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# ‘Eye’ in the Zamucoan languages

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## Abstract:

The present chapter examines the lexeme ‘eye’ in Zamucoan, a small family of languages traditionally spoken in the Chaco Boreal, in South America. The morphology of ‘eye’, and the development of the lexeme over time are analyzed. All Zamucoan languages are characterized by eye/face polysemy, which is cross-linguistically well-documented. ‘Eye’ occurs in derivations and compounds for parts of the eye, the face and other body-related terms, such as ‘eyeglasses’, ‘mask’ and ‘acne’. In addition, ‘eye’ is the metaphorical source for many referents characterized by a round shape, which can undergo further metaphorical extension. These conceptualizations will be discussed in detail and can follow pathways of semantic change that have been described in the literature. The lexeme ‘eye’ is also found in compounds and idioms that refer to the sense of sight, eye conditions, states of mind, social behaviors and sleep. A condition or a deformation of the eye can serve to insult or mock someone, while the name of some animals refers to eye-related features. Finally, a few ideophones that are specifically used with ‘eye’ are described.

**Keywords:** Ayoreo, Chaco languages, Chamacoco, Chiquitano, embodiment, morphology, polysemy, semantic change, Zamucoan

## 1 Introduction\*

The present chapter analyzes the lexeme ‘eye’ in Zamucoan. After having introduced the Zamucoan family, section 2 describes the morphology of ‘eye’ and the development of the lexeme over time. Then, the eye/face polysemy, documented in all Zamucoan languages, is addressed (§3). ‘Eye’ occurs in derivations and compounds for parts of the eye, the face and other body-related terms (§4). The eye also serves for the metaphorical mapping of various types of round objects (§5). It appears in compounds and idioms referring to the eyesight, eye conditions (§6), states of mind and social behaviors (§7). Other idiomatic collocations and ideophones specifically used with ‘eye’ are dealt with in §8.<sup>1</sup>

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<sup>1</sup> Data on Ayoreo and currently spoken Chamacoco are provided in phonological transcription. The same applies to data on Old Zamuco and its dialects (see §2), but in this case it was necessary to interpret the orthographic transcription based on our knowledge of modern Zamucoan languages (for details, see Ciucci & Bertinetto 2015: 20-21, Ciucci 2016). In this chapter, the following abbreviations are used: 1, 2, 3 = first, second, third person; AF = argument form; AYO = Ayoreo; CHA = Chamacoco; DIM = diminutive; EXIST = existential; F = feminine; GF = generic form; IDEO = ideophone; IF = indeterminate form; IRLS = irrealis; M = masculine; OZA = Old Zamuco; PF = predicative form; PL = plural; PREP = preposition; REFL = reflexive; SG = singular; SUB = subordinator.

The Zamucoan family consists of two living languages: (i) Ayoreo (**AYO**), with about 4,500 speakers in southern Bolivia and northern Paraguay; (ii) Chamacoco (**CHA**), with approximately 2,000 speakers in the Paraguayan department of Alto Paraguay. CHA has two dialects: Ebitoso (or Ibitoso) and Tomarãho. In this chapter, I refer to the former, spoken by the vast majority of the Chamacoco. A third language, †Old Zamuco (**OZA**), was spoken in the Jesuit mission of *San Ignacio de Samucos*, in the northern Chaco. It was described in the 18<sup>th</sup> century by the Jesuit Father Ignace Chomé, author of a grammar (Chomé 1958 [*ante* 1745]) and a dictionary, whose critical edition is in preparation (Ciucci, forthcoming). Although AYO and OZA share most of their lexicon, they should be considered two separate languages. By contrast, CHA lost most of its original Zamucoan lexicon, but sometimes maintains archaic features which are very useful for historical reconstruction (Ciucci & Bertinetto 2015, 2017).

The data for AYO come from the available lexicographical sources (SIM 1967, Barrios et al. 1995, Higham et al. 2000, Morarie 2011) and fieldwork by Pier Marco Bertinetto and myself. For CHA, I use data from my fieldwork (undertaken between 2009 and 2019) and from Ulrich and Ulrich (2000). The main source for Old Zamuco is the dictionary by Ignace Chomé (Ciucci, forthcoming). A first description of this dictionary is Ciucci (2018). All other sources are overtly mentioned in the paper. The reader interested in more information about Zamucoan may consult Ciucci (2016[2013]). Concerning the analysis of linguistic embodiment in Zamucoan, this study was preceded by a paper on the lexeme ‘head’ (Ciucci 2019).

## 2 ‘Eye’ and the Zamucoan nominal morphology

This section introduces the inflectional morphology of ‘eye’ in Zamucoan, which concerns two areas of interest: (i) the nominal suffixation; (ii) the possessive inflection of the noun. It will help to understand the linguistic glosses throughout the paper.

Zamucoan nouns and adjectives have a suffixation expressing gender (masculine or feminine), number (singular or plural) and a ‘nominal form’, which distinguishes between ‘predicative form’ (PF), ‘argument form’ (AF) and ‘indeterminate form’ (IF). Such a morphological tripartition is a peculiarity of Zamucoan (for more details, see Ciucci 2016 and Bertinetto *et al.* 2019). The predicative form marks the NP with predicative function: e.g. CHA *owa* (2SG) *ɲakirap* (man[M.SG.PF]) ‘you are a man’. The singular predicative form diachronically coincides with the root and is often the starting point for any morphological operation. The NP with argument function is instead marked by the argument or the indeterminate form: e.g. CHA *ɲakirb-itɛ* (man-M.SG.AF) *tola* ([3]fear) *ojajuwa-t* (giant\_anaconda-M.SG.AF) ‘the man fears the giant anaconda’. The difference between the argument and indeterminate form is that the latter expresses a non-specific referent: e.g. CHA *t-iɛ* (1SG-meet) *ɲakirb-itik* (man-M.SG.IF) ‘I met a man’.

The nominal suffixation of ‘eye’ is reported in (1), with the suffixes indicated by the segmentation. The indeterminate form is omitted, since it has a low frequency. OZA and AYO have the same root *edo*, coinciding with the singular predicative form. The predicative and argument form are syncretized in the singular of many AYO feminine nouns, such as *edo* (1b). CHA *ile/ili* ‘eyes’ (1c) is a plurale tantum. The CHA plural has systematically lost the distinction between predicative and argument form, which are therefore not indicated. Besides, some CHA

adjectives are uninflectable and thus have no morphological gloss. CHA *ile/ili* is a cognate of OZA and AYO *edo*, for reasons discussed at the end of this section; here it is worth anticipating that CHA /l/ corresponds to OZA and AYO /d/. CHA also has an innovative term for ‘eye’ (2d), which rarely occurs in eye-related conceptualizations; its etymology is uncertain.

- (1) a. OZA *edo* (3.F.SG.PF), *edo-tae* (3.F.SG.AF), *edo-i* (3.F.SG.PF), *edo-jie* (3.F.PL.AF) ‘eye’  
 b. AYO *edo* (3.F.SG.PF/AF), *edo-j* (3.F.PL.PF), *edo-die* (3.F.PL.AF) ‘eye’  
 c. CHA *il-e* / *il-i* (3.F.PL) ‘eyes’  
 d. CHA *one*<sup>9</sup> (3.F.SG.PF), *on-ta* (3.F.SG.AF), *on-e* (3.F.PL) ‘eye’

In Zamucoan, body parts are usually inflected for possessor, which is marked by a prefix (for more details, see Ciucci 2016). The possessive inflection of ‘eye’ is reported in (2), where only prefixes are segmented. All Zamucoan languages distinguish a plain third person (glossed as ‘3’), and a reflexive third person (REFL), coreferent with the subject. The former is the base of the possessive inflection and is used as a citation form (it is indeed the possessive person reported in ex. 1). The expression of the possessor is not always obligatory, and body parts can have a ‘generic form’ (GF), which does not refer to any possessor: this is the case of ‘eye’ in OZA and AYO. The possessive inflection of ‘eye’ extends to all of its derived nouns and compounds with ‘eye’ as a first unit (when they can be possessed).

- (2) a. OZA *j-edo* (1SG.F.SG.PF), *edo* (2SG/3.F.SG.PF), *d-edojie* (REFL.F.PL.AF) *aj-edojie* (1PL/2PL.F.PL.AF), *p-edo* (GF.F.SG.PF) ‘eye’  
 b. AYO *j-edo* (1SG.F.SG.PF/AF), *b-edo* (2SG.F.SG.PF/AF), *edo* (3.F.SG.PF/AF), *d-edo* (REFL.F.SG.PF/AF), *jok-edodie* (1PL.F.PL.AF), *wak-edodie* (2PL.F.PL.AF), *p-edo* (GF.F.SG.PF/AF) ‘eye’  
 c. CHA *p-ile* (1SG.F.PL), *e-le* (2SG.F.PL), *ile* (3.F.PL), *de-le* (REFL.F.PL) ‘eyes’  
 d. CHA *p-onta* (1SG.F.SG.AF), *onta* (2SG/3.F.SG.AF), *n-onta* (REFL.F.SG.AF) ‘eye’

The citation form of nouns and adjectives is the singular predicative form for OZA and the singular argument form for AYO and CHA (in addition to the third person for nouns with possessive inflection). Pluralia tantum, such as *ile* (2c), are cited in the plural. For reasons of simplicity, in the rest of this paper I will often omit the glosses for the citation forms of ‘eye’: OZA *edo* (2a), AYO *edo* (2b), CHA *ile* (2c) and *onta* (2d).

Finally, some historical data are worth considering. Lussagnet (1962: 42) published some wordlists collected by the French traveler Alcide d’Orbigny, who in 1831 had met the speakers of four OZA ‘dialects’ (3). Here and in (4), a tentative morphological segmentation was added; the original translation was adapted to the morphology of each form. The forms in (3) are very similar to those of OZA and AYO.

- (3) Guarañoca: *j-edo-dia* (1SG-eye-F.PL.AF) ‘my eyes’  
 Samucu and Poturero: *j-edo-j* (1SG-eye-F.PL.PF) ‘my eyes’  
 Morotoco: *j-edo* (1SG-eye[F.SG.PF]) ‘my eye’

For CHA there are some historical data on both dialects collected by Boggiani (1929: 171-172 [ante 1902]) and Baldus (1932: 402), who also provided unpublished data by the Czech anthropologist Alberto Vojtěch Frič. In (4), the forms of ‘eye’ are in the original transcription, with a phonetic interpretation.

(4) Ebitoso (Boggiani): *ídd-i* ['id:i], *íll-iü* ['il:i] ([3]eye-F.PL) ‘eyes’

Ebitoso (Baldus): *p-ěl-e* ['pɛle] (1SG.F.PL) ‘my eye’; *a-d-é* [a'de] (2SG.F.PL) ‘your eyes’

Tomarãho (Baldus): *p-ěd-e* ['pɛde], *p-ěl-e* ['pɛle], *p-el-ě* ['pelɛ], *p-el-í* [pe'li] (1SG.F.PL) ‘my eyes’; *ěd-e* ['ɛde] (2SG.F.PL) ‘your eyes’

Ebitoso (Frič): *ul-ü* [uly] (2SG.F.PL) ‘your eyes’

Although OZA and AYO *edo* and CHA *ile* (with root *il-*) are cognates, their relationship is not straightforward. Dropping the final root-vowel (*edo* ~ *il-*) is frequent in CHA. The initial CHA /i/ may correspond to any OZA and AYO vowel, while CHA /l/ corresponds to OZA and AYO /d/. Considering that /i/ and /l/ are CHA innovations, the data in (4) show an earlier stage of CHA, in which the original sounds are partly maintained; some forms have root-initial /e/, while the consonant /l/ alternates with /d/. These phonemes have changed in CHA *il-*, but are preserved in OZA and AYO *edo*.

### 3 The eye/face polysemy

In OZA and AYO, the plural of *edo* ‘eye’ also means ‘face’ by synecdoche, as in (5). The same occurs in two OZA dialects documented by d’Orbigny (6), and in CHA, where *ile* ‘eyes’ also means ‘face’ (7). By contrast, CHA *onta* ‘eye’ (1d) does not show any eye/face polysemy, possibly because it is an innovation.

- (5) AYO *a-ru* *b-edo-die*  
 2SG.IRLS-wash 2SG-eye-F.PL.AF  
 ‘Wash your face!’, lit. ‘wash your eyes!’

- (6) Guarañoca: *ido-dia* ([1SG]eye- F.PL.AF) ‘my face’, lit. ‘my eyes’  
 (variant of *jedodia*, ex. 3)

Morotoco: *j-edo-e* (1SG-eye-F.PL.PF) ‘my face’, lit. ‘my eyes’ (Lussagnet 1962: 232)

- (7) CHA *Ukomehet* *ño* *tɛ-ũr* *d-el=ihí* *ono:-ta*  
 Ukomehet [3]go 3-wash REFL-eye=PREP river-F.SG.AF  
 ‘Ukomehet goes to wash his face (lit. his eyes) in the river.’

Brown and Witkowski (1983) estimate that a type of eye/face polysemy is found in about 40% of the world’s languages. The eye/face polysemy is particularly frequent in small societies. A specific term for ‘face’ usually develops later and can include the original polysemous term (Brown and Witkowski 1983: 83), as occurred in (8-9). In (8), the /d/ of *edo* turns into /n/ owing to nasal harmony triggered by the nasal vowel of the following morpheme,

which is semantically opaque and underwent phonetic erosion in AYO. In (9), ‘face’ is probably conceptualized as ‘the interior part’, ‘the inside’ of the eye, which may reflect the lower cognitive salience of ‘face’ compared to ‘eye’ (Brown and Witkowski 1983: 73).

- (8) a. OZA *enoratea* (3.M.SG.PF) ‘face; façade; frontispiece’ < *edo* ‘eye’ + *-rãtea* ?  
 b. AYO *enoteaj* (3.M.SG.AF) ‘face; forehead; looks; color’ < *edo* ‘eye’ + *-(rã)tea* ?  
 c. Samucu and Poturero: *j-enonatea* (1SG-face[M.SG.PF]) ‘my face’ (Lussagnet 1961: 232)
- (9) a. OZA *edahorõ* (3.F.SG.PF) ‘face, features of the face’ < *edo* ‘eye’ + ? *ahorõ* (F.SG.PF) ‘interior part’  
 b. CHA *ilehet* (3.M.SG.AF) ‘face’ > *ile* ‘eyes’ + ? *ehet* (3.M.SG.AF) ‘inside’

The polysemous form meaning eye/face is usually the first element of compounds referring to the face (10-11).

- (10) a. OZA *edosuguru* (3.M.SG.PF) ‘frown, scowl, angry face’ < *edo* ‘eye/face’ + *usuguru* (M.SG.PF) ‘roughness’  
 b. OZA *edosugururak* (M.SG.PF) ‘frowning, scowling, with an angry face’ < *edo* ‘eye/face’ + *usugururak* (M.SG.PF) ‘rough’
- (11) OZA *edokakok* (M.SG.PF) ‘having a wrinkled forehead’ < *edo* ‘eye/face’ + *kakok* (M.SG.PF) ‘wrinkled’

In (12-15), there are OZA idiomatic expressions involving the eye/face polysemy.

- (12) OZA *a-hihi*      *j-edo-die*      *te-o\_nam*  
 1SG-do      1SG-eye/face-F.PL.AF      3-tremble  
 ‘I grimace’, lit. ‘I let my face tremble’ (involuntarily, e.g. when someone drinks something sour).
- (13) OZA *a-horu*      *edo-jie*      *jui*      *ome*      *agaje*  
 2SG-IRLS-disguise      2SG.eye/face-F.PL.AF      disguise      PREP      Father  
 ‘Disguise yourself so that the Father does not recognize you’, lit. ‘cover your face for the Father.’
- (14) OZA *a-ipogu*      *j-edo-jie*  
 1SG-hide      1SG-eye/face-F.PL.AF  
 ‘I disguise myself’, lit. ‘I hide my face.’
- (15) OZA *a-wagos*      *j-edo-jie*      *om*  
 1SG-cover      1SG-eye/face-F.PL.AF      PREP  
 ‘I cover myself (not to be recognized)’, lit. ‘I cover my face.’

It is significant that in compounds or idioms referring to the face, the plural of ‘eye’ is used instead of a specific term for ‘face’; indeed the latter was derived from ‘eye’ (8-9). As we will see in §4, the eye/face polysemy is maintained in a number of compounds referring to body parts.

#### 4 ‘Eye’ and the human body domain

‘Eye’ is used in derivations or compounds referring to parts of the eye and parts of the face contiguous to it. The same applies to a disease such as ‘acne’, to eye secretions and objects related to ‘eye/face’.

In most languages, the source of metaphorical mapping for ‘eyeball’ is a round object, such as ‘grain’ or ‘seed’ (Koch 2008: 120, 133; Urban 2012: 633). This is also the case in CHA, where ‘eyeball’ is literally the ‘seed of the eye’ (16). While here ‘seed’ is the source for a body part, the metaphorical transfer from ‘eye’ to ‘seed’ is also observed (ex. 30-31, §5.1).

- (16) CHA *ont ejhita* (3.F.SG.AF), *ile ejhita* (3.F.SG.AF) ‘eyeball’ (sometimes used for ‘iris and pupil’) < *onta* ‘eye’, *ile* ‘eyes’ + *ejhita* (F.SG.AF) ‘seed’

In the world’s languages, ‘pupil’ often derives from nouns for humans, small humans (e.g. ‘child’) or diminutive humanlike objects (Heine 1997: 132); in addition, ‘pupil’ can develop into a classifier for ‘person’ (Aikhenvald 2000: 443). Another conceptualization of ‘pupil’ is ‘small eye’ (Urban 2012: 671). In OZA, *edap* ‘pupil’ (17a) is the diminutive of ‘eye’, whose suffix *-ap* stems from *ap* (3.M/F.SG.PF) ‘child’ (Bertinetto and Ciucci, forthcoming); in AYO, *edodago* ‘pupil’ is literally the ‘woman (who laughs a lot) of the eye’.

- (17) a. OZA *edap* (3.F.SG.PF) ‘pupil’ < *edo* ‘eye’ + *-ap* (DIM)  
 b. AYO *edo ahikase* (3.F.SG.PF/AF) ‘pupil of the eye’ < *edo* ‘eye’ + ?  
 c. AYO *edodago* (3.F.SG.PF/AF) ‘pupil’ < *edo* + *dago* (F.SG.PF/AF) ‘woman who laughs a lot’

In AYO, the ‘iris’ is the ‘black/dark eye’ (18), with reference to the most frequent color of the irides (cf. Lao, Enfield 2006: 184). The term also extended to ‘livid, skin spot’, following the general tendency that “transfer proceeds from upper to lower parts of the human body” (Heine 1997: 134; an exception is in ex. 25).

- (18) AYO *edo utata* (3.F.SG.PF/AF) ‘iris of the eye’ (also ‘livid, skinspot’) < *edo* ‘eye’ + *utata* (F.SG.PF/AF) ‘dark, black’

The white part of the eye contiguous with the iris is the sclera. The AYO and CHA compound for ‘sclera’ is semantically transparent (19).

- (19) a. AYO *edo pororinej* (3.M.SG.AF) / *edo pororo* (3.F.SG.AF/PF) ‘white part of the eye, sclera’ < *edo* ‘eye’ + *pororinej* (M.SG.AF) ‘whiteness’ / *pororo* (F.SG.AF/PF) ‘white’

- b. CHA *ile ejhi po:re* (3.F.PL) ‘white part of the eye, sclera’ < *ile ejhi* (3.F.PL) ‘eyeball’ + *po:re* (F.PL) ‘white’

AYO ‘eyelash’ (20a) is the diminutive of ‘eye’, like OZA ‘pupil’ (17a). It is possible that in AYO ‘pupil’ shifted to ‘eyelash’ due to contiguity. This often occurs for body parts with low salience within the semantic domain of ‘eye’ (Koch 2008). A similar case is CHA ‘eyelashes’ (20b): Sušnik (1970: 106) notes that CHA ‘eyebrow’ is also used for ‘eyelashes’. Indeed ‘eyebrows’ is the second unit of ‘eyelashes’. Besides, confusion between ‘eyelash’ and ‘eyebrow’ is observed cross-linguistically, owing to their low salience (Koch 2008: 123-124).

- (20) a. AYO *edabia* (3.F.SG.AF) ‘eyelash’ < *edo* ‘eye’ + *-ap* (DIM)  
 b. CHA *ile utuso* (3.M.PL) ‘eyelashes’ < *ile* ‘eyes’ + *utuso* (3.M.PL) ‘eyebrows’, *utust* (3.M.SG.AF) ‘root; vein; eyebrow’; cf. AYO *etasode* (3.M.PL.AF) ‘eyebrows’ < *etasi* (M.SG.AF) ‘hairlike root of plants’

While in (20b) CHA and AYO ‘eyebrows’ are an extension of ‘root/vein’, in (21) ‘eyebrow’ comes from ‘eye’. In some languages, ‘eyebrow’ is conceptualized via metaphorical similarity with ‘fringe’, ‘line’, ‘edge’ (Koch 2008: 132; Urban 2012: 635). In AYO (21c), the opposite occurred, since ‘eyebrow’ can refer to the bank of a river or lake, usually higher than the water level. Similarly to ‘eyebrow’, ‘lower eyelid’ in AYO (22b) is used for the edge of a river or lake, of a road, or the ground at the edge of a hill.

- (21) a. OZA *jedomit* (1SG.M.SG.PF) ‘eyebrow’ < *edo* ‘eye’ + *-mit* ‘place where the preceding element is’ (Hervás y Panduro 1787: 174)  
 b. OZA *eda agu* (3.M.SG.AF) ‘eyebrow’ < *edo* ‘eye’ + ?  
 c. AYO *edogaj* (3.M.SG.PF/AF) ‘eyebrow, eyebrow area; bank of a river’ < *edo* ‘eye’ + *gaj* (3.M.SG.PF/AF) ‘on top of, over’ (cf. 33b)
- (22) a. OZA *edaho* (3.F.SG.PF) ‘skin of the (lower) eyelid’ < *edo* ‘eye’ + *aho* (M.SG.PF) ‘under’  
 b. AYO *edudi* (3.M.SG.AF) ‘lower eyelid; edge’ < *edo* ‘eye’ + *udi* (3.M.SG.AF) ‘under, below’  
 c. CHA *iltebite* (3.M.SG.AF) ‘eyelid’ < *ile* ‘eyes’ + ? *ebite* (3.M.SG.AF) ‘entrance’

In some CHA idiomatic expressions, the eyebrows are just designated by ‘eye/face’: e.g. *t-ĩr p-il-e* (1SG-extend 1SG-eye/face-F.PL) ‘I raise my eyebrows’; *il-e wirb-e* ([3]eye/face-F.PL without\_hair-F.PL) ‘s/he has neither eyebrows nor eyelashes’ (lit. ‘her/his eyes are without hair’). This may have to do with the fact that the Chamacoco traditionally ripped off their eyebrows and eyelashes from the age of 14-15 (Boggiani 1894: 34).

Other body parts surrounding the eye are in (23-26). In all of them, ‘eye’ is the first element of the compound.

- (23) a. OZA *edo piagoo* (3.M.PL.PF) ‘(upper) eyelids’ < *edo* ‘eye’ + *piago* (M.SG.PF) ‘door’  
 b. AYO *edogatej* (3.M.SG.AF) ‘upper eyelid’ < *edo* ‘eye’ + *gatej* (M.SG.AF) ‘what is above’



- (24) a. OZA *edo gaput* (3.M.SG.PF) ‘side of the eye towards the temple’ < *edo* ‘eye’ + *gaput* (3.M.SG.PF) ‘tail; penis’  
 b. AYO *edogapudi* (3.M.SG.AF) ‘side of the eye towards the temple’ < *edo* ‘eye’ + *gapudi* (3.M.SG.AF) ‘tail; penis’
- (25) a. OZA *eduat* (3.F.SG.PF) ‘corner of the eyes towards the nose’ < *edo* ‘eye’ + *wat* (F.SG.PF) ‘beginning; heel of foot’  
 b. AYO *eduhadia* (3.F.SG.AF) ‘side of the eye next to the nose’ < *edo* ‘eye’ + *uhadia* (3.F.SG.AF) ‘heel of foot’ (lit. ‘the heel of the eye’, cf. above)
- (26) a. OZA *edopie* (3.F.SG.PF) ‘eye socket’ < *edo* ‘eye’ + *pie* (F.SG.PF) ‘container’  
 b. CHA *ilibita* (3.F.SG.AF) ‘eye socket; bag under the eyes’ < *ile* ‘eyes’ + *ibita* ‘bottom’ or *pita* (F.SG.AF) / *pi*? (F.SG.PF) ‘box, container’, cf. CHA ‘eyeglasses’ (30c)

In (27), *edo* refers to ‘face’, also in (28a-b). In (28b), ‘acne’ is literally ‘the belly of the face’; subsequently, the ‘zygomatic bone’ is ‘the big belly of the face’.

- (27) a. OZA *edahit* (3.M.SG.PF) ‘forehead’ < *edo* ‘eye/face’ + ?  
 b. OZA *edugoro* (3.F.SG.PF) ‘wart on the face; comb of a chicken’ < *edo* ‘eye/face’ + *ugoro* (F.SG.PF) ‘bump, knot’
- (28) a. AYO *edopierāj* (M.SG.AF) ‘having acne or marks on his face’ < *edo* ‘eye/face’ + ? *pie* (F.SG.AF/PF) ‘container’ + *-rāj* ‘having’  
 b. CHA *ilixi* (3.F.PL) ‘acne, pimples’ < *ile* ‘eyes/face’ + *ixita* (3.F.SG.AF) ‘belly’  
 c. CHA *ilixita data* (3.F.PL) ‘zygomatic bone, prominences of the cheek’ < *ile* ‘eyes’ + *ixita* (3.F.SG.AF) ‘belly’ + *data* (3.F.SG.AF) ‘big’

Example (29) features eye secretions. In the word’s languages, the term for ‘tear’ often consists of two morphemes meaning ‘eye’ and ‘water’, ‘liquid’, ‘juice’ (Urban 2012: 686-687), as in CHA (29b).

- (29) a. AYO *edukadi* (3.M.SG.AF) ‘tear’ < *edo* ‘eye’ + ? cf. OZA *ukadi* (3.M.SG.PF) ‘tear’  
 b. CHA *ilotite* (3.M.SG.AF) ‘tear’ < *ile* ‘eyes’ + *otite* (M.SG.AF) ‘liquid, juice’  
 c. CHA *iltart* (3.M.SG.AF) ‘eye rheum’ (mucus discharge) < *ile* ‘eyes’ + ?

Finally, some objects are seen as extensions of the eyes or the face, such as ‘mask’ (30a) and ‘eyeglasses’ (30b-c).

- (30) a. OZA *edo horisore* (3.M.SG.PF) ‘mask’ < *edo* ‘eye/face’ + ?  
 b. AYO *edodie gaminorone* ‘eyeglasses’ < *edodie* ‘eyes’ + *gaminori* (3.M.SG.AF) ‘what is on top’  
 c. CHA *ilipita* (3.F.SG.AF) ‘lens’, *ilipe* (3.F.PL) ‘eyeglasses’ < *ile* ‘eyes’ + *pita* (F.SG.AF) ‘box, container’

Note that ‘lens’ (30c) exploits the same compound mechanism as OZA and (probably) CHA ‘eye socket’ (26).

## 5 Referential extensions of ‘eye’ beyond the body domain

Body parts can often be the source for the metaphorical mapping of inanimate objects (Heine 1997: 142-143). The eye often serves as a source for targets with a similar round shape (Kraska-Szlenk 2014: 31-32) and for classifiers for round and small objects (Aikhenvald 2000: 444). In Zamucoan, the target can be: (i) small and round (§5.1); (ii) round and hollowed (§5.2); (iii) round and shining (§5.3). The eye can also extend to ‘window’ and to an AYO clan symbol (§5.4).

### 5.1 Small and round objects

Some languages can have an eye/seed or eye/fruit polysemy, which is much less common than the eye/face polysemy discussed above (Brown and Witkowski 1983: 77). In AYO, *edo* ‘eye’ can be used for the grain of corn or rice, and for beans. Example (31) lists some compounds [noun + adjective] in which ‘eye’ has extended to ‘corn’ (31a-d) and ‘fruit’ (31e). In (31a-d), the gender of the compound differs from that of AYO *edo* ‘eye’, which is feminine. In (32), there are other types of compounds with the polysemous equation eye/seed (32a-b) and eye/grain (32c).

- (31) a. AYO *edo etoj* (M.SG.AF) ‘hard corn’ < *edo* ‘eye/corn’ + *etoj* (M.SG.AF) ‘hard’  
 b. AYO *edo parataj* (M.SG.AF) ‘soft corn’ < *edo* ‘eye/corn’ + *parataj* (M.SG.AF) ‘tender’  
 c. AYO *edo wahadi* (M.SG.AF) ‘hard corn’ < *edo* ‘eye/corn’ + *wahadi* (M.SG.AF) ‘hard’  
 d. AYO *edo sarej* (M.SG.AF) ‘yellow corn’ < *edo* ‘eye/corn’ + *sarej* (M.SG.AF) ‘yellow’  
 e. AYO *edo karate* (F.SG.PF/AF) ‘fruit of caraguata’ (*Bromelia balansae*) < *edo* ‘eye/fruit’ + *karate* (F.SG.PF/AF) ‘red’
- (32) a. OZA *kugedo* (GF.F.SG.PF) ‘shelled bean’ < *kuge* (GF.M.SG.PF) ‘bean’ + *edo* ‘eye/seed’ (lit. ‘bean’s eye/seed’)  
 b. AYO *kuge edo karataj* (M.SG.AF) ‘red bean’ < *kuge* (M.SG.PF) ‘bean’ + *edo* ‘eye/seed’ + *karataj* (M.SG.AF) ‘red’  
 c. AYO *geṇa edo* (F.SG.AF/PF) ‘grain of corn’ < *geṇa* (M.SG.PF) ‘corn’ + *edo* ‘eye/grain’

Two further semantic extensions of ‘eye’ are in (33).

- (33) a. CHA *ilibitea* (3.F.SF.AF), *ilap* (3.F.SG.PF) ‘coin’ < *il-* ‘eye’ + *-a:p* (DIM)  
 b. OZA *doreded* (F.SG.PF) ‘core of caraguata plant’ (*Bromelia balansae*) < *dore* (F.SG.PF) ‘caraguata’ + *edo* ‘eye/core’

## 5.2 Round and hollowed referents

(34) OZA *a-ipiasu edo-tae*  
 1SG-do eye/hole-F.SG.AF  
 'I make a hole.'

(35) AYO    *ke*         *edo*                                  *kuse*         *uhetiga*  
still      [3]eye/hole[F.SG.AF/PF]      EXIST      SUB  
*p-ijarite*  
GF-stopping\_place[M.SG.PF]  
'There is still space available so that (others) may be seated.'

(36) CHA *juweb-o* *noεa=ha* *p-arpi-te* *t-ār*  
rain-M.PL leak=PREP 1SG-bed-M.SG.AF 3-come\_from  
*tejx-it* *il-e*  
roof-M.SG.AF [3]eye/hole-F.PL  
‘The rain is leaking on my bed, it comes from the holes in the roof.’

(37) a. AYO *enomini* (M.SG.AF) ‘having holes’ < *edo* ‘eye/hole’ + *-mini* (possibly ‘place in which’) (cf. ‘eyesight’, 45a)

- b. AYO *enoraj* (M.SG.AF) ‘having holes’ < *edo* ‘eye/hole’ + *-rāj* ‘having’
- (38) a. OZA *edisigit* (3.M.SG.PF) ‘hole left by smallpox on the face’ < *edo* ‘eye/hole’ + ?  
 b. OZA *edobetarak* (M.SG.PF) ‘sparse; loosely woven’ < *edo* ‘eye/hole’ + ?  
 c. AYO *edogesaj* (M.SG.AF) ‘transparent; sparse’ < *edo* ‘eye/hole’ + *gesaj* (M.SG.AF) ‘open, clear’
- (39) a. AYO *ņupedo* (F.SG.PF/AF) ‘hole in the earth; cave; depths’ < *ņup* (M.SG.PF) ‘earth, ground’ + *edo* ‘eye/hole’  
 b. AYO *kukarani edo* ‘cave; cleft in rock/hill’ < *kukarani* (M.SG.AF) ‘hill’ + *edo* ‘eye’  
 c. CHA *koxāte onta* (F.SG.AF) ‘cave’ < *koxāte* (M.SG.AF) ‘hill; stone’ + *onta* ‘eye/hole’

### 5.3 Round and shining referents

The eye can often be the metaphorical source for round and shining objects (Kraska-Szlenk 2014: 31-32). In OZA, this association explains the use of ‘eye’ for ‘sunlight’ and ‘moonlight’, which are literally the ‘the eye of the sun’ (40) and the ‘eye of the moon’ (41). Note that in (40) ‘sun’ can be omitted.

- (40) OZA    *ge-odoe*                      *soru*                      (*giede*)                      *edo-tae*  
                  cloud-M.PL.AF              [3]cover                      sun                      [3]eye-F.SG.AF  
                  ‘The clouds cover the sunlight’, lit. ‘the clouds cover the eye (of the sun).’
- (41) OZA    *getosi-re*                      *edo-tae*                      *koro*  
                  moon-M.SG.AF              [3]eye-F.SG.AF              [3]be\_dazzled  
                  ‘The moonlight is pale’, lit. ‘the eye of the moon is dazzled.’

In the primordial Zamucoan cosmovision, the sun and the moon used to be human beings. For this reason, it is possible that such expressions served to disambiguate between the mythological characters and their manifestation as celestial bodies.

The ‘eye of the sun’, *giede edo* (42), has also acquired the meaning of ‘East’, the direction of the sunrise.

- (42) OZA    *emi-tie*                      *t-uarā*                      *giede*                      *edotae*  
                  wind-M.SG.AF              3-come\_from                      sun                      [3]eye-F.SG.AF  
                  ‘The wind comes from the East.’

The association between ‘eye’ and ‘sun’ is well-documented in languages from Southeast Asia and Oceania (Urban 2012: 320).

### 5.4 ‘Eye’ as ‘window’ and as a clan symbol

While all houses have at least one door, the window is often a later development, and the ‘eye’ can be used to conceptualize it (Urban 2012: 610-612). This is found, for instance, in several Indo-European languages (Buck 1949: 469-470): English ‘window’ is etymologically ‘wind-eye’ in Old Norse, while Russian *okno* ‘window’ comes from ‘eye’ (Vasmer 1979: 259). In Pāri (Nilotic), for instance, the ‘window’ is literally ‘eye-house’ (Dimmendaal 2011: 121).<sup>2</sup> In OZA, *edo* ‘eye’ extended its meaning to ‘window’. In Ayoreo, one compound for ‘window’ literally means ‘the eye of the house’ (43).

(43) AYO *gigiñaj edo* (GF.F.SG.AF/PF) ‘window’ < *gigiñaj* (GF.M.SG.AF) ‘house’ + *edo* ‘eye’

One may wonder whether language contact might have played a role in the polysemy eye/hole/window which characterizes OZA and AYO. Indeed the same polysemy is also in Chiquitano (aka Bésiro, unclassified), which was historically in contact with Zamucoan. In the Chiquitano spoken in the 18th century, *çutos* (GF.SG) means ‘eye’, ‘hole’ and ‘window’ (Adam and Henry 1880: 93). The eye/hole polysemy is still preserved in today’s Ignaciano and Migueleño dialects (Ciucci and Tomichá 2018, Nikulin 2018/2019), while all documented surviving dialects (also including Lomeriano) have introduced a Spanish term for ‘window’. However, in data for the Ignaciano dialect collected in the 1960s (Fuss and Riester 1986) ‘eye’ still maintains the sense of ‘window’.

The word ‘eye’ in AYO is found in the compound for the symbol of the clan *Kutamorãxaj* (44). The symbol, literally meaning ‘scratched eyes’, consists of two or three semicircles, one inside the other, which resemble three eyes (Pia 2016: 64; Rattunde et al. 2019: 20).

(44) AYO *pedobikade* (GF.M.PL.AF) ‘symbol of the clan Kutamorãxaj’ < *pedo* (GF.F.SG.AF/PF) ‘eye’ + *ibikade* (3.M.PL.AF) ‘scratched’

The first unit of the compound is *pedo*, which is in the singular (as generally required for the first element of the compound) and in generic form.

## 6 Visual perception and eye conditions

Since the eye is the organ of sight, ‘eye’ is found in compounds referring to vision (45). In (46), ‘eye’ occurs in some idiomatic expressions dealing with the act of seeing.

- (45) a. AYO *edomini / enomini* (3.M.SG.AF) ‘sight, eyesight, what is seen’ < *edo* ‘eye’ + *-mini* (possibly ‘place in which’)  
 b. AYO *edomite uteuj* (M.SG.AF) ‘who has good eyesight’ < *edomite* (3.M.SG.PF) ‘sight, eyesight’ + *uteuj* (M.SG.AF) ‘good, ripe’  
 c. CHA *ile iteibijo* (3.M.PL) ‘hallucination’ < *ile* ‘eyes’ + *iteibite* (3.M.SG.AF) ‘spirit, ghost’

<sup>2</sup> Cross-linguistically, ‘hole’ can also be a source for ‘window’, but here I only consider ‘eye’, which is the source for ‘hole’ in Zamucoan.

- (46) a. CHA *pem-o* *il-i=ε* *debitε*  
ostrich-M.PL [3]eye-F.PL=EXIST hard/sturdy  
'The ostriches have strong eyesight (= hard/sturdy eyes).'
- b. AYO *ute* *tε-ibero* *d-edo-die* *ihi* *ore*  
3M.SG 3-break REFL-eye-F.PL.AF PREP 3PL  
'S/he stares at them', lit. 's/he breaks her/his eyes on them.'
- c. AYO *t-iminiŋa* *edo-die* *aha\_kedeŋane*  
3-pay\_attention [3]eye-F.PL.AF everywhere  
'S/he watches continuously.'
- d. OZA *j-edo-jie* *kuteij-i* *om*  
1SG-eye-F.PL.AF brave/strong PREP  
'I stare at/look hard at (...)', lit. 'my eyes are brave/strong for.'
- e. OZA *a-ikuas* *j-edo-jie=hi*  
1SG-throw 1SG-eye-F.PL.AF=PREP  
'I look away from (...)', lit. 'I throw my eyes away from (...).'
- f. OZA *aka* *j-edo-jie*  
[1SG]sow 1SG-eye-F.PL.AF  
'I look down', lit. 'I sow my eyes.'
- g. OZA *j-edo-jie* *tε-o\_po*  
1SG-eye-F.PL.AF 3-be\_white  
'My eyes cloud over', lit. 'my eyes are white.'

The eye is the first unit of compounds referring to health issues of the eye, such as 'blind' (47). In CHA, the word-formation of 'blind' (47c) is not transparent, but the term is possibly a cognate of *edobek* OZA 'blind' (47a), despite the different initial vowels. Other compounds are in (48); in (48d), *edo* stands for 'face'. In AYO, the inflected form *p-edo-die* (GF-eye-F.PL.AF) has acquired the specific meaning of 'eye pain'.

- (47) a. OZA *edobek* (M.SG.PF) 'blind; one-eyed' < *edo* 'eye' + ?  
b. AYO *edopari* (M.SG.AF) 'blind' < *edo* 'eye' + *pari* (M.SG.AF) 'closed'  
c. CHA *olibit* (M.SG.AF), *olibik* (M.SG.PF) 'blind'
- (48) a. OZA *edopusek* (M.SG.PF) 'squinting' < *edo* 'eye' + *upusek* (M.SG.PF) 'twisted, bent'  
b. OZA *edubak* (M.SG.PF) 'having red eye because of discharge' < *edo* 'eye' + *ubak* (M.SG.PF) 'red'  
c. AYO *edogusuj* (M.SG.AF) 'who does not see well' < *edo* (3.F.SG.PF/AF) 'eye' + ? *gusu* 'only'

- d. AYO *edosarej* (M.SG.AF) ‘having a yellow face because of a disease’ (liver disease or malaria) < *edo* ‘eye/face’ + *sarej* (M.SG.AF)

In (49), there are some idiomatic collocations for eye conditions.

- (49) a. OZA *j-edo-jie* *te-o\_nam*  
 1SG-eye-F.PL.AF 3-tremble  
 ‘I have eye pain’ ‘I have red eyes owing to discharge’, lit. ‘my eyes tremble.’
- b. AYO *edo-die* *e* *deroke*  
 [3]eye-F.PL.AF now lack flavour  
 ‘S/he has poor eyesight’, lit. ‘her/his eyes now lack flavor.’
- c. AYO *edo* *pororo*  
 [3]eye[F.SG.AF/PF] white[F.SG.AF/PF]  
 ‘Her/his eye is white’, i.e. ‘s/he is blind’ (as an insult).
- d. CHA *on-t(a)* *po:ɬ-ɬa=ε*  
 [3]eye-F.SG.AF white-F.SG.AF=EXIST  
 ‘S/he is blind in one eye’, lit. ‘s/he has one white eye.’
- e. CHA *il-e* *po:r-i=ε*  
 [3]eye-F.PL white-F.PL=EXIST  
 ‘S/he is blind’, lit. ‘s/he has white eyes.’
- f. CHA *il-e* *pata*  
 [3]eye-F.PL be\_rotten  
 ‘S/he does not see well’, lit. ‘her/his eyes are rotten.’
- g. CHA *il-e* *poɛik*  
 [3]eye-F.PL bent/curved  
 ‘S/he has a squint.’
- h. AYO *edo-die* *kako*  
 [3]eye-F.PL.AF [3]have\_a\_cramp  
 ‘S/he squints’, lit. ‘her/his eyes have a cramp.’

In AYO and CHA (49c-e), blindness is also expressed through the association of ‘eye’ and ‘white’, similarly to the sclera (19). Saying that someone is blind can be an offense in AYO. Indeed, in AYO and CHA a condition or deformation of the eye (real or fictitious) often serves to offend, as is common for expressions from the body domain (Kraska-Szlenk 2014: 26). For instance, the AYO compound in (50) is normally used for animals and is an insult if used for a person.

(50) AYO *edo burutuj* (M.SG.AF) < *edo* ‘eye’ + *burutuj* (M.SG.AF) ‘bulging’ (referred to eye)

The same applies to the corresponding CHA expression (51a). Other offenses are in (51b-51c).

- (51) a. CHA *il-e* (e)*pux*  
[3]eye-F.PL bulging  
‘Her/his eyes are bulging.’
- b. CHA *il-e* *ix-e* / *ko:s*  
[3]eye/face-F.PL swollen-F.PL swollen  
‘Her/his eyes/face (i.e. the area around the eyes) are swollen.’
- c. CHA *il-e* *ixe:b-e* / *de-jo*  
[3]eye-F.PL small-F.PL big-M.PL  
‘Her/his eyes are small / big.’

In CHA, one can mock someone because of an eye defect. Two nicknames for people with swollen or bulging eyes (52) have developed out of (51a) and (51b). They are used in playful stories or to make fun of someone.

- (52) a. CHA *ilko:et* ‘having swollen eyes’ (nickname) < *ile* ‘eyes/face’ + *ko:s* ‘swollen’  
b. CHA *ilpuxit* ‘having bulging eyes’ (nickname) < *ile* ‘eyes’ + *pux* ‘bulging’

While nicknames are uninflectable, the same words are used as common nouns for ‘jaguar’ (53a) and ‘frog’ (53b). The jaguar has a swollen face according to the speakers, while bulging eyes characterize the frog. Another term for ‘jaguar’ is *ilpijot* (M.SG.AF); initial *il-* might again be the root of ‘eyes’, but it is impossible to ascertain, since the lexeme is not transparent. These terms for ‘jaguar’ and ‘frog’ have no cognate in OZA and AYO, and are very likely CHA innovations.

- (53) a. CHA *ilko:et* (M.SG.AF) ‘jaguar’ < *ile* ‘eyes/face’ + *ko:s* ‘swollen’  
b. CHA *ilpuxut* (M.SG.AF) ‘frog’ < *ile* ‘eyes’ + *pux* ‘bulging’

Finally, there is also a bird name whose first unit is ‘eye’ (54). In AYO, the maguari stork is named after the skin around its eyes, which is red, while the rest of its body is mostly white.

- (54) AYO *edobi karataj* ‘maguari stork’ (*Ciconia maguari*) < *edo* ‘eye’ + ? + *karataj*  
(M.SG.AF) ‘red’

I have found so far no other animal name which has a clear connection with ‘eye’.

## 7 States of mind and social behavior



The eye is employed in several conceptualizations that refer to the psychological sphere of the individual and her/his behavior. Indeed, the eye, as the organ of sight, is fundamental for cognition and can express emotions or intentions. In OZA and AYO, there are compounds (55) and idioms (56) in which the eye is associated with the expression of love, anxiety, excitement, anger, admiration and fear.

- (55) a. AYO *edoṇari* (3.M.SG.AF/PF) ‘beloved’ < *edo* ‘eye’ + *ṇari* (3) ‘to want very much’  
 b. AYO *edoṇariesōri* (3.M.SG.AF) ‘who loves greatly, has strong affection for’ < *edoṇari* (3.M.SG.AF/PF) ‘beloved’ + *-sōri* (nomen agentis)  
 c. AYO *edo kakoj* (M.SG.AF) ‘nervous, anxious, excited’ < *edo* ‘eye’ + *kakoj* (M.SG.AF) ‘wrinkled’

- (56) a. OZA *a-wena* *j-edo-jie* *igesi*  
 1SG-consume 1SG-eye-F.PL.AF outside  
 ‘I open my eyes wide’ (out of anger or admiration), lit. ‘I consume my eyes outside.’
- b. OZA *a-mise-ṇo* *aj-edo-jie* *ome* *kutea* *usoda-doe*  
 2.IRLS-beat-PL 2PL-eye-F.PL.AF for thing[M.SG.PF] bad-M.PL.AF  
 ‘Look away from the bad things’ lit. ‘beat your eyes for the bad things.’  
 (not to look something out of anger)
- c. OZA *j-edo=koroṇum* *te-ahirig-odoe*  
 1SG-eye[F.SG.PF]=be\_frightened/admired 1SG-seen-M.PL.AF  
 ‘I am (lit. my eye is) frightened and admired for what I have seen.’
- d. AYO *edo-die* *harobe-j*  
 [3]eye-F.PL.AF frightened-F.PL.AF  
 ‘S/he is frightened.’

Since the eyes can express anger, in AYO they occur in idiomatic expressions meaning ‘to scold’ or ‘to accuse someone’ (57).

- (57) a. AYO *j-iketa* *ute* *edo-die*  
 1SG-light\_up 3SG [3]eye-F.PL.AF  
 ‘I scold her/him’, lit. ‘I light up her/his eyes.’
- b. AYO *ore* *te-usēre* *ṇani-one* *udore* *ore* *edo-die*  
 3PL 3-point\_to [3]man-M.PL.AF those 3PL [3]eye-F.PL.AF  
 ‘They accuse/blamed those men’ lit. ‘they pointed to the eyes of those men.’

The eye also serves for the conceptualization of some mental and physical disorders affecting the visual perception (58-59).

(58) AYO *edohisej* (M.SG.AF) ‘dizzy, lost’ < *edo* ‘eye’ + *hise* (?) cf. (59a)

- (59) a. AYO *edo-die* *te-o* *hise*  
 [3]eye-F.SG.AF 3-look\_like ?  
 ‘S/he feels faint / gets dizzy.’
- b. CHA *t-ejtε* *p-il-e*  
 3-shake 1SG-eye-F.PL  
 ‘I am confused’, ‘it makes me dizzy’, lit. ‘it shakes my eyes.’
- c. CHA *il-e* *kikita*  
 [3]eye-F.PL turn\_around  
 ‘S/he is drunk’, ‘s/he feels dizzy’, lit. ‘her/his eyes turn around.’

In CHA, the moral character of an individual manifests itself through the eye. Having ‘good’ or ‘beautiful eyes’ stands for a good character (60a-b). ‘Hard eyes’ can refer to strong eyesight (46a), but also to faithfulness (60c). By contrast, if someone has ‘hungry eyes’, s/he is evil (60d).

- (60) a. CHA *il-e* *om*  
 [3]eye-F.PL good[PF]  
 ‘S/he is good/kind’, lit. ‘her/his eyes are good.’
- b. CHA *ṇakirb-itε* *il-e* *ihĩr*  
 man-M.SG.AF [3]eye-F.PL beautiful[F.PL]  
 ‘The man is good/kind’, lit. ‘the man’s eyes are beautiful.’
- c. CHA *tĩmkaɿ-ɿa* *il-e* *debitε*  
 woman-F.SG.AF eye-F.PL hard/sturdy  
 ‘The woman is faithful’, lit. ‘the woman’s eyes are sturdy.’ (cf. 46a)
- d. CHA *il-e* *xãr*  
 [3]eye-F.PL hungry  
 ‘S/he is evil’, lit. ‘her/his eyes are hungry.’

Also the adjective *ilxa:bit* (M.SG.AF) ‘evil’, although it is not transparent, might have as a first unit the root of ‘eye’, *il-*.

Finally, the CHA memory-related conceptualization in (61) is rooted in the metaphor REMEMBERING IS SEEING.

- (61) CHA *asa timtɛaɭ-ɭa tɛ-iɛw p-il-e e:-jo*  
 that[F.SG] woman-F.SG.AF 3-grab 1SG-eye-F.PL [3]above-M.PL  
 ‘I do not forget that woman’, lit. ‘that woman grabs above my eyes.’

Further idiomatic collocations of ‘eye’ are discussed in the next section.

## 8 Sleep, other idiomatic expressions and ideophones

In Zamucoan, the ‘eye’ occurs in idioms associated with the semantic domain of sleep (62).

- (62) a. OZA *j-imo-tie tɛ-igaru j-edo-jie*  
 1SG-sleep-M.SG.AF 3-tie 1SG-eye-F.PL.AF  
 ‘I am sleepy’ lit. ‘my sleep ties my eyes.’
- b. AYO *mo-j tɛ-ipokasu j-edo-die*  
 [GF]sleep-M.SG.AF 3-fold 1SG-eye-F.PL.AF  
 ‘I am sleepy’, lit. ‘the sleep folds my eyes.’
- c. AYO *ore edo-die tɛ-ipokasu d-abaj-ode*  
 3PL [3]eye-F.PL.AF 3-fold REFL-body-M.PL.AF  
 ‘They are sleepy’, lit. ‘their eyes fold their bodies.’
- d. CHA *t-iɛak p-il-e*  
 1SG-break 1SG-eye-F.PL  
 ‘I close my eyes’ (to rest or sleep), lit. ‘I break my eyes.’
- e. AYO *mo-j ɲohi edo-die*  
 [GF]sleep-M.SG.AF [3]leave\_from [3]eye-F.PL.AF  
 ‘S/he has insomnia’, lit. ‘the sleep leaves from her/his eyes.’
- f. AYO *edo-die wahade-j*  
 [3]eye-F.SG.AF strong-F.PL.PF  
 ‘S/he has insomnia’, lit. ‘her/his eyes are strong.’
- g. AYO *edo-die tɛ-o pak\_pag=ihɪ ɲum-i*  
 [3]eye-F.SG.AF 3-look\_like IDEO=PREP ground-M.SG.AF  
 ‘S/he has insomnia.’
- h. OZA *j-edo-jie tɛ-o\_nak*  
 1SG-eye-F.PL.AF 3-?become\_quiet  
 ‘I am awake, I wake up.’, lit. ‘my eyes become quiet.’

- i. AYO *edo-die* *tɛ-o\_ɲake*  
 [3]eye-F.SG.AF 3-become\_quiet  
 ‘S/he is wide awake’, lit. ‘her/his eyes become quiet.’

Further OZA and CHA idioms involving the eye are in (63).

- (63) a. OZA *a-rekare* *j-edo-jie*  
 1SG-move 1SG-eye-F.PL.FF  
 ‘I say no’, lit. ‘I move my eyes/face’ (cf. Ciucci 2019: 47)
- b. OZA *a-ipokasu* *j-edo-jie*  
 1SG-fold 1SG-eye-F.PL.AF  
 ‘I close my eyes’, lit. ‘I fold my eyes.’
- c. CHA *ɛ-ijeru* *d-el-e*  
 3-close REFL-eye-F.PL  
 ‘S/he covers her/his eyes’ (with hands or blindfold), lit. ‘s/he closes her/his eyes.’
- d. CHA *t-ejɛ* *d-el-e*  
 3-shake REFL-eye-F.PL  
 ‘S/he turns around’, ‘s/he dances’, lit. ‘s/he shakes her/his eyes.’
- e. CHA *tɛ-icak* *n-on-ta*  
 3-break REFL-eye-F.SG.AF  
 ‘S/he winks’, lit. ‘s/he breaks her/his eye.’
- f. CHA *il-e* *tokole*  
 [3]eye-F.PL [3]come\_out  
 ‘S/he is in a hurry’, lit. ‘her/his eyes come out.’

Zamucoan has some ideophones which are only used with ‘eye’. In CHA, the ideophone can be the head of the intransitive predicate, while in OZA and AYO it must be preceded by the light verb *-o* ‘to look like’ (64)

- (64) a. OZA *j-edo-jie* *tɛ-o* *kuru\_kuru*  
 1SG-eye-F.PL.AF 3-look\_like IDEO  
 ‘My eyes twinkle.’
- b. AYO *edo-die* *tɛ-o* *kururu\_kururu*  
 [3]eye-F.PL.AF 3-look\_like IDEO  
 ‘The eyes shine intensely.’

- c. CHA *il-e* *jek\_jek\_jek*  
 [3]eye-F.PL IDEO.blink\_hard  
 ‘S/he (lit. her/his eyes) blinks hard’ (moving the eyebrows towards the nose).
- d. AYO *edo-die* *tɛ-o* *ɲiti\_ɲiti\_ɲiti*  
 [3]eye-F.PL.AF 3-look\_like IDEO  
 ‘Her/his eyes blink/flash.’
- e. OZA *j-edo* *tɛ-o* *parak\_parak*  
 1SG-eye-F.SG.PF 3-look\_like IDEO  
 ‘I blink.’
- f. CHA *il-e* *parak\_parak\_parak*  
 [3]eye-F.PL IDEO.blink  
 ‘S/he blinks’, lit. ‘her/his eyes blink.’

One can combine the idiom in (64e) with the number word ‘one’ to refer to a short amount of time (65).

- (65) OZA *aj-edo* *tɛ-o* *parak* *nomara-tae*  
 1PL/2PL-eye[F.SG.PF] 3-look\_like IDEO one-F.SG.AF  
 ‘In the twinkling of an eye’ lit. ‘we/you blink our/your eyes one time.’

A number of expressions shown in this section refer to a movement of the eye or the face. Among them, all Zamucoan languages have one ideophone for ‘to blink’ (64c-f), which in both OZA and CHA involves the reduplication of the same word, *parak*, to be traced back to Proto-Zamucoan.

## 9 Conclusions

In this chapter, I have analyzed the lexeme ‘eye’ in Zamucoan. The eye is one of the perceptually most salient body parts; these are usually primitive words with a short phonological form and are more resistant to change than most of the lexicon (Heine 1997: 132-134; Kraska-Szlenk 2014: 17). This is also the case in Zamucoan, where reflexes of Proto-Zamucoan ‘eye’ are preserved in all languages: OZA and AYO *edo* ~ CHA *il-*. The analysis of the available historical data for CHA shows an intermediate stage in the evolution of ‘eye’, which confirms that *il-* is cognate of OZA and AYO *edo* (§2). CHA also has introduced a new term for ‘eye’, but the original one, which only maintains the plural *ile/ili*, is still preferred in compounds or idioms involving the eye.

In Zamucoan, ‘eye’ displays several interesting cases of polysemy. The plural of ‘eye’ has by synecdoche the sense ‘face’ (§3). The lexeme ‘eye’ is widely used in compounds and

derivations for parts of the eye or the face, for eye secretions, as well as other related terms, such as ‘eyeglasses’, ‘mask’ and ‘acne’ (§4). Beyond the body domain, the eye has many metaphorical extensions motivated by similarity in shape (§5): it can be the source for small and round objects, such as ‘seed’, ‘corn’, ‘grain’, ‘fruit’ or ‘coin’ (§5.1). ‘Eye’ can extend to ‘hole’, and in AYO from ‘hole’ to ‘essence, root, origin’ and ‘honeycomb’ (§5.2). Since the sun and the moon are round, in OZA ‘eye’ has acquired the meaning of ‘sunlight’, ‘moonlight’ and, from the former, ‘East’ (§5.3). Another semantic extension of ‘eye’ is ‘window’. OZA and AYO share the polysemy eye/hole/window with neighboring Chiquitano. In AYO, ‘eye’ is also used for a clan symbol (§5.4). The eye is found in compounds and expressions referring to the sense of sight and eye conditions or deformations, which often serve as insults or mockery; some animal names originated from unusual eye-related features (§6). A number of states of mind and social behaviors are conceptualized through the eye (§7). In several idiomatic collocations, ‘eye’ is associated with sleep. Finally, there are a few ideophones that specifically occur with ‘eye’ (§8).

## References

- Adam, Lucien and Victor Henry. 1880. *Arte y vocabulario de la lengua chiquita*. Paris: Maisonneuve y Cia.
- Aikhenvald, Alexandra Y. 2000. *Classifiers: A typology of noun categorization devices*. Oxford: Oxford University Press.
- Baldus, Herbert. 1932. “Beiträge zur Sprachenkunde der Samuko-Gruppe”. *Anthropos* 27. 361-416.
- Barrios, Armindo, Domingo Bulfe and José Zanardini. 1995. *Ecos de la selva. Ayoreode Uruode*. Asunción: CEADUC.
- Bertinetto, Pier Marco, Luca Ciucci and Margherita Farina. 2019. “Two types of morphologically expressed non-verbal predication”. *Studies in Language* 43, 1. 120-194.
- Bertinetto Pier Marco and Luca Ciucci. Forthcoming. “Non-prototypical derivation in Zamucoan”. In: Wolfgang U. Dressler and Martina Werner (eds.), *Between derivation and inflection*. Vienna: ÖAW Verlag.
- Boggiani, Guido. 1894. *I Ciamacoco*. Roma: Società Romana per l’Antropologia.
- Boggiani, Guido. 1929 [ante 1902]. “Vocabolario dell’idioma Ciamacoco. Apuntes póstumos de Guido Boggiani, compilados y redactados por Cestmír Loukotka”. *Anales de la Sociedad Científica Argentina* 108. 149-175, 227-241.
- Brown, Cecil H. and Stanley R. Witkowski. 1983. “Polysemy, lexical change and cultural importance”. *Man*, new series 18, 1. 72-89.
- Buck, Carl D. 1949. *A dictionary of selected synonyms in the principal Indo-European languages*. Chicago: University of Chicago Press.
- Chomé, Ignace. 1958 [ante 1745]. “Arte de la lengua zamuca” (Présentation de Suzanne Lussagnet). *Journal de la Société des Américanistes de Paris* 47. 121-178.
- Ciucci, Luca. 2016 [2013]. *Inflectional morphology in the Zamucoan languages*. Asunción: CEADUC.

- Ciucci, Luca. 2018. Lexicography in the Eighteenth-century Gran Chaco: the Old Zamuco Dictionary by Ignace Chomé. In: Jaka Čibej, Vojko Gorjanc, Iztok Kosem and Simon Krek (eds.), *Proceedings of the XVIII EURALEX International Congress: Lexicography in Global Contexts*. Ljubljana: Ljubljana University Press. 439-451.
- Ciucci, Luca. 2019. "On the lexeme 'head' in Zamucoan". In: Iwona Kraska-Szlenk (ed.), *Embodiment in Cross-Linguistic Studies: The 'Head'*. Leiden: Brill. 28-50.
- Ciucci, Luca (ed.). Forthcoming. *Ignace Chomé: Vocabulario de la lengua zamuca - Edición crítica y comentario lingüístico*. Madrid/Frankfurt: Iberoamericana Verfuert Verlag.
- Ciucci, Luca and Pier Marco Bertinetto. 2015. "A diachronic view of the Zamucoan verb inflection". *Folia Linguistica Historica* 36, 1. 19-87.
- Ciucci, Luca and Pier Marco Bertinetto. 2017. "Possessive inflection in Proto-Zamucoan: a reconstruction". *Diachronica* 34, 3. 283-330.
- Ciucci, Luca and José Macoñó Tomichá. 2018. *Diccionario básico del chiquitano del Municipio de San Ignacio de Velasco*. Santa Cruz de la Sierra: Ind. Maderera San Luis SRL/Museo de Historia UAGRM.
- Dimmendaal, Gerrit J. 2011. *Historical linguistics and the comparative study of African languages*. Amsterdam/Philadelphia: John Benjamins.
- Enfield, Nick J. 2006. "Lao body part terms". *Language Sciences* 28. 181-200.
- Fuss, Max and Jürgen Riester. 1986. *Zúbaka. La Chiquitanía: visión antropológica de una región en desarrollo. Tomo I: Vocabulario español-chiquito y chiquito-español*. La Paz: Los Amigos del Libro.
- Higham, Alice, Maxine E. Morarie and Greta Paul. 2000. *Ayoré-English dictionary*. Sanford, FL: New Tribes Mission. 3 vols.
- Hervás y Panduro, Lorenzo. 1787. *Vocabolario poliglotta con prolegomeni sopra più di CL lingue*. Cesena: Gregorio Biasini.
- Heine, Bernd. 1997. *Cognitive foundations of grammar*. New York/Oxford: Oxford University Press.
- Koch, Peter. 2008. "Cognitive onomasiology and lexical change: Around the eye". In: Martine Vanhove (ed.), *From polysemy to semantic change: Towards a typology of lexical semantic associations*. Amsterdam/Philadelphia: John Benjamins.
- Kraska-Szlenk, Iwona. 2014. "Semantic extensions of body part terms: Common patterns and their interpretation". *Language Sciences* 44: 15-39.
- Lussagnet, Suzanne. 1961. "Vocabulaires Samuku, Morotoko, Poturero et Guarañoka précédés d'une étude historique et géographique sur les anciens Samuku du Chaco bolivien et leur voisins". *Journal de la Société des Américanistes de Paris* 50. 185-243.
- Lussagnet, Suzanne. 1962. "Vocabulaires Samuku, Morotoko, Poturero et Guarañoka (suite et fin)". *Journal de la Société des Américanistes de Paris* 51. 35-64.
- Morarie, Maxine E. 2011. *Diccionario Ayoré – Español*. Manuscript.
- Nikulin, Andrey. 2018/2019. *¡Manityaka au r-ózura! Diccionario básico del chiquitano migueleño. El habla de San Miguel de Velasco y de San Juan de Lomerío*. Santa Cruz de la Sierra: Manuscript.
- Pia, Gabriella Erica. 2016. *Diccionario antropológico Ayoreo. Parte tercera: Adecuado - Adulto casado*. Pisa: Laboratorio di Linguistica della Scuola Normale Superiore.

- Rattunde, Naomi, María Susanna Cipolletti, Carla Jaimes Betancourt and Karoline Noack (eds.). 2019. *Eramone. Visiones del mundo. Objetos de los ayoréode en el museo BASA. Catálogo de exposición*. Bonn/La Paz: BASS/Plural.
- SIM = South-American Indian Mission. 1967. *Diccionario ayoré-castellano*. Yoquiday/POza Verde: SIM.
- Sušnik, Branislava. 1970. *Chamacocos. Diccionario etnografico*. Asunción: Museo Etnográfico Andrés Barbero.
- Ulrich, Matthew and Rosemary Ulrich. 2000. *Diccionario ishíro (chamacoco) – español / español – ishíro (chamacoco)*. Asunción: New Tribes Mission.
- Urban, Matthias. 2012. *Analyzability and semantic associations in referring expressions: A study in comparative lexicology*. Leiden: Universiteit Leiden. PhD dissertation.
- Vasmer, Max 1979. *Russisches etymologisches Wörterbuch*. Vol. 2. Heidelberg: Carl Winter Universitätsverlag.