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Ecology of Pressures and Linguistic Vitality of the *Yoremnokki* Language in Sinaloa

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ABSTRACT

The study of endangered languages is still of great importance, however, on one hand, the methods of analysis aren't always presented in an integrated or holistic manner, and on the other hand, the languages aren't always available to be studied; this is the case for the *yoremnokki* language in the northwest of Mexico, for which a holistic study is presented using UNESCO's linguistic vitality and ecology of pressures.

The linguistic shift of the *yoremnokki* language is a fact; to study this phenomenon, an ethnographic study was carried out in 2019 in the North of Sinaloa, Mexico in the *yoreme* mayo region.

We found that there are more factors for the displacement of the *yoremnokki* language than there are for its maintenance. The centennial restriction generational transmission is one of the factors that most influence the movement of the linguistic *yoremnokki*; although the *yoreme* mayo population grew from 1985 to date, in proportion to the total population, it is decreasing. There are fewer and fewer spaces in their domain; the last refuge is that of festivals and rituals. New spaces have been opened, radio, telephones, internet and higher education, but they are limited. Few written materials are available but the recent establishment of the writing standard represents a major step in maintaining it.

Even though the language doesn't appear as officially high risk in Mexico, urgent measures should be taken to revitalize this language.

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1.   Introduction

Linguistic displacement is a fact in all indigenous languages in Mexico that are at risk of disappearing. But each is in different circumstances, according to the INALI (2012) the risk for 48% of the languages is not immediate, the rest can be medium, high and very high. The *yoremnokki* language has undergone changes in accordance with the historical processes of the region in northern Sinaloa,

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México; Belonging to a culture, *yoreme* mayo, has resisted the onslaught of acculturation processes that have been maintained since the first contacts with the Spanish and later with the Mexicans. Currently, the communities where these people are located are intercultural, indigenous and non-indigenous coexist even in the same family. The reason for this investigation is to determine the leve lof risk for the *yoremnokki* as a language of one of the cultures of the northwest of Mexico, which has been one of the least studied, unlike some of the languages in other regions of the country.

Through an ethnographic study carried out in 2019, through field work and using observation techniques, interviews and some surveys, we sought to characterize the form of linguistic displacement. It is about clarifying, knowing and explaining the socio-intercultural framework in relation to the loss of the *yoremnokki* language, in order to assess its vitality according to the scales of the UNESCO (2003) and following the perspective of ecology of pressures by Terborg (2006).

The study of endangered languages (Filipovic & Pütz, 2018) is still of great importance. For authors like Mufwene (2017) and Ospina-Bozzi (2015), the analysis that were performed from the perspective of vitality, allow for broader and more interdisciplinary discussions of the sociolinguistic situation, such as the acknowledgement of the language as a human right (Carpenter y Tsykarev, 2020), its political and legislative situation (Zajícová, 2017), the specific tendencies in the use of language (Karidakis & Kelly, 2018; Schrader-Kniffki, 2017). In this study, ecologic models are considered (Bastardas-Boada, 2017; Giraldo-Dávila & Maya-Franco, 2015; Echeverri & Romero-Cruz, 2016; Groff, 2018), based on the relationship between the dominant and the minority language, which complement the understanding of vitality.

This investigation is important since even when the linguistic displacement has been detected, the elements that make up the current state of the language had not been studied in depth; since, as Terborg (2006) mentions, when carefully studying the causes and effects of their displacement, phenomena that specifically happen only in that place can be revealed.

The Method was ethnographic and it consisted in two basic aspects: 1) the ethnographic practice centered on fieldwork, performed in 2019 and 2) the anthropological reflection, centered in deskwork (San-Román, 2009). As mentioned by Restrepo (2015):

The ethnography as a methodology, as a framework, would be defined by the emphasis in the description and located interpretations. As a methodology, the ethnography would seek to offer a description of determined aspects of social life considering the associated meanings of the actors (p. 163).

Given that the target sociolinguistic dynamic arises in the practice of speakers and non-speakers of the language, the selected method was ethnographic. More specifically, we performed a microehtnography, which according to Álvarez (2008), is centered in the analysis of patterns with which the members of a community interact, in this case, the *yoreme* mayo people, emphasizing the sociolinguistic component; through there, we focused on the problem of linguistic vitality and the ecology of the pressures, without encompassing all of the ethnography, because, instead of analyzing the phenomenon from a holistic standpoint, we studied the interactional situations according to the object of study.

Mexico is one of the countries with a long tradition in sociolinguistic studies on indigenous languages, practically since the arrival of the Spanish. But recently, mention can be made of studies on their displacement by various authors such as Hamel (1987, 1995) Hamel & Muñoz (1988), Díaz-Couder (1996-1997, 2015), Terborg (1995, 1996, 2000 , 2004, 2006), Terborg & García Landa (2011), Terborg, Velásquez & Trujillo (2007), Trujillo (2007, 2008, 2011), Trujillo & Terborg (2009), among others who have developed works that mainly revolve around to the ecology of pressures model. It is noteworthy that also has been preceded by the work of Moctezuma (2009, 2001), of Moctezuma, JL & Lopez, H. (2007) and Ochoa-Zazueta (1998), who have made the first contributions regarding use of the yoremnokki language.

Díaz-Couder (cited by Trujillo & Terborg, 2009) postulates three types of linguistic communities: a) persistence, b) maintenance, and c) displacement. With persistent communities, "it refers to the most isolated regions, with less economic integration and greater political autonomy (in the sense of a relatively little interference by federal and state government agencies in internal affairs)" (Díaz-Couder, 1996 -1997).

Currently more than 50% of the indigenous communities in Mexico make up a social organization that can be either maintained or has signs of movement. In the first, bilingualism is more widespread in all domains (Díaz-Couder, 1996-1997). Displacement begins "the moment a community begins to choose another language in areas in which the local has been used routinely" (Trujillo & Terborg, 2009, p. 128). From Zimmermann's perspective (cited by García Landa & Terborg, 2011), functional displacement can be observed many times when the new generation no longer uses the language of their parents.

Reversing it requires effective policy and actions aimed at reversing the dynamics aimed at the disappearance of the indigenous languages of Mexico (Moctezuma, 2009), unfortunately under current conditions it is not only difficult to stop the ethnophagic process, but the colonizing and acculturating inertia of non-indigenous governments has intensified.

The present investigation found, from the ecology of pressures, that there are more factors in favor of displacement of the *yoremnokki* language than there are factors for its maintenance. According to UNESCO's factors of vitality: a) there are serious problems in the intergenerational transmission; b) the rate of population of *yoremnokki* speakers in comparison to the total population is decreasing, from 5.6% in 1910 to 1.4% in 2015; c) the places for the language are restricted to the family and the traditional parties; d) even though there is some openness from the new forms of communication, the digital breech is an impediment to preserve the language; e) there is a marked delay in the codification of the language and the generation of material for education; f) the governmental and institutional policies favor the revitalization of the language only in paper, but in practice, there are a lot of difficulties to put in practice; g) the attitude of the own members of the community as to the maintenance of the language is mixed and h) there are few documents in the language.

Given the lack of precise information about the situation of the *yoremnokki* language, this research offers specific data that can be the base for the establishment of public policies oriented to the revitalization of the language.

Furthermore, the following section shows, in part 2, a brief description of the *yoreme* mayo ethnic group; in part 3, UNESCO's model to observe the vitality of a language; in part 4, the explanation of the ecology of pressures model; in part 5, methodological aspects are reviewed; in part 6, we show the main results and finally, we present the conclusions.

2.   The *yoreme mayo*

The *yoreme mayo* ethnoregion is made up of ethnic groups that these days are recognized as Mayo and Yaqui, that is, they speak of the *yoreme* mayo who are preferably located in the north of Sinaloa and south of Sonora, and the *yoreme yaqui* who are mainly in Sonora. Thus, when speaking of *yoreme*, reference is made to both mayo and *yaqui*; The term mayo or yaqui is used to specify one of the two ethnic groups. For this study, the *yoreme* mayo of Sinaloa is taken into account, given that, even though there is a brotherhood of origin and tradition with those of Sonora, the essential difference is in terms of language variants. Their language is directly related to *yaqui* and *guarijio* (Moctezuma, 2001).

In relation to a territory, the pre-Hispanic peoples who inhabited what is northern Sinaloa and southern Sonora constituted important population centers. From the Conquest, these groups were displaced, de-territorialized and diminished by politics, power, the economy and religion, until today (Sandoval-Forero, Guerra-García & Ruiz-Martínez, 2012).

Currently, the highest population density in *yoreme* mayo is dispersed in a region whose topography varies from sea level, close to the Gulf of California (Sea of Cortez) to the summits of the highest mountains in the Sierra Madre Occidental at about 2,290 meters above sea level, and is made up of three physiographic zones: the mountains, the valleys and the coast (Carpenter, 2009). Its 183 communities have very varied dimensions and are distributed according to the INALI geostatistical reference (2009) in the municipalities of El Fuerte, Choix, Guasave, Sinaloa, Angostura and Ahome. The Government of the State of Sinaloa has recently recognized them, Jahuara II, Bacorehuis, Constancia, El Pochotal and Los Capomos are those with the largest indigenous population even though today they are not exclusive places of this ethnic group (El Estado de Sinaloa, 2018).

They call themselves *yorem'mem* (those who respect); their language, *yoremnokki*, belongs to the tara-cahita family, as mentioned, from the Yuto-nahua branch (INALI, 2009); According to the group's oral tradition, the word "mayo" means "the people of the riverside" (Moctezuma & López, 2007).

According to INALI (2009), there are 11 language families in Mexico, in 364 variants belonging to 68 ethnolinguistic groups. A linguistic variant will be considered at high risk of disappearance if the total number of speakers is less than 1000, and the percentage of speakers between 5 and 14 years of the total is greater than 10% and the total number of localities in the that is spoken is between 20 and 50. The *yoremnokki* belongs to the *Yuto-nahua* family and is one of the 48 variants in this situation (INALI, 2012).

3.   Vitality of a language, the UNESCO model

In 2002 and 2003, UNESCO commissioned an international group of linguists to develop a framework for determining the degree of vitality of a language, in order to contribute to policy formulation, definition of needs and adequate safeguard measures. From this came the document "Vitality and danger of disappearance of languages" in which the following nine criteria were established: 1) intergenerational transmission, 2) absolute number of speakers, 3) proportion of speakers with respect to the total population, 4) trends in existing domains of use, 5) response to new domains and the media, 6) language materials for education and literacy, 7) government and institutional attitudes and policies (including status and use), 8) attitudes of members of the community towards their own language, and 9) quantity and quality of the documentation (García-Landa & Terborg, 2011).

Intergenerational Language Transmission (factor 1)

"The most commonly used factor in evaluating the vitality of a language is whether or not it is being transmitted from one generation to the next" (Fishman, 1991, as cited in UNESCO, 2003). Fishman noted that intergenerational transmission, from parent to child, was critical in determining the continuity of a language (Dwyer, 2011). Based on this idea and Fisher's original proposal of a scale of 8 levels, UNESCO (2003) proposes six degrees which are fully explained in the aforementioned document, here only the extremes will be displayed:

Safe (5): The language is spoken by all generations. There is no sign of linguistic threat from any other language, and the intergenerational transmission of the language seems uninterrupted.

Critically endangered (1): The youngest speakers are in the great-grandparental generation, and the language is not used for everyday interactions. These older people often remember only part of the language but do not use it, since there may not be anyone to speak with.

Extinct (0): There is no one who can speak or remember the language (p. 7-8).

Proportion of Speakers within the Total Population (factors 2 and 3)

The proportion of speakers in a region in combination with the number of speakers and non-speakers is a good indicator of what happens to a language (Koplening, 2019); for a population without risk, the entire population uses it, at the opposite end, nobody speaks. The language is at greater risk as the percentage of speakers decreases. UNESCO (2003) presents the following scale. (Table 1).

Table 1.

Speakers proportion scale.

Degree of Endangerment	Grade	Proportion of Speakers Within the Total Reference Population
Safe	5	All speak the language.
Unsafe	4	Nearly all speak the language.
definitively endangered	3	A majority speak the language
severely endangered	2	A minority speak the language
critically endangered	1	Very few speak the language
Extinct	0	None speak the language

Source: UNESCO (2003, p. 9)

Trends in Existing Language Domains (factor 4)

Languages are alive as long as they are found in all existing domains. A language of wide regional or national communication has an official domain, in government, education and other public offices and institutions. The critical change is when the local language is used less frequently at home and is not transmitted to the children, this state is characterized by bilingualism in the generations of parents and grandparents; children tend to be semi-speaking; this description suggests that there is a change in favor of the dominant official language while the local one is in danger of disappearing. Use in all domains requires fluent speakers of all ages (Grenoble, 2006).

Of the degrees proposed by UNESCO (2003), the extremes are shown below:

Universal use (5): The language of the ethnolinguistic group is the language of interaction, identity, thinking, creativity, and entertainment, and is actively used in all discourse domains for all purposes.

Highly limited domain (1): The non-dominant language is used in very restricted domains at special occasions, usually by very few individuals in a community, like ritual leaders on ceremonial occasions. Some other individuals may remember at least some of the language (rememberers).

Extinct (0): The language is not spoken at any place at any time. (p. 9-10).

Response to New Domains and Media (factor 5)

The general pattern is, worldwide, the use of the language in all current and emerging domains, including education and in all the media. Its use in the media is critical therefore they serve to spread the language and encourages growth and maintenance; they are also indicators of its prestige (Grenoble, 2006). The levels for UNESCO are presented in Table 2 below:

Table 2.

Degrees of response to new domains and media.

Degree of Endangerment	Grade	New Domains and Media Accepted by the Endangered Language
Dynamic	5	The language is used in all new domains
Robust / active	4	The language is used in most new domains.
Receptive	3	The language is used in many domains.
Coping	2	The language is used in some new domains.
Minimal	1	The language is used only in a few new domains.
Inactive	0	The language is not used in any new domains.

UNESCO (2003, p. 11).

Materials for Language Education and Literacy (factor 6)

Literature refers to two specific aspects: 1) to written production and 2) to literacy, since it is believed that the social and economic well-being of a culture depends on how literate people are in their language. It is related to the materials that are used and produced in the school environment for their learning. It is considered in our times that writing is fundamental for the vitality of the language. In this sense, UNESCO (2003) proposes the following scale (table 3).

Table 3.

Grades of educational materials.

Grade	Accessibility of Written Materials
5	There is an established orthography, literacy tradition with grammars, dictionaries, texts, literature, and everyday media. Writing in the language is used in administration and education.
4	Written materials exist, and at school, children are developing literacy in the language. Writing in the language is not used in administration
3	Written materials exist and children may be exposed to the written form at school. Literacy is not promoted through print media
2	Written materials exist, but they may only be useful for some members of the community; and for others, they may have a symbolic significance. Literacy education in the language is not a part of the school curriculum
1	A practical orthography is known to the community and some material is being written
0	No orthography available to the community

Source: UNESCO (2003, p. 12)

Governmental and Institutional Language Attitudes and Policies, Including Official Status and Use (factor 7)

A basic premise of modern sociolinguistics is that all languages are functionally equal. Despite this, languages are evaluated and judged in the framework of what are called attitudes that appear in the context of government policies and planning. In this way, changing adverse attitudes towards a language is the first step towards its vindication and rescue (O'Rourke & Hogan-Brun, 2013). Particularly:

A country's government may have an explicit language use policy for its multiple languages. At one extreme, one language may be designated as the sole official language of the country, while all others are condemned. At the other extreme, all languages of a nation may receive equal official status. Equal legal status, however, does not guarantee language maintenance and long-term vitality of a language (UNESCO, 2013, p. 13).

Of the factors presented by l to UNESCO (2003), the extremes are presented:

Equal support (5): All of a country's languages are valued as assets. All languages are protected by law, and the government encourages the maintenance of all languages by implementing explicit policies.

Forced assimilation (1): The government has an explicit language policy declaring the dominant group's language to be the only official national language, while the languages of subordinate groups are neither recognized nor supported.

Prohibition (0): Minority languages are prohibited from use in any domain. Languages may be tolerated in private domains.

Community Members' Attitudes toward Their Own Language (Factor 8)

Negative attitudes towards a local language can be translated into negative thoughts about ways of thinking and believing, in general terms, towards the same culture. You can perceive, delayed, unused, underdeveloped, or may be seen as an impediment to progress in society that doesn't value it (Grenoble, 2006).

Members of a speech community are not usually neutral towards their own language. They may see it as essential to their community and identity and promote it; they may use it without promoting it; they may be ashamed of it and, therefore, not promote it; or they may see it as a nuisance and actively avoid using it (UNESCO, 2003, p. 14).

UNESCO's scale (2003) in this regard is found in Table 4:

Table 4.
Grades of the community members' attitudes scale.

Grade	Community Members' Attitudes toward Language
5	All members value their language and wish to see it promoted
4	Most members support language maintenance
3	Many members support language maintenance; others are indifferent or may even support language loss.
2	Some members support language maintenance; others are indifferent or may even support language los
1	Only a few members support language maintenance; others are indifferent or may even support language los
0	No one cares if the language is lost; all prefer to use a dominant language

Source: UNESCO (2003, p. 15).

Amount and Quality of Documentation (factor 9)

Documentation of endangered languages is an important matter if we want to preserve their main characteristics. Those with few speakers, less studied and in danger present the challenge of the scarcity of documents since in these cases there is very little data available. On the opposite extreme, the majority languages such as English, Spanish, German, among others, there is an excessive quantity of documents of a very diverse nature. Those that are in danger of extinction do not have a written tradition and have few if not null documents (Klessa, 2014).

As a guide for assessing the urgency for documenting a language, the type and quality of existing language materials must be identified. Of central importance are written texts, including transcribed, translated, and annotated audiovisual recordings of natural speech. Such information

importantly helps members of the language community formulate specific tasks, and enables linguists to design research projects together with members of the language community (UNESCO, 2003, p. 16).

The UNESCO scale (2003) is shown in Table 5:

Table 5.
Grades of quantity and documentary quality.

Nature of Documentation	Grade	Language Documentation
Superlative	5	There are comprehensive grammars and dictionaries, extensive texts; constant flow of language materials. Abundant annotated high-quality audio and video recordings exist.
Good	4	There are one good grammar and a number of adequate grammars, dictionaries, texts, literature, and occasionally updated everyday media; adequate annotated high-quality audio and video recordings.
Fair	3	There may be an adequate grammar or sufficient amount of grammars, dictionaries, and texts, but no everyday media; audio and video recordings may exist in varying quality or degree of annotation.
fragmentary	2	There are some grammatical sketches, word-lists, and texts useful for limited linguistic research but with inadequate coverage. Audio and video recordings may exist in varying quality, with or without any annotation.
Inadequate	1	Only a few grammatical sketches, short wordlists, and fragmentary texts. Audio and video recordings do not exist, are of unusable quality, or are completely un-annotated.
undocumented	0	No material exists.

Source: UNESCO (2003, p. 16-17).

4.   Ecology of pressures

Most of the approaches carried out in linguistic displacement studies start from an ecological approach, which has resulted in a diversity of edges when put into practice (Vargas, 2016).

The ecology of pressures is presented from the complexity, not that referring to the misunderstanding of the facts, but rather in reference to the interweaves, knots and links that occur with the categories involved in the phenomenon, in which the actions emerge from a set of coordinated, parallel or conflicting pressures (Gómez-Retana, Terborg & Estévez, 2019).

The ecology of pressures is a systemic model where subsystems are found that are included and excluded according to local, regional and global dynamics; it presents processes of adaptation, survival, vitality or extinction, just as biological diversity does (Vargas, 2016); hence, the analysis of the situation of the ecology of a language takes into account the environment, which refers to the set of circumstances of its use (García Landa & Terborg, 2011).

Within the complexity of the phenomenon, it must be understood that each aspect presents an ecology of pressures (Trujillo & Terborg, 2009) in which, in plain terms, pressures for and against are identified that put the magnitude of the *yoremnokki*'s linguistic displacement in the balance in this case. The elements that are briefly explained by Trujillo and Terborg (2009) and García Landa & Terborg (2011) are shown below.

- The intensity of the pressure depends on two factors: a) the interest of the depressed individual and b) the state of the world (general context).
- Interest originates from essential needs and specific ideologies.
- The state of the world is modified in action and it is this state that also conditions the action itself.
- The tools that are used for their own modification are part of the state of the world.
- Language can be considered as one of the mentioned tools.
- What determines the quality of this tool is competence, which is considered to be of an individual and inappropriate nature, for which reason "shared facility" is proposed.

- The shared ease, along with the interests of the speakers, determines the different pressures and whether or not the latter are in conflict in the ecology of pressures.
- Common knowledge, knowledge of language, knowledge of the world, are part of the shared facility, as long as it is shared and automated.
- Shared ease is part of the "current state of the world" which gives rise to pressure for action.
- Process is the modifications of the current state of the world.

This allegory to ecology is very useful for the analysis of languages, which are subject, from the social point of view, to forces and processes; but in the same ecological system it can include different processes and within them different forces that do not always maintain the same sense, some could complement each other and others go against each other (García Landa & Terborg, 2011). These ideas are represented in the following diagram (figure 1) that has been reconstructed based on the previous explanation. In the case of *yoremnokki* and of any other indigenous language in Latin America, its coexistence with Spanish generates an ecology in which processes and forces participate. When processes are unfavorable, like in this case, you think about how to stop searching because you have the perception that it is altering an ecological state that had long remained balanced (García Landa & Terborg, 2011).

The displacement of a minority language, such as *yoremnokki*, by a majority (Spanish) is a process that accounts for power relations, in this case of non-indigenous people (Terborg & García Landa, 2011). Hagège (cited by García Landa & Terborg, 2011) proposed the two key concepts "the ecolinguistics or linguistic environment, which makes each situation of bilingualism unique, and the pressures that, as conceptual constructs, could serve to find common patterns in different situations" (p. 20).
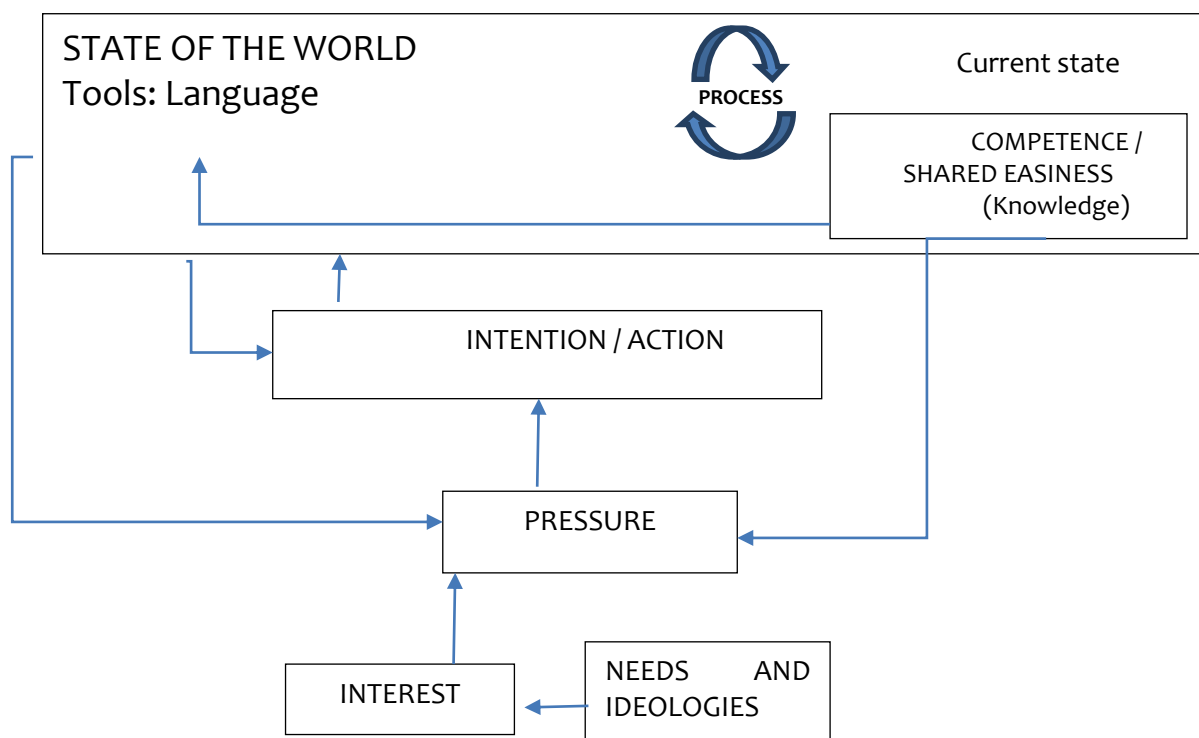

Figure 1. The ecology of pressures model.
Source: Own construction based on the proposal of Trujillo & Terborg (2009).

When, in a context there are different languages in contact, their speakers experience different pressures (Trujillo & Terborg, 2009). Pressure is the central construct of the model and is linked to power relations and ideologies, values, human actions, which in turn are related to attitudes towards a certain linguistic variant (Trujillo & Terborg, 2009).

The most important element in this model is the pressure "that makes men act to modify the state of the world according to their convenience" (Trujillo & Terborg, 2009, p. 130). In turn, the

pressure arises from "interest", without it there would be no pressure;" Interest is a fundamental condition for pressure to emerge" (Terborg & García Landa, 2011, p. 38). At the same time, interest is motivated by needs and ideologies.

In a conflictive relationship, power arises between conflicting pressures whose results may be convenient for some people and totally inconvenient for others. When this happens, the ecology of pressures would be unbalanced, as it is affected when the pressures on a part of the speakers in this contact situation increase (Terborg & García Landa, 2011).

Stable linguistic ecologies maintain a pressure balance that has been stable for some time; these are affected when the pressures on a part of the speakers in contact situation increase. The alteration of the pressures transforms the social and therefore linguistic balance, hence that ideological, power relations, among others, are intertwined (Trujillo & Terborg, 2009).

Actions are the result of pressures and modify or preserve the current state of the world. The modification may or may not be prolonged, permanent or temporary, and ideally, in some cases it will be possible to return to the current situation (for example, minimize the displacement or cancel it) (Terborg & García Landa, 2011).

5.   Methods and techniques

To carry out this work, a multi-method perspective was used, since in order to understand the phenomenon of displacement in a broader way, the complementarity of disciplines is necessary; In this case, it was possible to integrate different disciplines that were combined by a multidisciplinary work team, in which sociolinguistic, ethnological, educational and social psychology aspects were addressed (Gallardo, Vergel & Villamizar, 2017).

Firstly, the research was performed, as mentioned, from a microethnographic perspective, however, we included techniques such as the ecology of pressures and UNESCO's vitality factors, which could explain all or part of the linguistic displacement.

Hence, the method also takes the analytical property as implied defragmenting factors vitality according to UNESCO and from l to ecology pressures in each of its systematic components.

The research was also ethnographic in nature, since the research did not leave aside what people did, how they behaved and how they interacted, and also aims to describe their beliefs, values, perspectives and motivations, from the point of view of the members. of the community.

Observation techniques, semi-structured interviews, discussion groups, questionnaires, as well as the analysis of documentary material were combined. Observation was envisaged to comprise three activities: observations themselves, note-taking, and interpretation.

The interview technique was considered for several reasons; first, there were spaces in which the observer could hardly access the daily life of the members of the community; secondly, there was personal history data that could be obtained more quickly, and thirdly, it could be an additional verification technique with respect to the information obtained by other methods. On the other hand, the focus group method was also used to highlight collective differences and levels of consensus, even when complaints and demands are symptomatic. Meetings were held where *yoreme* people was put to talk about the situation of their language.

The preparation of questionnaires was previously carried out in accordance with the stated objectives of the research and was applied at each visit to the community.

In the field work, an attempt was made to study the sociolinguistic aspects, especially the extralinguistic factors that have altered the *yoreme* mayo group, in 2019, for the displacement of the *yoremnokki*. The elements that pointed to both maintenance and linguistic displacement were located (Barragán, 2009). This consisted of systematized periodic visits to the ethnoregion throughout the year 2019 in which conversations, photographs, surveys of indigenous students and teachers and some locals were collected, but mainly observations were made, in which some aspects of the *yoremnokki* were discussed with the inhabitants of the community.

After completing the studies, an intensive analysis of the information was carried out, characterized by the reduction of the data, the disposition of the same and the obtaining of results (Quaas, et. al., 2001).

6.   Main results
6.1   Vitality of the *yoremnokki*

In accordance with the above, an exercise to assess vitality according to UNESCO factors is presented below.

Intergenerational transmission

For the *yoreme* mayo people, the cultural decline was intensified with the fall of Bachomo, its last leader, in 1915 and caused the first intensive process of intergenerational restriction of the language and stimulated self-racism. In the post-revolutionary era, many indigenous people had to flee from persecution because they had lost the war and the leaders changed their residence and name.

Later, starting in the 1930s, the *yoremes* followed the strategy of linguistic restriction and did not teach *yoremnokki* so that their children were not discriminated against and could insert themselves into the economic life of the region. Currently, about 60% of adults who speak the language have taught their children, others have refused, have failed due to various reasons or have not known how to transmit it.

There have been significant losses in the language from the time of grandparents today and it is believed that the next generations will speak the *yoremnokki* to an even lesser extent. In the last twenty years, intergenerational transmission has gone from 4 to 3 on the UNESCO scale, from vulnerable when the language was used by some children in all areas, to clearly endangered, since it is now mainly used by the parental generation and above.

Ratio of speakers to total population

The total *yoreme* mayo population has been slowly increasing over time, as shown in the historical series from 1985 to 2015 in Table 6; In this it should be noted that between 1910 and 1960 the population decreased due to the deaths that occurred in the Revolution and the other post-revolutionary events when many indigenous people hid their affiliation derived from the subsequent persecution.

Table 6.

Historical series of the yoreme mayo population in Sinaloa.

year	1895	1910	1921	1930	1940	1950	1960
YOREME MAYO POPULATION	8,539	16,813	12,188	6,164	6,667	2,509	1,837
year	1970	1980	1990	1995	2000	2010	2015
YOREME MAYO POPULATION	27,848	56,387	37,776	39,382	37,779	39,616	40,300

Source: INEGI (2016) and INALI (2012).

However, if the data is analyzed with respect to the total population of Sinaloa there is a strong decrease, the maximum percentage was found in 1910 5.6% of the population and currently there is 1.4% of the state total.

The *yoremes* are in continuous contact with the non-indigenous "yoris" where intercultural processes live daily. Table 4 shows the comparative data between 2000 and 2015 for the municipalities with the presence of *yoreme* mayo in Northern Sinaloa. It should be stressed that a) while the total population in these 5 municipalities increased by 16% over the 15 years covered, the indigenous population only grew by 7% and *yoremnokki* speakers 6%; b) the indigenous population has not grown uniformly in all municipalities, while in some a decrease in population is reported, in others such as Choix it has increased significantly; c) the percentage of speakers has been maintained with respect to the entire indigenous population (even if this data does not indicate the percentage spoken), 2% with respect to the total population of the 5 municipalities and 45% with respect to the entire *yoreme* mayo population and d) there is very little monolingual population of 315 that there were in 2000 for 2015 there were only 129. These data indicate that the problem of language displacement is a high risk.

Table 7.

Comparative data of the yoreme population May 2000-2015.

YEAR	Municipality	AHOME	EL FUERTE	GUASAVE	SINALOA	CHOIX	TOTAL
2000	Total population	359,146	89,515	277,402	85,100	29,355	840,518
	Indigenous population	13,712	12,778	8,712	1,735	842	37,779
	Percentage of Indigenous Population	4%	14%	3%	2%	3%	4%
	yoremnokki Speakers	5,258	5,342	5,153	930	389	17,072
	Percentage with respect to the total population	1%	6%	2%	1%	1%	2%
	percentage with respect to the indigenous population	38%	42%	59%	54%	46%	45%
	Monolingual	19	17	276	0	3	315
2015	Total population	449,215	100,459	295,353	88,659	33,027	966,713
	Indigenous population	16,588	12,394	7,371	1,699	2,248	40,300
	Percentage of Indigenous Population	4%	12%	2%	2%	7%	4%
	yoremnokki Speakers	6,732	5,676	3,400	1,138	1,139	18,085
	Percentage with respect to the total population	1%	6%	1%	1%	3%	2%
	percentage with respect to the indigenous population	41%	46%	46%	67%	51%	45%
	Monolingual	0	0	21	104	4	129
TOTAL	TOTAL POPULATION	25%	12%	6%	4%	13%	15%
	INDIGENOUS POPULATION	21%	-3%	-15%	-2%	167%	7%
	YOREMNOKKI SPEAKERS	28%	6%	-3. 4%	22%	193%	6%

Own construction source based on data from INI-CONAPO (2002) and CDI (2016).

Trends in existing domains of language use

There are fewer and fewer spaces for the full recreation of the *yoreme* mayo language. Differences in its management are presented according to the contexts: in public and inter-ethnic spaces, Castilian prevails, while the *yoremnokki* loses more and more validity in private and intra-ethnic matters. Economic affairs are conducted in Spanish; in schools, even indigenous primary schools, the language is little spoken, less than 10% of the children speak it regularly; in most families, even those considered indigenous, Spanish is regularly spoken; the last linguistic refuge is the one that corresponds to the festivals, the rituals are carried out preferably in the indigenous language.

In the community it is mentioned the vast majority (about 80%) of families are considered hybrid, for example, within the same family, some members have followed the traditions, while the rest is not recognized as *yoreme*. From the family nucleus are the two competing languages. 50% of speakers have learned *yoremnokki* from their mothers, 30% of the entire family nucleus, the rest have learned it with friends and in daily use.

The intercultural composition of indigenous teachers and parents also fosters the complexity of the situation. Of the teachers, 50% speak and write the language, and 15% only speak and the rest, neither speak it nor write it. This generates contradictions among teachers in linguistic matters. Language-speaking teachers acknowledge the great influence that their teachers had in reinforcing their knowledge of *yoremnokki*, but there were also teachers who discouraged their learning. The main problem is presenting a strong language like Spanish, as opposed to a weak one, in the same classroom space outside the family context. The result is that the latter loses prestige.

There is no continuity in cultural reinforcement, after elementary school it is until university when the intention of showing up to culture appears again. The Autonomous Indigenous University of Mexico (UAIM) is settled in the *yoreme* mayo ethnoregion. However, the indigenous cultural elements in this university curriculum are minimal, since the basic language is Spanish. Indigenous students who speak *yoremnokki* are few and the courses are not triggers for new speakers, since *yoremnokki* is taught as a second language.

In the last 20 years, the degree according to the UNESCO scale has gone from 2 to 1, from limited or formal fields to very limited fields.

Response to new domains and the media.

Las dominant social forces have been present; On the one hand, the daily use of the mass media by young *yoreme* and the growth of the educational offer up to the university level, has resulted in significant intergenerational cultural changes.

The *yoremnokki* has lost dominions in the home, in religion and in organizations, but in the last twenty years its (weak) presence has increased in the school environment, because in addition to the coverage in indigenous primary education, the creation The UAIM has opened spaces for it at the university level, where speakers have had to face new linguistic challenges, such as higher language teaching, the formation of its norm and the expansion of editorial and artistic production.

New mass media have brought, mainly for young *yoreme* mayo, new domains, the internet and cell phones are now common. However, from the sociolinguistic point of view, the media aim to give prestige to the English language, followed by Spanish, and to discredit indigenous cultures. There is an international pressure that advocates defending their rights as an ethnic group and that are aimed at rescuing their culture, but it is insufficient given the imminent weight of the large number of adverse factors and elements that have been mentioned. On the other hand, to from May 9, 2019 the *yoremnokki* appears sporadically in some programs from the radio opening UAIM; not yet has no presence in television and film.

In the past twenty years, the *yoremnokki* has moved from the UNESCO scale from grade 1 to grade 2, from a few to some new areas.

Language materials for education

There are few materials that can be used didactically to strengthen the language. Teachers have a poor opinion of the textbook on *yoremnokki* promoted by the SEP, as it presents words that are not used in this region. This has forced teachers to generate their own teaching materials, but each one starts from different educational criteria in view of the late normalization of the language.

In the last twenty years on the UNESCO scale the *yoremnokki* has increased from 0 to 1, from having no spelling to having a practical spelling.

Governmental and institutional attitudes and policies

The linguistic displacement is associated firstly with the historical submission that this ethnic group has suffered, in which the processes of colonization, acculturation and ethnophagy have been present in their daily life. In recent history, it goes back to the dispossession of land that was intensified with the Lerdo Law, which motivated the loss of prestige of the ethnic group and its language. Subsequently in post-revolutionary times, acculturation from the supporters of Vasconcelos' policies oriented education in the Castilian schools, the violent teaching of Spanish and the fight against the *yoremnokki*. Subsequently, they continued to pay for bilingualism and intercultural education in these linguaphagic processes.

The imposition of Spanish occurred from the time of the conquest until 2003 (Official Gazette of the Federation, 2018) when Spanish ceased to be the only national language, to make way for the original leagues, leaving an inertia difficult to reverse.

A relevant fact is the distribution of primary schools a) those run by the SEPyC where no emphasis is given to the indigenous language, b) those of the General Directorate of Indigenous Education, where culture is taken into account and c) those of CONAFE oriented to rural education. These systems coincide, but do not present uniformity in the criteria for language management. All schools present a mix of ethnoeducation, indigenous (indigenist) and non-indigenous education, intercultural, bilingual, community, rural and popular education that weakens cultural clustering and stimulates linguistic displacement. Promoting mother tongue in some and not in others increases the diversity of language skills.

Intercultural education is oriented to the subordination of the *yoreme* culture to the national culture, it is oriented to acquire the cultural contents of the dominant society. This simple fact reinforces the detected diglossia.

According to the above, in the last twenty years, the *yoremnokki* changed in the UNESCO scale of l to Grade 2, when the government ended openly encourage assimilation into the dominant language while minority were not protected. A grade 4 in which minority languages have some level of protection and its use begins to have a certain prestige in university classrooms. However, there are more inertias from the past than the force of the entry into force of new policies in this regard.

Community members' attitudes towards their own language

For the *yoreme* mayo, their culture and language are highly appreciated, but they are willing to preserve it as long as it is not an obstacle to the political and economic relationship with non-indigenous society. They require to be fluent in Spanish to access better job opportunities.

All *yoremes* show insecurity to affirm that they speak 100% *yoremnokki*, mainly due to the intergenerational loss, the limited repertoire from one community to another and the difficulty of the written language. Those who do not speak it find themselves unable to do anything significant to rescue it because the conditions are adverse; there are very few speakers who can really contribute relevant actions to avoid displacement. In part, these adverse conditions have stemmed from the lack of a strong *yoreme* organization that unites the majority of the ethnic group.

If there were teachers at some time punishing children who spoke the language to favor the Spanish, it has now been reversed phenomenon, as many teachers try to stimulate a children's use ; extraordinary efforts are made to speak it; but since it is taught as a second language, its prestige has been minimized; use tends to be reduced to the study of words, greetings, some songs and the *yoremnokki* Mexican anthem.

On the other hand, and presents phenomenon of self-discrimination. Children privilege those with white skin and discriminate as blacks. Only el 28% dares to identify as *yoreme* and less than 10% ethnic group speak *yoremnokki*. Thus, children mostly prefer not attached to any ethnic group, as generally does the Mexican mestizo.

In the last 20 years it has remained at level 3. Many members support the maintenance of the language; others are indifferent or may even support its loss.

Quantity and quality of documentation

The *yoremnokki* has had a long and slow process in the development of written materials, the main impulses have been first the efforts to generate a writing that has been given thanks to the contributions of very diverse linguists. Ochoa (1998) refers to the pioneering works of this language: a) Eustaquio Buelna who in 1890 published Arte de la lengua cahita by a father of the company of Jesús, b) Hotge published Cahita, in the Bulleting of the Bureau of American Ethnology, c) Alden Mason in 1923 who wrote A preliminary sketch of the yaqui language, d) José Ignacio Dávila Garivay who in 1944 investigated Some affinities between the Coca and Cahita languages, e) Jean Johnson with The Yaqui language, f) Howard Collard and Elisabeth Scott who wrote Spanish-Mayo Mayo-Spanish in 1974, g) John Dedrick who in 1977 wrote Spanish influence on Yaqui grammar and h) Andrés Lionnet in 1977 who published The Elements of the Cahita Language (Yaqui - Mayo).

The standardization of writing had not been carried out due to the Basque inertias of dismantling indigenous languages; Only in December 2019 did INALI generate the *Yoremnokki* Language Writing Standard (Mayo) (INALI, 2019); But there are still doubts about the assertiveness and effectiveness of its use.

Books on *yoremnokki* and production of some small pamphlets are numbered. In this sense, the books by Nicolás Gómez that he has published in the last 10 years are worth highlighting: Traditions of the Yoremem Mayo people from northern Sinaloa, Los fiesteros, El lunar de la Discordia and El ritual del coyote; but in reality there have been few works and rather they are of anthropological interest, rather than of daily use among the speakers.

In the last twenty years it has passed from grade 2, when there were some grammar outlines, word lists and texts useful for linguistic research limited to level 3, with acceptable grammar, some texts, but still insufficient. Table 5 below shows that there are currently more factors that point to

displacement, even though government policies and the attitude of its members have presented efforts in favor of maintenance.

Table 8.

Vitality factors of the language.

In favor of maintaining		In favor of displacement	
Degree	Explanation	Degree	Explanation
2 to 4	Political and gubernmental attitudes	4 to 3	Intergenerational transmission
	Encouraging of the asimilation of the dominant language and the protection of the *yoremnokki* language		From being used by children to being used by adults and elders
3	Attitude towards the members Many members support the maintaining of the language	2	Proportion of speakers A minority speaks the language
2 to 3	Quality and cuantity of documentation	2 to 1	Tendencies in dominion
	Some grammatical forms and word lists at an acceptable grammar, dictionaries and texts		The language used to be used in limited places, now it is restricted
		1 to 2	Response to new dominions and forms of communication
			The language passed to a few new ambits
		0 to 1	Materials in the language
			From not having orthographic norms to having a practical orthography and some materials

Source: own construction.

6.2   Ecology of pressures

Currently the *yoremnokki* does not compete with the Spanish, but marginally occupies a subordinate position according to a colonial order within the institutions. Its speakers present diglossia with respect to Spanish. In the region, the favored social classes use Spanish exclusively, while the disadvantaged use an unschooled Spanish, and at the opposite extreme are the relegated social groups that speak the language, which are mostly day laborers, unskilled workers, peasants and workers. There is a social distribution marked by the use of the language.

From the ecology of pressures, the following spaces are weighted. Regarding the family, we found that there are still members who master the language; however, it affects family interculturality, self-restriction and the generation gap.

The way of life of *yoremes* over sixty years old differs greatly from that of young people. The influence of the economically 'successful' figure of the non-indigenous pressures the new generations to modify their cultural forms. The economic situation has meant that both the father and the mother have had to go out to work and there is less time in contact with the mother tongue.

Regarding religion, the festivities are syncretisms that unite the entire ethnic group and privilege the *yoremnokki*, but in a dialectical way the formal religions are intensive in Spanish; in addition, the scarcity of musicians and partiers and other cultural elements act to the detriment of the linguistic phenomenon.

The *yoreme* organizations share both languages, the problem is the interference of non-indigenous people who help displacement. Indigenous policies and legislation have promoted initiatives to reclaim culture and there are individual efforts by indigenous teachers that have brought progress in teaching strategies and materials, despite this, the deficiencies in the basic indigenous education system, the lack of educational materials, teachers who are not fluent in the language, not very assertive textbooks and that Spanish has already become the mother tongue, minimize any progress.

At UAIM, a *yoremnokki* teachers' college has been set up and spaces such as the nest of languages, universal mother tongue classes, the promotion of cultural activities, the establishment together with INALI of norms and the recreation of policies and national and international indigenous legislation; but in the opposite sense it is observed: Spanish as the dominant language, the weighted weight of non-indigenous culture, the folklorization of the *yoremnokki* and the daily racism and discrimination.

In general terms, in the ecology of pressures, the elements that favor the displacement of the *yoremnokki* are stronger.

7.   Conclusion

In this research we found, from UNESCO's vitality factors and the ecology of pressures, that there are more factors in favor of displacement for the *yoremnokki* language, than there are factors in favor of its maintenance.

The centennial restriction on generational transmission is one of the factors that most affects linguistic displacement; It began from the conquest motivated by intercultural relations with non-indigenous people who imposed the use of Spanish and punished its use, until today when the trend has been followed. They press the generational restriction, a) the racism, the self-racism and the discrimination towards the *yoreme* mayo people and b) the fact that both the father and the mother work and have less time to teach the language and discourage it so that their children do not are discriminated in future jobs. Currently the *yoremnokki* is spoken mainly of the parental generation up.

There are fewer and fewer spaces for the full recreation of the language and it loses more and more validity in intra-ethnic affairs. Spanish is used in economic affairs, in organizations, in schools and in most families, the last linguistic refuge is the one that corresponds to the festivals, the rituals are carried out preferably in *yoremnokki*, even when each more frequently in the presence of non-indigenous people.

Having opened higher education for *yoremes* has created new spaces and new possibilities for its use. In addition, the new mass communication media have brought to the new young domains, the Internet and cell phones are now commonplace, however, these means also bring risks to devaluate of the language. Recently, radio is a new medium for the use of *yoremnokki* in the region, but its use is still absent in other media. Few materials for education, these were developed without a writing standard, which emerged recently and represents a great step for its maintenance.

Government policies have changed in the last 20 years, from openly encouraging the assimilation of Spanish, to beginning the protection of minority languages. However, the favorable inertias to displacement continue.

The *yoreme* mayo are willing to hold their language as long as not an obstacle to political and economic relationship with the non-indigenous society, they require fluency in Spanish to access better job opportunities. Speakers and non-speakers, they are unable to generate and follow any plan to avoid the strong tendency to displacement. Children in the communities are self-discriminating and only 28% consider themselves *yoreme* and less than 10% speak the language. Many members support its maintenance; others are indifferent or may even support their loss.

The *yoremnokki* has had a long and slow process in developing few written materials; In general, some grammar sketches, word lists and texts useful for limited linguistic research are presented. The normalization of the language will allow us to have an acceptable grammar, improve the texts, but even the editorial production is insufficient.

In general, there are more factors that point to displacement, even though government policies and the attitude of its members have presented efforts in favor of maintenance.

The ecology of pressures is presented in a dialectical way, since while in each domain there are actions that promote the maintenance of the language, opposite others arise that stimulate displacement, the latter being of greater force than the former. The diglossia situation implies that the *yoremnokki* is used by the least privileged social class in the region. Intercultural formation at school, family, teachers and other intercultural processes is part of the great counterweight that favor the ecology of pressures' strongest elements favoring displacement and minimize maintenance strategies

presented as rhetoric of emancipation from public policies that have belatedly promoted initiatives to reclaim culture.

The situation of the *yoremnokki* language is the product of the history of colonialism in Mexico, because it wasn't until the beginning of the XXI century that indigenous languages were recognized as part of the national languages in Mexico; the *yoremnokki* language, for instance, normalized its writing in 2019. After centuries of acculturing, it is not strange that this and other indigenous languages find themselves at risk of disappearing. Even now, as it has been shown, strong inertias are still present for the linguistic displacement.

Therefore, a shift in Mexico's public policies is needed to change the risk criteria for indigenous languages, especially the *yoremnokki* language, which currently is not catalogued as high risk, but it is imminent that, if there is no change, it will disappear soon.

This shift in policies should go beyond the linguistic aspect; it has to do with what the government really wants about ethnic and cultural diversity, that is, we need a new multicultural policy that claims and upholds the indigenous peoples in Mexico.

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