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ONOMATOPOEIAS IN AYOREO

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Introduction¹

Ayoreo (ISO 639-3 ayo) is an endangered language spoken by about 4,650 people in the Chaco lowlands of southeastern Bolivia and northern Paraguay. It belongs to the small Zamucoan family, which also includes †Old Zamuco and Chamacoco (2,000 speakers in northern Paraguay; ISO 639-3 ceg). In the past, the Chaco constituted a cultural and linguistic area, which apart from Zamucoan included Mataguyan, Guaycuruan, Enlhet-Enenlhet, Lule-Vilela, some Tupi-Guarani languages, and Chiquitano (unclassified) (see Comrie, Golluscio, González & Vidal, 2010; González, 2015; Ciucci, 2020).

While the vast majority of South American indigenous languages are agglutinating, Zamucoan languages are fusional. The typical constituent order is S/A-V-O, with the possessed preceded by the possessor and the noun followed by adjectival modifiers. Verbs are radically tenseless (Bertinetto, 2014b) and display a modal distinction between realis and irrealis. Nouns may have prefixes to mark the possessor. Nouns and adjectives have a suffix expressing gender, number, morphosyntactic function and determinacy (see Bertinetto, 2014a and Ciucci, 2016).

Despite previous contacts with the Western world, the Ayoreo gradually abandoned their traditional way of life starting in 1947. Still today, some Ayoreo live in voluntary isolation in the Paraguayan Chaco. For this reason, the influence of Spanish on Ayoreo is limited to some lexical borrowings. Although Ayoreo is an endangered language and Ayoreo-Spanish bilingualism is increasing, the language is still in vigorous use and is transmitted to children. Ayoreo is used in community schools and is recognized as an official language in Bolivia.

Position of onomatopoeias in the language system

This contribution offers a first analysis of onomatopoeias in Ayoreo, which I hope will be a starting point for further investigation. Although there are detailed studies on specific

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Ayoreo grammatical topics (e.g., Bertinetto, 2014b on tenselessness; Ciucci, 2016 on inflectional morphology; Ciucci & Bertinetto, 2019 on classifiers), the language still lacks a scientifically-oriented grammar. Morarie's (2006) pedagogical grammar and Bertinetto's (2014a) grammatical sketch briefly mention onomatopoeic words but offer no in-depth description of onomatopoeias in Ayoreo.

Onomatopoeias are usually recognized as such in the available corpora and dictionaries of the language. For this study, I analysed a database of onomatopoeias extracted from the following sources: SIM (1967), Higham, Morarie and Paul (2000) and Morarie (2011) are Ayoreo dictionaries that are particularly rich in data, including onomatopoeias; Fischermann (1988), Bórmida (2005) and Pia (2014-2018) are anthropological works that offer many examples of onomatopoeias. Other sources are Morarie (2006) and Briggs (1972-1973). The latter is a collection of school texts translated into Ayoreo. Ayoreo has a Spanish-inspired orthography established by missionaries, which is followed by all sources reported here (except Bórmida, 2005).

Like many languages with very recent written tradition, Ayoreo has not developed any metalinguistic vocabulary yet, so it has no specific term for onomatopoeias.

Zamucoan languages are rich in ideophones, which form a word class on their own. Example (1) features some Ayoreo ideophones.

- (1) a. *Edo-die* *ch-o* *cururu_cururu*
 [3]eye-F.PL.ARG 3-look_like IDEO
 'His/her eyes shine intensely.'
- b. *Edo-die* *ch-o* *jmiti_jmiti_jmiti*
 [3]eye-F.PL.ARG 3-look_like IDEO
 'Her/his eyes blink/flash.' (Morarie, 2011, pp. 104-105)

In Zamucoan, onomatopoeias are a subset of ideophones characterized by the fact that, unlike (1a), they imitate sounds (1b). Except for Bertinetto (2014a), sources on Ayoreo usually do not distinguish between ideophones and onomatopoeias. Although this is due to lack of scientific studies on the topic, the distinction between onomatopoeias and other ideophones may present ambiguities (see fn. 2).

Ayoreo onomatopoeias can be considered free morphemes, as one can see in (2-3). Hence, the language has primary onomatopoeias (cf. position paper), but secondary onomatopoeias are often derived (see the section on morphology and syntax).

- (2) *Pota-rasa jeta ch-icho. Diga ch-icho.*
 [3]want-MOD SUB.IRR 3-shoot afterwards 3-shoot
¡Po! *Cucha-rique base iji*
 O:sound_of_bursting thing-M.SG.INDET [3]fall ADP
 ‘He wanted to shoot. After a while, he shot. Bang! Something fell down.’ (Briggs, 1972-1973, II, p. 21)

- (3) *Jirãque abai ch-uje gatoi ome cuco-i*
 suddenly [3]husband[M.SG.ARG] 3-hit [3]head ADP boat-M.SG.ARG
erasôr-i ¡Toc! Ch-uje-pise
 [3]oar-M.SG.ARG O:sound_of_hitting 3-hit-AUG
ugaquedejna-i
 big_snake-M.SG.ARG
 ‘Suddenly, he hit its head with the oar of the boat. Bang! He hit hard the big snake.’
 (Briggs, 1972-1973, II, p. 11)

The available sources do not point out borrowed onomatopoeias. Ayoreo is now in contact with Spanish and Paraguayan Guarani, but such contact is recent, so the presence of borrowed onomatopoeias in present-day Ayoreo needs to be investigated. At the same time, Ayoreo has onomatopoeias whose sound source does not belong to traditional society (see subsection on semantic relations): this invites the hypothesis that onomatopoeias are an open class. Finally, some Ayoreo onomatopoeias are similar to those of Chamacoco: cf. Ayoreo *sec* vs. Chamacoco *sek* ‘sound of hiccup’; Ayoreo *toc toc* vs. Chamacoco *toj toj* ‘sound of hitting’. They may be due to shared inheritance or to the imitation of the same sound.

Description of onomatopoeia

Phonology

Vowel and consonant inventory

Ayoreo has 19 consonantal phonemes, reported in Table 1 along with their transcription, and five vowels (/a e i o u/). The oral vowels can contrast with nasalized vowels.

	labial	dental	alveolo-palatal	palatal	velar	glottal
voiceless stop	p <p>	t <t>			k <c, qu>	
voiced stop	^(m) b 	⁽ⁿ⁾ d <d>			^(ŋ) g <gu, g>	
affricate			ʈɕ <ch>			
fricative		s <s>				h <j>
nasal	m <m>	n <n>		ɲ <ñ>	ŋ <ng>	
voiceless nasal	ɱ <jm>	ɳ <jn>		ɲ̥ <jñ>		
approximant	w <u>	ɹ <r>		j <y, i>		

Table 1 Ayoreo consonants (adapted from Bertinetto, 2014a, 376)

Ayoreo onomatopoeias usually exploit consonants and vowels that belong to the phonological system, but there are exceptions, such as *piúf* ‘sound of spitting’, whose final sound [f] does not belong to the sound system. In addition, one can find lengthening of vowels and consonants that are otherwise unusual: *arr arr arr* ‘sound of the jaguar’; *baríuum* / *bróooooomm* ‘sound of a thunder’; *mii mii mii* ‘sound of the shrinking frog’; *scrisss* ‘sound of the cricket’s wings’; *uoo* ‘sound of water rushing or bubbling’; *yóooc yóooc yóooc* ‘sound of suffering of someone who has abdominal pain’. In the database, no phoneme appears to feature a higher frequency in onomatopoeias than in the main word-stock. Although onomatopoeias usually follow the phonotactic rules, there are several exceptions. In *bróooooomm* ‘sound of a thunder’ and *scrisss* ‘sound of the cricket’s wings’, there is a sequence of consonant plus /ɹ/ (<r>), otherwise not allowed in the language (see the next section), like the sequence /sk/ <sc> in *scrisss*. The same violation of the phonotactic rules may occur with ideophones in general, as in *chicrí chicrí chicrí* ‘sound of a wound that closes, dries up’.² While Ayoreo words cannot end with /n/ or /ŋ/, this is documented in onomatopoeias: *ten ten ten* ‘sound of iron hitting something’; *teng teng teng* ‘a cry of the bat’.

² It is not clear whether *chicrí chicrí chicrí* can be considered an onomatopoeia. Indeed, even though it is described as a sound imitation by Pia (2014-2018, I, 88), it is difficult to figure out a physical sound associated with a wound that dries up. For this reason, I consider it prudentially an ideophone.

Syllabic structure

The preferred syllabic structure in Ayoreo is CV; other documented syllable types are V and CVC. The latter is only found word-finally but is relatively frequent, although the vocoid [e] is often added to recreate the preferred CV structure. This may occur in onomatopoeias: for instance, the ‘sound of an instrument hitting something’ is *tac* (CVC), but also *taque* ([ta.ke] CV.CV) is documented. Indeed, this onomatopoeia is homophonous with the third person of the verb ‘eat’, which alternates *tac* and *taque*. Similarly, the sound of an object thrown against something occurs either as *chac* ([tɛak] CVC) or *chaque* ([tɛa.ke] CV.CV) in the database. Ayoreo is not a mora-based language and strongly prefers monosegmental onsets.

In the onomatopoeias database, about 70% of syllables are of the type CV, followed by CVC (about 19.5% of syllables in the sample). The most frequent syllables in the database, *chi*, *ju*, *re*, *ru* and *ta*, are all CV. The other types of syllables are less frequent and include VC and V. The latter occurs in about 2.5% of the sample. One example is the first syllable of *ururu* (V.CV.CV) ‘sound of something burning’. Some exceptional cases mentioned above, such as *bróooooomm* and *scriss*, as well as *pron pron pron* ‘sound of pumpkin, leaves moved by the wind’, offer the otherwise undocumented syllable types CCVC and CCCVC (ignoring the purely expressive lengthening of vowels and consonants). There are no onomatopoeic syllables exclusively containing consonants.

Stress

Ayoreo has intensity stress that is not fixed and can be distinctive. The behaviour of stress in onomatopoeias does not differ from the regular lexicon; the stress pattern is not predictable if one excludes the many monosyllabic onomatopoeias.³

Tone

Ayoreo is not a tonal language.

³ In this chapter, I only indicate the accent on onomatopoeias if it is given by the respective sources.

Word-formation

The most productive word-formation processes in Ayoreo are derivation (usually via suffixation) and composition. Onomatopoeias are usually reduplicated; this involves complete repetition of syllables so that onomatopoeias are often grammatical words consisting of more than one phonological word, e.g., *chucu chucu* ‘sound of raindrops drizzling to the ground’; *nos nos nos* ‘sound of the grey brocket’. Since the number of repetitions is not fixed, here I follow the respective sources for each onomatopoeia, but I need to point out that even in the same source an onomatopoeia can present a different number of repetitions.

Primary onomatopoeias in Ayoreo, as in most of the world’s languages, are underived, monomorphemic words. No element indicates the onomatopoeic nature of the word, except perhaps the possible repetition of syllables. Onomatopoeias in Ayoreo can be considered a subclass of ideophones.

Onomatopoeias often serve as bases for new words, mainly via composition or derivational suffixes: the resulting words are verbs or nouns (see the subsection on semantic relations). Onomatopoeias are often preceded by the light verb *-o* ‘be like, go like, sound like’ to form complex predicates. The resulting compound is a verb designating the action that produces the sound imitated by the onomatopoeia (4):

- (4) a. *-o + chi chi chi* ‘sound of people complaining or murmuring’ → *-o chi chi chi* ‘complain, grumble, murmur’
b. *-o + pac pac* ‘sound of an axe hitting the wood’ → *-o pac pac* ‘hit, break’
c. *-o + ten ten ten* ‘sound of iron hitting something’ → *-o ten ten ten* ‘hammer’
d. *-o + ururu ururu* ‘sound of something burning’ → *o- ururu* ‘burn’

Derivational processes are also documented, although they are less frequent than compounding in the database. For instance, from *chere chere* ‘sound of people complaining, murmuring’ one can derive *cherechererai / cherechererei* (M.SG.ARG), *cherechere* (F.SG) ‘talkative person who cannot be restrained’. If one adds the nomen agentis suffixes *-sôri* (M.SG.ARG) and *-to* (F.SG), the result is *cherecheresôri* (M.SG.ARG), *cherechereto* (F.SG) ‘complaining person’. The corresponding abstract noun can be derived with the suffix -

ringai, yielding *icherechereringai* (3.M.SG.ARG) ‘complaint, noisy chatter’. *Sere sere sere* is the onomatopoeia of a motor vehicle. The sound-imitation *sere* can take the feminine diminutive suffix *-abia* and the resulting form, *sererabia* (DIM.F.SG.ARG), designates a small electric motor.

Ayoreo has several words of onomatopoeic origin, such as animal names: for instance, the *chioi* bird, the plush-crested jay (*Cyanocorax chrysops*), stems from *chío chío*, the onomatopoeia of its call (Fischermann, 1988). Another bird whose name may stem from an onomatopoeia is *judui*, the Amazonian motmot (*Momotus momota*), whose call is *ju du qui* (Fischermann, 1988). *Jmi* or *mi* designates some species of green tree frogs, whose call is *mii mii* (Pia, 2014-2018, IV, 37). Similar considerations apply to the cricket, *dire*: his cry is *dire dire dire* (Pia, 2014-2018, IV, 53). Not only animal terms stem from onomatopoeias: the *jorojoro* is a rattle traditionally made with a turtle shell, and its name comes from the imitation of its sound, *jorojoró* (Pia, 2014-2018, I, 21; III, 105).⁴ The *tara* or *tārara* is a metal bell, and its name is due to its sound: *tará tará tará* (Pia, 2014-2018, I, 34). Finally, the term for ‘truck, motor vehicle’, *tāia*, comes from its sound imitation *talíia* (Pia, 2014-2018, I, 31).

Word classes

As previously mentioned, onomatopoeias are included in the word class of ideophones. Like ideophones, primary onomatopoeias usually do not take inflectional markers and alone do not constitute the predicate. There can be, however, exceptions (see the following section).

Syntax

Although onomatopoeias are normally uninflected, the opposite is shown in (5), where the sound of grumbling, *chi chi chi*, takes the suffix *-o*. Here the onomatopoeia is the predicate of a reduced relative clause that modifies the object of the main clause; indeed, the suffix *-o* indicates predicate function (as explained in Bertinetto, Ciucci & Farina, 2019) besides expressing agreement in gender and number with *uringane* ‘states of being’.

(5)	<i>Y-etaque</i>	<i>ore</i>	<i>úringa-ne</i>
	1SG-dislike	3PL	[3]state_of_being-M.PL.ARG

⁴ The *jorojoro* can also be of metal.

chi_chi_chi-o.

O:sound_of_grumbling-M.PL.PRED

‘I do not like their tendency to murmur.’ Lit. ‘I do not like their states of being that are *chi chi chi* (sound of grumbling).’ (Morarie, 2011, p. 348)

While onomatopoeias are free morphemes that can occur alone in a text, as shown in examples (2-3) and (5), in the corpus they are more frequently preceded by the light verb *-o* ‘be like, go like, sound like’ (see the section on word-formation). This is shown in example (6), with the same onomatopoeia as in (2).

- (6) *Enga don_Jaime_Quispe ch-icho. ¡Ch-o po!*
And PROPER.NOUN 3-shoot **3-be_like** **O:sound_of_bursting**
Mu qué ajnangoque arócojnaquedejna-i
but FOC wounded[M.SG.PRED] big_caiman-M.SG.ARG
‘And don Jaime Quispe shot. (It sounds like) bang! But the big caiman was only wounded.’ (Briggs, 1972-1973, I, 27)

The verb *-o* indexes the sound source, as one can see in (7), which comes from an Ayoreo ritual song in which the fire talks in the first person.

- (7) *Pió-i tu yu éee,* [repeated several times]
fire-M.SG.ARG COP 1SG *eee*
y-o ururu, [repeated several times]
1SG-be_like O:sound_of_something_burning
Either (i) ‘I am the fire, I sound like *ururu*’ or (ii) ‘I am the fire, I burn.’ (Pia 2014-2018, III, p. 53)

The morphosyntactic interpretation of the verb *-o* ‘look like, be like, sound like’ plus onomatopoeia is often ambiguous. It can be interpreted: (i) as a quotative or (ii) as the first element of a complex predicate that includes the onomatopoeia. Both interpretations are given in (7), and they are not antithetical: indeed, the sequence of quotative + onomatopoeia can easily turn into a complex predicate. The second translation is the one chosen by Pia (2014-2018, III, p. 53). A similar example is (8), for which Morarie (2011) offers both translations.

- (8) *Y-ab-ab-ia* *ch-o* *sic_sic_sic*
 1SG-child-DIM-F.SG.ARG 3-be_like O:sound_of_hiccup
 ‘My small daughter sounds like *sic sic sic* / has a hiccup.’ (Morarie, 2011, p. 252, 259)

When the *-o* + onomatopoeia construction is part of an idiomatic expression, as in (9), there is more evidence to consider the onomatopoeia as part of a complex predicate, which constitutes a secondary onomatopoeia (cf. position paper). Also the ideophones that are not onomatopoeias form a complex predicate with the light verb *-o* (two examples are in [1]).

- (9) *Ch-o* *chúcu_chúg=aja* *jnum-i*
 3-be_like O:sound_of_rain=ADP ground-M.SG.ARG
 ‘It drizzles.’ (Lit. ‘it sounds like *chucu chucu* on the ground.’) (Morarie, 2011, p. 105)

In the available Ayoreo texts, onomatopoeias and other ideophones (usually preceded by the verb *-o*) frequently occur in ritual songs, the so-called *sarode* (M.PL.ARG) (example [7] is from one of them). One can find many examples in Bórmida (2005) and Pia (2014-2018), among others. Ayoreo ritual songs are employed to obtain a magic effect, usually to cure a specific disease. They typically end with sound-symbolic expressions that give a particular stylistic effect to the song’s climax (Ciucci, 2022, pp. 258-259).

Semantics

General

The types of sounds that occur more frequently in the database are voice sounds, body sounds, bird sounds and sounds of mechanical devices (excluding electronic and modern equipment). All types of sounds are represented in the corpus, except for sounds of fish and sea creatures. This is because the Ayoreo traditionally lived in the Boreal Chaco, with no access to the sea. In addition, the area traditionally inhabited by the Ayoreo is far from the region’s major waterways and is characterized by some months of drought during the winter season. Since in the Ayoreo territory there are only minor rivers and some small lakes,

aquatic animals and fishing play a minor role in Ayoreo culture compared with their neighbouring Zamucoan population, the Chamacoco, who live on the coast of the Paraguay River.

Ayoreo has a very rich inventory of onomatopoeias for bird sounds. Since animals, and especially birds, can announce future events and even cause misfortunes, birdsongs are important in the Ayoreo culture (Fischermann, 1988 § 4.1). Fischermann (1988) identified several animal calls with their respective omens. They mostly involve birds, but also other animals, such as the bat (considered bird-like although it is a mammal) and the night monkey. An animal can have different calls announcing different future events. For instance, when the call of the rufous-browed peppershrike (a type of bird) is *tini tini*, it may announce a disease, the killing of somebody by a jaguar, or the arrival of foreigners. By contrast, when the call of this bird is *tocoté*, rain and good harvest will come. When the night monkey sounds like *uo uo ságu ságu*, someone will die; if its sound is *ju ju ju*, a disease will kill children.

Recognizing the omens allows people to intervene to avoid a disgrace. For this reason, it is crucial to know the various calls and onomatopoeias. A typical intervention is the singing of the above-mentioned ritual formulas (*sarode*), each having a specific magic effect (cf. Ciucci, 2022).

The sound imitation of an animal call may be homophonous with another word of the language, which in turn inspires the interpretation of the former (Fischermann, 1988). In this respect, the bat is an interesting case. If the bat's screech is *chiririri*, someone will be bitten by a rattlesnake; indeed, *chiririri* is also the sound of a rattlesnake. The onomatopoeia *pepec*, another bat's screech, is homophonous with *pepec* (M.SG.PRED) 'blanket' and suggests that somebody will die and will be wrapped in a blanket. Also *quis quis*, another bat's call, announces the death of someone because this onomatopoeia corresponds to the sound of a cudgel that is sharpened, in this case to dig a grave. *Tué chac* indicates instead that it is a good time for sowing and that the harvest will be so abundant that it will be possible to discard the bad fruits. According to Fischermann, this is because *chac* is homophonous with the onomatopoeia *chac*, the sound of an object thrown against something, here associated with the fruits thrown away.

At present, the documentation of Ayoreo onomatopoeias cannot be considered complete. For instance, the bird and animal sounds are many more than those attested so far. Each animal is associated with one or more ritual formulas, or *sarode*, in which the animal sound often occurs. Ayoreo *sarode* are currently being lost owing to cultural change and are difficult to document since they are taboo (Ciucci, 2019, 2022).

Among the sounds of artifacts, most items of the questionnaire of this volume are absent in traditional Ayoreo culture. The Ayoreo only had a few musical instruments, no vehicles and no modern weapons (such as firearms), which were gradually adopted in the last seventy years. Although some onomatopoeias of recently introduced artifacts are documented, more research on them is needed. For instance, although I found a fair number of onomatopoeias for the questionnaire entry “mechanical and electronic equipment and devices”, they exclusively refer to traditional Ayoreo mechanical instruments.

Semantic relations

Synonymy, antonymy and polysemy are documented in the language, but they are not very common. Among onomatopoeias, one can find some examples of synonymy and polysemy, but not antonymy. Both *chere chere chere* and *chi chi chi* imitate the voice of people complaining or murmuring; *ture* and *piulf* are both sound representations for spitting. *Jñac jñac* is polysemous, being both the buzz of an insect and the sound of an arrow hitting the target. *Pac pac pac* is the sound made when trampling, the sound of something shut with force, and the sound of an axe hitting the wood. *Tac* is the sound of an instrument hitting, pounding or crushing something, such as a nail being pounded, but it is also the sound of sandals flopping. It is also the ideophone of something that dries up, such as the soil or a wound. As shown above, homophony between different onomatopoeias or between onomatopoeias and other word classes has inspired the interpretation of some animal sounds as omens (see the previous section).

Some onomatopoeias can have slightly different variants as in (10):

- (10) a. *barúum* / *bobobobobom* / *bróooooomm* ‘sound of a thunder’
b. *chimíñimi* / *chimíyimi* ‘sound of people murmuring’
c. *sic* / *sec* ‘sound of a hiccup’
d. *ten ten ten* / *tein tein tein* ‘sound of iron hitting something.’

An already existing onomatopoeia might have been used for a ‘new’ sound, thus resulting in polysemy. For instance, *tais* is the sound of the bolt of lightning, bones breaking, and a gunshot, a new sound since firearms were recently introduced. *Po* is the sound of cracking something open, of bursting, and can also be used for a firearm, as in example (2). At the same time, *tais* and *po*, when used for a firearm, are another case of synonymy.

While some onomatopoeias can acquire new uses, others are innovations due to contact with Western society. For instance, iron objects were introduced by the Jesuits in the 18th century and remained a rare commodity until the second half of the 20th century (Fischermann, 1988 § 2.2.6), and the language has an onomatopoeia for the iron instrument hitting something: *ten ten ten* or *tein tein tein*. *Sere (sere sere)* is both the sound of a cat purring and that of an engine. Both cats and engines do not belong to traditional Ayoreo society. This shows that onomatopoeias are an open class in the language. Further evidence comes from the term for ‘truck, motor vehicle’, *tāia*, which is of onomatopoeic origin (see the section on word-formation).

- (11) *Gato* *ch-o* *sere_sere_sere*
 cat 3-be_like O:sound_of_cat_purring
 ‘The cat is purring.’ (Morarie, 2006, 73; pers. comm.)

Note that there is also an ideophone *sere* ‘being calm or at peace’ (Pia, 2014-2018) (12), but it is not clear whether it is related to the ideophone mentioned above. Although one can see a semantic link between the act of purring and being at peace, *sere* in the sense of ‘being calm or at peace’ does not directly imitate a sound, so it is an ideophone but not an onomatopoeia.

- (12) *Y-aje-i* *ch-o* *sere*
 1SG-inside-M.SG.ARG 3-be_like IDEO:being_at_peace
 ‘I am at peace’, lit. ‘my inside is at peace.’ (Morarie, 2006, 73)

Conclusion

In Ayoreo, onomatopoeias are a subset of ideophones, which form a word class on their own. While Ayoreo onomatopoeias mostly follow the language's phonology, they may occasionally involve sounds and syllabic structures not found in the other word classes. Ideophones, in general, are characterized by repetition, which does not occur in the general word-stock. Ideophones often form a complex predicate with the light verb *-o* 'look like, be like, sound like.' To onomatopoeias, one can apply derivational processes to derive new words. All types of sounds can potentially be represented by onomatopoeias, which are an open class; the only type of sounds lacking in the data are those of fish and sea creatures.

This is because the Ayoreo territory is characterized by drought for part of the year and has no access to the sea or any major waterway (unlike neighbouring populations). Of particular importance for Ayoreo culture are the sounds of animals, especially birds, because they often announce future events. Onomatopoeias are very frequent in ritual songs, along with ideophones in general, where they constitute the climax.

List of abbreviations

1, 2, 3 = first, second, third person; ADP = adposition; ARG = argument form; AUG = augmentative; COP = copula; DIM = diminutive; F = feminine; FOC = focus; IDEO = ideophones; INDET = indeterminate form; IRR = irrealis; M = masculine; MOD = modality; O = onomatopoeia; PL = plural; PRED = predicative form; SG = singular; SUB = subordinator

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Appendix

	onomatopoeia	meaning
1	<i>chucu chucu</i>	sound of raindrops drizzling to the ground
2	<i>pa pa pa</i>	sound of liquid boiling

3	<i>pu</i>	sound of wind blowing
4	<i>baríum / bobobobobom / bróooooomm</i>	sound of a thunder
5	<i>po po</i>	sound of cracking open, splitting open, sound of bursting or popping [referred for instance to rocks]
6	<i>ururu ururu</i>	sound of something burning
7	<i>jnip jnip</i>	sound of the fire with tremulous flame
8	<i>sere sere</i>	sound of a cat purring
9	<i>ju ju ju / uo uo uo ságu ságu</i>	calls of the night monkey
10	<i>coãc coãc / pa pa je je je / po po po / popopopopo</i>	calls of the tropical screech owl
11	<i>quitojé quitojé quitojé</i>	call of the great kiskadee (type of bird)
12	<i>mii mii mii</i>	sound of the shrinking frog
13	<i>chiririri</i>	sound of a rattlesnake
14	<i>jñac jñac</i>	buzz of insects
15	<i>dididididi</i>	sound of a cricket chirping
16	<i>ja ja ja</i>	sound of laughing
17	<i>chere chere / chi chi chi</i>	sound of people murmuring or complaining
18	<i>taca tac</i>	sound of walking
19	<i>jatis</i>	sound of sneezing
20	<i>yigui yigui</i>	sound of rattle/tambourine
21	<i>jorojoró</i>	sound of a rattle traditionally made with a turtle shell
22	<i>sere sere</i>	sound of an engine
23	<i>taíiia</i>	sound of a truck or motor vehicle
24	<i>ten ten ten</i>	sound of iron hitting something
25	<i>pac pac pac</i>	sound of an axe hitting the wood
26	<i>tais / po</i>	sound of gun
27	<i>jñac jñac</i>	sound of an arrow hitting the target
28	<i>tará tará tará</i>	sound of a bell