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Intellectual property in ethnomathematics

Propiedad intelectual en etnomatemática

Aldo Parra¹

Abstract

Beginning from the reflections about a methodology used in a research project with an indigenous Colombian community, this paper outlines some possibilities for ethnomathematical research. Issues like intellectual property and social relevance are discussed in order to propose a broader concept of “academic instance”, through the acknowledgement and legitimation of alternative scenarios of generation, transmission and transformation for mathematical knowledge. This paper has five sections: a) preliminaries about the indigenous community, b) description of the research process and its products (for their very nature, it will be written in a first-person plural voice), c) individual thoughts, treating the harmony between the ethnomathematical methodology and its theoretical, humanistic and political foundations, d) final remarks, sharing insights for further development, e) an epilogue or a review about the experience, to discuss the spirit which aims the analysis made.

Keywords: Ethnomathematics Research; Indigenous Education; Intellectual Property; Authorship.

Resumen

Partiendo de reflexiones sobre la metodología empleada en una experiencia con una comunidad indígena colombiana, este artículo propone posibilidades para la investigación en etnomatemática, que tienen implicaciones en aspectos como la propiedad intelectual y la pertinencia social, así como en el reconocimiento y legitimación de ámbitos alternativos de generación, difusión y transformación del conocimiento matemático. El texto tiene cinco secciones: a) información sobre la comunidad indígena, b) descripción del proceso investigativo (por su carácter colectivo y comunitario es narrado en primera persona del plural), y de la elaboración de sus productos bilingües, así como de la dinámica actual del grupo investigador, c) consideraciones individuales del autor, discutiendo la consonancia de la metodología en investigaciones etnomatemáticas con los presupuestos teóricos, humanistas y políticos del campo disciplinar. d) consideraciones finales, compartiendo elementos para un desarrollo posterior, e) epílogo o lectura de la experiencia desde otra mirada, donde se discute el espíritu que anima los análisis hechos.

Palabras Clave: Etnomatemática; Educación Indígena; Propiedad Intelectual; Autoría.

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INTRODUCTION

The Nasa indigenous community is located mainly in the Cauca state, in Colombia. It consists of more than 100,000 persons. They are recognized among other Colombian indigenous nations, by their powerful cohesion, inner organization, and their political participation with national impact. Although their negotiations with the national state began in 1650, since 1971 Nasa people have adopted an organizational scheme grounded in communitarian participation. They have created an indigenous regional Council, the *Consejo Regional Indígena del Cauca* (CRIC), which allowed them to be engaged in a consistent process of right's assertion, setting several lines of work such as health, judicial autonomy, land recovery and education. Nasa's educational practices have been developing for the last 30 years, sketching and developing their own autonomous educational system, recognized by the Colombian government.

In order to achieve their goals, they have established as priorities the reinforcement of their mother tongue (*Nasayuwe*), the defense of their land, and the development of alternative pedagogies. All of these initiatives are linked to a political project of resistance against their extinction as a culture. (CRIC Consejo Regional Indígena del Cauca 2004).

The Indigenous Center of Intercultural Research in Tierradentro² (CIIT) was created in 2003 by the indigenous movement as one of several endeavors. In that center the Nasa people have been doing several and diverse projects, such as risk prevention plans; sociolinguistic studies; communitarian development; agricultural and ritual calendars, all of these addressing strategic and alternative responses to several indigenous problems. Embedded in culturally diverse environments, the projects were developed with a communitarian approach. In a general meeting³ for education in 2006, the community ordered CIIT to create a team of bilingual indigenous researchers, coming from several villages of Tierradentro's zone, with the aim of conducting a research on their mathematics.

² Tierradentro is the sacred region for Nasa people, and the place where *Nasayuwe* language is more used; UNESCO recognized that zone as a cultural heritage for humankind. Tierradentro also allocates most indigenous *Cabildos* than any other area in the Country. *Cabildo* is the political and organizational unit that rules into an indigenous territory area called *Resguardo*. In this paper *Resguardo* is translated as "Village".

³ That assembly was held in the anniversary of Benjamín Dindicué's death, an indigenous leader who was leading the educational processes inside the region. Dindicué was murdered in 1979 by paramilitary forces.

They sent me an invitation to be part of the team, as a collaborator and adviser, considering my Bachelor degree in Mathematics. Another non-indigenous professional, who had previously collaborated with the CIIT educational issues, was also engaged.

The aim of this paper is to reflect theoretically about intellectual property in ethnomathematics, through an analysis of the theoretical standpoint and methodological way in which the CIIT's team conducted their research. The specific empirical research results were already presented in a book Caicedo (2009), that provides an interpretation of the Nasa mathematical thinking.

DESCRIPTION OF THE COLLECTIVE EXPERIENCE

In this section, the pronoun “we” will be used to describe the things developed into the research, regarding the collective spirit that drove the process. For further methodological considerations the singular “I” will be used.

To start the process, we considered useful to sensitize on the social and dynamic self of mathematical knowledge. A set of previous ethnomathematical experiences located in Colombia was reviewed in the first meetings: (Cauty, 1999), (Albis, 1989) and (Parra, 2003). Also we include some “classic literature” like (Carraher, Carraher, & Schliemann, 1987), (Soto, 1995) and (Ascher, 1981), which were motivating in this team's departure and served to create a background.

Considering Alan Bishop's work (1988) about the existence of (at least) six “universal” mathematical activities (to measure, to play, to count, to explain, to locate and to design), we started a description process of several practices that the Nasa people have noticed inside their villages, stimulating the collection and interpretation of data directly by ten indigenous researchers. Every month, for a period of one and a half years, we arranged meetings to contrast and socialize the data collected by the researchers along the month. These encounters lasted two days and happened in a different place each time, helping to know (and own) the territory, showing and sharing the job among the several communities. A great deal of those meetings were organized based on the indigenous scheme of assembly, demanding participation of all different types of members of the community (local governors, ancient healers, elders, children, teachers and adults), approving,

complementing and correcting the assertions about the practices, that had been collected by the research team.

It was remarkable the main role of the mother tongue in every single reunion or assembly, as well as in the oral testimonies which were collected by the indigenous researchers. In several instances the analysis were constructed in *Nasayuwe*, because it facilitates them to conceptualize (despite being all of them bilingual). At the end of that stage, some members tried to make an abstract in Spanish for the two non-indigenous members who did not know the language, in order to understand the resulting ideas. Far from forbid or limit those situations of apparently lack of communication (in behalf of the feeling “losing control of the research”), we wanted to promote them, as a gesture of trust and interdependence. Today we believe that this was crucial to strengthen the whole research process.

With the set of the collected data in several villages, it was assigned to each team member the responsibility to organize, in a written and bilingual way, all the issues related with one of the selected activities (as we said before: to measure, to play, to count, to explain, to locate and to design) in order to go further in the knowledge founded. For this new stage three members left the group and those who stayed assumed a new research role, more personal but still collective, which lead them to create an explanatory discourse, coherent with the information obtained collectively and diachronically along the process. This writing process demanded seven months. We thought those findings should not be reduced to a mere ethnocentric accounts, prone to be labeled as ethnic folklore (and because of that, unable to interact) and we started to contrast that knowledge with theoretical stances from the official academy, read some specific papers related with these subjects. We studied materials from (Huizinga, 2000) (Chamorro & Belmonte, 1991), (Chávez & Puerto, 1998), (Rojas, 1998), and the curricular guidelines for mathematics, from the Colombian ministry of education (COLOMBIA. Ministerio de Educación, 1998). That stage was not easy but it was very satisfactory because we could see how our indigenous colleagues managed to contrast, evaluate, reformulate and look for evidence to prove or disapprove those explanatory discourses that have come from different and strange contexts. In every case it was evidenced an appropriation and a conceptual re-elaboration of the academic discourse, impossible to be achieved by a researcher who does not belong to the Nasa community.

Complementary to the facts related above, our indigenous colleagues attended several national and regional conferences in mathematics education, disseminating and presenting our work and being in touch with the dynamics of those other instances of knowledge's circulation. Furthermore, the CIIT presented this experience to the Colombian Ministry of Culture, and won the national fellowship for indigenous languages research. This prize constituted the only economic aid received along 3 years and allowed the printing of an entirely bilingual book, which describes all the results, aiming to raise concerns, questions and possibilities about mathematics and cultural heritage. The editorial process demanded eight months of work and was itself another stage in the research. Every single chapter was submitted to an inner system of group's filters.

First, every researcher wrote a bilingual draft with an overview about a particular activity entrusted to him/her. This version was complemented by them, after a work session with me, as a mathematical advisor, in those meetings we consensuated assertions and concepts, both in Spanish and in *Nasayuwe*. In all those meetings arose clearly a text's main feature for us: it was not a mere translation from a text thought in Spanish to *Nasayuwe*. The changes were mutual in both languages and it was looked for an easy expression but without trivialize the concepts and practices related. Keeping that in mind, each author should like the manuscripts that they have in charge. That second version was read by a couple of members of the team, doing orthographical, grammatical and style comments and suggestions. A third version was submitted to a main review for the whole research group. That moment was critical: we had to consider approaches and make decisions about the writing style and how to manage the writing as an act because three different but related items emerged: a) the necessity to maintain expressions in a familiar style within *Nasayuwe*, which allow us "to come in" easier to our target reader (indigenous teachers and parents, b) the notice of the presence of dialectal variations in the *Nasayuwe* language, plenty of sayings, idioms, jargons, contractions and particular intonations⁴, c) the

⁴ Although some members proposed to keep one unified and neutral style, to be "official" for the *Nasayuwe* language, other members want to make evident the accents and idioms distinctive of each author, urging the readers to identify and recognize those differences between the several indigenous areas. The last option prevailed because we considered it strategic, using sociolinguistic issues about the importance to revitalize the indigenous languages.

introduction, or not, of neologisms to describe mathematical terms, needed in the texts, such as “unit of measure ” or “discrete”⁵.

Addressing all the related issues above, we wrote papers that relates and describes mathematical objects within a cultural view, specifically Nasa, including interpretations and metaphors coming from spiritual dimensions. It is very interesting to note how concepts typically assumed as mathematical were being re-created within Nasa indigenous worldview, e.g. the continuous and the discrete, ordinality, cardinality, unit of measure for measurable magnitudes, etc... even notions related to physics, such as velocity, motion and inertia. Mathematical language of logic was equally considered, expressions used for equivalences, implications, negations, disjunctions and other logical conjunctions, which are used to shape and format discourses inside the culture.

It is important to note that no single stage of research related until now had escaped to strong debates inside the research group, neither to unsolved questions. A deadline was defined to deliver the material, and one thousand copies of the book were printed, seven hundred and fifty were delivered to the indigenous teachers and their villages. All the authors agreed that the book became copyrighted by the CIIT, as a way to keep the intellectual property in the indigenous community as a whole To stress that commitment, in the very copyright page, were listed the names of the elders, cabildos' authorities, former members of the team and teachers who provides, check and comment the information and guide and assess the research process. Villages' assemblies were also included as sources in the copyright page because the Nasa community assumes those meetings as actors with agency and legitimacy. However, we did not want to deny the work of the research team members. So we decided to detach authorship from intellectual property, the former was recognized to the nine members of the team, and the latter remain in the community.

⁵ In this topic, the question about the utility and reception of the terms by the community becomes a very strong element of judgment. We inquired if within *Nasayuwe* there are words that could account for what is intended, and also if the previous words created to express mathematical concepts were natural or forced. As much as were possible, we look for not using neologisms, but we could not make it totally. We also proposed to extend the meaning of existing words in the *Nasayuwe*, to express metaphorically the idea we wanted. For every proposal that we made we included explanatory notes.

The book was (and still is) disseminated and assessed in the Tierradentro's zone, as well in others Nasa's villages in Cauca. In that new process all the authors continued playing a fundamental role, commenting, explaining and sharing their experience with teachers and general public, through workshops and assemblies. They were collecting impressions, suggestions and mistakes of several types. Despite our initial efforts, some of the chapters were severely criticized in their style in *Nasayuwe*, but welcomed in their content.

We want to highlight here that we did not take those critique as a comment from the readers (who act as "product final users"), rather than that, we assumed their intervention as a natural step in the editorial process. Parents, teachers and authorities are considered agents in the research, and because of that, they became authors, in an extended sense. We decided to make an enhanced second edition, with entire new *Nasayuwe* versions of some chapters and one additional chapter, including some advices and suggestions for parents, to help their kids with the development of mathematical skills outside the school in cultural spaces and events. That new chapter gives some tools about how parents could not promote negative images about kids' school performance, based in their earlier experiences, but to focus in their current skills as grown-ups out of school. That was a suggestion and a reflection made by some parents. We took Brazilian booklets (BRASIL,2002) with tips and suggestions as an inspiration, and shared some personal experiences as teachers to propose our own version for the chapter.

External to this process, indigenous movement obtained the legal permission to manage locally part of the educational administration state funds. This implied some autonomy in the economical investment for schools, books and teachers salary. So, the local association that gathers cabildos in Tierradentro gave to the CIIT in 2012, some funds to print the second edition and distribute it to the villages.

One of our current challenges is to create new teams with teachers who take the data as input, and develop didactical tools for the classroom. To do these, it's crucial to engage a former group member, as an advisor to the new teams.

In the last four years we diversified our work, in one hand we monitor the use and reception of the book; in the other hand we study and research new ideas. We are currently developing with the group another process of "owned" investigation on Nasa's

mathematical thinking, outside the frame of Bishop’s work, following another path to create new kinds of hybrid knowledge, becoming appropriate and more specific to the Nasa community. We like to think this research as a collective creation, in which three agents learn, interact and add, from their diverse past, knowledge and expectations: the Nasa community, the research group and the non-indigenous collaborators. Each element of this triad has autonomous but related and convergent actuation, possessing non-transferable areas of decision and creation, in which its authority is respected and the necessity of their presence is validated. This idea of collective creation refers to a multilateral structure, which allows the research to avoid the trapdoor of “everybody does all” or “everybody knows everything”, as well as a taylorist division of the work.

Several stages of the research and the preeminence of each agent could be represented using the spiral image in Figure 1. This symbol had served Nasa people (and another indigenous people across Latin America) to conceptualize their own ways to build knowledge, and ultimately, to survive as a culture. So, this image that often belongs to mathematics, is present not only into Nasa’s conceptualization, but depicts fairly well our research.

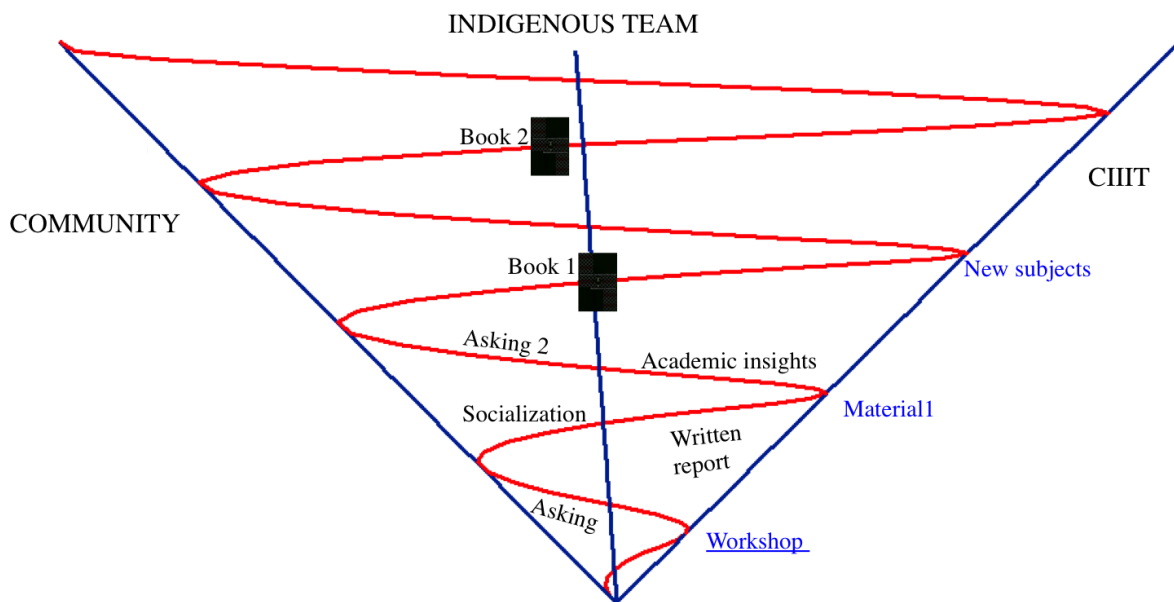


Figure 1. Methodology of collective creation

It is perfectly possible inside the ethnomathematical field to disagree with, or to put in doubt, the interpretation about the Nasa mathematical thinking that we outlined, saying some of our results could be improved or even discarded. As authors, we will be very pleased if such a thing happens because it would imply a growth in the population interested in the study of Nasa mathematics. Due to the collective dynamic implemented, any change in the data will be received as a consubstantial an inevitable part of the methodological process, which turns notions like “success” or “fail” inapplicable

INDIVIDUAL REFLECTIONS

In this section I want to share some reflections from this experience that I believe that can be useful for ethnomathematics researchers. Some of them, and many others, were discussed with the indigenous people at Tierradentro.

Ethnomathematics has been recognized for its interest to vindicate and legitimate skills, knowledge and practices that have served several groups and nations to survive and transcend in time and space. If we understand that those issues do not exist in a vacuum, but they are manifested inside normed contexts of socialization, in which such they are disseminated, evaluated and transformed, we can appreciate that ethnomatematical research does not culminate to understanding/sharing several knowledge, but it also would have to do with understanding/sharing these ways of generation and dissemination.

Certainly this assertion is not new in a theoretical level, (D’Ambrosio, 1994, 1998), but it highlights a current methodological void/oversight because while most research work register mathematical practices of a group of indigenous people, artisans, workers, etc., only few experiences have taken into account the practices of socialization and research used in the groups.

Most research in ethnomathematics have been conducted under the same invariable style/canon: findings belong to a researcher, which is external to the researched community, and decides what is published, in which format, when and where. Although the knowledge and practices belong to a researched “other”, they are showed under the style and criteria of the researcher, which even boasts about to have “entered” into the community and to have “cracked/decoded” their mathematical knowledge, which (obviously) had not been revealed

until the researcher came. Those “others” do not have any participation in the released information. They do not obtain royalties, profits or non-monetary benefits from the research on which they were subjected. “Others” are not more than raw research material. Sometimes, even their real names are not registered in papers and other publications. The most they can expect is to be mentioned in the acknowledgements because they answered the researcher’s questions.

It is very symptomatic fact that Eduardo Sebastiani Ferreira, a well-known researcher of the *mother mathematics*⁶ of several Brazilian indigenous groups, had to draw attention on this point, proposing in (Sebastiani-Ferreira, 1994) something as basic as to present the research’s final results to the studied community/group. Such proposal bares a conception of ethnomathematics in which the researches are made *about* groups, and not *with* groups. The presence of that methodological pattern, and their underlying conception, could be rooted in the location of ethnomathematics between mathematics and cultural anthropology (D’Ambrosio, 1998), and also in the initial claims to link ethnomatematical research with ethnography (Millroy, 1992; Sebastiani-Ferreira, 1994), particularly in its more classical view. That view had been already questioned within anthropology itself, by authors like (Rappaport, 1998, 2008), (Wielewicki, 2001) and (Montero, 2006). The first one problematizes the subject/object dichotomy and the historicity of the very ethnographical report. The other two understand ethnography as a discursive construction, tied to the political-religious and philosophical paradigms of the time/space to which the research belongs to.

With the emergence of new styles of ethnographic research (Denzin & Lincoln, 2011), as well as other emerging methodologies of de-colonial and postmodern studies, it would be worthwhile to explore the potential that these tools have to build new answers for the specific dilemmas facing in ethnomathematics. However, this ethnographical intend is hard to maintain if one considers some aims, which are explicitly or implicitly related with ethnomathematics.

⁶ In portuguese: *matemática materna*.

For instance, when the mutual enrichment is promoted, a question arises: in what ways the people researched can be enriched, despite the fact that some part of their knowledge circulates among us? Certainly, it is a great step forward that we can learn from them, but: what do they learn? It is also used largely the concept of *dialogue*, but that actually means that we can talk about one “other” (indigenous, black, farmer, etc...) then more questions are raised: when that other can talk? Where? To whom? With what purpose? This issue becomes particularly sensitive if the community to be studied has consciously developed a process of social-political reivindication about their own knowledge⁷. In this kind of situations is very problematic to arrogate the right to be the “other’s voice”, when those others are struggling for their empowerment, and for building their own discourse.

Within this discussion arise problems with authorship and intellectual property: on the one hand the researcher appears as a *knowledgeable/erudite voice*, who can call certain set of practices as mathematical, and has the preparation to produce a paper. On the other hand is the community, as an *authorial voice* because it generates and performs the practices. We can imagine the former as a reporter and the latter having the intellectual property of that knowledge; however, it does not resolve the social and legal implications. Especially if we take into account that the idea of “copyright” is individual and has always had in its very nature a mercantilist function, which collides with initiatives of collective appropriation of knowledge.

This dilemma had appeared in other fields and is far from being solved. Using the definitions that UNESCO has launched about traditional knowledge and intangible cultural heritage, Wanda George has pointed a clever question: *Does a community really own its distinctive intangible cultural heritage?* Although this scholar exemplifies the discussion

⁷ I am referring here to the indigenous peoples of Latin America, the Maori people in New Zealand, the peasants of the “Movimento Sem Terra” (Brazilian Landless movement) and many others. Enlightening the words of the Nasa leader Gentil Guegia (Caicedo & Parra, 2009) "In our language we call research *ûus atxah*, and this involves thinking, planning, reflecting, listening and understanding, demands to share and produce new knowledge. For us, to investigate is a pedagogical strategy that we have deployed to know ourselves in relation to our culture, hence the spaces provided by the community at home, school, barbers, congresses, assemblies and ritual, are those which facilitates best this learning" (p.7, my translation)

using tourism and non-indigenous communities, she derives some useful reflections for our question in ethnomathematics:

“While certain facets of a culture can be copyrighted, such as pieces of written music, artworks or other visible manifestations, the intangibles – ideas, meanings, collective identity attributes, oral and unwritten expressions, and the symbolism attached to these – cannot be easily protected. Intangible and tangible cultural aspects are accumulated and reproduced during the evolution of a local community in building its collective and social value system – a social construct.” (George, 2010)

Naturally the academic context is relevant for the professional researcher and not necessarily (but probably) members of cultural groups are interested in getting into those spaces in which research traditionally circulates (classrooms, congresses and books). We do not advocate for belittling or ignoring the complex preparation possessed for the scholars, neither the specific, own and natural questions, which arise from them. But if the ethnomathematical claims to respect and share knowledge are taken seriously, the scenarios to circulate knowledge should be diversified. Such idea could imply two-way movements: in one direction stimulate the presence and participation of *knowledge-holders* in meetings and other traditional context of the academic community, and in the other direction, to ensure that the investigations will be developed, presented and assessed also in the traditional instances that sociocultural groups have established to gather and produce its knowledge. This second direction demands from us a positioning about a question: do we think that those instances do not or should not exist? Even worse: do we think that those instances do not have the capability to understand the motivations and procedures of an ethnomathematical research?

While it is difficult to identify the public scenarios of transmission/generation of knowledge in some labor groups (nurses, craftsmen, peddlers), for ethnical groups those scenarios are visible and vigorous: markets, house of knowledge, malokas, mingas, roads, and of course, rituals. In all of them, peoples have never stopped to conceptualize, to think, to feel and to act. Right there, people have taken, and still take, the crucial decisions that have allowed them to survive across time and space, without dissolving unconsciously in the mainstream. Under-estimate the power of conceptualization and prompting that those context have, weakens the explicative and transformative capability of the research, leaving it confined in

a sort of church in where is adored an unique type of academy, that is, this oversight condemns the ethnomatematical research exactly to the same type of ivory tower against which the ethnomathematics was initially raised: a sad paradox.

The questions and tensions raised in the previous paragraphs were addressed in the collective experience, although not in a predetermined and calculated way. Instead of trying to “give voice” to the others, I was just “listening their voices” and that facilitated many decisions. In that sense, to adopt a figure as “main researcher” did not seem to be consistent with the Nasa communitarian scheme of work, and to circulate the results only for a restricted audience would not have been fitting with the aim of bringing new meanings of academy neither with the claim to vindicate indigenous knowledge as mathematical (in an extended sense). Writing in a bilingual way harmonized with the ideas of matheracy and literacy D'Ambrosio (2006); hold meetings with the communities was in tune with an anthropological sensitivity approach to the teaching of mathematics, the work of conceptualize mathematics using *Nasayuwe* language fits completely with the creation of new knowledge. In short, we were doing an exercise in composition, trying to “give life to our artwork”.

FINAL REMARKS

I hope within ethnomathematics could be combined⁸ the presence of the voices mentioned above, erudite and authorial, facing the research from multiple views, with diverse theorization models, taking advantage of the several ways of communication and validation that any organizational process generates, and considering the objective that peoples and groups have made for themselves⁹. I mean, by exploring unreleased and timely possibilities, methodological strategies could be strengthened at the junction of several

⁸ This combination is not without its problems: although it seems possible to recognize collective authorship of research in journals, conferences, projects and books, what can we do with the thesis and dissertations, which universities demands to perform individually?

⁹ In addition to the work reported here, we know experiences like Cauty (1999) with the Wayuu people in the Colombian Guajira, which also explores these possibilities.

research agendas. Is this not exactly the hallmark of a truly alive academy, to be exploring possibilities?

A new path for the ethnomathematics would be to undertake investigations which recognizes that individuals and people often foreign to centers of power (power of every nature), do not only have various types of knowledge, but also have the capability to disseminate them, broaden them and contrast them with the knowledge of others¹⁰. Indeed, people and individuals have the power to define how, when and where their knowledge can circulate. This, to my view, besides fulfilling by far Ferreira's proposal, helps to concrete the ethnomathematical desire to recognize and promote a character of intellectual and political subject for the marginalized sectors, reinterpreting the role of academy and turning society a little less violent and discriminatory.

This approach is a result of awareness that several authors have made on the need to deepen and complement the ethnomathematical criticisms to imperial models of submission, due to a fervent exaltation of the knowledge of a sociocultural group could generate a rejection of "hegemonic mathematics", which paradoxically does not provide any help to a diminished sociocultural group in its own journey to transcend and survive. At this point it can be considered the character of *undetermined* that Ole Skovsmose (2011, pp. 15-16) gives to mathematics education, as well as the power relations which Knijnik (2006) reveals around the mathematical knowledge, and it can be extended for every group the question of André Cauty (2001) "How to remain Amerindian and learn mathematics needed for today and for the future?".

In short, this approach tries to highlight how futile and cumbersome can become the dichotomies of subject/object, self /others, pure/impure, local/global or academy/life, when put in terms of a stigmatization of the "other", only serving to hinder the construction of the human society proposed by D'Ambrosio(1998) .

¹⁰ Wendy Millroy conducted an ethnography on the mathematics of carpenters, five months living and working as an apprentice to a carpenter's shop, making herself some furniture, etc. Pooling her previous knowledge in mathematics with her recent skills of woodworking she identified some elements of mathematics in this group (Milroy, 1990). We could imagine that one member of the carpentry shop had gone to a college math for 5 months and working as an apprentice, doing some work, etc.. Pooling his previous carpentry knowledge with his recent math skills, what elements of mathematics of their own group he could have identified?

EPILOGUE

In an academic event where I related this experience at Cauca state, some colleagues praised the work, saying that it highlights an ethic factor inside ethnomathematical research. Maybe it does so, but not intentionally, since the concern that prompted me to develop this experience was one of aesthetic nature. I will explain it. When a musician seeks stay on the scale of the piece of music he plays, or when an actor cares for not entering or leaving the scene at the wrong time, they pursue the same thing: to preserve the coherence of the artwork that are helping to build and achieve the desired aesthetic effect. I assumed that I should participate in the related research in the same way. Caring to be consistent with the deep motivations that I assume underpin ethnomathematics.

Therefore, I ask the reader to keep out from the text any attempt to prescribe rules from which someone would settle who does or does not research “rightly” or what is good or bad in Ethnomathematics. Nothing can be more against my will. I'm just sharing some thoughts on an experience, in order to be useful to others in their specific crossroads. They are nothing more than paths, possibilities....

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