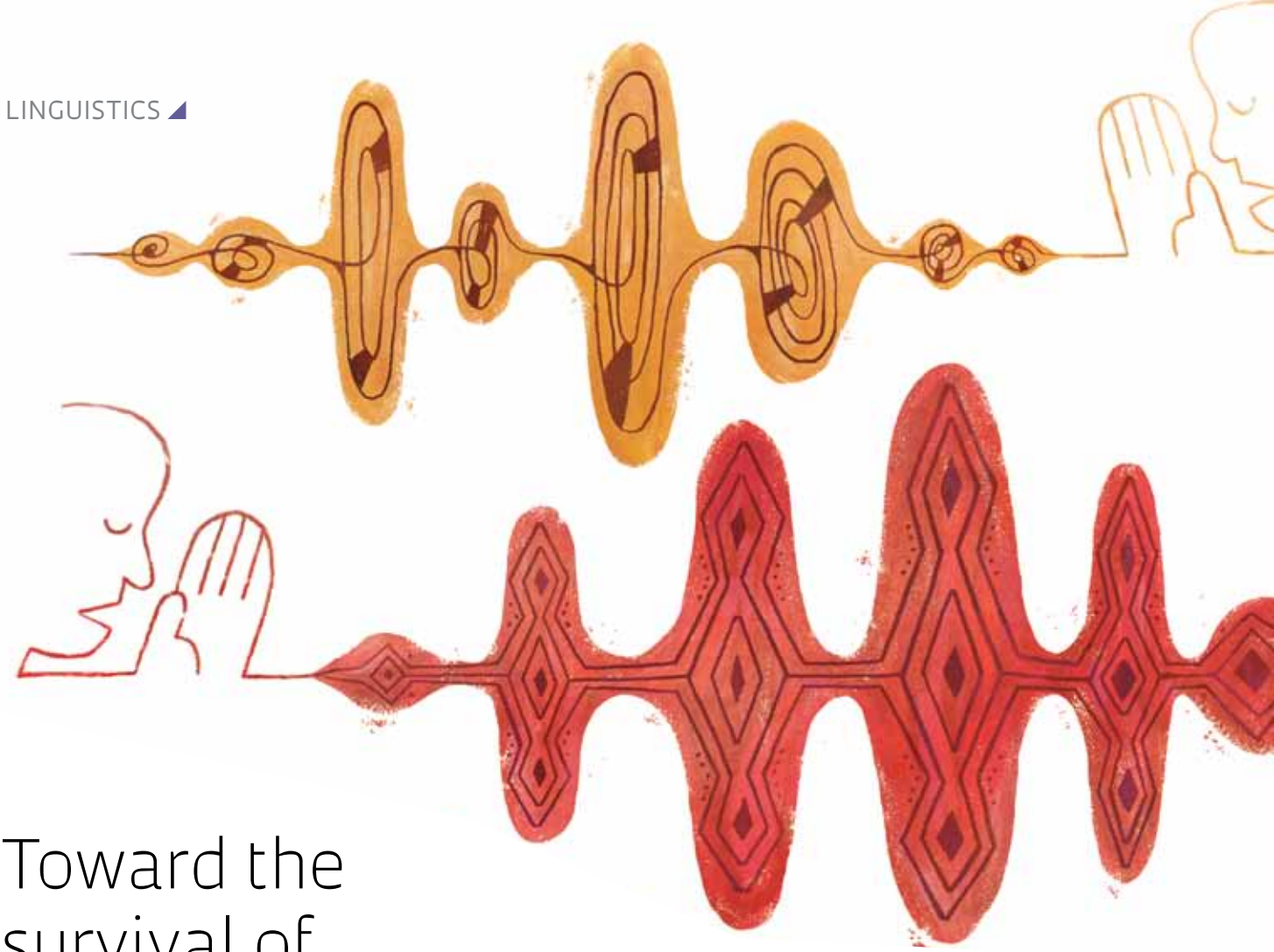

Toward the survival of **indigenous languages**

With the help of technology, researchers work to prevent the disappearance of native languages in Brazil

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PUBLISHED IN NOVEMBER 2018

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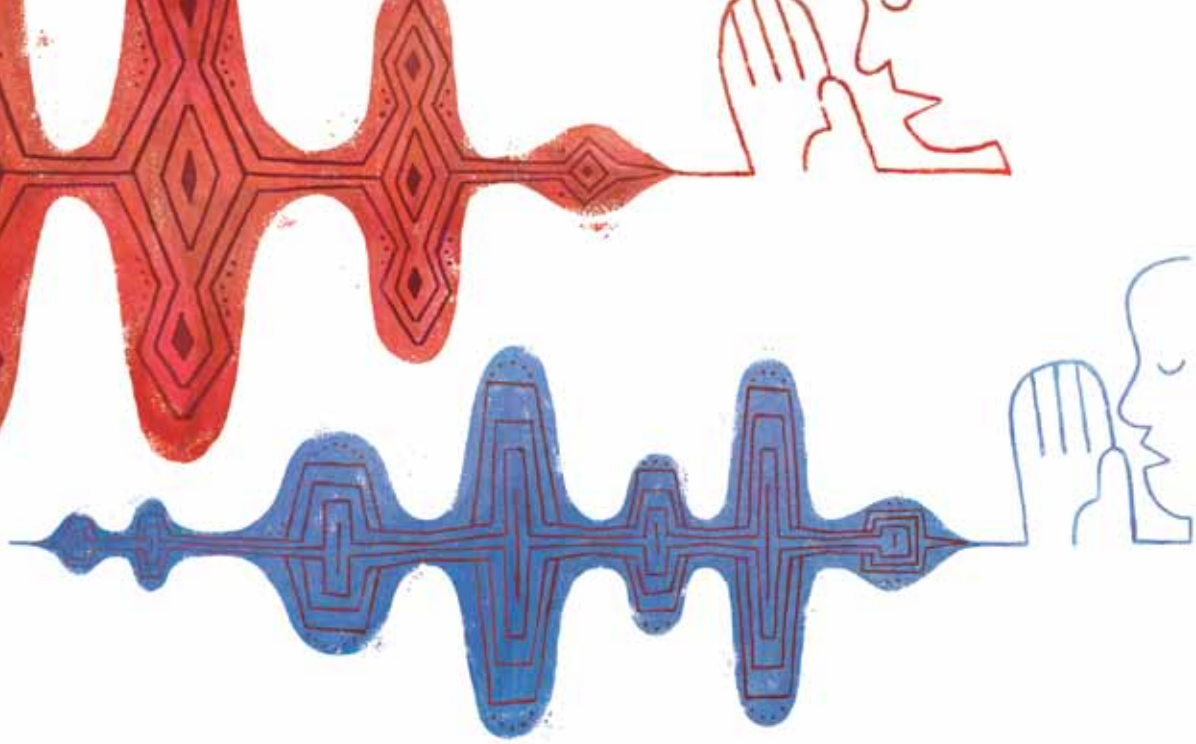
The approximately 170 indigenous languages spoken in Brazil are an important subject of research in the linguistic field today. It's a fight against time. Faced with estimates that these languages could disappear within 50 to 100 years, linguists are dedicated not only to recording them but also to working toward their survival. From textbooks to dictionaries, from sites in indigenous languages to digital linguistic corpora, a generation of researchers who began their studies with these communities in the 1990s are offering contributions that simultaneously deal with the subject's scientific demands and meet social aims.

"We've lost a lot of diversity and we're going to lose even more," says Luciana Storto, a



professor in the Department of Linguistics at the School of Philosophy, Languages and Literature, and Humanities at the University of São Paulo (FFLCH-USP). She refers to an estimate that there were more than a thousand native languages spoken in the country before colonization. Nevertheless, Brazil is recognized worldwide for its many languages: there are 37 families or linguistic subfamilies (Macro-Jê and Tupi are the largest groupings), as well as eight other isolated languages—that is, languages unrelated to any other known language.

The indigenous population in the country has grown to 896,917, according to data from the Brazilian Institute of Geography and Statistics (IBGE), but the number of people who speak these languages is continually declining—today, only 434,664 people are able to speak them. Although many of these native peoples don't live on indigenous lands, most indigenous language speakers are concentrated in the demarcated areas that occupy 13% of the Brazilian territory and favor the preservation of the language and culture of these ethnic groups. In the book *Línguas indígenas: Tradição, universais e diversidade* (Indigenous languages: Tradition, universality, and diversity), scheduled for release in 2019, Storto explains that while health care and nutrition have improved among indigenous peoples, "historical prejudice" causes many to abandon their own languages, believing this is the most suitable way to obtain fluency in the Portuguese language.

The production of material for use in communities is one way of repaying the contributions of indigenous people

For languages with an oral tradition, the consequences of this process are disastrous. "Knowledge is passed down from generation to generation, mainly through narratives told by the oldest and most experienced to the community's youngest members," explains Storto. When older people stop using a certain language and children stop learning it, the result is the disappearance of that language. Schools, which could intervene in this process, aren't always able to do so. Although indigenous education has had its autonomy legally guaranteed since 1999, there is no structured educational system—each ethnic group must take responsibility for conceiving its own plan. As there are few native professionals with the training to do this, communities rely on specialized collaboration to develop specific teaching materials for their own language.

The linguist's work with indigenous communities is extensive and almost always begins with the description of the language in its many aspects—sounds and their combinations, words and their composition, sentences and their formation, and the language in actual use. An initial synthesis of this knowledge results in theoretical works that can take the form, for example, of a grammar text. Such was the case for Storto, whose doctoral thesis, defended at the Massachusetts Institute of Technology (MIT) in the United States, was dedicated to Karitiana, the language of a community living in an area located in Porto Velho, Rondônia.

"It's common that this is the first approach, because every language has a logic, and linguists have techniques to

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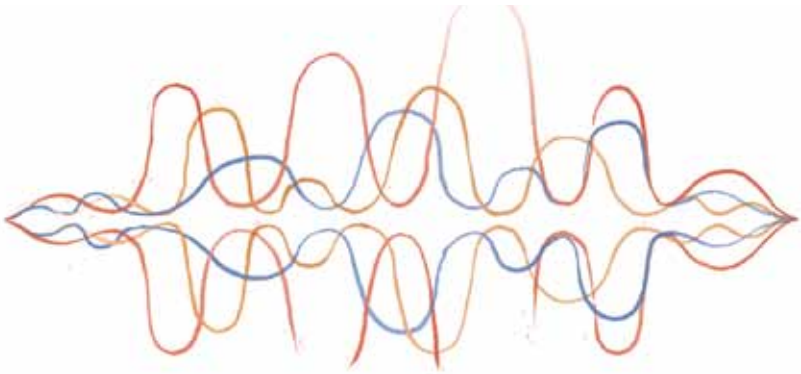
extract this logic and write down a grammar," explains Filomena Sandalo, a professor in the Department of Linguistics of the Institute of Language Studies at the University of Campinas (IEL-UNICAMP). Sandalo has been a researcher on the subject for more than 25 years. As part of her doctoral thesis, defended at the University of Pittsburgh in the United States, she created a grammar for the Kadiwéu language, which is spoken by the eponymous indigenous community whose territory is located in Mato Grosso do Sul.

Starting from the description, which is also a way of understanding and mastering the language, the work can develop in different directions. Sandalo's work has an unusual trajectory because it is subordinated to theoretical discussions in the field of generative linguistics. Presented by the American linguist and philosopher Noam Chomsky in the late 1950s, this field abstractly describes and explains language, which is understood to be an innate capacity of the human brain. "I created a grammar which was atypical among those working on documenting indigenous languages," the UNICAMP researcher explains. She adds, "The themes I'm looking for are the universals of the language, that which characterizes human language regardless of culture and society."



DIGITAL CORPUS AND WEBSITE

As part of the project "Frontiers and asymmetries in phonology and morphology," which proposed experiments with Portuguese and Kadiwéu in order to discuss linguistic theory, Sandalo coordinated the creation of a digital corpus of this indigenous language. Available for consultation at UNICAMP's Tycho Brahe Project website, this corpus brings together some of the Kadiwéu people's narratives in sound and text files, with a translation of each of the words (annotations to a text to explain the meaning of a word, for example, are called "glosses" by linguists), as well as morphological analysis. The aim is twofold: to serve both for linguistic research and for educational use. "A corpus is also a mechanism for preserving languages," the project coordinator adds.

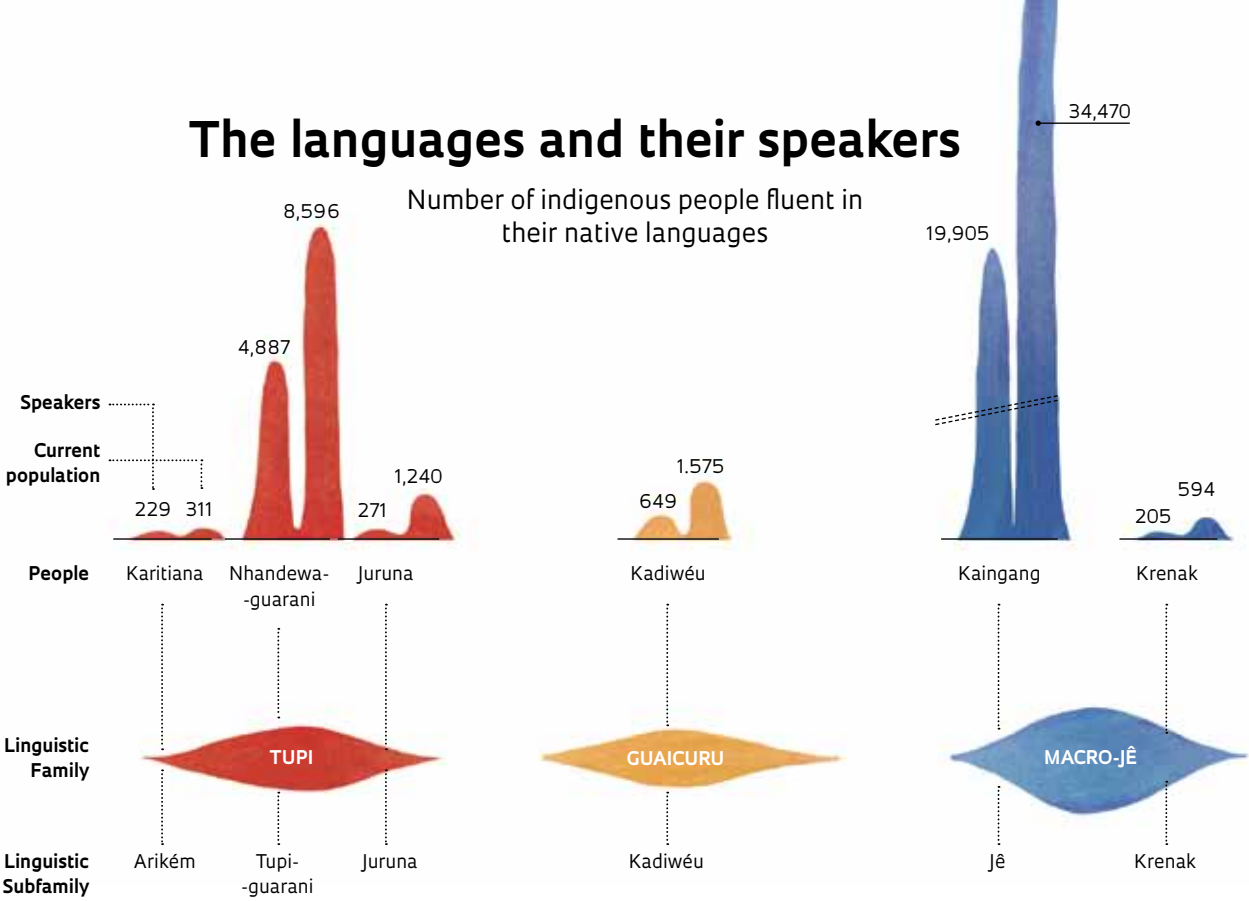
In the field of theoretical research, the production of material for use in communities is seen as a way of repaying the contributions of the indigenous people. "We do a lot of work documenting texts and sentences, and we need them to help us the entire time with translations. In exchange, we produce didactic material: a spelling reference, a documentation project," says Storto. Such projects, she explains, have significant value to these communities: "If exhibited at school, a video of ancestors speaking the language, for example, is useful as a record of traditional knowledge."

Given the importance of writing in Western culture, the preliterate nature of hat indigenous languages contributes to their vulnerability. For this reason, the orthographic part of the project is often part of the work of the linguist, who establishes the alphabet and the rules for its use. This was what Wilmar D'Angelis did in the early 2000s in a joint effort with the Kaingang in the western region of the state of São Paulo, where he worked for almost four decades, initially as an indigenist and later as a linguist. In a participatory process, the community and researcher adapted an orthography developed in the 1960s for the Kaingang

Preserved from childhood

When she was invited by the Juruna to record their lullabies, Cristina Fargetti was surprised. A few years earlier, she had asked members of the community if there was a tradition of women singing at night for their children. There wasn't. "If you ask the wrong question, you'll get the wrong answer," she says today, after discovering that the tradition does exist but that lullabies can be sung only during the day, until around 4:00 p.m. The Juruna believe that sleep temporarily takes people's souls away from their bodies. If they were sung at night, these songs would quickly push the soul away. Pulled into the darkness, it wouldn't be able to return. This would lead to illness or even to the child's death.

The result of the research, which had as its goal the revitalization of this indigenous tradition, can be found in *Fala de bicho, fala de gente – Cantigas de ninar do povo juruna* (Animals speak, people speak—Lullabies of the Juruna people; Edições SESC). The book provides a complete study of the genre, comparing it to Portuguese and Brazilian songs, discussing their meaning among the Juruna, and presenting transcriptions and contextualized translations of 49 songs. The rich musical repertoire of this ethnic group is also the object of a study by researcher and composer Marlui Miranda, who wrote the transcriptions of the songs Fargetti collected, which are reproduced on a CD that accompanies the book. There are also discussions about humor among the Juruna and how they view the differences between humans and animals—aspects that are important for understanding the songs and that evoke specific understanding of linguistics and anthropology.



SOURCES LUCIANA STORTO AND FELIPE FERREIRA VANDER VELDEN (KARITIANA), MÔNICA THEREZA SOARES PECHINCHA (KADIWÉU), KIMIYE TOMMASINO AND RICARDO CID FERNANDES (KAINGANG), RUBEM FERREIRA THOMAZ DE ALMEIDA AND FABIO MURA (NHANDEWA-GUARANI), MARIA HILDA BAQUEIRO PARAISO (KRENAK), TÂNIA STOLZE LIMA (JURUNA) – INDIGENOUS PEOPLES IN BRAZIL, INSTITUTO SOCIOAMBIENTAL; CENSO DEMOGRÁFICO 2010: CARACTERÍSTICAS GERAIS DOS INDÍGENAS (DEMOGRAPHIC CENSUS 2010: GENERAL CHARACTERISTICS OF THE INDIGENOUS POPULATION), BRAZILIAN INSTITUTE OF GEOGRAPHY AND STATISTICS.

of southern Brazil. Both a defender and a creator of inclusive projects, D'Angelis also highlights the importance of the indigenous language being visible in communities with access to technology; not seeing their own language on the internet, "in what to indigenous people will appear to be the largest space for dissemination and circulation of ideas and information," can generate the belief that native languages have value only as folklore, without function in the real world. Therefore, the researcher considers it essential to create contexts in which the language is actually used.

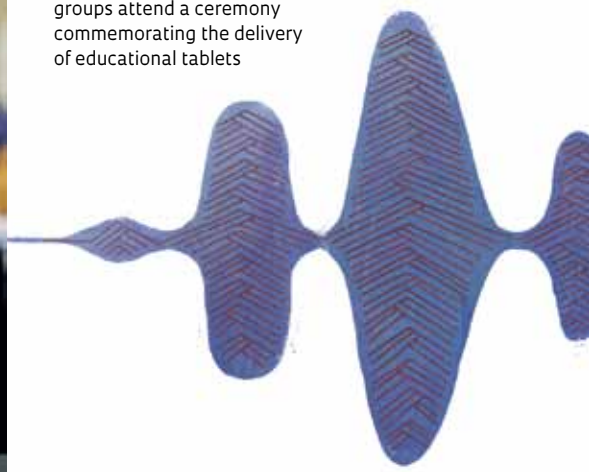
It was this thinking that guided the 2008 creation of Kanhgág Jógo, the first website entirely in an indigenous language in Brazil. The result of the collaboration of D'Angelis's research group with members of the Kaingang communities of Rio Grande do Sul, the project was then repeated with other ethnic groups. For D'Angelis, preventing the use of technology would be akin to taking a refrigerator to the village and only allowing the storage of food brought from the city, leaving out anything produced locally.

The production of literature indicates the language's vitality and gives cause for celebration

INFORMATION RETRIEVAL

Together with his students who meet in the InDIOMAS research group, the UNICAMP professor carries out projects with the participation of members of several indigenous communities. By engaging languages that were about to go out of use, such as the Nhandewa-Guarani, the Krenak, and the Kaingang of São Paulo, researchers are working on retrieving linguistic information, as well as conducting teacher training workshops and producing materials for teaching the languages. The group is finalizing the second volume of the book *Lições de gramática nhandewa-guarani* (Nhandewa-Guarani grammar lessons) and, by request from the community itself, will publish a scholastic dictionary of the São Paulo Kaingang language in 2019. Unlike works that point out corresponding terms in both Portuguese and the respective native language—works that, according to D'Angelis's estimate, would consult one indigenous speaker for every 100 nonnative consultants—the dictionary proposes to show what the terms mean within the Kaingang culture. Among the challenges the research group faces is the task of stimulating, in the language's few remaining speakers, the memory of terms they don't use today because they refer to situations or elements that no longer exist, such as animals that are no longer seen or customs that are no longer practiced.

Natives in Cacoal, Roraima state, from the Surui, Cinta-Larga, and Karitiana ethnic groups attend a ceremony commemorating the delivery of educational tablets



Another researcher working against the current of proposals that present indigenous culture from a Western viewpoint is Cristina Fargetti. A professor of linguistics at the College of Letters and Sciences at São Paulo State University (FCL-UNESP), Araraquara campus, Fargetti has been developing a vocabulary of the Juruna language since 2010. She explains that instead of translating terms like "snow" into a culture that doesn't even have this concept, her goal is to ask how the Juruna see reality itself. For an entry on a certain bird, for example, in addition to the translation into Portuguese, it's important to understand aspects such as its association with a myth or song and the connotations of its birdsong.

LITERARY PRODUCTION

Fargetti's work with the Xingu Indigenous Park community in Mato Grosso began about 30 years ago during her master's research, which was dedicated to the Juruna language. At that time, the language had no written record, with the exception of lists of words designated by travelers and a few scientists. Several years later, participation in a training project for indigenous teachers led to the proposal of a Juruna orthography, in which members of the actual community discussed solutions for a written version that facilitated its use. "Today, there are many young people typing in their own language and typing very fast. This is a sign that the language makes sense, has a function, and that they prefer to use Juruna to Portuguese," observes Fargetti, now the coordinator of LINBRA (the Brazilian Indigenous Languages Research Group), which gathers students around the study of indigenous languages.

Appreciating their own culture is, among the Juruna, a reality based on the importance given to the language itself [*see inset*]. Although in the late 1960s there were around 50 Juruna, there are currently more than 500, and all are speakers of their native language. Portuguese is used only with nonindigenous people or visitors of other ethnicities. According to the UNESP professor, with the learning of written Juruna, the younger members of the group began to show more interest in the stories and myths told by their elders. "They discovered that the written stories were always reductions or adaptations of what is alive and dynamic in the spoken versions, so that the spoken stories came to be valued more," explains Fargetti. There is also literature being produced in Juruna, especially in verse. This fact is, for the researcher, a cause for celebration: "Poets never announce the death of their language, but, rather, its full vitality," she adds.

Among the Karitiana, the last decades have also been marked by valuing their own culture, with a gradual rise of leadership formed within the community, notes Luciana Storto. In her view, since at least 1991, outside leaders and teachers have been replaced by members of the community, which has become self-managed and is striving to offer complete elementary education within their own village. "The trend is that they are becoming self-sufficient, but without isolation," she observes. "People are on the internet, they're studying, they're seeking employment. It's not possible to stop time. The ideal scenario is that they bring the diversity and specificities of their cultures to the professions they will be pursuing," she says. ■

Projects

1. Contact and linguistic change in Alto Rio Negro (no. 14 / 50764-0). **Grant Mechanism** Regular Research Grant; **Principal Investigator** Luciana Raccanello Storto (USP); **Investment** R$66,326.29.
2. Frontiers and asymmetries in phonology and morphology (no. 12/17869-7). **Grant Mechanism** Thematic Project; **Principal Investigator** Maria Filomena Spatti Sandalo (Unicamp); **Investment** R$422,423.59.

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