CHAPTER 13

The healing words of the Ayoreo

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1 Introduction

The present paper offers a linguistic perspective on the so-called *sarode*, magic formulas traditionally used by the Ayoreo with the main purpose of curing diseases. After introducing the Ayoreo and their culture (Section 1.1), the taboo associated with *sarode* and their relationship with the Ayoreo cosmovision are addressed (Section 2). Some of these ritual formulas are analyzed (Section 3) and their role in present-day Ayoreo society is discussed (Section 4). Magic formulas never constituted a closed corpus, but new ones were created over time, adapting to changes and innovations in Ayoreo mythology; Section 5 shows the origin of a new healing formula inspired by the epidemics that occurred after contact with the Jesuits in the 18th century. Conclusions are in Section 6.

[1] I owe a debt of gratitude towards Gabriella Erica Pia† for her precious observations while I was writing the first version of this paper. Thanks are also due to Alexandra Y. Aikhenvald, Pier Marco Bertinetto, R. M. W. Dixon, Brigitta Flick and Anne Storch. Data are reported in the Ayoreo orthography (see Bertinetto 2014 and Ciucci 2016 for details). The reference work for Ayoreo lexicography is Higham et al. (2000). Zamucoan nouns and adjectives distinguish a predicate, an argument and an indeterminate form (see Bertinetto et al. 2019 for details). In Ayoreo, nouns are usually cited in argument form. The form is not indicated in the glosses of feminine nouns and adjectives whose predicate and argument form coincide. In addition, Zamucoan nouns inflect for possessor (also indicated in the glosses). The following abbreviations are used: 1, 2, 3 = first, second, third person, ADP = adposition, AF = argument form, COP = copula, EXIST = existential, F = feminine, IDEO = ideophone, M = masculine, NEG = negative, PF = predicative form, PL = plural, RFL = reflexive, SG = singular.

1.1 The Ayoreo language and people

Ayoreo is spoken by about 4,500 people in a vast area of the northern Chaco divided between Bolivia and Paraguay. It belongs to the Zamucoan family, along with Old Zamuco† and Chamacoco. Although their ancestors interacted with the Jesuits in the 18th century, the Ayoreo began regular contact with Western culture in 1947. Since then, almost all Ayoreo have gradually abandoned their traditional way of life, although small Ayoreo groups are still isolated in the forest. The Ayoreo language, although endangered, is still in vigorous use; at the same time, many elements of the Ayoreo culture are being lost. Although here I mostly refer to the traditional culture and use the present tense, many assertions no longer apply to the current lifestyle of the Ayoreo (excluding those who live in isolation). The traditional Ayoreo cosmovision is possibly very similar to that of the Old Zamuco-speaking people (Ciucci 2019), who, after evangelization by the Jesuits, mostly merged with the Chiquitano (fka Chiquito) living in the missions, and gradually lost their identity; also for this reason, Old Zamuco is extinct. By contrast, the Chamacoco cosmovision differs sharply from the Ayoreo one, possibly owing to the cultural influence exerted by other indigenous populations on the Chamacoco (Cordeu 1989–1992). Not all 18th-century Zamucoan peoples spoke Old Zamuco: the Jesuits identified several "dialects", and present-day Ayoreo descends from the varieties spoken by those groups who decided to maintain their traditional way of life, often, after having spent some time in the missions.*Sarode:* the healing words of the Ayoreo

In traditional Ayoreo medicine, there are two main possibilities to cure diseases: (i) the use of ritual or magic formulas/songs, called *sarode* (M.PL.AF),[2] and (ii) the intervention of a shaman (Sebag 1965a,b). In what follows, I only focus on *sarode*, chants whose main function is to perform a healing. Indeed, *sarode* represent a merging between language and traditional medicine. By contrast, herbal remedies play a limited role in Ayoreo medicine, which only employs a few medicinal plants (Schmeda-Hirschmann 1993, Otaegui 2014: 86). Although most *sarode* are curing songs/chants, some of them

[2] The singular is *sari* (M.SG.AF).

perform other functions: for instance, there are *sarode* for the rain (Pia 2018: 83) and *sarode* that serve to do someone damage. In the latter case, they are sung on something connected to the person one wants to harm; the kind of damage depends on each chant, and some *sarode* are even used to kill people (Idoyaga Molina 2000: 121–129).

The connection between language and traditional medicine is based on the belief that certain stories or formulas exert power on reality: it is not the person who pronounces some words, or the spirits listening to them, but the words themselves that have magic power (Otaegui 2014). This explains the use of *sarode*, but also the secrecy characterizing some Ayoreo oral texts. Indeed, Ayoreo myths cannot be recounted entirely, because the act of telling myths, independently of the narrator's intention, can have magic consequences, often nefarious for the listener, the narrator and their community (see, for examples, Bórmida 2005, I: 106, Idoyaga Molina 2000: 69–98, Otaegui 2014: 81–82 and Pia 2016: 41). For this reason, even though there are collections of Ayoreo myths (Fischermann 1988, Wilbert and Simoneau 1989, Bórmida 2005 and Pia 2014–2018), it is hard for anthropologists to document them.

Myths are often incomplete, because telling them involves risks, and asking the Ayoreo for mythological narratives can destroy the relationship of trust with the investigator[3]; similar considerations apply to *sarode*. Furthermore, most Ayoreo have abandoned those aspects of their traditional culture that are deemed contrary to the new Christian belief: *sarode* are thus dangerous, considering the enormous power of *Dupade* (M.SG.AF), the Christian God (Ciucci and Pia 2019). Ethnographers who want to collect myths and *sarode* are often seen as tricksters and in Paraguay are called *abujadie* (lit. 'the beards') (Bessire 2011).

In Ayoreo mythology, almost all non-human entities (natural phenomena, plants, animals, traditional objects, states of mind, etc.) result from the transformation of an Ayoreo who, for various reasons, decided to turn into the given entity.

(1)	Eram-i	taninga-i,	ijnoque	por-idie,
	world-M.SG.AF	beginning-M.SG.AF	3.NEG.EXIST	tree-F.PL.AF

[3] The late Gabriella Erica Pia was able to collect many myths and *sarode* after her adoption by the *Etacõri* clan (Pia 2014: 48, 54–56).

ijnoque	cuchis-ode,	gusu	ayore-ode	iji	eram-i.
3.NEG.EXIST	animal-M.PL.AF	only	person-M.PL.AF	ADP	world-M.SG.AF

Ayore-ode	ch-ijnoningase=re	aja	por-idie
person-M.PL.AF	3-change_completely=3.RFL	ADP	tree-F.PL.AF

je_aja	cuchis-ode.
along_with	animal-M.PL.AF

'At the beginning of the world, there were no trees, no animals, (there were) only the Ayoreo (lit. 'the people') in the world. The people changed completely into trees and animals' (Bertinetto et al. 2010: 115).

The Ayoreo grammar has significantly affected their mythology. Indeed, Ayoreo distinguishes between masculine and feminine gender, and the grammatical gender of nouns determines the social gender of the person who transforms him or herself into the noun's referent.[4]

For instance, *dequeyutiguei* (M.SG.AF) 'smallpox' is a masculine noun. Before turning into a sickness, smallpox used to be a powerful Ayoreo leader (Fischermann 1988: §7.1); only men can be leaders, and smallpox is represented as a man, because the noun is masculine (see Aikhenvald [2016: 120–135] for other examples of gender as a source of poetic metaphor). Other diseases also originated from the metamorphosis of a human.

In myths, the Ayoreo character very often decides to turn into a non-human entity because of a conflict with the rest of the community. However, before the metamorphosis, the person is asked to leave something useful for the other Ayoreo, which is usually a magic song (Pia 2014: 50–51). In each *sari* (M.SG.AF), the singular of *sarode* (M.PL.AF), the protagonist of the myth speaks in the first person. The magic effect obtained through the formula is often connected with some quality of the mythological character or the non-human entity they turn into (see examples in Section 3).

[4] This and other aspects of the interaction between language and Ayoreo myths, including their taboo nature, are dealt with in more detail in Ciucci (2019, forthcoming a).

Sarode are sometimes called *ujñarone* (3.M.PL.AF) in the literature (e.g. Sebag 1965a,b), while Otaegui (2014: 61–62) considers the *ujñarone* a particular type of *sarode.* The word *ujñari* (3.M.SG.AF), *ujñarone* (3.M.PL.AF) properly means 'breath' and refers to the whole healing process, which involves both the recitation of a *sari* and the act of blowing on the sick person; according to Pia (2014: 50–51), the concept of *ujñarone* also includes the myth from which the *sari* originates.

Each *sari* has its specific function, which is generally to heal a particular disease. The definition of disease or illness is very wide in the Ayoreo culture: it applies when someone is unable to perform their role and obligation in society (e.g. is unable to hunt) or when there is a lack of well-being or enjoyment, which occurs, for instance, if one is afraid, depressed or exhausted (Fischermann 1988, Otegui 2014: 221–223). If someone is unlucky in love, they are also considered sick (Pia, pers. comm.), and there is even a *sari* for bad dreams (Pia 2014: 83). Generally, each Ayoreo who has turned into a non-human entity has left a *sari*. While not everybody is allowed to listen to a myth, everyone (not necessarily a shaman) can listen to a *sari* and use it to cure a disease. However, there is a caveat. Magic formulas can only be pronounced when they are needed. Otherwise, there could be adverse consequences for the person who performs the chant and for their community; for the same reason, the *sari* used must be the appropriate one for a given disease. In addition, if the *sari* is not recited in the right way, it has the opposite effect, so that not everybody dares to learn and recite *sarode*, and those who can perform them are held in high estimation (Pia 2014: 52, 81–82). The correct recitation of the *sari* does not "depend on the exact replication of formulaic words, but rather, on the ability of the chosen words and performance to evoke the desired effects" and correctly refer to the related myth and its protagonist (Bessire 2011: 272). In this sense, Ayoreo curing songs do not exclude some creativity by the healer; the formula can thus vary, while the tonality is the same in all *sarode*; for this reason, there can be different versions of the same *sari* (see an example in Bessire 2011). *Sarode* can vary considerably in length, depending on the place and time in which they were collected (Dasso 2019). According to Pia (2014, 2016: 40), there are hundreds of *sarode*, but owing to cultural change and the already mentioned taboos, there are nowadays only a few people who know these formulas and the corresponding myths. Documenting *sarode* is thus extremely difficult, and some people pretend not to be able to

repeat a *sari*, even though it is often a short formula (Pia 2014: 50–51).

2 Collecting and analyzing *sarode*

The use of *sarode* shows the importance of language in the Ayoreo cosmovision, but this has inauspicious consequences for the field linguist, because it is hard, if possible at all, to analyze *sarode* during fieldwork. Since working with a native speaker is a requisite for a good-quality transcription (Dixon 2010: 322), a linguist cannot provide a reliable transcription of these texts. While a linguist is not required to share the vision of the community where they work, they should respect the local beliefs both for ethical reasons and to be trusted. Since a linguist collects texts for language documentation, and the kind of text plays a secondary role, one should avoid asking informants to narrate something which would make them feel uncomfortable. For instance, one of my Ayoreo informants, Vicente, had a particular talent for telling stories. Even though I did not ask him for myths, because I knew their taboo nature, he spontaneously recounted myths, restricting the narration to fragments of stories that he felt allowed to share with me. Since I was aware of the prohibition, and out of respect, I did not ask him for more information. By contrast, an anthropologist such as Pia spent many years living with the Ayoreo, thus gaining the trust that allowed her to collect myths and *sarode*. In particular, she visited remote communities, looking for older people (often shamans) who might have learned *sarode.* The danger of disregarding taboos is much diminished for older people, who are destined to die relatively soon (Ciucci and Pia 2019). Sebag (1965b: 95) mentions an old Ayoreo who did not care about dying and wanted to teach all of the *sarode* he knew to the other men of his group. He took two nights to do this, and at the end got sick and died.

The interested reader can find transcriptions of *sarode* in Fischermann (1988), Bessire (2011) or Pia (2014, 2015, 2016, 2018); Bórmida 2005 [1973–1979], Renshaw (2006) and Dasso (2019), among others, provide translations of *sarode*.

In examples (2–4) are three *sarode* from Pia's Ayoreo anthropological dictionary. Since no linguist was present when the *sarode* were collected, there is a problem concerning the overall

quality of the texts.[5] The *sarode* in (2–4) do not present particular textual issues. I have followed Pia's transcription (including the accents), but I have added linguistic glosses and have partly changed the translation to make it more literal.[6]

The first is the *sari* of *carujnaguejna* (Pia 2016: 40), a local tree *(Peltogyne confertiflora).* She was a woman who bled while pregnant. She healed herself and, despite some problems, gave birth to a child. She left the following *sari*, which, along with her story, serves to help women during childbirth (2).

(2) Carujnanguejna tu yu éee, Carujnanguejna tu yu éee,
tree_name.F.SG COP 1SG eee tree_name.F.SG COP 1SG eee

Carujnanguejna tu yu éee, y-iyo-de que ch-odajá,
tree_name.F.SG COP 1SG eee 1SG-blood-M.PL.AF[7] NEG 3-stop

mu ajé y-iqueta yu, e ch-o_jnaqué éee,
but 3.inside 1SG-heal 1SG already 3-stop eeee

e ch-o_jnaque éee, e ch-o_jnaque éee.
already 3-stop eeee already 3-stop eeee
'I am the *carujnanguejna eee,* I am the *carujnanguejna eee,* I am the *carujnanguejna eee,* my bleeding does not stop, but it is inside, I heal myself, it already stops eee, it already stops eee, it already stops, eee.'

[5] I was the linguistics editor of the Ayoreo texts in Pia's anthropological dictionary. Although I could correct obvious linguistic mistakes in myths and *sarode* (Ciucci 2014), there were sometimes passages whose correctness was uncertain, but it was not possible to check them with native speakers, since these texts are taboo. Similar considerations apply to the other authors who have transcribed *sarode*.

[6] Depending on the author, there are different criteria concerning orthographic accents (see Higham et al. 2000, Bertinetto 2014 and Ciucci 2014 for more details).

[7] Menstruation is a taboo in Ayoreo, so that there is no specific word, and the plural of 'blood' is used to refer to it (Ciucci and Pia 2019).

The following *sari* (from Pia 2016: 46) is particularly dangerous. It is used when someone has been cursed, so that the malediction goes back to the person who first pronounced it. It was left by *Iriria*, the brushland tinamou, a type of bird *(Nothoprocta cinerascens).* When *Iriria* was an Ayoreo, she was a female shaman who cursed people, causing their death.

(3) Iriri-á tu yu éee, Iriri-á tu yu éee,
tinamou-F.SG.AF COP 1SG eee tinamou-F.SG.AF COP 1SG eee

Iriri-á tu yu éee, cuchabe tu yu éee,
tinamou-F.SG.AF COP 1SG eee big.F.SG COP 1SG eee

cuchabe tu yu éee, cuchabe tu yu éee.
big.F.SG COP 1SG eee big.F.SG COP 1SG eee

Y-o_jnipe éeee, jnipe éeee, jnipe éeee,
1SG-be_in_trance eeee in_trance eeee in_trance eeee
[jnipe (IDEO) 'sound of the fire with tremulous flame']

y-o_seré éee, y-o_seré éee, y-o_seré éee.
1SG-faint eee 1SG-faint eee 1SG-faint eee
[seré (IDEO) 'sound of calm, tranquillity']
'I am the Iriria (brushland tinamou) eee, I am the Iriria eee, I am the Iriria eee, I am big eee, I am big eee, I am big eee. I am in trance eeee, (I am) in trance eeee, (I am) in trance eeee, I faint eee, I faint eee, I faint eee.'

The silk floss tree used to be an Ayoreo woman who healed very rapidly when she was wounded. Before turning into a tree, she left the *sari* in (4), which is useful if someone cuts themselves (Bertinetto et al. 2010: 121–122, Pia 2014: 87–88).

(4) Cucó uyú éee! Cucó uyú éee!
silk_floss_tree.F.SG 1SG eee silk_floss_tree.F.SG 1SG eee
'I am the silk floss tree, eee! I am the silk floss tree, eee!'

udé sar-i, udé sar-i, y-isiome.
this.M.SG formula-M.SG.AF this.M.SG formula-M.SG.AF 1SG-give
'This magic formula, this magic formula, I give.'

Cucó uyú éee! Que oré ch-aquesu yu,
silk_floss_tree.F.SG 1SG eee NEG 3PL 3-cut 1SG
'I am the silk floss tree! They do not wound me,'

ore ch-ijnó, nanique, yu, ñ-ijungoró,
3PL 3-hit_with_an_axe long_ago 1SG 1SG-neck.F.SG
'they hit me a long ago, at my neck,'

yojoá, yojoá, yojoá, pac, pac, pac
IDEO IDEO IDEO IDEO IDEO IDEO
[yojoá 'sound of sliced wood'; pac 'sound of the blow of an ax']

y-aquesu yu y-aró-i, ch-uchengari ucha-de
1SG-cut 1SG 1SG-skin-M.SG.AF 3-open pulp-M.PL.AF
'I cut my skin, the pulp opens.'

Cucó uyú éee! Cucó uyú éee!
silk_floss_tree.F.SG 1SG eee silk_floss_tree.F.SG 1SG eee
'I am the silk floss tree eee! I am the silk floss tree, eee!'

Cucó uyú éee! y-isiome udé sar-i,
silk_floss_tree.F.SG 1SG eee 1SG-give this.M.SG formula-M.SG.AF
'I am the silk floss tree eee! I give this magic formula,'

ee y-o_tac, ee y-o_tac, ee y-o_tac,
already 1SG-heal already 1SG-heal already 1SG-heal
[tac (IDEO) 'sound of wound that heals, of ground that dries up']
'I already heal my wound, I already heal my wound, I already heal my wound'

chicrí chicrí chicrí e suru éee, e
IDEO IDEO IDEO already 3.close eee already
[chicrí 'sound of the wound that heals']
'(the wound) is already closing,'

suru éee, e suru éee.
3.close eee already 3.close eee
'is already closing, is already closing.'

The structure of all *sarode* is very similar: the protagonist presents themselves and their power; in longer *sarode*, more details of the

story are referred to. *Sarode* offer interesting data on ideophones, because they contain and usually end with sound-symbolic words, which are the climax and "express through the sound the therapeutic or preventive action and are a symbol of the healing and regenerative efficacy of the word and its ritualized use" (Idoyaga Molina 2000: 137, my translation). Although some authors talk about onomatopoeias, they are better referred to as ideophones, because not all of them are proper onomatopoeias (Bertinetto 2014). Ayoreo, like the other Zamucoan languages, is very rich in ideophones; they often follow the verb 'to be like, look like' (*yo* in the first person singular, *cho* in the third person) with which they form a verbal periphrasis. In (2–4), I have glossed each verbal periphrasis as a whole, but I have also reported, whenever possible, the meaning of the ideophones as indicated by Pia.

The use of *sarode* is very simple and was described by Sebag (1965b: 95) and Pia (2016: 52–53). When someone is sick, people can look for someone who knows *sarode*, or a shaman (they can also be the same person). An expert in *sarode* who is not a shaman is usually preferred, since shamans are feared because they are more powerful (Pia 2016: 52). Pia (2016: 37–55) distinguishes three types of non-shamans who are knowledgeable in *sarode* (5): the *igasitai* is at the highest level, the *sarode irajasõri* at the lowest. The *igasitai* knows more *sarode* than the others, including the most dangerous ones, and in some cases can even be a better healer than a shaman. Shamans and *sarode* experts can be either men or women.

(5) a. *sarode igasitai* (M.SG.AF), *sarode igasite* (F.SG) or simply *igasitai* (M.SG.AF), *igasite* (F.SG) < *sarode* + *igasitai* (M.SG.AF), *igasite* (F.SG) 'intelligent, wise'
b. *sarode irajatai* (M.SG.AF), *sarode irajate* (F.SG) < *sarode* + *irajatai* (M.SG.AF), *irajate* (F.SG) 'knowledgeable'
c. *sarode irajasõri* (M.SG.AF), *sarode irajato* (F.SG) < *sarode* + *irajasõri* (3.M.SG.AF), *irajato* (F.SG) 'who knows, understands'

Any expert in *sarode* has to smoke tobacco in a pipe and inhale it ten or twenty times before performing the healing. According to Fischermann (1988: §7.4), only those who know *sarode* can smoke a pipe. Then, for about 10–15 minutes, the *sarode* expert blows on several parts of the body of the sick person and sings the specific *sari* for the disease. The *sari* is repeated several times; at the end, the

healer blows upwards. There can be some variants of this technique; for instance, the healer can hesitate to blow on a child who is afraid or, out of shame, on the stomach of a woman. In this case, he blows on a glass of water that the woman then drinks or that is then used to massage the sick child (Sebag 1965b: 95). The healer cannot charge anything, but the family of the sick must offer them something appropriate to the importance of the 'service' received. An expert in *sarode* receives less important gifts than a shaman, who is more powerful (Pia 2016: 52–53). The effectiveness of *sarode* has never been investigated from a scientific point of view; Renshaw (2006) hypothesizes that healing chants might strengthen the patient's immune system owing to suggestion. If the person is not healed, the next step is to try with a shaman, who is more 'specialized' in curing than someone who only knows *sarode*. Shamans are the most knowledgeable people in traditional medicine and can choose to use *sarode*. Indeed, some of them began as experts in *sarode* (Pia 2016: 51). Shamans have a different healing technique that only they can perform, which is reserved for the most severe cases, but it does not involve language and is not addressed here (see Sebag 1965a,b).

3 *Sarode* in a changing culture

The Ayoreo culture changed very fast after contact. Today the few remaining shamans are very old, and nobody wants to become a shaman, owing to the influence of evangelical and Catholic missionaries. Some parts of the traditional knowledge are disappearing, including *sarode*. Today the Ayoreo want to turn to modern medicine, but their communities are in remote areas with limited access to healthcare, apart from the community in Santa Cruz de la Sierra (Bolivia). In addition, Western medicine is often out of reach, because it is too expensive for the modest means of the average Ayoreo.

Modern medicine has not completely replaced traditional practices, and *sarode* are still considered useful to cure someone. The persistent taboo concerning *sarode* provides indirect evidence for this. However, today *sarode* are rarely used in Paraguay (Renshaw 2006: 259). The Ayoreo do not question the effectiveness of their magic formulas, but missionaries associated traditional healing practices with the devil, thus causing them to be abandoned (Bessire 2011). Otaegui (2014: 86–109), who has investigated the Ayoreo

community of Jesudi, in the Paraguayan Chaco, describes the co-existence of traditional and modern medicine. As he notes, both are scarce, which makes a complementary use of the two even necessary. On the one hand, today only a few people know *sarode*; on the other, the Jesudi community only has sporadic access to medical treatment and medicine. *Sarode* and modern medicine are seen as equivalent. In addition, new elements from the Christian religion integrate traditional beliefs and are beginning to play a role in the healing process.

Some Ayoreo still consider modern medicine as not wholly effective and as being unable to explain the cause of illness (Otaegui 2014: 94). Several authors point out that in the perception of the Ayoreo, there were fewer diseases when they lived in the forest, and indeed, many diseases, such as flu and smallpox, resulted from contact with the non-Ayoreo. As is well-known, populations who have lived a long period of isolation are particularly vulnerable to common diseases, and contact with Western people can lead to the deaths of many indigenous people. This happened in the 20th century, when the Western world tried to establish regular contact with the Ayoreo: many of them died as soon as they went to live in the evangelical and Catholic missions (see some dramatic stories in Bartolomé 2000: 106–107, 120–121). Even before some of the groups moved to the missions, the emergence of new diseases led to the killing of shamans, who were considered the culprits of illnesses they could not cure (Bartolomé 2000: 284–285, Bessire 2014: 74). At the same time, epidemics allowed missionaries to use modern medicine to convince the Ayoreo of the power of their new religion as opposed to traditional Ayoreo beliefs (Bessire 2011: 278–279). The lack of immunological memory remains an issue that in the future might affect the uncontacted Ayoreo groups, whose habitat is threatened by deforestation.[8]

4 Epidemics and the origin of a *sari*

Contact-related epidemics affected Zamucoan populations even before the 20th century. In 1724, the Jesuits founded the mission of

[8] See the campaign of Survival International at https://www.survivalinternational.org/tribes/ayoreo

San Ignacio de Zamucos to evangelize the Zamucoan tribes. A substantial group of ancestors of the present-day Ayoreo lived for some time with the Jesuits (Fischermann 1993), before escaping back into the woods and living in isolation. Epidemics were frequent in the missions and also affected Zamucoan people (Combès 2009: 83). In 1736–1737, there was a terrible epidemic of smallpox in San Ignacio de Zamucos; consequently, the power relations between the different Zamucoan groups changed and internal conflict arose, ultimately leading to the abandonment of the mission in 1745 (Combès 2009: 56, 83). This also had consequences for the Jesuits' linguistic policy and for the decline of Old Zamuco, now extinct. Indeed, San Ignacio de Zamucos was the only mission where Old Zamuco was the language of evangelization. For this reason, the Jesuit father Ignace Chomé wrote a dictionary and a grammar of the language (both extremely useful for present-day linguistic studies). In all other missions of south-eastern Bolivia, the official language was Chiquitano, and people speaking other indigenous languages were supposed to learn it. When San Ignacio was abandoned, most people speaking Old Zamuco and its dialects moved to the neighboring missions, where they were gradually assimilated and shifted to Chiquitano, which until a few decades ago was widely spoken owing to the cultural heritage of the missions.

The diseases caused by contact with the Jesuits have remained in the oral memory of the Ayoreo. Fischermann (1988) reports several stories that are set at the time of the Jesuits. One of them is about *dequeyutiguei* (M.SG.AF) 'smallpox', which killed most of the inhabitants of San Ignacio de Zamucos (Fischermann 1988: myth number 65), and indeed the epidemic of 1736–1737 claimed the lives of 400 people, leaving only 130 families in the mission (Combès 2009: 83). The Old Zamuco dictionary by Ignace Chomé was written in San Ignacio de Zamucos between 1738 and 1739, so that a number of examples and expressions refer to the recent epidemic. Chomé uses the generic expressions *ducoz yugoritie* 'mortal disease' (6a) or *ducoz datetie* (lit. 'the big disease'), translated in Spanish as *peste*, which in South America designates an infectious disease or smallpox (6b–c). These data come from the upcoming critical edition of Chomé's dictionary (Ciucci, forthcoming b).

(6) a. *iré amiño'hi yidaire ome ducoz yugoritie* 'those who remained after the mortal disease in my village'

b. *ducoz datetie chuena ayaquiogaizodde* 'the infectious disease/smallpox (lit. the big disease) consumed all of our ancestors'
c. *ducoz datetie chuena yiguiosoddoe nez* 'the infectious disease/smallpox killed all of my relatives'

In the dictionary, there is also a more specific expression for 'smallpox', *ducoz tarataucc* (7). *Ducoz* is the generic term for 'disease', while *tarataucc* means 'rotten', so that smallpox is literally the 'rotten disease' (7). This is different from the Ayoreo term *dequeyutiguei* (M.SG.AF) 'smallpox'[9]. A "linguistic trace" of the smallpox epidemic is the lemmatization of the specific term for the pockmarks left by smallpox. The entry is reported in (8).[10]

(7) *ducoz tarataucc* (M.SG.PF), *ducoz taratautie* (M.SG.AF), pl. *ducoz tarataucho* (M.PL.PF), *ducoz tarataugoddoe* (M.PL.AF) 'disease, infectious disease of smallpox'

(8) *eddiciguit* (3.M.SG.PF), *eddiciguitie* (3.M.SG.AF), plural *eddiciguicho* (3.M.PL.PF), *eddichiguidoddoe* (3.M.PL.AF) 'pockmarks left by smallpox on the face', possessive *yeddiciguit* (1SG.M.SG.PF), *eddiciguit* (2SG/3.M.SG.PF), plural *ayeddiciguicho* (1PL/2PL.M.SG.PF); *eddiciguidoddoe unahâpuz* 'he is pretty marked by smallpox'; *eddiciguitac* 'distinguished by smallpox in the face'.

The Old Zamuco dictionary also provides examples showing how the Jesuits explained and justified epidemics and other diseases to the Zamucoan people (9).

(9) a. *Tupâde chiguina ducozitie, amati chagüetie a güaque ati añeño ayayutigo, ega tirogore ayutigo* 'When God sends you disease or hunger, subject your will to his will'

[9] *Dequeyutiguei* comes from *eyutiguei* (M.SG.AF) 'weariness, fatigue, tiredness, emptiness, destruction' (Higham et al. 2000: 309). This noun is unpossessible, yet *dequeyutiguei* (M.SG.AF) 'smallpox' has the prefix *dequ-*, normally used for the unspecified possessor of possessed nouns. The derivation of *dequeyutiguei* from *eyutiguei* indicates that the former was recently adapted for 'smallpox' and that its mythological explanation (see Section 2) is also an innovation.

[10] The English translation and the glosses between parentheses are mine.

b. *ducadoddoe Tupâde chiguina ducozoddoe a, amati chagüetie a yoc, ega yinucoi om* 'Sometimes God sends us diseases or hunger so that we remind ourselves of him'
c. *naco ducozitie dihi ayitonoriga o* 'Hopefully you will learn a lesson with the disease', 'Hopefully the disease will teach you a lesson.'

The present-day Ayoreo descend from Zamucoan groups who did not go to live with the Jesuits, who had taught them about *Dupade* (M.SG.AF) 'God'. Examples such as (9) explain why, in the Ayoreo culture, the name of God, *Dupade*, was a linguistic taboo before the recent evangelization. *Dupade* is traditionally seen as "a powerful and terrible divinity such that no shaman can cope with him, hence pronouncing his name can be dangerous" (Ciucci and Pia 2019: 36).

This also contributes to explain the formation of a new *sari*, that of the *cojñoque eduguejnai* (M.SG.AF) lit. 'foreign leader' or 'leader of the foreigners'. This figure can be identified with the Jesuit missionary leading the mission of San Ignacio de Zamucos. Unlike the other *sarode*, this is an exception, because it is not a *sari* left by a mythical Ayoreo who turned into a non-human entity. In addition, it reflects how the indigenous people who did not want to live in the missions saw the Jesuits. There is only one version of this *sari*, transcribed by Fischermann (1988: §9.3, *sari* 1) and reported in (10) (my translation).

(10) I am a disgusting foreigner full of diseases / I am a particularly harmful foreigner, whom nobody understands, and full of diseases / I am a disgusting foreigner full of grave diseases / I will punish my people (servants) / I will destroy my people / I am a powerful chief of the foreigners, full of grave diseases / I will have big diseases / but I have powerful magic formulas and my powerful magic formulas will destroy me / my powerful magic formulas will come back against myself / I am a foreigner whom nobody can understand, full of diseases / I am a foreigner whom nobody can understand, full of big diseases / I bring many diseases / I am a powerful leader of the foreigners, full of diseases / I am the owner of many things / I am the boss of the foreigners, a chief and owner of many things / I am someone who goes through the forest / I will go through the world / I am the owner of many things / but I have many

> big diseases / I am someone who goes through the forest [noise of a foreigner who moves].

This *sari* is employed to heal those who have contracted a disease brought by the white people. It also shows that epidemics and other diseases that occurred at the time of the Jesuits left a deep trace in the memory of the Ayoreo. Some northern Ayoreo groups still know San Ignacio de Zamucos as *Guidai toi* (lit. the 'dead village'), because of the many people who died there (Fischermann 1988: §1.1.2).

This example shows that *sarode* never constituted a closed corpus, but that new *sarode* have continuously been created. As seen in Section 2, *sarode* refer to the content of myths, and indeed Fischermann (1988, 1993) documents stories set in San Ignacio de Zamucos (such as the one mentioned above about smallpox). Even in the 20th century, new stories inspired by Christianism and new *sarode* emerged (Bessire 2011: 276–277) before the Christian belief started to replace traditional healing practices.

5 Conclusions

In traditional Ayoreo culture, the word itself can exert a magic power. This explains the use of magic formulas or songs, the so-called *sarode*. They are mainly used for healing purposes and represent the intersection between language and traditional medicine (Section 2). Since *sarode* are taboo, it is difficult for the researcher to document them. The healing ritual in which they are sung is very simple and can be performed by anybody who knows the appropriate formula for a given disease (Section 3). Nowadays, fewer and fewer people know *sarode*. Although they are rarely employed, they can still co-exist with modern medicine, which is often unavailable (Section 4). At the same time, contact with Western people resulted in the transmission of previously unknown diseases. The epidemics that occurred in the 18th century in the Jesuit missions inspired a new *sari* to heal "white people's diseases" (§5). Such an issue was never forgotten by the Ayoreo, and re-emerged when they were recontacted after 1947. Indeed, when the Ayoreo began to sedentarize, many people died because of diseases transmitted by outsiders.

There is an impressive and touching story reported by Barrios et al. (1992: 54–57) which shows that, during their first contacts with outsiders in the 20th century, the Ayoreo were aware of the health risks involved. In 1971, the Ayoreo group of the Garaigosode from Paraguay left their traditional way of life, and consequently many older people died. As narrated by Manene, a young Ayoreo at that time, the elder knew that they would die, but they felt that, at that point in time, it was necessary to break their isolation to ensure the long-term survival of the group; thus, they decided to sacrifice themselves for the sake of their children. The Ayoreo are descended from Zamucoan groups who met the Jesuits in the 18th century but chose to maintain their traditional way of life. The fear of diseases was one reason for this choice and contributes to explaining the subsequent hostility of the Ayoreo towards outsiders until the second half of the 20th century (Bartolomé 2000: 121). The lack of antibodies against diseases that are common in the Western world is a matter of most serious concern for the future of the uncontacted Ayoreo, for whom *sarode* are possibly still the most practiced healing technique.

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