

# One Less Indigenous Teacher in the Natural Sciences: An Anti-Racist Analysis of the Reasons for Abandoning an Undergraduate Course in Biology

Um Professor Indígena a Menos nas Ciências da Natureza: Uma Análise Antirracista das Razões do Abandono de um Curso de Licenciatura em Biologia

Un Profesor Indígena Menos en Ciencias Naturales: Un Análisis Antirracista de las Razones del Abandono de un Curso de Licenciatura en Biología

Regiane Lopes dos Santos,<sup>ID</sup> Paulo Lima Junior,<sup>ID</sup> e Adriano Dias Gomes Karajá<sup>ID</sup>

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## Abstract

Structural racism and the ongoing modern-colonizing project in Latin America would not be the same without the contributions of Modern Western Science. Contradictorily, it is also through the sciences — especially social sciences — that colonialities have been challenged. Inspired by decolonial criticism, we tell the life story of Waxihô Karajá, an indigenous Karajá Xambioá man who entered and abandoned a Biology course. The results illustrate how Iny indigenous education contributed to the development of Waxihô Karajá's interest in Biology. Our analysis also reveals that the low quality of basic education offered in indigenous communities; the unpreparedness of higher education institutions to receive diversity; the difficulties experienced by young people with low-education backgrounds and the energy expended by cultural minorities to combat a myriad of colonial violences through student activism can compromise academic success. Results indicate that the approach and the departure from natural science courses by young indigenous people seem to have reasons that are sometimes similar and sometimes different from those listed in the research with young people from the national society. There is an urgent need to reorient university retention policies to promote the academic success of indigenous students in natural sciences courses.

*Keywords:* sociological portraits, indigenous students, dropout, structural racism, coloniality

## Resumo

O racismo estrutural e o projeto moderno-colonizador em curso na América Latina não seriam os mesmos sem as contribuições da ciência moderna ocidental. Contraditoriamente, é também por meio das ciências — sobretudo das ciências sociais — que as colonialidades têm sido contestadas. Inspirados pela crítica decolonial, contamos a história de vida de Waxihô Karajá, um homem indígena Karajá Xambioá que ingressou e abandonou um curso de Biologia. Os resultados ilustram como a educação indígena Iny contribuiu para o desenvolvimento do interesse de Waxihô Karajá por Biologia. Nossa análise também revela que a baixa qualidade da educação básica ofertada em comunidades indígenas; o despreparo das instituições de educação superior para receber a diversidade; as dificuldades experimentadas por jovens oriundos de realidades de baixa escolarização e a energia dispensada por minorias culturais para combater uma miríade de violências coloniais por meio do ativismo estudantil podem comprometer o

sucesso acadêmico. Os resultados indicam que a aproximação e o afastamento de cursos de ciências da natureza por jovens indígenas parecem ter motivos ora similares ora distintos daqueles elencados pela pesquisa com jovens da sociedade envolvente. Urge reorientar as políticas de permanência universitária para fomentar o sucesso acadêmico de estudantes indígenas em cursos de ciências da natureza.

*Palavras-chave:* retratos sociológicos, estudantes indígenas, evasão, racismo estrutural, colonialidade

### Resumen

El racismo estructural y el proyecto colonizador moderno en marcha en América Latina no serían lo mismo sin las contribuciones de la ciencia occidental moderna. Contradictoriamente, también es a través de las ciencias — especialmente las ciencias sociales — que se han desafiado las colonialidades. Inspirándonos en la crítica decolonial, contamos la historia de vida del Waxihô Karajá, un hombre indígena Karajá Xambioá que se matriculó y abandonó un curso de Biología. Los resultados ilustran cómo la educación indígena Iny contribuyó al desarrollo del interés del Waxihô Karajá por la Biología. Nuestro análisis también revela que la baja calidad de la educación básica ofrecida en las comunidades indígenas; las dificultades que experimentan los jóvenes de entornos con bajo nivel educativo y la energía gastada por las minorías culturales para combatir una miríada de violencia colonial a través del activismo estudiantil pueden comprometer el éxito académico. Los resultados indican que el acercamiento y alejamiento de los cursos de ciencias naturales por parte de jóvenes indígenas parecen tener razones a veces similares y otras diferentes a las enumeradas en la investigación con jóvenes de la sociedad circundante. Existe una necesidad urgente de reorientar las políticas de retención universitaria para promover el éxito académico de los estudiantes indígenas en los cursos de ciencias naturales.

*Palabras clave:* retratos sociológicos, estudiantes indígenas, evasión, racismo estructural, colonialidad

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## Introduction

Throughout history, the successive constitutions of the Brazilian state have ranged from denying the existence of native peoples to trying to assimilate them (Moraes & Rigoldi, 2019). After five centuries of colonial violence, at the end of the 20th century, through the struggles of social movements such as the indigenous movement, specific rights for indigenous populations, relating to territorial demarcation and education, were expressed in the form of a law (Munduruku, 2012).

Guaranteeing social rights for minority populations, such as indigenous peoples in Brazil, involves learning the knowledge produced by modern Western science, especially the natural sciences (Aikenhead & Lima, 2009; Carter, 2017). In the current scenario, access to scientific education is an important tool for indigenous peoples to participate autonomously in all aspects of life and, consequently, to guarantee their fundamental rights. To this end, it is essential that science teaching is offered with quality and based on the principles of indigenous school education: use of mother tongue, interculturality, differentiation, and community character (Maher, 2006).

For work in indigenous school education, teachers from the community are preferred (Maher, 2006). Although public affirmative action policies have had an impact on the number of indigenous teachers educated by higher education institutions, some disciplines still lack more professionals educated in the specific area than other ones. This is the case with natural sciences. Between 2005 and 2021, in a state in the northern region of Brazil, it was observed that at the largest federal institution of higher education in the locality, most of the entries and completions in teacher education courses were related to the Humanities area. The number of entrants to degrees in natural sciences accounted for less than 3% of total enrollments, of which only those who entered the degree course in biological sciences completed their studies (R. L. dos Santos & Lima Junior, 2022).

Ferreira, Soares and Castro (2021) list the courses that have the largest indigenous presence at the Federal University of Western Pará (UFOPA) and among them are degrees and bachelor's degrees that are directly linked to the natural sciences and mathematics, but, in general, the literature in the area points to a preference for Pedagogy, Law and education in the health area (Bergamaschi et al., 2018; Bergamaschi & Kurroschi, 2013; Luciano & Amaral, 2021). However, the low number of indigenous students in undergraduate courses related to the natural sciences is not exclusive to the Brazilian reality, as can be seen in Jin (2021) and Rofe et al (2016).

Although there is a demand for qualified teachers to work in indigenous school education, national research on the education of indigenous teachers of natural sciences in intercultural or regular degree courses remains scarce (R. L. dos Santos & Lima Junior, 2021; Rosa & Lopes, 2018). With the publication of this work, which is qualitative in nature, we seek to expose the social conditioning factors behind the approach and withdrawal of an indigenous person enrolled in a regular university course in the natural sciences, based on his experience. For this reason, together with its protagonist, we tell the story of Waxihô Karajá, a Karajá Xambioá indigenous man who, despite his enthusiasm for Biology, quit this undergraduate course.

The production of this work began with three long conversations between the first author and the protagonist of this story. The tone of these dialogues was based on an anti-racist appropriation of Bernard Lahire's sociological portraits (2004), introduced into science education research by Paulo Lima Junior and Luciana Massi (2015, 2018). Considering the effects of colonialism on the constitution of our country and on the development of our educational policies, we sought to answer the following research questions: i) how did Waxihô Karajá's socialization contribute to the development of his interest in Biology? ii) how responsible is the surrounding society for his early departure from the Biology degree?

In the next section we discuss in general terms the structuring of racism from the colonial enterprise and its consequences for the performance of people from minority groups at university. Below is the method by which our research was conducted. Furthermore, we will explain some of the characteristics of the Karajá peoples and the

socio-cultural transformations that have taken place as a result of contact. We then describe the changes that indigenous school education has undergone in our country, synchronic with the schooling of Waxihô Karajá, and how migration to mainstream school may have contributed to the genesis of his disposition to resist. In the following sections, we discuss the satisfactory and unsatisfactory entrance to University, the reasons for having one less indigenous professor of natural sciences and the community relevance of the degrees earned. Finally, we reflect on the factors involved in an indigenous science teacher dropping out of a natural sciences course.

## A Theoretical Framework With a Stripe Over Its Eyes<sup>1</sup>

### America Has Not Been Discovered

The maritime expeditions in search of new routes for the trade in spices and precious metals by Europeans had an impact on the economic, political and cultural history of the planet on an unprecedented scale. They produced a new continent and sophisticated the modern/colonial/Eurocentric capitalist system that would prevail in contemporary globalization (Quijano, 2005). The Spanish and Portuguese began their **invasion** of the place that Americo Vespucci's publisher, Martin Wakdseemüller (or Walseemüller), would call America in 1507 (Lafaye, 2018). In early 16th century. The invasion of the territories originally named Tawantinsuyu, Anauhuac and Pindorama<sup>2</sup> and the genocide of their original peoples began, pillaging, enslaving, raping, and exterminating thousands of people (Porto-Gonçalves, 2009). There is no need to talk about discovery, but a brutal violence on which the modern experience of European well-being is based (Ballestrin, 2013; Grosfoguel, 2013).

In the European encounter with the indigenous peoples in Pindorama, the Portuguese arrived hungry, dirty and sick, as was to be expected for a long journey in those days. Indigenous historian and journalist Ailton Krenak tells us that the native peoples received the European otherness in their conditions of hunger, smell and disease in solidarity (Bolognesi, 2018). However, even though they were warmly welcomed, it should be remembered that the departure of ships from Spain or Portugal had no tourist purpose and the minds of the "inquisitive and acquisitive" (Elliott, 2018, p. 139) settlers operated in a different way to the minds of the indigenous people. With their physical strength recovered and having acquired knowledge about the new territory, the colonizers began a series of expeditions to the place they named Ilha de Vera Cruz in search of something they could profit from. They found the wood extracted from *Caesalpinia echinata*<sup>3</sup>. It seemed so profitable that they renamed their new "company"

1 When a Karajá Xambioá made a stripe over his eyes, it meant that he was ready for war (Albuquerque & Karajá, 2016).

2 Tawantinsuyu (Andean area), Anauhuac (Mexico) and Pindorama (Brazil) (Lisboa, 2014).

3 Scientific name of the plant popularly called brazilwood. There are other historians who refute the association of the name Brazil with the name of the brazilwood plant, but we have adopted Ailton Krenak (2015) and the collection on Latin American History organized by Leslie Bethel as a reference.

Brazil (Jonhson, 2018). From then on, they went to extreme lengths to plunder nature, enslave and banally exterminate its original inhabitants; justifying themselves through religious differences and skin color, initial markers established to distinguish those who would be considered human and the others, dehumanized (Grosfoguel, 2016; Quijano, 2005).

In the words of Kum Tum Akroá Gamela, indigenous leader of the Akroá Gamela people, the annihilation of indigenous peoples and their cultures was inexorable, because the denial of indigenous modes of social organization, via colonization, by Europeans, already denounced the minimal value that had been placed on their lives:

Colonization is essentially the negation of the other, which goes from this more subtle, subjective negation to physical elimination, and then I have been thinking: this issue of genocide begins when the Europeans arrived here and said: You are nothing, you are not people, you are not human, you have no faith, because you have no law, because you have no king. Then what are they? They are nothing'. It does not make much difference to cut off the head or cut it in half with a machete or put a bullet through it, because death has already been decreed, it has been executed beforehand (Milanez et al., 2019).

Such “absurd, inhuman, incomprehensible and rationally inexplicable” (Schio, 2016) acts are expressions of the banality of evil that have exposed an indefensible Europe (Césaire, 1978, p. 14), which has chanted in its narratives of a benevolent mission while carrying out executions for the purpose of looting. The violent way in which Europeans explored and occupied the continent ignited opposing reactions from local inhabitants. Since then, wars to maintain its existence have been constantly necessary. The end of political subjugation of the local population left elements that, just as hyphae do with fungi, still sustain the domination of former colonies by metropolises. Only recently has the coloniality of peoples begun to be tackled from the point of view of those who have been inferiorized (Gonzaga et al., 2020).

## **Racism and Coloniality**

The illusion that transformed the violent and cowardly invasion of Pindorama into its glorious discovery is associated with the way Europeans claimed to be superior to any other forms of existence, culture, and knowledge. This European ideal of superiority is structured by the idea of **race** (Quijano, 2005): a mental construction of vertical categorization established at a certain historical time with the aim of dominating social groups. There are two aspects to the concept of race (Almeida, 2020): the most obvious is based on inherited phenotypical characteristics, while the other, equally important, is related to the ways of thinking and expressing oneself that make up a people's cultural heritage. Ramon Grosfoguel (2016) highlights religion as a core element of European racism. According to Sílvio Almeida, these “basic registers intersect and complement each other” (Almeida, 2020).

Racism became the foundation of colonial rule, with Eurocentrism as a reference point for rationality and endorsing the establishment of new social identities such as blacks, mestizos and Indians (Quijano, 2005). The enslavement and execution of blacks, indigenous people and mestizos became admissible to modern Western reason because it considered all otherness to be abject. The Cartesian maxim “I think, therefore I am” only applied to Europeans, since the cultural and epistemological inferiority attributed to non-Europeans meant that, since they did not think from the norm, they could not even exist (Grosfoguel, 2016).

Colonialism, as the territorial domination of colonies by metropolises, came to an end practically everywhere on the planet around the 1950s. However, the forms of power, knowledge and being of the former metropolises remained dominant in the discourse of the economic powers and in the imagination of the former colonies. The supremacy of the nations of the Global North, maintained to this day thanks to the subjective character of domination, is expressed by the category coloniality, which is divided into three main axes (Mignolo & Walsh, 2018): the coloniality of power (Quijano, 2005), the coloniality of knowledge (Lander, 2005) and the coloniality of being (Maldonado-Torres, 2007).

Colonialities are preserved by the allegiance of local elites to the power of the Global North. The condemned of the earth (Fanon, 1968) support the perks of global powers and local elites by exploiting their bodies, living in extreme social, economic and existential deprivation. And what is more, these convicts are still blamed for their own misfortunes whenever the siren song of meritocracy sings in their ears that, for lack of personal effort, they can't achieve a more dignified existence (A. Nascimento, 2016).

### **Educational Policies and Experiences in the Context of Structural Racism**

Our society still normalizes the permanent inflammation of the colonial wound on the bodies of people from the lower classes and cultural minorities (Kilomba, 2019). Since Brazil's slave-owning past (Souza, 2019), the elites have maintained their privileges by controlling the economy and the state, replicating, through structural racism, “patterns of functioning that result in rules that privilege certain social groups, because racism is part of the social order” (Almeida, 2020, p. 36). Thus, in our country, people continue to be classified between those who will have the right to life and those who will be rejected, who will succumb.

In the 21st century, public policies aimed at repairing historical injustices committed against minorities have been built and implemented. Although the inflation of diplomas is a reality (Bourdieu, 2007), affirmative action policies aimed at helping people who have historically been excluded from academic environments to enter and remain there are a necessary step forward. Over the years, these actions could lead to changes in the socio-economic profile of the Brazilian population. However, even though the doors of Westernized universities have been widened, their main principles stem from the “naturalization of the racist/sexist epistemic structures of knowledge that prevail in the modern and colonial world” (Grosfoguel, 2016, p. 43). This implies an experience severely compromised by colonialities, racism and sexism for black, indigenous, women and LGBTQIA+ students in the academic environment.

Although openly supremacist demonstrations are becoming more and more frequent, everyday racial hostility against black and indigenous people usually takes the form of microaggressions, which can occur verbally or non-verbally, through jokes, silencing, isolation (Almeida, 2020; Gomes & Powell, 2016; Solórzano & Yosso, 2002). Some examples of microaggression are: receiving less respectful treatment or services in an impoverished manner; assuming that the student has lower intellectual capacity or is a dishonest person and even showing fear of otherness (Franklin, 2008). Its veiled nature makes it complex to trace and tends to confuse victims about its occurrence, making the academic experience of minorities such as indigenous students quite stressful (Gomes & Powell, 2016; Solórzano & Yosso, 2002).

William A. Smith (2004), when discussing the effects of racism and microaggressions suffered by black university professors in majority white environments, exposes that working conditions in these environments are more stressful for black workers when compared to their white colleagues. Smith parallels the stress experienced by black teachers to the state of soldiers after a war. Even out of combat, both remain alert, which, for black teachers, would result in psychological and physiological effects and behavioral responses that constitute what is known as **racial battle fatigue** (Franklin, 2008; Smith, 2004).

The concept of racial battle fatigue was later expanded to describe the experiences of minority students at institutions that privilege the epistemology and ontology of whiteness (Franklin, 2008; Franklin et al., 2014; Smith et al., 2011). In our case, we adopted this concept as the key to interpreting the life story of Waxihô Karajá, an indigenous man who dropped out of his degree course in Biology.

## Method

Biographical interviews may well comprise the qualitative methods of sociology (Fontes, 2020). In this work, we used sociological portraits, a biographical research method proposed by French sociologist Bernard Lahire (2004) as a critical extension of Pierre Bourdieu's work. The name of the technique is also the name of the end product, and its implications for science education research are discussed in the literature (Lima Junior & Massi, 2015). The sociological portrait is a narrative drawn up by the researcher(s) based on interviews, seeking to give "a properly sociological treatment to the individuality of the social actors" (Massi et al., 2018, p. 51).

On the one hand, a properly sociological analysis of life stories recognizes that individuals are socially configured in all their ways of acting, thinking, and feeling. Therefore, issues of class, gender, race, ethnicity or more institutional, familial and historical issues are important in understanding the life experiences of each individual and what they carry as a legacy of these experiences. On the other hand, the sociological analysis of life stories also recognizes that the socialization process usually produces unique results, singular combinations of socially shared characteristics and experiences. As a result, sociological portraits cannot and are not intended to produce generalizable

results, because each individual is a unique combination of socially shared characteristics. Nor is it forbidden for portraits to feed our imagination about other people's lives, because the characteristics found of individuals are not completely exclusive but derive from social experiences with which others can also identify. For instance, when an experience of racism is reported and several people are outraged, what happens is not a generalization, a logical derivation; but an identification, an emotionally dense and politically potent process. Storytelling, depending on how we tell it, can be an important tool in confronting coloniality.

During the interviews, participants are asked to tell about their experiences in the family, at school and at work, as well as their sociability and leisure time (Caetano, 2013). The objectives of the interview are made clear to the participant, allowing them to collaborate in the production of their own story. This type of interview does not follow structured or semi-structured protocols, but rather open questions and leading questions. Sometimes it is necessary for the interviewer to ask questions that allow them to understand the interviewee's life story beyond their horizon of awareness (Massi et al., 2018). The strategies for conducting interviews and their applications to science education research are described in Paulo Lima Junior and Luciana Massi (2015; 2018).

In the original study (Lahire, 2004), six 2.2-hour interviews were conducted with eight middle-class French individuals on "topics related to school, work, family, sociability, leisure, cultural practices and the body" (Lahire, 2004, p. 32). Here, in an anti-racist re-reading of the original work, Waxihô Karajá was interviewed three times, for a total of six hours, by Regiane dos Santos under the guidance of Paulo Lima Junior. The interviews were conducted focusing on the main themes of (1) family life, (2) school experience, and (3) work experience (Alencar et al., 2023; Martins & Lima Junior, 2020). The anti-racist appropriation that we are practicing here consists of taking coloniality as a starting point for actively listening to and reconstructing life experiences.

The audio recordings of the interviews were later transcribed and read. Based on the transcripts, the first version of the *sociological portrait* was drawn up, read and approved by Adriano Dias Gomes Karajá. This is a biographical analysis telling the life story of the interviewee with a view to identifying **dispositions** (more or less stable ways of acting, thinking and perceiving the world that a given person develops as a result of past social experiences). In this way, dispositions indicate how the experiences of the past flexibly guide the ways of being of each individual in the present (Lima Junior et al., 2021). Analyzing such dispositions and the social value attributed to them might be a powerful tool for investigating structural racism and how it flexibly guides our ways of being in the world. According to Lahire (Lahire, 2004), the complete identification of a disposition takes into account that: (1) dispositions presuppose a *recurrence* of experiences and, in other words, in order to speak of a disposition, there must be a class of varied situations pointing together to a more or less stable way of being; (2) dispositions *do not have to be active* in all contexts and times of life, *nor do they have to correspond to the position* that the individual occupies in the structure of social relations



(i.e. not all of an indigenous man's dispositions result from the fact that he is indigenous), not all of an indigenous man's dispositions result from the fact that he is indigenous); (3) dispositions always have a social origin, a *genesis*, a series of experiences through which a relatively stable way of being is formed and stabilized in a person's life. In all cases, the analysis of an individual's dispositions brings us back to the process of socialization.

The first version of the sociological portrait was shared with the protagonist portrayed, who made his comments, signing it as co-author. This process is very important and shows the specifically reflexive function that sociological portraiture can fulfill in educational research, and there is no impediment to the protagonist playing the role of author (Alencar et al., 2023).

It is worth remembering that the stereotyped and racist knowledge that the surrounding community holds about indigenous communities can be a major obstacle to understanding their experiences and life stories. For this reason, the following portrait does not begin with the story of Waxihô Karajá, nor does it begin by counting how many rooms his house had, whether he is the son of teachers or workers, how many siblings he had (like sociological portraits of the working class). In view of the racism that shapes the surrounding community relationship with indigenous peoples, these social markers lose their explanatory power very easily. It seems to be more important to start with the mythical origins of the Iny peoples, observing the uniqueness of this history, which has been made invisible by the surrounding society, and to point out the transformations that have taken place as a result of contact in order to outline the socio-cultural aspects that are important to the life story of Waxihô Karajá.

## **Waxihô Karajá's Community Context**

### **The Mythical Origins of the Iny People**

The Nile, Seine, and Tietê rivers are examples of bodies of water famous for the cities built on their banks. For Westerners, it is the big cities that give importance to rivers. For other peoples, rivers may be respectable because they are part of the family. Ailton Krenak (2019) tells us that the Rio Doce, as it is called by non-indigenous people, is the grandfather of his people and, for them, its name is *Watu. Berohoky*, or in non-indigenous language, Rio Araguaia, in turn, is the grandmother of the Karajá peoples, a female figure from whom her grandchildren do not want to distance themselves because she brings them so much joy (Comunidades Iny Karajá, 2019).

Since time immemorial, the entire life and history of the Karajá has been linked to the seventh largest river in Brazil — the Araguaia/*Berohoky*. The first Karajás — half-men, half-fish — lived in the underwater world and, out of curiosity, climbed through a hole to reach land. Helped by supernatural beings, *the rain people*, they explored the new place and were enchanted by the abundance and beauty of the earthly world. According to the myth, however, after the exploration, they could neither live in the interworld nor return to the infra-world. Thus, they lost their immortality and remained on their own in the earthly environment (Nunes, 2016).

The first non-indigenous versions of the history of the Karajás do not mention their mythical origins, nor the way in which the Araguaia River involves them ontologically and environmentally. For the explorers, the Araguaia River represented the route to the colonial encounter that would mark the zero point of Karajá existence. The accounts produced by European expeditionaries moving through the central Brazilian plateau in the 16th century show that, according to the Western notion of time, the Karajá Xambioá had occupied territories in the northern region of Brazil for around four centuries (Toral, 1992).

Regarding the Karajá peoples, they call themselves *Iny*, which means ‘ourselves’, ‘people’. It is noteworthy that they are comprised of three subgroups - the Karajá people, the Javaé people and the Karajá Xambioá people - who represent an intermediate structure in the Jê-Bororo/Tupi *continuum* (Petesch, 1987; Toral, 1992). According to André Toral (1992), the differentiation between the Karajás, Javaés and Karajás Xambioás was due to their movement along the river, from its lowest to its highest point (i.e. from north to south). Currently, the different groups are located between the states of Goiás, Mato Grosso, Pará and Tocantins, always on the banks of the Araguaia River. Although their territories are in different areas and there are singularities for each of the subgroups, they share *Inyribè*, their mother tongue, which belongs to the Macro-Jê linguistic stock (Lima Filho & Silva, 2012; Nunes, 2016).

As well as giving rise to the Iny people and becoming the navigation route that set them apart, the Araguaia River influences aspects of the Karajá peoples’ daily lives, such as the use of space in the territory, the timing of community activities, food and the development of artifacts. As far as spatial occupation is concerned, their houses seem to be aligned with it, but the ceremonial spaces face inwards, towards the forest (Toral, 1992). In turn, activities in the community are stipulated according to the annual life cycle of the river, which fluctuates in volume throughout the seasons. At times when the river is lower, the Karajás enjoy the river beaches, the men fish (sometimes with the help of bows and arrows) and catch turtles, which are an important part of the traditional diet. In the rainy season, when the river is fuller, the Karajá men prepare the fields for the Karajá women, who are responsible for growing manioc, yams, corn, watermelon, pumpkin, cotton, sweet potatoes and rice (Albuquerque & Karajá, 2016; Alves & Vieira, 2017; Schiel, 2017).

For the Karajá, the Araguaia River is the habitat of their deities, a source of food, a source of entertainment, a connection with themselves, the source of their identity and the path to others. Even the dawn of each day, which comes with the hope of guaranteeing the continuity of life and the culture of the Karajá peoples, is seen from the river: the rising (*txuolana weribi*) and setting (*txurotena weribi*) mean, in Inyribè, respectively, *the shore from which the sun comes out* and *the shore from which the sun goes in*; something like comparing the western and eastern limits of the Earth’s surface to two rivers (Comunidades Iny Karajá, 2019; Toral, 1992).

## Contact With the Surrounding Society

Considering the dynamism of existence, it must be recognized that various transformations experienced by indigenous populations in recent centuries have occurred through violent assimilation processes resulting from colonial contact. Fish and turtles, which have always been part of the traditional Karajá diet, due to the practice of predatory fishing, are less present in the village meals. Industrialized foods have taken over more of the Karajá's table, replacing those produced by their own cultivation, leading to changes in community work and in the health of the people (A. M. do Nascimento, 2013).

Religious practices have also been affected. There are increasingly fewer ritual ceremonies. Men were historically associated with the figure of the shamans, who, with their capacity for mobility and dialog between worlds, also became responsible for the health care of the people in the village. By contrast, nowadays, cures have generally been carried out using medicines bought in the city and the presence of churches and evangelical missionaries is very strong, having managed to convert many indigenous people to their beliefs (A. M. do Nascimento, 2013). Younger people are less and less fluent in Inyribé, (A. M. do Nascimento, 2013) the mother tongue of the Karajá peoples. As well as being less proficient in their mother tongue, young people also avoid permanent body painting (Albuquerque & Karajá, 2016). In both cases, the deviation from cultural practices by young people is associated with the constraints generated by contact with non-indigenous people.

The processes of cultural loss have been severe for the youngest, who have come to live in a sad in-between place: they are not as involved in the activities of their village, nor are they included in the social life of the city. Young people experience an interface that causes them dislocation, discomfort and illness. The consequences of young Karajá not belonging may be related to the increase in suicide attempts (Calafate, Grácio and Silva, 2015). For a cultural group that for almost five centuries has walked a razor's edge to ensure its survival in the face of non-indigenous actions, having its young people depressed and losing their lives makes the struggle even more severe. In addition to the sad scenario experienced by the youngest, there are pressures from national society that question their Karajá identity and try at all costs to undermine their political guarantees.

If, on the one hand, the colonizer's weapons have undergone metamorphoses, on the other, resistance has also changed. Previously, men were the main intermediaries in relations with the *tori*<sup>4</sup>, in the form of *abitans* or chiefs. Today this space has also been occupied by women. If, at other times, it was necessary to be generous, a good communicator and able to avoid war in order to become a leader (Clastres, 2017), contact with the society that surrounds information, knowledge and *fake news* has demanded greater attention to schooling. Thus, with the need to become fluent in modern Western knowledge and to promote the rescue and maintenance of language and culture (Schiel, 2017), we see the re-signification of indigenous school education through the so-called

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<sup>4</sup> Iny name for non-indigenous people.

subversive process *amansamento do giz* (*chalk taming*). In the words of Célia Xakriabá (2020, s.p.), the term “taming” was chosen because of the need to “tame that which was brave, which was valiant, and therefore attacked and violated our culture”.

The transformation of the school from a place of cultural assimilation to a place for preparing an indigenous *intelligentsia* (Luciano & Godoy, 2017) only reaffirms the creativity and tenacity of centuries of these populations not to succumb to the pitfalls of contact. Through the story of Waxihô Karajá, we will highlight some of the tactics created by indigenous peoples to resist the indolent reason of national society.

## Results and Discussion

### On Indigenous (School) Education

Waxihô Karajá was thirty-eight years old at the time of the interview, the son of an indigenous mother and a non-indigenous father. Despite his parents' divorce, the boy has mostly lived in his home community. For the Karajá people, of patrilineal descent, when the parents separate, the children accompany their parents. The boy's stay with his mother's family is therefore a strategic adaptation to keep the group together. The Karajá Xambioá people went through periods of severe population decline, registering approximately 40 people in the middle of the last century (Toral, 1992). In this way, it seems sensible not to “let the indigenous people leave the village” in order to maintain customs and make the population grow again. In recent decades, following the implementation of positive policies for indigenous peoples, the population of the Karajá Xambioá people has exceeded 500 individuals (Albuquerque & Karajá, 2016). By staying with his group of origin, Waxihô Karajá had the opportunity to experience his people's ways of being, thinking and acting through indigenous Iny education, building his community belonging and identity.

**Indigenous education** takes place in a community environment, with no specific timetables or physical spaces. Family members introduce children to the world through games and everyday situations. They acquire useful knowledge for themselves and the community by observing and imitating their elders (Maher, 2006). Of his experiences of indigenous education, Waxihô Karajá highlighted a conversation he had with his uncle while he was introducing plants, animals and the river. Araguaia's pedagogy consisted of introducing animals that became part of the game:

[...] the alligator hatchling. It was the toy we had. [...] taking an electric fish and running after the other classmate to put it on their back, to see who had the strength to hold it, you know? Those who could stand the shock! Those were the things that we had. That was our reality.

The youngest receive values, traditions, myths and rites in a spontaneous, continuous, pleasurable and flexible way through observing the actions and narratives of their elders (Venere & Velanga, 2008). While indigenous education is essentially carried

out in the community, the surrounding society has, since modern times, established times, people and institutions specifically in charge of disseminating the knowledge that is considered essential (Moreira & Candau, 2003).

**Indigenous school education** dates back to the colonial period. Originally devoted to the modern/colonizing project, it is not in itself a favorable tool for native peoples. It needs to be critically transformed (or tamed) so that it becomes an instrument of resistance. In the colonial period, the schooling of indigenous populations was the responsibility of Franciscan and Jesuit missionaries until the Pombaline Reform in the 18th century. With the publication of the Directory of Indians, the state's goal was to turn them into farmers, as well as forcing them to abandon their native languages in favor of Portuguese (Fanelli, 2021). With the Proclamation of the Republic in 1891, the charters produced oscillated between disregarding the existence of indigenous populations and the belief that the "Indians" should be culturally assimilated by the surrounding society (Fanelli, 2021; Moraes & Rigoldi, 2019). Throughout history, indigenous school education has existed predominantly committed to the subalternization of native peoples.

Even today, the greed to make indigenous territories available for capitalist exploitation fuels initiatives of assimilation, violence and extermination. In the 1970s, several of Brazil's indigenous peoples realized that the brutality of the state would only be curbed by unifying the struggle. Nationally organized, the Indigenous Movement succeeded in participating in the constituent assembly, guaranteeing the right to territory and to differentiated, specific and bilingual school education. The assimilationism that had been in force since the invasion of Brazil began to wear thin with the onslaught of the Indigenous Movement (Munduruku, 2012), which established an emancipatory paradigm for their school education.

Although the role of the school is not unanimous in the communities (Oliveira, 2020), after the changes that have taken place in recent decades, younger indigenous people have been encouraged to attend school because of the formation of new leaders, the achievement of paid positions and the possibility of acting politically with the surrounding society (Baniwa, 2012; Leitão, 2000). In Waxihô Karajá's village, schooling was not only accepted but valued by his family: "*my grandmother told me to go to school, so we all had to go to school*".

The indigenous school attended by Waxihô Karajá was multigrade and administered by the National Foundation for Indigenous Peoples (Funai), with only two classes: "*(...) I remember it was the whole class (...) the kids together, big and small (...) (...) there were two teachers: one was with the bigger class and the other was with the smaller ones. So, I was in the group of little ones*". "Multigrade schools are common in rural regions of the country, considering that "the scarcity of teachers and resources make it difficult to have institutions typical of contemporary times, with students distributed in classes according to their age" (Guimarães et al., 2023, pp. 2–3). Even though access to education is considered a fundamental right, they receive little attention from managers. Even though access to education is considered a fundamental right, multi-grade schools are considered inferior and receive little attention from managers.

As a result of the poor quality of education, at the age of ten, Waxihô Karajá was not properly literate in the national language. For this reason, at the end of the 1990s, the boy was removed from his community to study in the urban area, where part of his family lived. In this way, Waxihô Karajá had access to the *tori* schools, which were considered more efficient. Nowadays, migrations of indigenous people from their communities to the city context are still common, due to the precariousness of the school education services offered to indigenous peoples (Oliveira, 2020).

### **Disposition to Resist**

At the age of ten, when Waxihô Karajá entered the town's school, he was sent to one of the initial grades, "*back in the nursery*", as he told us. When asked how he felt about the situation, he told us that it made him feel a bit awkward: "[I felt] *a bit embarrassed because I was ten years old and still in the midst of lots of little children*". Waxihô Karajá's mother, even though she was not educated, demanded that he attend school and do the activities on offer. His uncle, an indigenous teacher, contributed by demanding good performance and attending meetings called by the school. As a result, despite the age-grade gap, Waxihô Karajá adapted to the new reality:

I kind of flew from one class to another; it was a leap! I did two classes at the same time, (...) three classes, so that I could enjoy it and reach the level that my age allowed (...) but I had to manage. It wasn't easy either, was it?

At the school in town, Waxihô Karajá experienced situations of embarrassment from his classmates, which affected his participation in some school activities:

It got to the point where, when it came to history lessons, I didn't want to go (...) because when someone talked about Indians, people would say: 'Ah! an Indian here in the classroom!'; 'Speak Indian!'; 'Indian who walks around naked!' that thing that still exists today (...) when I studied, back in 1996-1997, I was a kid, I was embarrassed, really, right? So, I often didn't want to go to class. So that was the problem. That's even the difficulty that most of us still face at university.

The vexatious situations often experienced by Waxihô Karajá result from the stereotypical view of the indigenous child. Since the colonial encounter, Amerindian peoples have been placed on the margins, as the exotic other, but they have tenaciously resisted and demonstrated that they are and are far beyond the poor caricature that the surrounding society is capable of making of their identity. To sum up, the analysis of Waxihô Karajá's accounts suggests the presence of a disposition to resist that would have emerged as a response to the microaggressions (Gomes & Powell, 2016) and racism (Peixoto, 2017) of his schoolmates, but which spreads to other contexts in Waxihô Karajá's life.

## Prospects For Entry Into Higher Education

Waxihô Karajá attended the first stage of elementary school in the city between the ages of 10 and 15 and the second stage of elementary school between the ages of 16 and 19. School education for indigenous students was still part of the remit of the Ministry of Justice. Since many territories did not have schools that catered for more specialized levels of schooling, Funai (National Indigenous People Foundation) offered scholarships to help indigenous students to stay in urban areas. The amount granted was supplementary, as it depended on the student having a way of staying in the city, otherwise the studies would be abandoned (Guarany Silva, 2017).

After Waxihô Karajá completed elementary school and two years of high school in the city, the local state network took over indigenous school education in 2008. The provision of secondary education in their village had the effect of eliminating funding for the school life of young indigenous people in the city. As a result, he returned to the village to attend the last grade of high school. Waxihô Karajá reports the difference between the service offered in the city and in the village, in which the precariousness of the infrastructure and the lack of properly trained staff stand out:

The state offered secondary education in the village, but there was no school, no materials, nothing, and only two teachers. So, you go from a reality where each subject has one teacher, to two teachers taking on all the subjects. Sometimes we studied under a mango tree, you know? So, we'd arrive, and the teacher would say: "Today it's going to be here under this mango tree". The good thing was that the mangoes fell, so we had a snack too, right? (laughs)

Waxihô Karajá went from a high school with several teachers to an organization with only two teachers, where classes sometimes took place under a tree. The discrepancy — racially framed — between the resources made available to the two education systems seems to be evident. Despite the limitations aforementioned, he points out that the indigenous students received support from their teachers to continue their studies and were guided in their choices for graduation. In the last year of high school, the students and their teacher discussed the subject: "*Guys, today we're going to talk about your future...*" In this conversation, everyone's affinities were considered, and the teacher was able to help them by considering their school performance.

Indeed, two pieces of good news from the period are worth mentioning. The first concerns the reservation of places for indigenous students that began in 2005 at the federal university closest to their territory, an initiative that preceded the publication of the national quota law in 2012 (Castro & Iwamoto, 2021). The second is that all the students from the village went to university and, sooner or later, would complete a degree course: "*[...] all those students who went through the hardship of studying under a mango tree, under some old shed in the village, an abandoned shed, right? They've all graduated from university*".

Choosing a degree course is part of the political strategies for many indigenous groups (Baniwa, 2012): “Regardless of whether it’s the Krahô people, the Apinajé, the Xerente, regardless of which people they are, they will choose a course (...) to help the people in some way”. Waxihô Karajá, observing that other students had already chosen “architecture and urbanism (...), being teachers (...) health”, decided to “stay in the environment”. Waxihô Karajá considered the possibility of working on behalf of his community, contributing to the improvement of his people’s planting system, *roça de toco* (a traditional cultivation system in which a small area of vegetation is cleared and then cultivated for two years). Together with one of his colleagues who had entered Agronomy and his brother who had chosen Environmental Engineering, he opted for the Forestry Engineering course offered by the Federal University, on a campus located in the south of the state.

Despite being approved, Waxihô Karajá never even went to the university to register. With little information about his academic future, he had no idea that the city in which the course was offered was a long way from his community. The distance from the village of origin may tip the balance towards making it difficult for indigenous students to stay on undergraduate courses, both for financial and emotional reasons:

the aspirations and prospects of studying in higher education are also a challenge for most of them, since the courses [...] are far from their communities [...] far from their families, their community and, sometimes, they are unable to participate in the socio-cultural activities that take place in the community contexts experienced by their people (R. R. dos Santos & Melo, 2021, pp. 172–173, emphasis added).

The distance of the city in which the Forestry Engineering course was offered from the Araguaia River was a major factor in Waxihô Karajá’s decision to give up his place: “we have this bond with the water, and, in a way, we try not to move away from it”. He mentions the importance of the Araguaia River for his life, comparing it to the use of sea water for other social groups: “diving in the water of the Araguaia (...) it kind of renews me (...) it’s like it cleanses (...) it’s like people say about bathing in salt water to relieve (...) it’s like that, right?”.

### **Admission and Failure at Undergraduate Level in Biology**

After giving up on studying Environmental Engineering, Waxihô Karajá’s second choice was Biology because, in his view, “(...) being a biologist was the pinnacle of one’s career”. He passed the entrance exam, and the course was offered on a campus closer to his community and the Araguaia River. The choice of Biology, a natural sciences course, was not very common among indigenous students, but it made sense to Waxihô Karajá, considering his experiences with his uncle, an indigenous teacher:

(...) he became the special uncle, actually. Not just for me, but for my brothers and cousins. Because he was a kind of teacher, even though we were on vacation in the village, which is a sacred month in July, right? All the Karajá return to the village, regardless of where they are. And then we’d go back, he’d get it, he’d teach



us everything, right? From a plant, (...) a tendril from the plant, the slimes, right? (...) So he would go through everything, which roots were medicinal, which weren't, which were good for a type of medicine, which weren't. Oh, what's the right time to fish, according to the water temperature, what kind of fish you can catch, what time for each fish, likewise turtle fishing. So, he was the guy who taught us everything.

In a previous study, carried out with data from a university in the northern region of Brazil, of the 998 enrollments of indigenous students over 16 years (2005-2021), only 25 were enrolled in natural sciences courses (R. L. dos Santos & Lima Junior, 2022). None of the few indigenous students enrolled in Physics and Chemistry obtained a degree. Only the Biology course was able to train some indigenous students. This data indicates that Waxihô Karajá's choice of biology course is a **countertendency**. We believe that learning about animals and plants from indigenous education was important in building his interest in biology:

When playing with hatchlings, catching the alligator and running off, with the alligator's mother following, you have no idea of the danger involved. But you're a child, right? It's about picking up a baby turtle from the beach and bringing it back to the village, so that its shell hardens, becomes stronger, more resistant, so that you can return it to the water, so that it has a greater chance of reaching adulthood than it did on the beach. (...) Because out of a hundred baby turtles, out of a clutch of turtles, only one will actually reach adulthood, right? Most of them die on the beach, even before they reach the water. So, they face several obstacles. And then what did we do? And it's interesting... We learned this without being at school, right? (...) Living day to day. So, it was these situations that made me think, 'Well, I like this business.'

Waxihô Karajá mentions that, in addition to his experiences with the fauna and flora in the Karajá community, artifacts produced by the surrounding society also contributed to arousing his interest. He reports that he had had contact with biology textbooks and mentioned that he had enjoyed leafing through them, even though he didn't know how to read them... "*And then I remember that once, my uncle brought me a biology book (...). And then I came across this book, and I started to look at it, I looked at the pictures and I still couldn't read properly, so I started to like it there*". Later, living in an urban area, after learning to read in Portuguese, he remembers an *insight* he had when he came across a biology textbook from the collection available at his mother's house, "*That's what I want*".

After entering the Biology course, Waxihô Karajá progressed well in the specific subjects and remained on the course for four semesters: "*In the Biology subjects themselves, I was very good (...) [my] grades were nine, nine and a half, ten*". However, their good performance in the specific subjects of the course was not enough to allow them to progress:

Off I go to Biology. I came across the teaching degree. Right away, I took calculus of one variable, mechanical physics, calculus I, calculus II... Then I said, 'No, this isn't Biology'. And then I went to the second, third, fourth [semester], I looked at it like this, I said, 'Aren't you going to finish calculus?'

Waxihô Karajá had a lot of difficulty with calculus, physics and chemistry: "*I was terrible at math, physics and chemistry. Actually, I believe I still am, right?*". However, in addition to this difficulty, prejudice of his colleagues regarding Waxihô Karajá's indigenous identity made it difficult for him to integrate into the group: "*So there was a certain prejudice from my colleagues in Biology. I think Biology (...) taught me to work alone. Do you understand it? Why is this? In every group work nobody wanted to do it with me, right? (...) So what did I do? I used to do it on my own*". The loneliness experienced by Waxihô Karajá in his course subjects came from the inferiority of his intellect expressed by the other students:

In the first period, no one wanted to sit nearby. Nobody wanted to work with me. Because I was indigenous. Actually, I wasn't. I am, right? 'That's the Indian. He knows nothing'. Then when I went to present, I remember to this day, I went to present my first seminar. My legs were trembling. I sweat. (...)

**Resistance** (as opposed to resignation) seems to have been Waxihô Karajá's typical response to the situations of micro-violence he suffered at university, "*Almost all my life, always [...] proving to myself that I can do it. Then what did I do? 'That's Alright. Don't you want to walk with me? That's wonderful. I don't care about you either. I'll do what I can do*". This attitude helped him to win the respect of the other students and teachers, as the following two moments illustrate:

(...) We had anatomy lessons. I had to "kill three tortoises to be able to ride one". Do you understand it? Then, when the guys realized that I was very good, they wanted to form a group with me, a duo. 'No. I don't want it either. I'm going to do it alone'.

(...) I remember a seminar on Didactics. I think it was Psychology of Education. It was on politics. Or something about politics. (...) Then we went to discuss politics. (...) My [part] was to talk about the parties, the political parties. My dear friend, I've put on quite a show. And it was a hit. From then on, I was invited. I began to be invited by my professor to take the same course with others. I became the course monitor.

These situations illustrate the presence of a disposition to resist.

## Political Experiences

For indigenous students, some subjects in undergraduate courses represent challenging obstacles (Faustino et al., 2019), as well as difficulties in integrating with non-indigenous colleagues due to microaggressions, prejudice and racism (Pisani, 2020). However, Waxihô Karajá's story raises another recurring theme: **the need to fight for the rights of other indigenous students.**

When he joined the Biology course, Waxihô Karajá told us that his classes took place in a rented building with inadequate facilities, instead of on the newly built *campus*. The students were dissatisfied and began to ask what they could do to improve their conditions. In this context, Waxihô Karajá discovers the existence of the Indigenous Working Group (GTI) on the capital campus. The creation of a similar group on their *campus* would give indigenous students better conditions for representation. Waxihô Karajá gradually gained visibility as an indigenous activist in the student activism, becoming a student representative on the Course Board and elected to the Biology Academic Center. He was “*getting into these things, thinking it was great*”.

Waxihô Karajá describes himself as a *troublemaker*. He used this adjective or synonyms of it to talk about situations in which he acted to demand his rights or understand situations that he believed to be inappropriate. According to him, his political action began by questioning the leader of his own community, demanding the right of young people to take part in the group meetings:

[...] in the Iny people, neither young people nor women took part in meetings. It was just the men. The decisions were always theirs. One evening he had a meeting. Then I said. My uncle, the uncle I still admire today, was the chief at the time. I said, ‘Oh, uncle, I want to talk’. He goes, ‘Look, first thing: you don’t have the right to speak. And secondly, you don’t even have to be here. I said, ‘No? That’s alright!’ Then the next day it was the village cleaning service, which is the swidden, the communal cleaning. You get the men together and clean up the village. The front and back of the village. It’s general: mowing and then weeding. Anyway, leaving it clean. Then he called everyone together in the morning. Then the kids came, everyone. I remember that. Then I gathered the kids. I gathered them together. We sat down on the field. Right in the middle of the field. And we said, ‘Hey, we’re not going to work today. As long as these guys don’t sit down and listen to us, we won’t work’. [...] We were getting really lazy. Then my uncle arrived: ‘Let’s go mowing. We’re going to mow’. ‘No. We’re not going’. ‘How come you’re not going?’ I said, ‘No. If we don’t have the capacity to discuss with you in the meeting, we don’t have the capacity to rub shoulders with you either. We’re going to stay here’. Then my uncle said, ‘Boy, don’t you dare. I’m your uncle’. I said, ‘Precisely because you’re my uncle. But you’re a chief. And I’m one of the people who live in the village. You’re my chief. You have to listen to me as well. If you don’t want to, you won’t listen to us. We won’t work though. Then I started a movement there. Moral of the story: to this day, men and women [are] part of the meeting...

Another event that reveals his way of thinking and acting politically occurred while he was a student in the Indigenous Teachers Education Program — a program created to train indigenous teachers at secondary level. Waxihô Karajá was annoyed by the lack of transparency in the accountability of the course and, when he questioned the managers about the use of finances when the indigenous teaching course was offered,

he received his diploma a little earlier than the others, as a way of being restrained. His power to act politically, which we consider to be inherent in his **disposition to resist** — has its genesis at the beginning of his interaction with the surrounding society due to his transfer from the indigenous school to the school of the surrounding society and is maintained in his interactions with his community, with other indigenous peoples and when he enters university, as we anticipated.

During his undergraduate studies in Biology, Waxihô Karajá began a political journey of many achievements for the indigenous students of his campus and the University as a whole. Waxihô Karajá felt like “*a Robin Hood of the law for the people, right? Especially for indigenous people*”. As well as winning improvements for indigenous students at the university where he was studying, he got full scholarships for other indigenous students at private colleges. His efficient political activity took on ever greater proportions. As well as being recognized by his colleagues, the popularity he gained also made him proud: “*because then the name grows, right? ‘Well, who’s Waxihô Karajá? The guys: ‘Waxihô Karajá! Waxihô Karajá! Waxihô Karajá!’ [...] I was called to join other movements*”. His significant political journey during his degree in Biology also included a meeting with Pope Francis and an interview with Greenpeace. However, the intensity with which Waxihô Karajá immersed himself in the student activism made it impossible for him to devote himself to academic activities.

When I saw it in front of me, I said: ‘Wow. Now there’s no way out. It’s time to quit and do something else. Because there’s no way back from here. And time passed. That’s when I realized that it wasn’t possible to reconcile the student activism with... there are people who manage it, right? But I couldn’t do it. Then I left the movement. I said, ‘No. I’ll look after my life. I’ll finish the course, then I’ll see what I can do.

Even though Waxihô Karajá realized that there were issues with some of the course subjects (calculus, chemistry, physics), he believes that the intensity with which he experienced his political participation in order to minimize it was the main factor that compromised his performance. “Experiences with oppression, including racism, sexism, homophobia, transphobia, and ableism, often lead minoritized students to engage in resistance and activism, demanding that institutions create more equitable and just opportunities” (Linder, Quaye, Lange et al., 2019, p. 38). Waxihô Karajá mentions that he was unable to manage his time between political activities and his degree subjects. After taking four semesters and failing sixty percent of his subjects, he took stock of his academic life and ended up dropping out of the Biology course.

## Leaving the Biology Course

Dropping out of a degree course does not always lead to nothing. It is usual for students to have other opportunities in mind, or even other degree courses (Lima Junior, 2013) In the case of Waxihô Karajá, he abandoned the Biology course in favor of the Geography course, which was not his first choice. In the Biology course, it would

really stand out more, as the presence of indigenous students is usually lower in the natural sciences and their technologies. The lack of access to mathematical knowledge in basic education seems to be a structural element of the school obstacles imposed on the indigenous population.

Geography, History (...) the degrees themselves, they're the least valued courses (...) there on the campus where I did it, in Araguaína, it's a course that isn't much targeted by the competition, right? (...) then I arrived on the course, avoiding mathematics, of course, right? (...) I saw things there that I didn't usually see when I was studying, anyway. Sometimes we study in high school, and most of the things we see there, especially related to calculus, you won't see there in college. You're shown something else there. And then when I got to Geography, I came across a number of didactic subjects, right? And then I thought: 'Well, come on. Reading, reading, reading. At least there's no calculation. It was great.

Transferring between higher education courses is not uncommon among indigenous students, as can be seen in Amaral and Baibich-Faria (2012), Paladino (2012) and Cassandre et al. (2016), for reasons associated with adapting to the course or even proximity to their communities. Faustino et al. (2019), in a study aimed at correlating the situation of indigenous students enrolled at the State University of Maringá and their learning of mathematics, showed that these students, upon entering some courses with a high workload in this subject, when they fail, choose to migrate to courses that do not contain any subject related to mathematics. The case of Waxihô Karajá therefore illustrates that the lack of opportunities to learn mathematics and the natural sciences is part of structural racism, restricting opportunities for the indigenous population to enter and remain in various higher education courses.

Waxihô Karajá's entry into the Geography course removed mathematics from his path, but his academic success was not immediate. The student activism was still time consuming for him. In this context, Waxihô Karajá faces the death of his mother: *"I failed the first term [...]. Then, in the second term [of the Geography course], my mother died [...]. I was in a difficult situation for a while, [...] really sad. [...] My mother was everything, right?"* The loss of his mother made Waxihô Karajá review his priorities. As in other student trajectories (Martins & Lima Junior, 2020), the support he received from one or more classmates was decisive for him to complete his degree in Geography:

Then a classmate of mine practically grabbed my arm and said: 'Hey, we're going to finish this thing together'. And that's when I started thinking 'Now I'm going to do it for me and my mother'! And that's when I left the student activism. I really let go of it. I said, 'I don't want it anymore'. And I began to devote myself to my studies.

Indeed, self-regulation in academic activities might be related to students' social background. University students from low-income and/or minority backgrounds tend to have greater difficulties when it comes to time management and the development of

course activities (Fior et al., 2022). In the case of Waxihô Karajá, this capacity for self-regulation came after he dropped out of the Biology course, about three years after his first entry into higher education. In the following excerpt, he describes a strategy he adopted to study, which had a positive impact on his performance:

the teachers passed on the content, the texts. I wouldn't take out my workbook. I'd take that text. I went online. I'd take a text similar to the one he passed on, which we always find, right? And then I read the similar texts. Then I'd go back to class and discuss it with the teacher, as if I'd read the text he'd given me. They thought it was amazing. And that was the strategy I found, right to the end.

Self-regulation of studies requires the use of a series of strategies which, for some students, are only developed later. Waxihô Karajá's experience on the Geography course was marked by experiences of academic and social integration.

### **A Snake on the Prowl**

When asked about racism at the university, Waxihô Karajá shows a certain ambivalence. He distinguishes his *individual experiences* from *structural racism*. In his individual experiences, he denies having suffered racism — the microaggressions we point out here were not readily recognized by him as racism. At the same time, he describes himself as “a snake on the prowl”, always ready to respond assertively to aggressions that never seem to be fully realized.

I was like a snake on the prowl. I was always ready, [...] it was hard for anyone to say anything to me because I already knew, don't mess with that one because he's more of a troublemaker than the others. [...] My mother always said that whoever runs ahead drinks clean water, right? And my grandfather used to say that a man with foresight is worth more than ten. [...] I don't have to wait for a situation to happen before I do something. I have to do something before the situation happens. I have to think ahead of the people who are going to do something. So, many times, I'd see my cousins, my colleagues from the village, because in the village everyone is related, you know, in short, I'd see my relatives crying and then they'd get there crying, and I'd ask, 'Guys, what's happened? Then I said, 'Man, did you just cry?' He said, 'Yes. I said, 'Old man, you're a real bad boy. Listen up, bro. Did he say you eat lice? Alright! I eat lice, will you eat them with me? Man, you don't know what you're missing, it's too good. Dumbass! (...) Listen up? So, you have to know how to fight back, now as soon as I just accept it, just accept it, society will come down hard on me. Because I just accept it. Now, as soon as I get up, I stamp my foot on the ground and say: 'No. I'm not going to do this. It's not like that. Here we're going to argue on equal terms.' Alright. Society isn't going to come down on me. Why is this? They're going to look: 'Oh, that one's "armed". He's prepared and anything we do, he'll fight back.

Waxihô Karajá is an indigenous man. At the time of the interview, he had completed her degree in Geography and was a postgraduate student, working politically to improve indigenous school education in her home state. As we contemplate his story alongside him, we respect his position on racism in his school/academic career. However, it is beyond dispute that the consequences of structural racism have been present throughout his life story and may still have been influential in shaping his journey with the surrounding society.

Racism is not limited to racial slurs. For this reason, it cannot be completely resolved by changes in individual attitudes. The concept of structural racism helps us to problematize the unbalanced distribution of resources and state apparatuses for the schooling of indigenous populations which, in Waxihô Karajá's life story, directly involved: (1) his difficulty in reading Portuguese at the age of ten, even though he attended school regularly; (2) the difficulties he faced with math and natural science subjects, such as chemistry and physics; (3) the need to spearhead the creation of adequate spaces for indigenous students to stay at university, since protecting access alone is insufficient; (4) the need to support his relatives in conflictive and/or vexatious situations in the academic environment; (5) the possible anxiety of always being on the lookout, prepared, vigilant, ready for any fight.

The powerful image of the snake in a boat used by Waxihô Karajá shows us the effort that people from non-hegemonic cultural groups have to make to enter, remain and succeed in mostly white spaces. Waxihô Karajá's involvement in activism resulted in him dropping out of his degree course in Biology. Like other students from racial minorities, his energy to focus on his studies was diverted to creating solutions for himself and the community of indigenous students (Linder, Quaye, Lange et al., 2019; Linder, Quaye, Stewart et al., 2019). Smith, Hung and Franklin's (2014; 2011) research describes how black students, instead of focusing on their studies, have to divert their energy into dealing with the stress responses caused by racial microaggressions. The cumulative effect of this violence, both in the academic environment and throughout these people's lives, is physically, psychologically and emotionally damaging and, according to the literature, is responsible for racial battle fatigue (Franklin, 2008; Smith, 2004).

“Racial battle fatigue can be defined as the psychological, physiological and behavioral stress responses due to the cumulative impact of racial microaggressions” (Franklin, 2008, p. 46). It should not be confused with occupational stress (Franklin, 2008) as it is “a response to the distressing mental/emotional conditions that result from facing racism daily” (Smith, 2004, p. 180). Common responses to psychological stress caused by racial battle fatigue can include frustration, anger, resentment or fear; physiological responses can include headaches, teeth grinding, increased blood pressure, stomach problems; and behavioral responses can include poor academic performance, procrastination, impatience, speed in arguing because of feeling threatened (Smith et al., 2011).

## Emergencies Based on the Case of Waxihô Karajá

As you can see, the analysis of Waxihô Karajá's life story illustrates two processes potentially shared by other indigenous people who, in the interests of their communities, enter higher education in general, and scientific higher education in particular:

1. **Structural racism** is not limited to individual experiences of racial insult and microaggressions, but includes denying indigenous communities access to systematized knowledge, especially mathematical knowledge, which is decisive for entering and completing higher education courses in the natural sciences and their technologies. Denying access to this knowledge objectively implies the denial of professional opportunities for indigenous peoples.
2. **The disposition to resist**, which can make it possible for indigenous people to survive in a racist society, even when it is not subjectively experienced as "fatigue", takes up important time and effort from those who need to constantly fight for the affirmation of their identities. The need to fight politically can add limits to the academic success of indigenous students in higher education.

Since the beginning of their schooling, the surrounding society has failed to offer them the right to a quality school education. Waxihô Karajá's family had to remove him from the community in order to place him in a school that offered a more appropriate service. Structural racism can be clearly seen when the quality of the service offered to people living in urban contexts is graded in relation to those living in rural areas: peasants and indigenous people. The impact of the hierarchization of the availability of a quality service reverberates in the difficulties of performance from the initial grades to the highest levels of schooling.

The inequalities in quality provision are not just between urban and rural areas. There are no equally distributed natural science teachers in Brazil: "in 2014, more than half of the teachers in these regions did not have specific training, namely the Northeast (68.2%), the North (62.8%) and the Center-West (53.3%)" (Queiroz & Faleiro, 2021). In the case of Waxihô Karajá, leaving the village and migrating to the city would bring benefits in terms of access to only part of the subjects in the basic education curriculum, since the region he has always inhabited has a historical shortage of teachers trained in the natural sciences.

Affirmative action policies represent a step forward in transforming the profile of university students in the country (R. L. dos Santos & Lima Junior, 2023) There is an urgent need, however, to move forward with regard to the permanence of indigenous students in academic environments (Pereira et al., 2020; Pisani, 2020; Russo & Diniz, 2020) through the granting of scholarships to manage the costs of living outside their communities and the proposal of actions to overcome some factors that compromise the success of indigenous students in undergraduate courses, namely: the distance between the community and the cities where the universities are located (Amaral & Baibich-Faria, 2012; Bacury et al., 2016), difficulties in communication, reading and writing in



Portuguese (Ferreira et al., 2021; Peixoto, 2017; Silveira & Mortimer, 2011), fragile basic schooling (Amaral & Baibich-Faria, 2012) and difficulties with mathematics and the use of technologies (Ferreira et al., 2021; Pisani, 2020).

Expression in Portuguese and comprehension of written texts varies between groups and is well documented in the literature. The Karajás-Xambioás, due to the strong process of linguistic loss that their community has undergone, predominantly use the Portuguese language (Karajá et al., 2021). Other peoples in Tocantins, such as the Apinayé and Krahô people, however, do not share the same use of Portuguese as the Karajás Xambioás (Brasil & Silva, 2020; Virginia & Batista, 2021). Although the Karajá-Xambioá students do not seem to struggle with the language of the national state, their texts in Portuguese present peculiarities: they tend to use plural markers with feminine nouns in Portuguese. In the context experienced by Waxihô Karajá, the actions developed by the working groups set up at the University were able to engage in dialogue with teachers to facilitate understanding of the production made by Karajá students in Portuguese.

However, the development of mathematical and scientific expression in indigenous communities is not equally analyzed. Thus, could one establish an intercultural parallel for mathematics like the one established for the Portuguese language? We are facing a major challenge that is linked to Western ignorance of ethnomathematics and the ineffective provision of school education as a public policy for these groups.

In addition to issues involving disciplinary knowledge, actions to combat racist practices are necessary, as well as preparing civil servants to welcome individuals from cultural backgrounds that differ from the norm (Herbetta, 2018). Continuing studies for indigenous students, as well as for individuals from the lower classes, often becomes a gamble made in the dark, due to the inexperience of those close to them about the challenges of taking this or that degree (Figueiredo, 2018). Waxihô Karajá's first choice was not successful because he was not aware of where he was going to study. Later on, even though he was interested in Biology, he didn't know beforehand that there was a need to study calculus. Another factor may be linked to the lack of techniques for studying and managing one's own time.

To some extent, these difficulties with higher education are not specific to indigenous peoples but affect the children of the working class in the surrounding society. For instance, even though dropout rates may not depend much on the parents' schooling in low economic return courses in public institutions (Knop & Collares, 2019), where many Physics, Chemistry and Biology courses are located, children from the lower classes tend to have lower results in higher education performance assessments (Silva et al., 2021), less social integration and greater difficulty in meeting the standards of excellence that organize life in these courses (Lima Junior et al., 2020; Lima Junior et al., 2020). Even when dropout rates are similar, social inequalities contribute to different student experiences. As one might see from the analysis of Waxihô Karajá's story, his experiences cannot be reduced to a class issue but take on the specific colors and expressions of those who are subject to structural racism.

## Conclusion

Through an analysis of the narrative of the life story of Waxihô Karajá, an indigenous man, we have exposed the social conditioning factors associated both with his entry into a natural sciences course and later with his abandonment of that course, implying the loss of a potential indigenous science teacher, a rare professional in indigenous communities across the country. If the approach to the course was mostly associated with the relationships between individuals from his community and with the experiences he had in his territory, part of the responsibility for the alienation of this indigenous student can be linked to the structural racism provided in his course through interactions with the surrounding society.

From the unavailability and precariousness of basic schooling conditions in their community of origin — tasks which are the responsibility of the state authorities — to the search for better conditions to remain and succeed for themselves and their group within the university context, it can be seen that the educational treatment provided to indigenous people in our country needs to be reflected on, quality improved and greater respect shown to these social groups.

Although many of the episodes experienced by Waxihô Karajá — and certainly not experienced exclusively by him as an indigenous person — brought up in this text are unfortunate and embarrassing for the history of education in the country, the news from 2023 in Brazil makes us hopeful that other indigenous students interested in natural sciences courses will be able to attend their degrees with better conditions for permanence and success. We list the return of the Secretariat for Continuing Education, Literacy, Diversity and Inclusion (SECADI); the appointment of Federal Deputy Joana Wapichana as the first indigenous president of Funai; the news of the creation of the first indigenous university in its original territory, in Maranhão, and the necessary and unprecedented implementation of the Ministry of Indigenous Peoples led by indigenous leader Sônia Guajajara make us believe that not only the direction of indigenous school education in the country and scientific education with and for the indigenous peoples of Brazil can be changed, but that dignity and social justice for the indigenous peoples of this territory can become a constant, allowing individuals like Waxihô Karajá to leave the permanent condition of vigil, struggle and fatigue, and to be able to study as much as they want, without forgetting to enjoy the sacred month of July on the banks of the Araguaia River.

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## References

- Aikenhead, G. S., & Lima, K. E. C. (2009). Science, Culture and Citizenship: Cross-Cultural Science Education. *Revista Brasileira de Pesquisa em Educação em Ciências*, 9(3), 1–15. <https://periodicos.ufmg.br/index.php/rbpec/article/view/3998>
- Albuquerque, F. E., & Karajá, A. D. G. (2016). *Aspectos Históricos e Culturais do povo Karajá – Xambioá*. Pontes Editores.
- Alencar, L. A., dos Santos, R. L., Martins, A. M., & Lima Junior, P. (2–6 de outubro, 2023). *Gosto por Docência: distinção e ressignificação da prática docente por meio de uma análise (co)autoral*. XIV Encontro Nacional de Pesquisa em Educação em Ciências (ENPEC), Caldas Novas, Goiás.
- Almeida, S. (2020). *Racismo Estrutural*. Editora Jandaíra.
- Alves, D., & Vieira, M. V. (2017). Territorialidade e demarcação de terras indígenas no Tocantins: o caso histórico dos Karajá do Norte. *Ñanduty*, 5(7), 91–114. <https://doi.org/10.30612/nty.v5i7.7798>
- Amaral, W. R., & Baibich-Faria, T. M. (2012). A presença dos estudantes indígenas nas universidades estaduais do Paraná: trajetórias e pertencimentos. *Revista Brasileira de Estudos Pedagógicos*, 93(235), 818–835.
- Bacury, G. R., Melo, E. A. P. de, & Gonçalves, T. O. (2016). Trajetórias de vida e formação de professores indígenas nos estados do Tocantins e Amazonas. *Revista Linhas*, 16(32), 172–199. <https://revistas.udesc.br/index.php/linhas/article/view/1984723816322015172>
- Ballestrin, L. (2013). América Latina e o giro decolonial. *Revista Brasileira de Ciência Política*, 11, 89–117. <https://doi.org/10.1590/S0103-33522013000200004>
- Bergamaschi, M. A. (2012). Entrevista: Gersem José dos Santos Luciano — Gersem Baniwa. *Revista História Hoje*, 1(2), 127–148. <https://doi.org/10.20949/rhhj.v1i2.44>
- Bergamaschi, M. A., Doebber, M. B., & Brito, P. O. (2018). Estudantes indígenas em universidades brasileiras: um estudo das políticas de acesso e permanência. *Revista Brasileira de Estudos Pedagógicos*, 99(251), 37–53. <https://doi.org/10.24109/2176-6681.rbep.99i251.3337>
- Bergamaschi, M. A., & Kurroschi, A. R. da S. (2013). Estudantes Indígenas Na Ensino Superior: O programa de acesso e permanência na IFRGS. *Políticas Educativas, Porto Alegre*, 6(2), 1–20. <https://seer.ufrgs.br/index.php/Poled/article/view/45654>
- Bodansky, L., Bolognesi, L. (Produção), & Bolognesi, L. (Direção). (2019). *Guerras do Brasil.Doc* [Série Documental]. Curta!.
- Bourdieu, P. (2007). *A distinção: crítica social do julgamento*. ZOUK.
- Brasil, A., & Silva, C. da. (2020). O povo indígena Apinayé e o acesso à licenciatura em educação do campo da Universidade Federal do Tocantins: Algumas reflexões. *Education Policy Analysis Archives*, 28(159), 1–20. <https://doi.org/10.14507/epaa.28.4752>

- Caetano, A. (2013). *Vidas refletidas: sentidos, mecanismos e efeitos da reflexividade individual* (Tese de Doutorado, Instituto Universitário de Lisboa, Lisboa, Portugal). Repositório do Iscte. <http://hdl.handle.net/10071/6244>
- Carter, L. (2017). A Decolonial Moment in Science Education: Using a Socioscientific Issue to Explore the Coloniality of Power. *Revista Brasileira de Pesquisa em Educação em Ciências*, 17(3), 1061–1085. <https://periodicos.ufmg.br/index.php/rbpec/article/view/4663>
- Cassandre, M. P., Amaral, W. R. do, & Silva, A. da. (2016). Eu, Alex, da etnia Guarani: o testemunho de um estudante indígena de administração e seu duplo pertencimento. *Cadernos EBAPE.BR*, 14(4), 934–947. <https://doi.org/10.1590/1679-395146821>
- Castro, F. G. de, & Iwamoto, H. M. (2021). Política De Cotas No Ifto Campus Gurupi: Reflexos Da Lei Nº 12.711/121 / Quota Policy Ifto Campus Gurupi: Reflections of Law Nº 12.711/12. *Brazilian Journal of Development*, 7(1), 2502–2523. <https://ojs.brazilianjournals.com.br/ojs/index.php/BRJD/article/view/22821>
- Césaire, A. (1978). *Discurso sobre o colonialismo*. Sá da Costa.
- Clastres, P. (2017). *A Sociedade contra o Estado* (Afrontamen). Ubu Editora.
- Comunidades Iny Karajá. (2019). *Iny tkylysinamy rybèna* (N. C. de Lima & R. M. Leitão (Eds.)). IPHAN.
- dos Santos, R. L., & Lima Junior, P. (2023). Estaríamos Vivenciando uma Virada Decolonial na Educação em Ciências Brasileira? *Revista Brasileira de Pesquisa em Educação em Ciências*, 23(u), 1–36. <https://doi.org/10.28976/1984-2686rbpec2023u709744>
- dos Santos, R. L., & Lima Junior, P. (27 de setembro a 01 de outubro, 2021). *A Formação de Professores Indígenas de Ciências em publicações no ENPEC e na ANPEd entre 2013–2019*. XIII Encontro Nacional de Pesquisa em Educação em Ciências (ENPEC), on-line.
- dos Santos, R. L., & Lima Junior, P. (2022). How many indigenous teachers choose science? *XX IOSTE Symposium*, 1–5.
- Elliott, J. H. (2018). A conquista espanhola e a colonização da América. In L. Bethell (Ed.), *História da América Latina: América Latina Colonial, volume I* (pp. 135–194). Editora da Universidade de São Paulo.
- Fanelli, G. de C. R. (2021). *A lei 11.645/2008: a história de como a temática indígena passou a ser obrigatória nas escolas brasileiras*. Appris.
- Fanon, F. (1968). *Os Condenados da Terra*. Civilização Brasileira.
- Faustino, R. C., Franco, E. da S. N., Novak, M. S. J., & Menezes, M. C. B. (2019). Observatório da Educação Escolar Indígena e o Ensino da Matemática: uma experiência com acadêmicos Kaingang e Guarani da Universidade Estadual de Maringá. *Revista Paranaense de Educação Matemática*, 8(15), 266–286. <https://doi.org/10.33871/22385800.2019.8.15.266-286>

- Ferreira, M. A. V., Soares, L. de V., & Castro, T. S. (2021). Alunos indígenas na Universidade: o que mudou nas práticas curriculares do professor do ensino superior? *Revista Exitus*, 11, 1–25. <https://doi.org/10.24065/2237-9460.2021v11n1ID1574>
- Figueiredo, A. C. (2018). Limites para afiliação à vida acadêmica de estudantes de camadas populares no contexto de expansão universitária. *Educação e Pesquisa*, 44, 1–18. <https://doi.org/10.1590/S1678-4634201844173462>
- Fior, C. A., Graciola, M. A. D., Pelissoni, A. M. S., & Polydoro, S. A. J. (2022). Contribuições de uma disciplina na promoção da autorregulação da aprendizagem de universitários egressos da rede pública. *Revista Docência Do Ensino Superior*, 12(e039772), 1–21. <https://doi.org/10.35699/2237-5864.2022.39772>
- Fontes, B. C. (2020). A entrevista biográfica na sociologia. *Revista Sociais e Humanas*, 32(3). <https://doi.org/10.5902/2317175837238>
- Franklin, J. D. (2008). Racial Microaggressions, Racial Battle Fatigue, and Racism-Related Stress in Higher Education. *Journal of Student Affairs*, 44–55.
- Franklin, J. D., Smith, W. A., & Hung, M. (2014). Racial Battle Fatigue for Latina/o Students: A Quantitative Perspective. *Journal of Hispanic Higher Education*, 13(4), 303–322. <https://doi.org/10.1177/1538192714540530>
- Gomes, G., & Powell, A. (2016). Microagressões no ensino superior nas vias da Educação Matemática. *Revista Latinoamericana de Etnomatemática Perspectivas Socioculturales de La Educación Matemática*, 9(3), 44–76. <https://www.revista.etnomatematica.org/index.php/RevLatEm/article/view/311>
- Gonzaga, Y. M., Costa Júnior, J. da, & da Costa Júnior, J. (2020). Capital racial e a perspectiva colonial no século XXI. *Revista M. Estudos Sobre a Morte, Os Mortos e o Morrer*, 5(10), 240–265. <https://doi.org/10.9789/2525-3050.2020.v5i10.240-264>
- Grosfoguel, R. (2013). “Hay que tomarse en serio el pensamiento crítico de los colonizados en toda su complejidad” Entrevista a Luís Martínez Andrade. *Metapolítica*, 83, 38–47.
- Grosfoguel, R. (2016). A estrutura do conhecimento nas universidades ocidentalizadas: Racismo/sexismo epistêmico e os quatro genocídios/epistemicídios do longo século XVI. *Sociedade e Estado*, 31(1), 25–49. <https://doi.org/10.1590/S0102-69922016000100003>
- Guarany Silva, E. (2017). *Aspectos históricos e culturais do povo Karajá-Xambioá: Uma Contribuição para a Educação Escolar Indígena*. Fundação Universidade Federal do Tocantins.
- Guimarães, U. A., Zonta, J. F. P., Haslinger, M. L. K., & da Silva, O. B. (2023). Desafio do docente diante das classes multisseriadas na educação infantil. *Revista Científica Multidisciplinar*, 4(4), 1–11. <https://doi.org/10.47820/recima21.v4i5.3065>

- Herbetta, A. F. (2018). Políticas de inclusão e relações com a diferença: considerações sobre potencialidades, transformações e limites nas práticas de acesso e permanência da UFG. *Horizontes Antropológicos*, 24(50), 305–333. <https://doi.org/10.1590/S0104-71832018000100011>
- Jin, Q. (2021). Supporting indigenous students in science and stem education: A systematic review. *Education Sciences*, 11(9), 1–15. <https://doi.org/10.3390/educsci11090555>
- Jonhson, H. B. (2018). A colonização portuguesa do Brasil, 1500–1580. In L. Bethell (Org.), *História da América Latina: América Latina Colonial, volume I* (pp. 241–281). Editora da Universidade de São Paulo.
- Karajá, A. D. G., Albuquerque, F. E., & Sissi, S. A. de A. (2021). A situação sociolinguística dos indígenas Karajá-Xambioá: contribuições para a educação escolar. *JNT — Facit Business and Technology Journal*, 1(32), 4–81. <https://revistas.faculdadefacit.edu.br/index.php/JNT/article/view/1369>
- Kilomba, G. (2019). *Memórias da plantação: episódios de racismo cotidiano*. Editora Cobogó.
- Knop, M., & Collares, A. C. M. (2019). A influência da origem social na probabilidade de concluir os diferentes cursos de ensino superior. *Sociedade e Estado*, 34(2), 351–380.
- Krenak, A. (2015). Paisagens, Territórios E Pressão Colonial. *Espaço Ameríndio*, 9(3), 327–343.
- Krenak, A. (2019). *Ideias para adiar o fim do mundo*. Companhia das Letras.
- Lafaye, J. (2018). A literatura e a vida intelectual na América Espanhola Colonial. In L. Bethell (Ed.), *História da América Latina: América Latina Colonial, volume II* (pp. 595–641). Editora da Universidade de São Paulo.
- Lahire, B. (2004). *Retratos sociológicos: disposições e variações individuais*. Artmed.
- Lander, E. (2005). *A colonialidade do saber: eurocentrismo e ciências sociais Perspectivas latino-americanas*. CLACSO.
- Leitão, R. M. (2000). O papel da educação escolar na formação de lideranças indígenas: o caso dos karajá. *23ª Reunião Anual Da ANPEd*, 1–17.
- Lima Filho, M. F., & Silva, T. C. da. (2012). A arte de saber fazer grafismo nas bonecas Karajá. *Horizontes Antropológicos*, 18(38), 45–74. <https://doi.org/10.1590/S0104-71832012000200003>
- Lima Junior, P. (2013). *Evasão do ensino superior de Física segundo a tradição disposicionalista em sociologia da educação* (Tese de Doutorado, Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul). Lume. <https://lume.ufrgs.br/handle/10183/78438>

- Lima Junior, P., Anderhag, P., & Wickman, P. (2021). How does a science teacher distinguish himself as a good professional? An inquiry into the aesthetics of taste for teaching. *International Journal of Science Education*, 44(5), 815–838. <https://doi.org/10.1080/09500693.2021.1958392>
- Lima Junior, P., de Andrade, V. C., Fraga Junior, J. C., Silva, J. A., Goulart, F. M., & Araújo, I. M. (2020). Excelência, evasão e experiências de integração dos estudantes de graduação em Física. *Ensaio Pesquisa em Educação em Ciências (Belo Horizonte)*, 22, 1–23. <https://doi.org/10.1590/21172020210140>
- Lima Junior, P., Fraga Junior, J. C., de Andrade, V. C., & Bernardino, P. R. P. (2020). A integração dos estudantes de periferia no curso de Física: razões institucionais da evasão segundo a origem social. *Ciência & Educação (Bauru)*, 26, 1–15. <https://doi.org/10.1590/1516-731320200030>
- Lima Junior, P., & Massi, L. (2015). Retratos sociológicos: uma metodologia de investigação para a pesquisa em educação. *Ciência & Educação (Bauru)*, 21(3), 559–574. <https://doi.org/10.1590/1516-731320150030003>
- Lima Junior, P., & Massi, L. (2018). Nossa lente, nossa técnica: fundamentos dos retratos sociológicos. In L. Massi, P. Lima Junior, & E. Barolli (Eds.), *Retratos da docência: contextos, saberes e trajetórias* (pp. 20–51). Letraria.
- Linder, C., Quaye, S. J., Lange, A. C., Roberts, R. E., Lacy, M. C., & Okello, W. K. (2019). “A Student Should Have the Privilege of Just Being a Student”: Student Activism as Labor. *Review of Higher Education*, 42, 37–62. <https://doi.org/10.1353/rhe.2019.0044>
- Linder, C., Quaye, S. J., Stewart, T. J., Okello, W. K., & Roberts, R. E. (2019). “The Whole Weight of the World on My Shoulders”: Power, Identity, and Student Activism. *Journal of College Student Development*, 60(5), 527–542. <https://doi.org/10.1353/csd.2019.0048>
- Lisboa, A. de M. (2014). De América a Abya Yala - Semiótica da descolonização. *Revista da Educação Pública*, 23(53/2), 501–531. <https://periodicoscientificos.ufmt.br/ojs/index.php/educacaopublica/article/view/1751>
- Luciano, G. J. dos S., & Amaral, W. R. do. (2021). Povos indígenas e educação superior no Brasil e no Paraná: desafios e perspectivas. *Integración y Conocimiento*, 2(10), 13–37. <https://revistas.unc.edu.ar/index.php/integracionyconocimiento/article/view/34069>
- Luciano, G. J. dos S., & Godoy, D. B. de O. A. de. (2017). Educação intercultural: direitos, desafios e propostas de descolonização e de transformação social no Brasil. *Cadernos CIMEAC*, 7(1), 12–31. <https://seer.uftm.edu.br/revistaelectronica/index.php/cimeac/article/view/2216>
- Maher, T. M. (2006). A formação de professores indígenas: uma discussão introdutória. In L. D. B. Grupioni (Ed.), *Formação de professores indígenas: repensando trajetórias* (pp. 11–37). MEC/UNESCO.

- Maldonado-Torres, N. (2007). Sobre la colonialidad del ser. In S. Castro-Gómez & R. Grosfoguel (Eds.), *El giro decolonial Reflexiones para una diversidad epistémica más allá del capitalismo global* (pp. 127–167). Siglo.
- Martins, A. M., & Lima Junior, P. (2020). Identidade e desenvolvimento profissional de professoras de ciências como uma questão de gênero: o caso de Natália Flores. *Investigações em Ensino de Ciências*, 25(3), 616–629. <https://doi.org/10.22600/1518-8795.ienci2020v25n3p616>
- Massi, L., Lima Junior, P., & Barolli, E. (Eds.). (2018). *Retratos da docência: contextos, saberes e trajetórias*. Letraria.
- Mignolo, W., & Walsh, C. (2018). *On Decoloniality: concepts, analytics, praxis*. Duke University Press.
- Milanez, F., Sá, L., Krenak, A., Cruz, F. S. M., Ramos, E. U., Jesus, G. dos S. de, & de Jesus, G. dos S. (2019). Existência e Diferença: O Racismo Contra os Povos Indígenas. *Revista Direito e Práxis*, 10(3), 2161–2181. <https://doi.org/10.1590/2179-8966/2019/43886>
- Moraes, J. T., & Rigoldi, V. (2019). PROLIND — a Identidade Étnica Como Orientadora Do Processo Educacional: Uma Análise De Sua Efetivação No Campus Da UFMS em Aquidauana. *Argumenta Journal Law*, (30), 273–296. <https://seer.uenp.edu.br/index.php/argumenta/article/view/386>
- Moreira, A. F. B., & Candau, V. M. F. (2003). Educação escolar e cultura(s): construindo caminhos. *Revista Brasileira de Educação*, (23), 156–168. <https://doi.org/10.1590/S1413-24782003000200012>
- Munduruku, D. (2012). *O caráter educativo do movimento indígena brasileiro (1970–1990)*. Paulinas.
- Nascimento, A. (2016). *O genocídio do negro brasileiro: processo de um racismo mascarado* (3ª ed.). Perspectivas.
- Nascimento, A. M. do. (2013). Desafios à Elaboração Curricular Para a Educação Escolar Indígena: Reflexões e Alternativas de Enfrentamento Dos Povos Karajá Xambioá e Guarani. *Espaço Ameríndio*, 7(1), 95–145. <https://doi.org/10.22456/1982-6524.36105>
- Nunes, E. S. (2016). *TRANSFORMAÇÕES KARAJÁ Os “antigos” e o “pessoal de hoje” no mundo dos brancos* (Tese de Doutorado, Universidade de Brasília, Brasília, Distrito Federal). Repositório Institucional da UnB. <https://repositorio.unb.br/jspui/handle/10482/21495>
- Oliveira, M. A. de. (2020). *Indígenas e ensino médio em Roraima: Demandas de Estudantes Macuxi* (Tese de Doutorado, Universidade de São Paulo, São Paulo). Biblioteca Digital de Teses e Dissertações da USP. <https://doi.org/10.11606/T.48.2020.tde-01022021-141247>
- Paladino, M. (2012). Algumas notas para a discussão sobre a situação de acesso e permanência dos povos indígenas na educação superior. *Práxis Educativa*, 7(Esp), 175–195. <https://doi.org/10.5212/PraxEduc.v7iEspecial.0008>



- Peixoto, K. P. F. (2017). Racismo contra indígenas: reconhecer é combater. *Revista AntHropológicas*, 28(2), 27–56. <https://doi.org/10.51359/2525-5223.2017.25363>
- Pereira, G. F. de S. F., do Amaral, W. R., Bilar, J. A. B., Amaral, W. R. do, & Bilar, J. A. B. (2020). A experiência de estar na universidade sob a ótica de uma indígena estudante da pós-graduação. *Education Policy Analysis Archives*, 28, 158. <https://doi.org/10.14507/epaa.28.4791>
- Petesich, N. (1987). *A trilogia Karajá - sua posição intermediária no continuum Jê-tupi*. Université Paris X.
- Pisani, M. da S. (2020). Acesso, dificuldades e permanência indígena no ambiente universitário: a monitoria indígena nos cursos de Pedagogia e Ciências Sociais (UFT/ Tocantinópolis). In R. N. de P. Câncio (Ed.), *Reflexões sobre acesso ingresso e permanência de estudantes indígenas na Universidade Federal do Tocantins* (p. 92). EDUFT.
- Porto-Gonçalves, C. W. (2009). Entre América e Abya Yala – tensões de territorialidades. *Desenvolvimento e Meio Ambiente*, 20, 25–30. <https://revistas.ufpr.br/made/article/view/16231>
- Queiroz, G. C., & Faleiro, W. (2021). Ser Professor(a) de Ciências da Natureza: Atratividade à Licenciatura nos últimos dez anos (2010–2020). *RCEF: Revista Ciências em Foco*, 14, 1–18. <https://econtents.bc.unicamp.br/inpec/index.php/cef/article/view/15917>
- Quijano, A. (2005). Colonialidade do Poder, Eurocentrismo e América Latina. In E. Landier (Org.), *A Colonialidade Do Saber. Eurocentrismo e Ciências Sociais. Perspectivas Latino- Americanas* (pp. 227–278). CLACSO.
- Rofe, C., Moeed, A., Anderson, D., & Bartholomew, R. (2016). Science in an Indigenous School: Insight into Teacher Beliefs about Science Inquiry and their Development as Science Teachers. *The Australian Journal of Indigenous Education*, 45(1), 91–99. <https://doi.org/10.1017/jie.2015.32>
- Rosa, S. C. S., & Lopes, E. T. (2018). Tendências das publicações brasileiras sobre a formação de professores indígenas em ciências da natureza. *Amazônia: Revista de Educação Em Ciências e Matemáticas*, 14(32), 108. <https://doi.org/10.18542/amazrecm.v14i32.5805>
- Russo, K., & Diniz, E. A. (2020). Trajetórias indígenas na universidade: O direito ao ensino superior no Rio de Janeiro. *Education Policy Analysis Archives*, 28, 73. <https://doi.org/10.14507/epaa.28.4708>
- Santos, R. R. dos, & Melo, E. A. P. de. (2021). Etnografia como campo de pesquisa na e para a prática docente de professores indígenas Iny-Karajá que ensinam Ciências e Matemática. *Cadernos CIMEAC*, 11(1), 163–191. <https://doi.org/10.18554/cimeac.v11i1.5243>
- Schiell, H. (2017). Dançando cacofonias: de mestiços, inã (Karajá) e “cultura”. *Anuário Antropológico*, 42(2), 353–381. <https://doi.org/10.4000/aa.2477>

- Schio, S. M. (2016). “Mal Banal” e América Latina: uma análise por meio da perspectiva Arendtiana. *RELACult - Revista Latino-Americana de Estudos Em Cultura e Sociedade*, 2(Esp.), 42–53. <https://doi.org/10.23899/relacult.v2i4.309>
- Silva, L. P., Castro, M. A. R., Lopes, T. H. C. R., & Castro, C. R. (2021). Relação entre origem social e desempenho acadêmico na educação superior no Brasil entre os anos de 2008 e 2013. *Gestão & Planejamento*, 22, 481–496. <https://doi.org/10.53706/gep.v.22.7014>
- Silveira, K. P., & Mortimer, E. F. (2011). Tradição Maxakali e Conhecimento Científico: Diferentes Perspectivas para o Conceito de Transformação. *Revista Brasileira de Pesquisa em Educação em Ciências*, 11(3), 9–33. <https://periodicos.ufmg.br/index.php/rbpec/article/view/4206>
- Smith, W. A. (2004). Black faculty coping with racial battle fatigue: The campus racial climate in a post-civil rights era. In D. Cleveland (Ed.), *A long say to go: Conversations about race by African American faculty and graduate students* (pp. 171–190). Peter Lang.
- Smith, W. A., Hung, M., & Franklin, J. D. (2011). Racial Battle Fatigue and the MisEducation of Black Men: Racial Microaggressions, Societal Problems, and Environmental Stress. *The Journal of Negro Education*, 80(1), 63–82. <https://muse.jhu.edu/article/806860>
- Solórzano, D. G., & Yosso, T. J. (2002). Critical Race Methodology: Counter-Storytelling as an Analytical Framework for Education Research. *Qualitative Inquiry*, 8(1), 23–44. <https://doi.org/10.1177/107780040200800103>
- Souza, J. (2019). *A elite do atraso*. Sextante.
- Toral, A. A. de. (1992). *Cosmologia e Sociedade Karajá* [Dissertação de Mestrado]. Universidade Federal do Rio de Janeiro, Rio de Janeiro.
- Venere, M. R., & Velanga, C. T. (2008). A criança indígena e a educação infantil: as complexas relações entre a cultura e a escola na cidade. *Tellus*, (15), 175–191. <https://doi.org/10.20435/tellus.v0i15.167>
- Virginia, M., & Batista, D. A. (2021). Situação sociolinguística dos Krahô de Pedra Branca: considerações sobre a facilidade linguística em língua materna e língua portuguesa. *Revista Linguística*, 17, 191–205. <https://doi.org/10.31513/linguistica.2021.v17n1a40683>
- Xakriabá, C. N. C. (2020). Amansar o giz. *PISEAGRAMA*, (14), 110–117. <https://piseagrama.org/artigos/amansar-o-giz/>



**Regiane Lopes dos Santos**

Instituto Federal do Tocantins  
Paraíso do Tocantins, Tocantins, Brasil  
regianels@ifto.edu.br



**Paulo Lima Junior**

Universidade de Brasília  
Brasília, Distrito Federal, Brasil  
limajr@unb.br



**Adriano Dias Gomes Karajá**

Secretaria de Estado de Educação do Tocantins  
Palmas, Tocantins, Brasil  
adrianoindio17@hotmail.com

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### **Manifestation of Attention to Good Scientific Practices and Exemption from Interest and Responsibility**

The authors declare that they are responsible for complying with the ethical procedures provided by law and that no competing or personal interests could influence the work reported in the text. They assume responsibility for the content and originality, as a whole or in part.

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