (see Section 1.3.2).¹³¹ The RM was compiled between 1538 and 1540 and delivered to the viceroy of New Spain in 1541 by the Franciscan friar Jerónimo de Alcalá, who had acted as both scribe and interpreter for the Purepecha informants, including the *petamuti* ‘chief sacrificer’ (Pollard, 2016: 59; Craine & Reindorp, 1970: vii). Identifying references to odours in these two texts allows us to gain an impression of the historical canon of scents in Purepecha.

Let us begin with the lexical entries in the *Diccionario Grande*. A total of 14 smell terms are attested in this work, of which 10 are basic terms and the remaining four are descriptive terms.¹³² The same total number of basic terms is attested in Modern Purepecha (see Section 5.3.1). A full list of terms collected from the *Diccionario Grande* is presented in Table 23, followed by the bare smell root in contemporary orthography and its translation. Entries preceded by an asterisk have been analysed or identified as descriptive terms, i.e. which refer to a state or event that is not fundamentally olfactory such as ‘to burn’ (see Section 5.3.2). In addition to these terms, *t^hunumbarihpeni* ‘to smell like dog (of people)’ is also attested in the sixteenth century source, as well as in the Friedrich archive (see Section 5.3.3.1), although as a transitive, agentive verb I will not include it in this historical canon.

¹³¹ As indicated in Sections 1.4 and 4.2, a second, even earlier dictionary is available for Purepecha (Gilberti, 1559), as is a grammar (Gilberti, 1558). However, the *Diccionario Grande* is widely considered to be a more comprehensive work that was in all likelihood compiled either by or with the help of native Purepecha speakers rather than (predominantly) by outsiders, i.e. Spanish friars. As a result, I will only use the latter source in this analysis.

¹³² Note that I list the three terms beginning in *je-* as separate terms, as in the *Diccionario Grande*, although it is highly likely that they are all derivations of the root *je-* or *ji-*, whose meaning remains unclear. However the root *jir(h)u-* appears to contain the spatial locative *-rhu*, which refers to the nose area (see Section 5.3.3.1).

<i>Diccionario Grande</i> entry	English translation	Modern root	Meaning
hamara-	to smell good or bad the part indicated	ja-	to be
hecume-, herume- ,	to stink of something rotten,	jiku- jir(h)u-	Not attested Not attested
hecueme-	to sink of putrefaction (same as hecume-), to stink of urine or damp, etc	jik(w)u-	Not attested
puntzuma-/me-	to smell fragrant	puntsu-	to be fragrant
*quatsi-	to stink	kwatsi-	to defecate
quinguimara-	to stink of saltpetre	kini-	to stink (esp. of unwashed person)
sipia ^h -, sipi-	to smell, stink badly	sipi-	to stink foully
*teremarahcarani	to stink (of house)	tere-	to be rotten
tocemara-	to stink of goat, etc	tose-	to smell fatty
caquimarandeni	to smell of goat (re: place)	tsaki-	Not attested
tsiquimara ^h -	to stink of burnt chilli	tsike-	to smell strongly
tzunamara-	to smell of milk, etc	tsunha-	Not attested
uchu-	to smell of fish	uchu-	to stink
*xungomarauacurani	to smell of cooked herbs	xunha-	to be green
yndamarandeni	to smell of butter or fat	inta-	Not attested

Table 23: Smell roots in 16th century Purepecha from the *Diccionario Grande*

Eight of the 14 terms are attested in both the sixteenth century and the modern language, although *quatsi-* (*kwatsi-* in modern orthography) ‘to defecate’ (Friedrich, unpublished; see also Velásquez Gallardo, 1978: 38) clearly still exists in the modern

language but has not been attested thus far with smell semantics.¹³³ Moreover, if one assumes that butter or fat and cooked herbs do not emit a pleasant smell, which holds for the modern language for the former at least, then only one term in Table 23 has positive connotations. This preference for negative hedonic statements is paralleled in the modern canon of smell terms, as well as in the inventories of other languages (e.g. Lee, 2015; see also Section 5.1.1).

Moreover, the majority of the historical smell roots in Table 23 are listed together with the suffix *-mara*, which is the same suffix pair as *-ma-rha-*, relating to taste and the mouth (see Section 5.3.1.1.), followed by additional spatial location morphology for more specific localisation. The frequent presence of this suffix pair, and the absence of the *-k'u-nti-* that is found with the modern basic terms, suggests that there may have been a shift in the expression of odour semantics, from a general taste-smell spatial couplet to individual ones for each sense. Indeed taste morphology may (pre-)historically have applied to both taste and smell, as it still can, with the smell spatial couplet emerging only later. It should also be acknowledged that the strong emphasis on location may simply reflect an attempt on the part of the creator/compiler of the dictionary to provide as comprehensive a set of entries as possible. That said, the body is clearly a key orienting principle for events, actions and states in Purepecha (Friedrich, 1984: 60), even if the historical explanation for this focus is not immediately forthcoming (see also Enríquez Andrade, 2012: 43-44 for a presentation of bodyparts and odour terms in Totonac). The main issue in relation to the change in spatial couplet morphology is the lack of intermediate textual evidence, namely from the seventeenth to the early twentieth century, which would facilitate further research on this issue.

As an example, let us look more closely at the entry for the root *hamara-* (*ja-ma-rha-* in modern orthography) ‘to smell good or bad the part indicated’. Here we find multiple sub-entries constructed with the related derivative *hanga-*, i.e. *ja-* ‘to be’ plus *-nha* ‘interior enclosure, cavity’. These two elements are supplemented by

¹³³ It should also be noted that simply because a term has not been attested in the modern dictionary or in the field data collection does not mean it does not still exist. Lexical differences do occur in the Purepecha dialects, therefore it may be that the sixteenth century terms were taken from different varieties of the language than the present study.

additional spatial location morphology, such as *-nti* ‘interior surface of angle on vertical axis’ (to refer to a generic place), to specify which body part or location smells, as in (16).¹³⁴

- (16) *janha-ma-rha-nti-ni* ‘to smell a lot (of a place)’
 janha-ma-rha-k’u-ra-ni ‘to smell good (of hands)’
 janha-ma-rha-ch’a-ni ‘to smell good (of throat/neck)’
 janha-ma-rha-re-kwa-re-ni ‘to smell good (of the whole body)’
 janha-ma-rha-ntsi-ni ‘to smell good (of head)’
 janha-ma-rha-tsi-ka-ni ‘to smell good (of low parts)’

On the whole there is much more emphasis in the *Diccionario Grande* on how places, including body parts, smell than in Friedrich’s dictionary and other references to olfaction in Purepecha. Nonetheless, we can identify the same three types of smell terms, whose classification was elaborated in Sections 5.3.1 to 5.3.3, as demonstrated in examples (17a-c), where the original orthography is in the first line, followed by the modern adaptation in the second line.

- (17a) *Vchu-ma-ra-nde-ni* (Type 1: Basic)
 uchu-ma-rha-nti-ni
 smell-SP.LOC-SP.LOC-SP.LOC-NF
 ‘to stink of fish’
- (17b) *Tere-ma-ra-hcha-ni* (Type 2: Descriptive)
 tere-ma-rha-ch’a-ni
 smell-SP.LOC-SP.LOC-SP.LOC-NF
 ‘to stink rotten (of neck)’

¹³⁴ Note that the orthography has been adapted to the modern conventions used elsewhere in this paper.

(17c)	churipu	en	ha-ma-ra-nde-ni	(Type 3: Source-based)
	churipu	eni	ja-ma-rha-nti-ni	
	soup	is ¹³⁵	be-SP.LOC-SP.LOC-SP.LOC-NF	
	'to smell of soup'			

In line with the flexibility and overlap of generic smell roots that we saw in Section 5.3.3.1., there are also examples of both roots given for the same entry in the *Diccionario Grande*, such as *hamarahcarani* ~ *sipimarahcarani* 'to stink badly (of house)', where both *ja-* and *sipi-* are attested. This overlap reflects that which is observed in the modern language, where *ja-* is preferred for source-based (copulative) verbs such as 'Ana smelled good', with the other two roots occurring in the same context but with a much lower frequency.

Even though the *Diccionario Grande* places great emphasis on the location of an odour, the general meaning of the terms shared with the modern language is largely equivalent. The main exception to this generalisation is *tocemara-* which refers predominantly to 'the (bad) smell of goat' while the modern root *tose-* refers more to 'the (bad) smell of something fatty'. The root *quingui-/kini-*, whose main referent is 'saltpetre' in the sixteenth century dictionary but 'unwashed person' in the modern language, may also seem to be another exception at first sight (or sniff!). However, saltpetre has a slight smell of urine which may also emanate from a person who has not washed for some time. As such, it appears that different referents are being used, in some cases, to refer to the same, or at least a similar, unpleasant odour. Taken together, the considerable proportion of shared roots, the preference for negative terms and the semantic similarities indicate that olfactory language has proved relatively robust and stable across time in Purepecha. As such, we do not seem to be dealing with what McHugh (2012: 17-19), following Baxandall (1988), calls the "period nose", which would predict that sixteenth century Purepecha speakers would perceive and evaluate odours in a different way to their modern-day descendants. Aside from the difference in spatial couplet morphology, the historical terms do not

¹³⁵ It is not certain that this lexeme is a contraction of *eni* 'to be', which has since fallen out of use, having grammaticalised into the predicativisor -i or -e (see Section 1.5.2).

differ significantly from those attested and elicited in the modern language in semantic (i.e. regarding their main referents) or formal terms.

In contrast, the RM offers a far less negative perspective of smell in late prehispanic and early colonial Purepecha culture. In this work almost 20 references are made to *olores* ‘smells, fragrances’, predominantly with reference to smoke or incense. Fire and smoke played a key role in certain Tarascan¹³⁶ religious ceremonies, including those carried out before going to war; in fact most of the references to fragrances appear in the descriptions of preparations for war. Moreover, one of the most important gods, Kurikaweri (also spelled Curicaveri, Curicaueri, Curicaberi, amongst others in the RM) ‘he who emerges burning’, was the *Wakusecha* god of war, suggesting also a connection between the terrestrial and celestial beings through an odorous substance, here smoke.¹³⁷

Indeed the RM relates how, before departure for war, the *Cazonci* ordered villagers to collect wood, which they stacked in large piles in temples throughout the region. These wood piles were lit so as to create large fires over which prayers and exorcisms were conducted by priests known as *Jiripacha* (singular: *Jiripati*¹³⁸). Together with five sacrificers and five priests known as *Curitiecha* ‘the knowers of burning’, the *Jiripacha* would make little balls of fragrance from incense and tobacco known as *andumukwa* ‘bile, tobacco, henbane (*Hyoscyamus niger*)’.¹³⁹ The *andumukwa* were attached to branches in the wooden pyre and later cast into the fire by the priests so that the gods would grant the Tarascans victory over their enemies, including by causing illness in their villages. Before burning the fragrance balls, the *Jiripacha* would preach, explaining how the god Kurikaweri had ordered the wood to

¹³⁶ ‘Tarascan’ is generally used in the archeological and (ethno-)historical literature to refer to the inhabitants of Michoacán prior to the arrival of the Spanish, as well as in the early modern period. I follow this convention here.

¹³⁷ Pickering & Beekman (2016: 13) note that the Old Fire God was the single most recognisable Mesoamerican deity prior to the Epiclassic (around 800-900 CE).

¹³⁸ The loss of *-ti* in the plural is unexpected. A direct translation of this name is difficult, although the term is easily glossed: *jiri-pa-icha* ‘to seek-DIR.CENTRIF-PL’. Its meaning suggests looking to leave a point, reflecting the imminent departure for war.

¹³⁹ “The use of “balls of fragrance” seems to have been a trait held in common in much of Mesoamerica [...]. The Tarascans gathered resin from various tropical trees, which they made into little balls for use in religious ceremonies and apparently at any time an important decision had to be made. At times the balls were also made of tobacco. These little balls, when placed in fire, burned slowly and gave off an odor that was pleasing to the gods” (Craine & Reindorp, 1970: 20, footnote 2).

be burned as an offering of the gods. They would take a ball of fragrance and offer this prayer to Kurikaweri: “Thou God of Fire who hast appeared in the midst of the houses of the chief priests, perhaps there is no virtue in this wood which we have brought to the temples and in these fragrances which we have here to give thee” (Craine & Reindorp, 1970: 20-21). The priest would then call out the name of each of the enemies’ lords, thus: “Thou Lord, who hast in charge all the people of such and such village, receive these fragrances and let there be a few of your vassals for us to take in the war” (idem.). This ceremony was performed on two nights, with the words of the prayers directed to the four quarters of the world and to hell. Once the prayers were finished, the balls of fragrances were thrown on to the fires (de Alcalá, 1956 [1574]; Craine & Reindorp, 1970).

The odours of incense and smoke were considered to be perceptible to the gods, as exemplified in the following interaction between Tariauri (the main hero of the RM and the unifier of the Tarascan Empire) and his nephew Tangaxoan regarding the arrival of Xaratanga, goddess of Tarianan (probably the modern-day town of Zirahuen, to the south-west of Lake Pátzcuaro):

“‘How can you bring her here? There are many dangers along the way. [...] Go clear her temples and her throne and place the incense there, make fires and smoke in that place for she will smell them when she comes.’ Tangaxoan replied that he had cleared that place and throne.” (Craine & Reindorp, 1970: 206, emphasis added).

As indicated above, tobacco was one of the substances burned in Tarascan ceremonies. Tobacco (also known in Spanish by its Nahuatl name *picietl*) was also the most important sacred plant for the premodern Maya and Nahua. Considered the sacred medicine *par excellence*, it was a god in its own right. It was used in various forms, including drunk as an infusion, chewed, smoked in cane tubes or inhaled as dust through the nose. The RM indicates that in the *cazonci*’s funeral procession, one person carried his cane-tubes of fragrances (Craine & Reindorp, 1970: 45), suggesting that he also partook in tobacco smoking. In the Maya and Nahua traditions, ground

tobacco was left in receptacles in temples so that gods could leave their trace to their human followers in the form of an animal print. Also, in meetings of poets and nobles, tobacco was smoked in cane pipes with hallucinogenic plants, granting it both a ritual and a medicinal meaning. Together with copal incense and flowers, tobacco continues to constitute the impalpable nourishment of the divine beings (gods). It also still has an important social meaning in some Nahuatl and Maya communities; in religious and family celebrations cigarettes are offered as gifts, often to older women (de la Garza, 2001: 100-101).

Burning and sacrifice, and their associated smells, also played a role in early Christian society. Here smoke functioned as a transmitter of odour and its qualities, such as the transformation of the stench of burning flesh into the sweet scent of martyrdom, as in the case of Saint Polycarp. The uncontainable and invisible properties of smell enabled odours to cross the boundaries of heaven and earth, thereby offering a link to the divine being (Harvey, 2006: 53-55). The key cross-cultural similarity here is the positive association or perception of the odour that relates to or connects with the deity. We saw in the brief description of the Tarascan war ceremony above that pleasant fragrances in the form of balls of incense and/or tobacco (now called copal) were cast on to the fire to please the god of fire Kurikaweri. A satisfied god brings good fortune to the worshippers, or rather bad fortune to the enemies. By ensuring the support of the gods, then, it could be claimed that pleasant odours therefore played their part in the expansion of the Tarascan State.

5.5. Conclusions

Rather than being difficult to express verbally, as claimed by scholars from various disciplines (see Section 5.1), the domain of smell in Purepecha is actually rather extensive. Odours can be described in three ways: (i) a basic reduplicated root that refers to some kind of PERCEIVED FOULNESS and specific smell morphology in the form of the spatial couplet *-k'u* and *-nti*; (ii) an intransitive root with non-olfactory semantics, such as *kurhi-* 'to burn', combined with the same spatial couplet morphology; and (iii) a generic verb derived from *ja-* 'to be; to smell' with the source of the odour, usually in the objective case, as well as the olfactory spatial couplet. The

presence in the language of basic roots that can refer only to odours (when combined with smell morphology) indicates that Purepecha constitutes another ‘olfactory culture’. However, it seems that these basic roots are somewhat underspecified for meaning, as illustrated by the translation in small caps, and receive their manner of perception through the semantically strong, albeit rather opaque in the case of *-k'u* and *-nti*, suffixes. These basic roots have proved to be relatively stable over time, in terms of both form and meaning, suggesting that their origin or introduction into the language considerably predates the earliest existing written records. The reason for the preoccupation in Purepecha for how objects, and more especially body parts, smell, however, remains poorly understood.

It was observed in Section 5.3 how different elicitation methods obtained different types of responses, with the Brief Smell Identification TestTM being the least effective with reference to basic terms. This is likely due to the low cultural salience of the stimuli contained in the booklet, as opposed to the smell jars that contained well-known, local substances. Moreover, the author’s presence during data collection may well have influenced participants, consciously or unconsciously encouraging the use of Spanish, the language associated with outsiders. It should also be mentioned that the lower-than-expected use of basic terms attested through the different elicitation methods may also indicate that the system is falling into obsolescence under the influence of bilingualism with Spanish, especially since younger speakers appear to use these terms less (see also O’Meara & Majid, 2016). Nonetheless, the observed propensity for negative hedonic smell terms in Purepecha supports the notion that foul odours are more consciously salient than pleasant ones (Lee, 2010: 115). This notion is not new, however, having been observed by Kant (2006) over 200 years ago:

“Which organic sense is the most ungrateful and also seems to be the most dispensable? The sense of smell. It does not pay to cultivate it or refine it at all in order to enjoy; for there are more disgusting objects than pleasant ones (especially in crowded places), and even when we come across something fragrant, the pleasure coming from the sense of smell is always fleeting and transient.” (Kant, 2006: 50-51).

While cross-cultural comparison of olfactory language may help to highlight certain universal tendencies in naming of typical referents, I contend that olfactory terminology is more valuable when considered from a language- and culture-internal perspective. This is the position put forward by McHugh, whereby the “vocabulary used to describe smells is contingent on a certain time, place and culture”, (McHugh, 2012: 65; see also Section 5.4). As the spatial couplet morphology helps us to better understand word formation processes, from both a synchronic and diachronic perspective in Purepecha, so might other elements of olfactory language help in unravelling the many complex puzzles posed by languages across the world.

