

## Spatial Language and the Use of Body-Part Terms in Nahuatl and P'urhepecha<sup>1</sup>

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**Abstract:** The present comparative paper explores the use of body-part terms in the grammars of Nahuatl and P'urhepecha, two Mesoamerican languages still spoken in Mexico today. The two languages possess terms that designate parts of the human body, such as lip, head, face, nose, neck, foot, etc. However, their use of body-part terms extends beyond the nominal realm to their inclusion in verbal derivation and the grammatical expression of locative relations between objects. Although the marking of spatial relationships via body-part terms is not exclusive to these Amerindian languages, it is certainly a prominent feature of their grammar and worthy of further research. Drawing from examples provided by native speakers, this paper focuses primarily on the use of body-part terms in verbal derivation and the expression of location in Nahuatl and P'urhepecha, all with the purpose of contributing to the growing body of work devoted to the relationship between language and space and advancing our current crosslinguistic understanding of how languages handle the expression of locative features and other spatial information in their grammars.

### 1. Introduction

The present comparative paper explores the use of body-part terms in the grammars of Nahuatl and P'urhepecha, two indigenous Mesoamerican languages still spoken in Mexico today. The two languages possess terms that designate parts of the human body, such as lip(s), head, face, nose, neck, foot, etc. However, their use of body-part terms extends beyond the nominal realm to their inclusion in verbal derivation and the grammatical expression of locative relationships between objects. As opposed to languages where spatial location of objects is typically expressed by means of prepositions, both Nahuatl and P'urhepecha instead employ various body-part terms as locative markers through verbal and nominal constructions. Although this type of marking of spatial relationships via body-part terms does not appear to be exclusive to these two Amerindian languages

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(cf. Brugman 1983, on Mixtec; Hollenbach 1995, Mixtecan; Levy 1999, Totonac; MacLaury 1989, Zapotec), it is certainly a prominent feature of their grammar and worthy of further research.

Drawing from examples provided by native speakers, this paper focuses primarily on the use of body-part terms in verbal derivation and the expression of spatial location in the grammars of Nahuatl and P'urhepecha, including a section comparing and contrasting the two languages.

### 2. The Languages

Typologically, P'urhepecha (also known as Tarascan) is a language isolate which exhibits variable syntactic order, although it presents characteristics of a verb-final language, such as postpositions. It possesses a system of cases, which include the locative, genitive, and objective cases. It is a language where primary objects are distinguished from secondary objects as primary objects are marked by the objective suffix *-ni*. P'urhepecha constitutes an example of agglutination since most words are readily analyzable into different types of derivational and inflectional morphemes. It contains no prefixes, only suffixes. It is mostly spoken in the state of Michoacán in central western Mexico. The variety described here is primarily that of the Sierra region of Michoacán.

Nahuatl is a Uto-Aztecan language still spoken in several Mexican states, such as Veracruz, Guerrero, and Michoacán; it is an agglutinative language with a great variety of inflectional and derivational processes, one of which is noun incorporation. As is the case with P'urhepecha, there is no single orthography to represent this language. The variety analyzed here is mainly that of the Huasteca region in Veracruz, Mexico.

### 3. Nominals Related to the Body

#### 3.1. P'urhepecha

According to Enfield, Majid, and van Staden (2006:137), “the body is a physical universal and all languages have terms referring to its parts.” Some of the terms that P'urhepecha has to refer to parts of the human body are the following:<sup>2</sup> *ep'u* ‘head’, *jak'i* ‘hand’, *penchumekua* ‘mouth’, *kanarhikua* ‘face’, *jantsiri* ‘foot’, *eskua* ‘eye’, *kutsikua* ‘ear’, *urhi* ‘nose’, *jurhintskua* ‘knee’, *tsikat'akua* ‘leg’, *ioxurhakua* ‘arm’, *mintsita* ‘heart’, *pexu* ‘back’, *añanchakua* ‘neck’. All of these are nouns, and therefore they can, for instance, be pluralized or possessed.

With respect to their internal structure, some of these nouns, for example *ep'u* ‘head’, *jak'i* ‘hand’, *urhi* ‘nose’ seem to be monomorphemic or at least they do not appear to be easily analyzable into smaller components. A few are clearly polymorphemic; in these, the individual morphemes can be identified, although they may not always be readily interpreted, as in the following two examples: *Eskua* ‘eye’ may be analyzed as: *es* ‘?’ + *kua* (nominalizer); *añanchakua* ‘neck’ < *aña* ‘vertical’ + *ncha* ‘back of the neck’ + *kua* (nominalizer).

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<sup>2</sup> All the linguistic examples in both languages are presented using practical orthographies.

### 3.2. Nahuatl

Some of the body-part terms found in Nahuatl are: *īxtiyōlli/īxtli* ‘eye, face’, *tēntli* ‘lip’, *ihitl* ‘stomach’, *nacaztli* ‘ear’, *tzīntli* ‘anus’, *yōllōtl* ‘heart’, *camac/camatl* ‘mouth’, *tzontecōmitl* ‘head’, *metztli* ‘leg’, *tzīntamalli* ‘buttocks’, *māitl* ‘hand, arm’, *icxitl* ‘foot’. The Nahuatl terms shown here contain more than one morpheme, given that they are provided in what is known as the absolutive (non-possessed) form, which ends in *-tl*, *-tli*, or *-li*: *tēn-tli* ‘lip’, *cama-tl* ‘mouth’, *icxi-tl* ‘foot’, and so forth. In discourse, however, Nahuatl body parts in general do not appear in the absolutive but only in the possessed form (unless the body part has been severed from its possessor), as in: *nometz* ‘my leg’, *moicxi* ‘your foot’, *īxtiyol* ‘his/her eye’, etc.

## 4. Body-Part Terms in Verbal Derivation

Besides exploring the kinds of body-part names found in Nahuatl and P’urhepecha, we may wish to go beyond body-part terminology and focus on whether body-part categories impinge on the grammatical structures of these languages in a more extensive way, for instance whether they are employed as building blocks for the creation of complex lexical items. Indeed, body-part terms, such as ‘head’, ‘face’, ‘nose’, and ‘lip’, especially as spatial or partitive morphemes, have become extensively incorporated into processes of derivation of complex items such as verbs and (deverbal) nouns. This is one of the ways in which body-part terms are called on to fill a variety of lexical and syntactic functions in the grammar of each of these languages.

### 4.1. P’urhepecha

P’urhepecha is specially known for its rich and complex spatial morphology. Aside from body-part nouns, the language also has a number of body-part suffixes. Body-part suffixes constitute a formal class of bound morphemes, i.e., they do not function as independent nouns, and are limited to appear one at a time in the same position as verbal formatives—usually immediately after the verbal root, or after the root and some type of adverbial suffix, and before all other adverbial suffixes and the inflectional morphemes—thus forming complex verbal bases. These suffixes can be grouped with other P’urhepecha locative morphemes, given that they may also encode spatial information and appear in the exact same position in the verbal base as other locatives. Since body-part suffixes are unable to appear independently, the language possesses morphologically unrelated terms used for this purpose. For instance, as seen above, the independent noun for ‘head’ is *ep’u*, the one for ‘nose’ is *urhi*, and the one for ‘back’ is *pexu* whereas the corresponding corporeal suffixes are *-ts’i*, *-rhu*, and *-parha*, respectively.

Over time body-part suffixes have grammaticalized into positional-orientational markers, combining with verbal roots to encode detailed spatial relationships between objects or the locus of affects or experiences. It is by now well established that metaphor and metonymy constitute fundamental driving forces in the grammaticalization of body-part terms as these have extended their domain of application from the more tangible and concrete to the more abstract (Heine 1997;

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Claudi & Heine 1986). It is also the case that body-part terms have undergone varied semantic extensions whose detailed paths of development undoubtedly require further investigation.

The following are examples of a few of the body-part suffixes alongside some of the extended meanings they have developed (Mendoza 2006): 1) *A* ‘stomach, intestines’ denotes: central area, interior, field, yard, body of fruit or vegetable. 2) *Ch’u* ‘buttocks, genitals’: bottom of objects, underside, underneath, roofed passageway. 3) *Mu* ‘mouth, lip’: opening, orifice, edge, entrance, door, window, language, speaking. 4) *Ndi* ‘ear, top of shoulder’: ear of objects, handle, inside corner, interior surface of an angle, ground surface, branch, hearing, understanding. 5) *Da/ɲe* ‘chest, thoracic area’: interior, interior enclosure, cavity. 6) *Darhi* ‘eye, face’: anterior surface of an object, interior surface, interior wall, flat (frontal) surface, flat area of the chest or stomach, shin, facade, emotion, mental states. 7) *Parha* ‘back’: posterior surface of objects, exterior surface, outside wall, belly of objects, tree trunk. 8) *Rhu* ‘nose, forehead’: point, tip, projection, end of object, edge, fruit, flower, seed. 9) *T’a* ‘leg, side of body’: thigh, side of objects, floor, bounded flat surface. 10) *Ts’i* ‘head’: top of objects, above, exterior upper surface.

A body-part suffix such as *ts’i* ‘head’ occurs in verbs like *tepets’ini* ‘to braid one’s hair’, *jupats’ini* ‘to wash one’s head’, and *porhots’ini* ‘to have a hole in the head’ (Medina Pérez 2006: 96), in which the head figures as a prominent semantic component. Further examples of the use of body-part morphemes in derivation (Friedrich 1971; Mendoza 2007) are: a) *A* ‘stomach’: *sunu-a-rha-ni* ‘to have indigestion’, *amba-a-ta-ni* ‘to clean a patio or field’, *kako-a-rha-ni* ‘to be empty’. b) *Mu* ‘mouth, lip’: *puti-mu-ku-ni* ‘to kiss’, *jatsi-mu-ta-ni* ‘to put at the door’, *uarha-mu-ku-ni* ‘to sharpen a blade’, *tsi-tsi-mu-ni* ‘to enjoy one’s food’. c) *Ndi* ‘ear’: *ata-ndi-ku-ni* ‘to hit someone’s ear or shoulder’, *amba-ndi-ta-ni* ‘to clean an inside corner’. d) *Da/ɲe* ‘heart, chest’: *kurhu-ɲa-ku-ni* ‘to smoke a person or animal out of a tree’, *jiu-ɲa-ni* ‘to scrape out the inside of a pot’, *p’itu-ɲa-ni* ‘to strum a guitar’. e) *Darhi* ‘eye, face’: *apo-ɲarhi-ni* ‘to have high cheek bones’, *charho-ɲarhi-ni* ‘to flush from embarrassment’, *uarhi-ɲarhi-ni* ‘to die in someone’s arms’, *ua-ɲarhi-ku-ni* ‘to bang one’s shin’, *ch’eno-ɲarhi-ni* ‘to fall of the inner side’ (as glaze inside a pot), *etsa-ɲarhi-ku-ni* ‘to spread over a flat surface’. f) *T’a* ‘leg, side’: *uana-t’a-ku-ni* ‘to pass someone on the road’, *jatsi-t’a-ku-ni* ‘to give a shot into the thigh’, *ma-t’a-ta-ni* ‘to stick to the floor of a room’.

### 4.2. Nahuatl

In Nahuatl body-part terms are also incorporated into verbs and typically denote the locus or (sub)part affected by the event described by the verb. Given that Nahuatl exhibits noun incorporation, body parts occur in the verb complex in a reduced form without their absolutive ending (*-tli*, *-tl*, *-li*), appearing as prefixes before the verbal root. Some of the most common body-part prefixes in verbal derivation are: *īx-*, derived from the noun *īxtli* ‘eye, face’ (the older word for ‘eye, face’), *tēn-* < *tēntli* ‘lip’, *ihti-* < *ihtitl* ‘stomach’, *nacaz-* < *nacaztli* ‘ear’, and *tzīn-* < *tzīntli* ‘anus’ (Sullivan 2011). They also appear as formatives in deverbal nouns.

With respect to noun incorporation, Mithun (1994:856) observes: “The IN [incorporated

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noun] loses its individual salience both semantically and syntactically. It no longer refers to a specific entity; instead, it simply narrows the scope of the V.” Specifically, in Nahuatl the incorporation of a body part has the effect of narrowing the scope of the verb to apply only to the part, subpart or location indicated by the body part. As in the case of P’urhepecha, it should be noted that some of the derived items in Nahuatl may also involve more metonymical, metaphorical, or abstract meanings, which may not necessarily denote direct involvement of the body part in the verbal event. For instance, *icxi-* < *icxiti* ‘foot’ may not refer directly to the foot or feet but, via metonymy, to something worn on one’s feet, for example, shoes or socks.

A few representative examples of Nahuatl verbs containing incorporated body parts with their approximate meanings (Sullivan 2013) are listed next: *Icxi-* < *icxiti* ‘foot’: *icxicalaquiliā* ‘to put a shoe on someone’s foot’, *icxicocoā* ‘for shoes to hurt someone’s foot’, *icxicuatōca* ‘to poke someone or an animal in the foot’, *icxigānchohuiā* ‘to trip someone with one’s foot’, *icxinehpaloā* ‘to cross one’s feet or legs’, *icxipepezoā* ‘to remove someone’s shoes or socks’, *icxipolōni* ‘to have blisters on one’s feet’, *icxipōztequi* ‘to break someone’s or an animal’s foot, to break the leg of a chair or table’, *icxitehtzona* ‘to hit someone on the foot’. *Ihti-* < *ihiti* ‘stomach’: *ihiticoyōni* ‘to have a hole in the middle’, *ihiticoyōniā* ‘to make a hole in the middle of something’, *ihiticuacualaca* ‘for the stomach to growl’, *ihiticuahcuālō* ‘to have stomach cramps’, *ihiticuatōca* ‘to pierce someone’s or an animal’s stomach’, *ihititelezca* ‘to kick someone or an animal in the stomach’. *Īx-* < *ixtli* ‘eye, face’: *īxcuapoloā* ‘to forget someone’s face’, *īxcuateuhhuiā* ‘to put dirt or debris in someone’s eye, to put dirt or debris in the water or some drink’, *īxcuati* ‘for one’s eyes to get tired’, *īxilpītza* ‘to blow on someone’s face’, *īxhuetzca* ‘to smile’, *īxmati* ‘to know someone or be someone’s relative’, *īxpā* ‘to put makeup on someone’s face’, *īxpachihui* ‘for something to fill up to the brim’, *īxpahpāca* ‘to wash someone’s face or the surface of something’, *īxpanō* ‘to disrespect someone, to cross a river or a road’, *īxpāntiā* ‘to accuse someone’, *īxpoloā* ‘to disappear or erase something’, *īxolīniā* ‘to touch the surface of a liquid’, *īxonī* ‘to sip the surface of water or a drink’, *īxtēmi* ‘for a container to fill to the brim, for someone’s face (or part of the face) to get swollen’.

### 5. Body-Part Terms in Locative Constructions

Although it is generally understood that languages possess particular terms that are used to name parts of the human body, such as head, face, back, neck, etc., and these are often employed to also name parts of objects, equally significant and important for linguistic science is the fact that a number of languages also employ body-part terms to encode spatial relationships between objects via different locative constructions. Over the last years, a good deal of attention has been paid to this area of linguistic research (Brugman & Macaulay 1986; de León 1992; Friedrich 1971; Svorou 1994) and although a significant amount of knowledge has been gained through such investigations, more remains to be done. Nahuatl and P’urhepecha are precisely among the Mesoamerican languages whose body-part terms figure prominently in the encoding of locative features. In both languages, body-part terms have become thoroughly integrated into their core grammars in order

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to provide detailed information as to the precise configuration of the objects in a locative relationship. Thus, in this section we focus on the analysis of some of the grammatical constructions by which spatial features are encoded in these languages and the role played by body parts.

### 5.1. P'urhepecha

As mentioned earlier, the body-part suffixes of P'urhepecha are firmly integrated into the language's system of spatial morphemes which appear as part of the verb. They behave semantically in largely the same manner as other locative suffixes as they also encode information of a spatial nature relating different objects. More specifically, the body part-suffixes mark the location where the subject of the verb is positioned, the (sub)area that the subject acts upon either on a separate object/entity or on himself/herself/itself, or where the action initiated by the subject takes place.

Given that one of the functions of body-part suffixes is to specify the locus of the state or action denoted by the verb on the entity (person, animal, or object) in question, when different areas of the same body or object are involved, this configuration can be analyzed as a part-to-whole relationship. Consider the following example (in the examples that follow the body part is in bold):

- (1)           Josefina ata-**k'u**-rha-sin-di           sipiata churikuechani.<sup>3</sup>  
Josefina apply-hand-FOR-HAB-ASSER.3 medicine at.night  
'Josefina puts medicine on her hand(s) at night.'

The suffix *-k'u* indicates the part of Josefina's own body that she applies the medicine on, her hand. There is no other nominal that encodes any partitive or spatial notion. Moreover, the suffix for 'hand' cannot be omitted even if the word *jak'i* 'hand' is also expressed in the same sentence. If it is expressed, *jak'i* is marked by *-rhu*, the locative case suffix, and it will then be coreferent with *-k'u*.

Perceived similarities of objects to human bodies provide a motivation for the extension of body parts to body-based metaphorical applications (Brugman 1983); consequently, body-part terms often extend their meanings based on the application of the geometry of the human body in its canonical upright position to other entities and areas of space (a path of evolution called the *anthropomorphic model* (Svorou 1994)). As discussed in 4.1, examples of body parts with extended spatial meanings in P'urhepecha include: *-rhu* 'nose', which also denotes 'point, tip, edge'; *-ts'i* 'head': 'top, above, upper surface'; *-parha* 'back': 'back side, exterior surface, outside wall'; and *-narhi* 'eye, face': 'interior surface, interior wall, flat frontal surface, anterior surface'.

In what follows, the focus will be exclusively on static spatial configurations involving two different entities or objects in direct contact (e.g., 'the cup is on the table'). In such case, the fundamental function of the body-part suffix is to delimit the specific area of the ground where the

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<sup>3</sup> Abbreviations used: ASSER – assertive, FOR – formative, HAB – habitual, LOC – locative, PERF – perfect, PL – plural.



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also used to designate the side or corner of something; while ‘inside’ is expressed by *ih̄ti-* < *ih̄titl* ‘stomach’, and ‘base, lower part’ by *tz̄īn-* < *tz̄īntli* ‘anus’ (Sullivan 2011:41-43).

Body parts as relational words in Nahuatl are used in genitive constructions of the form POSS-BODY PART-LOC + NOUN, where the body part serves to mark a more specific area within a more general space, such as in *itz̄īntlan cuahuītl* ‘at the base of the tree’; here the third singular possessive prefix *i-* agrees in person and number with the complement noun that combines with it, in this case, *cuahuītl* ‘tree’; *itz̄īntlan* ‘at the base of’ is formed by *tz̄īn-* (< *tz̄īntli* ‘anus’) + *-tlan* (locative). In a language like Nahuatl, these possessive constructions are an indication that the spatial relational features of body-part terms have originated in their application to part-whole relationships. Another example is *calli īxtēnno* ‘in front of the house’, where the third singular possessive prefix *i-* agrees in person and number with the noun that is its complement, in this case, *calli* ‘house’. *Īxtēnno* ‘in front of’ is formed by *īx-* < *īxtli* ‘face, eye’, *tēn-* < *tēntli* ‘lip’, and *-no*, an assimilated form of *-co* (locative (in, at)). As seen in this last example, where *īx* and *tēn* appear together, body parts may be combined with one another to form more complex relational words.

An interesting variation in the spatial use of body parts in Nahuatl is the possibility of combining the complement noun (the noun that the possessive points to in the locative possessive construction) and the body part into a single compound; in such case, the possessive prefix is omitted and the noun appears in its reduced (non-absolutive) form, which is also the form used for noun incorporation into verbs, and is juxtaposed to the body part acting as relational word: NOUN-BODY PART-LOC, as in *calīxtēnno* ‘in front of the house’ < *cal* (< *calli* ‘house’) + *īx* ‘eye’ + *tēn* ‘lip’ + *-no* (locative). According to native speakers, the meanings in the two cases, i.e., *calli īxtēnno* and *calīxtēnno*, are basically equivalent. Other examples are: *calnacaztlan* ‘at the corner of the house’ < *cal* ‘house’ + *nacaz* ‘ear’ + *-tlan* (locative); *ātz̄īntlan* ‘at the bottom of the water’ < *ā* (< *ātl* ‘water’) + *tz̄īn* ‘anus’ + *-tlan*; *āmēltēnno* ‘at the edge of the well’ < *āmēlli* ‘well’ + *ten* + *-no* (locative) (Sullivan 2011; Sullivan 2013).

The following sentences exemplify the use of body-part terms in the expression of static location in Nahuatl:

- (4) a.    Oquichpil itztoc    i-**tēn**-no    tepexitl.  
           boy            is            its-lip-LOC    cliff  
       b.    Oquichpil itztoc    tepexi-**tēn**-no.  
           boy            is            cliff-lip-LOC  
           *‘The boy is at the edge of the cliff.’*

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- (5) a. Cihuātl itztoc i-**tēn**-no ātl.  
 woman is its-lip-LOC water
- b. Cihuātl itztoc ā-**tēn**-no.  
 woman is water-lip-LOC  
*'The woman is at the edge of the water.'*
- (6) a. Oncah miac tetl i-**ixi**-tlan tepētl.  
 there are many stone its-foot-LOC mountain
- b. Oncah miac tetl tepē-**ixi**-tlan.  
 there are many stone mountain-foot-LOC  
*'There are many stones at the foot of the mountain.'*

In the (a) sentences, as in P'urhepecha, the figure is typically the syntactic subject, or as in (6a) the object of an existential verb like *oncah*, and the body-part term specifies the part of the ground that is directly involved in the locative situation. However, unlike in P'urhepecha, the body part is not added to the verb but appears (outside of the verb) as a possessed relational word whose possessor is its complement noun, which represents the ground. Thus, in (4a) *oquichpil* 'boy' is the figure and *tepexitl* 'cliff' the ground, and the body-part relational *itēnno* specifically marks the edge of the cliff as the precise location where the boy is situated. An alternative construction is shown in (4b-6b) where the complement noun is incorporated into the relational word without the possessive prefix; in such case, there is no separate independent nominal corresponding to the ground since it has been incorporated into the relational word.

### 6. Body-Part Terms as Relational Elements

In both Nahuatl and P'urhepecha, body parts further extend their domain of application via metonymy from part of an object to reference to the area in space that projects out from that part, is associated with that part, or to relative location in the space surrounding the object. This use represents the extension of body-part terms as relational elements of the grammar, since the body part delimits the relative location of some object with respect to another. As to possible explanations for the extension of body-part terms to the domain of space, Claudi and Heine (1986) propose an implicational hierarchy of basic conceptual categories where the category to the left serves as a metaphorical vehicle for the category to the right as follows: PERSON → OBJECT → SPACE → PROCESS → QUALITY. Thus, the category of space is conceptualized metaphorically via objects (i.e., SPACE IS AN OBJECT), as in (9) below, where 'ear' as a body part encodes the spatial notion 'beside'. Examples (7-8) are from P'urhepecha and (9-10) from Nahuatl:

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- (7) Takukata echu-**ch'u**-ku-s-ti mesa-rhu.  
 book flat-buttocks-LEXP-PERF-ASSER.3 table-LOC  
*'The book is lying flat under the table.'*
- (8) Misitu pi-**t'a**-ku-s-ti porhechi-rhu.  
 cat next.to-leg-LEXP-PERF-ASSER.3 pot-LOC  
*'The cat is next to (the side of) the pot.'*

In example (7), the book is not on the table but under it, and the body-part suffix *ch'u* 'buttocks, bottom' precisely indicates the area under the table. Similarly, in (8) the cat is not on any part of the pot but near it, and *t'a* 'leg, side' codifies this information.

- (9) a. Tlācatl itztoc i-**nacaz**-tlan cihuātl.  
 man is her-ear-LOC woman  
 b. Tlācatl itztoc cihuā-**nacaz**-tlan.  
 man is woman-ear-LOC  
*'The man is beside the woman.'*
- (10) a. Huēyi tetl ēltoc i-**tzīn**-tlan cuahuitl.  
 big stone is its-anus-LOC tree  
 b. Huēyi tetl ēltoc cuahui-**tzīn**-tlan.  
 big stone is tree-anus-LOC  
*'The big stone is at the base of the tree.'*

In examples (9-10) the referents of the two nominals in the sentence are similarly located relative to one another and the specific spatial relationship between them is provided by *nacaz* 'ear' → 'beside' and *tzīn* 'anus' → 'at the base'.

### 7. P'urhepecha *Darhi* 'Eye/Face' and Nahuatl *Ixtli* 'Eye/Face'

In P'urhepecha, the suffix *ɲarhi* 'eye, face' in general designates different kinds of flat surfaces with the understanding that these be facing the observer or be clearly visible to the observer. In addition, *ɲarhi* can also denote 'water, liquid' as in (11):

- (11) Siraueni anapu japunda chupipi-**ɲarhi**-s-ti.  
 Zirahuén of lake blue-face-PERF-ASSER.3  
*'(The water of) Lake Zirahuén is blue.'*

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Here *ɲarhi* marks the flat surface of the water, and we can conclude that the visible surface of the water is what is blue. In fact, *ɲarhi* is one of the most semantically diversified suffixes in P'urhepecha. A further example of its semantic productivity is the case where it denotes landscape features, such as 'hillside', as seen in (12):

- (12)            K'uiripu-echa icha-**ɲarhi**-ku-s-ti=ksi.  
                   person-PL            longish.horizontal-face-LEXP-PERF-ASSER.3=3  
                   *'The people are lying on the hillside.'*

In (12) the body-part suffix in context is sufficient for the hearer to understand what area of space the speaker refers to without having to further specify the place where the people are through some independent noun; this fact evinces the rich load of semantic information attached to these suffixes.

In Nahuatl, *īx-* < *īxtli* 'eye, face' is incorporated into relational words and can also refer to flat surfaces, including the water's surface, as in the following example:

- (13)            Patox    ahqui    i-**īx**-co    ātl / Patox    ahqui    ā-**īx**-co.  
                   duck    swims    its-eye-LOC    water / duck    swims    water-eye-LOC  
                   *'The duck swims on the water's surface.'*

As in previous Nahuatl examples analyzed here, (13) shows two closely related variants of this locative construction: One where the ground *ātl* 'water' is mentioned independently and another where it gets incorporated into the relational word, resulting in *āīxco*.

Another function of *īx*, which parallels *ɲarhi*'s behavior in P'urhepecha, is the encoding of features of the landscape. In Nahuatl, one finds a richness of terms that have to do with the type of existing terrain, such as *tlaīxco* 'elevated place' < *tla* (impersonal prefix) + *īx* 'eye' + *-co* (locative); *tlaīxtemōlez* 'place with a downward incline' < *tla* + *īx* + *temō* 'go down' + *lez* (nominalizer); *tlaīxtlehcolez* 'place with an upward incline' < *tla* + *īx* + *tlehcō* 'go up' + *lez*; *īxtlehcolez* 'upward incline' < *īx* + *tlehcō* 'go up' + *lez* (nominalizer); and *īxtemōlez* 'downward incline' < *īx* + *temō* 'go down' + *lez* (nominalizer). Thus, *īx* proves to be as versatile as its P'urhepecha counterpart.

## 8. Comparison of the Two Languages

### 8.1. Similarities

1. With respect to the terms used to name body parts, Nahuatl and P'urhepecha both possess many independent nouns to refer to body parts; some are monomorphemic, some polymorphemic.
2. Both languages employ body-part terms as formatives in derived verbs (and nouns) to encode meanings directly involving a body part or spatial meanings associated with the body part (e.g., P'urhepecha *-ɲarhi* 'eye, face' and Nahuatl *īx-* < *īxtli* 'eye, face').

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3. Both languages may use body-part terms in static locative constructions to express spatial relationships between two different objects that are in direct contact with one another.
4. Both languages employ body-part terms as relational elements in their grammars to locate objects with respect to one another where via metonymy the body part stands for the space that projects out from the body part or is generally associated with it.
5. Both languages may also express location using means other than body-part morphemes, for instance, locative adverbs and stative verbs like *jarhani* ‘to be located’, as is the case in P’urhepecha, or relational words/prepositions like *pan* ‘on, in’, in Nahuatl.
6. Both languages make use of body parts for the encoding of certain features of the natural environment. For instance, the term for ‘eye/face’ in both languages can designate different surfaces, such as the surface of a body of water or a hillside or incline.

### 8.2. Differences

1. P’urhepecha has both self-standing body-part nouns as well as body-part suffixes, which are morphologically unrelated to the corresponding independent nouns. Nahuatl possesses independent body-part nouns but does not have body-part suffixes.
2. In verbal derivation, Nahuatl employs the morphological mechanism of noun incorporation. The reduced forms of body-part terms are used to form verbs that express meanings that involve those body parts, and these forms also appear in locative constructions. For verbal derivation, P’urhepecha instead employs its set of body-part suffixes, which are also used in locative constructions.
3. Nahuatl appears to have relatively few body-part terms productively used for locative meanings; the ones that are commonly found are: eye/face, lip, foot, anus, stomach, and nose. P’urhepecha, on the other hand, has a larger set of productive body-part morphemes for this purpose (eye/face, back, ear, nose, neck, stomach, buttocks, head, mouth, foot, arm, leg, chest).
4. The morphosyntax of the locative constructions in the two languages is also different: P’urhepecha marks the ground by means of the locative case ending *-rhu*, and the body-part suffix associated with it is obligatorily integrated into the dispositional verb. In Nahuatl, the body-part term appears as a compounded relational word in a nominal possessive construction, where the complement noun that encodes the ground is the possessor of the body part. Alternatively, the ground gets incorporated into the relational word without any possessive prefix.

### 9. Conclusion

Nahuatl and P’urhepecha represent two different strategies with respect to the integration of body-part terms into the grammar of space. In both languages, the human body and its parts are confirmed to play a fundamental role in the expression of spatial relationships and the categorization of the physical features and parts of both animate and inanimate entities; moreover, body-part terms greatly enrich the morphological and lexical formation repertoires of these languages, actively participating as formatives in verbal (and nominal) derivation.

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To complement the study of the static locative constructions surveyed here, future papers should also focus on dynamic locative situations. In addition, further research in both languages is required to determine exactly what kinds of verbal roots allow the presence of body-part morphemes and what grammatical restrictions might be present. All in all, a study such as the present one should add to the growing body of work devoted to body-part terms and the relationship between language and space and help advance our current crosslinguistic understanding of how languages handle the expression of locative notions and other spatial information in their grammars, thus aiding us in the comparison of similar structures in other Mesoamerican languages or languages from other typological areas of the world.

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