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## **The freedom of knowledge: Asphalt's Academic and Children in the Academic Situation**

### **La libertad del conocimiento: Asfalto académico y Niños en Situación Académica**

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#### **Abstract**

The purpose here is to argue about the process of the encounter that occurred on São Paulo's asphalt street – the asphalt children and the asphalt academics. The roots of the main argument are centered in the sociological worldview and in the ethnomathematics posture, which were developed through a process of a PhD research project<sup>2</sup>. The bringing together of marginal and non-marginal positions and voices results in and is an activist social practice. The aim of looking at this encounter is to feed the end of verbalism and the beginning of a situated knowledge that is engaged with our everyday lives, with our very being searching equity on research acts.

**Key-words:** Sociology of Mathematics; Ethnomathematics; Children in Street Situation; Freedom.

#### **Resumen**

El propósito aquí es discutir sobre el proceso del encuentro que tuvo lugar en la calle de asfalto de São Paulo - los hijos de asfalto y los académicos de asfalto. Las raíces del principal argumento se centran en la visión sociológica del mundo y en la postura de las etnomatemáticas, que se desarrollaron a través de un proyecto de investigación de doctorado. El acercamiento de posiciones marginales y no marginales y voces produce y es una práctica social activista. El objetivo de observar este encuentro es alimentar el fin de verbalismo y el comienzo de un conocimiento situado que está acoplada con nuestra vida cotidiana, con nuestro propio ser de búsqueda de equidad en los actos de investigación.

**Palabras clave:** Sociología de matemáticas; Etnomatemáticas; Niños en situación de la calle; Libertad.

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## PREAMBLE

A diverse, abundance, and deep discussion is concentrated around the concept of freedom throughout the history of the human development, as worked by many authors since the antiquity. The core of the arguing proposed on this paper is around this concept and appears rooted in the dismissive attitude towards the “liberal” notion of freedom and in the notion of the “risk society”, reclaimed by the sociologists like Ulrich Beck, which works with the idea of the dominant ideology to sell us the insecurity. According to Žižek (2001), we are living in an era of the “escape from freedom” and in an emergent moment to rethink about the opposition of “formal” and “actual” freedom, which can developed in ourselves some questions about needs and desires, or even, about “free” decisions.

In this sense, the concept of freedom is linked with the concept of the freedom of choice that, in this liberal hegemonic system that we are living, can assume a blind position “rationalized”. Totally against any kind of blindness, the Žižek’s work has shaking our conscience about the actual situation of the encounters (the encounter with the other) under all insecurities that have been sold us.

As mathematician, living in and following the liberal society, I do cannot imagine accepting a dialogue with the children in street situation about his/her knowledge about Pythagorean theorem. As an ethnomathematician, which I understand promotes a holistic view, I really not only accept the dialogue, as I desire it, as I have the conscience that this encounter is crucial to our surviving, to the survival of the own knowledge feeding it its dynamic movement. However, I also have conscience that my choice, reinventing us, is an illusion. Our liberal hegemonic system gives us the possibility to change our posture, to do some choices, but with the condition that these choices do not seriously disturb the balance of the dominant ideology – which maintains the acts of different postures “in the same bag”.

In a radical posture, this paper is focused in the “disturbing” choice invited as a guest of the children of street situation – human beings whose difference does make the difference, to empower the democratic process (that is disappearing in our societies) through the accreditation of their knowledge, working and dialoging with them in the academic culture,

proposing an equal, affective, and learning encounter among different human cultural group – working in the urban boundaries.

## INTRODUCTION

During all the trajectory of the development of a PhD research project, the freedom of knowledge was the main exercise of all actions; the freedom of knowledge was exercised searching to give voice to all the actors inserted in this script through a dialogical process.

*“ ... o diálogo é uma exigência existencial. E, se ele é o encontro em que se solidarizam o refletir e o agir de seus sujeitos endereçados ao mundo a ser transformado e humanizado, não pode reduzir-se a um ato de depositar idéias de um sujeito no outro.”* (Freire, 1970, p79)

It is incontestable to recognize the presence of the innumerable academic works that could support many different ways to conduct this research, creating different scripts. The sectioned context of the academic environment itself could propose directions, through any of its departments of knowledge, to work with the presented data or even with their own conduct followed during this project with the children in street situation, in *loco*. However, the option on this PhD research project was developed under the reality followed in its construction; it imbricates different contexts through different point of views. The way through the complexity of the human relations, walking by different systems where those relations penetrate, was supported to search the freedom of knowledge.

Some necessary parameters to develop this script in the format of an academic research project were followed with the intention of maintaining a dialogical process with the academics with which it will be in contact; as such, many languages with different constructions, such as different interdisciplinary perspectives, can be found during this script, in a sociological read. It reinforced the idea of claiming the freedom of knowledge.

The sociological worldview adopted is present in the format of the script, promoting to the actors the possibility to exist within it and to the readers an encounter with sociology in action. I am not a formal sociologist, with academic degree in sociology, but embedded embedded in the character of the asphalt sociologist, based on Sal Restivo's works, I searched the movement of the sociological worldview to provide the opportunity of placing lived experiences in asphalt conceptual places.

“ (*about the sociological worldview*)... I have tried to express these complexities (*of sociological reality*) and difficulties (*of sociological understanding*) directly and with a view to recreating in the text (*The Sociological Worldview*) the same sorts of challenges we face in the world as we go about trying to make sociological sense of our experience.” (Restivo, 1991, p04)

To make a sociological sense of lived mathematical experiences was the central goal during “Children in street situation’s Culture and Concept of Space” Project; this movement had a deep influence during the whole development of this research. After the inclusion of the mathematical knowledge in the jurisdiction of sociology, conquered by Émile Durkheim and Oswald Spengler’s works, the sociology of mathematics can argue the discontinuity of the human relations existent in the urban non-space, as it is within this research.

The fact that the sociology of mathematics involves two academic environments (traditionally recognized as different and, before Durkheim and Spengler’s works, as antagonists) itself, promotes a change in the position of an observer capable of exercising the observation with more sets of eyes. With this, it also promotes more freedom for the observed knowledges as well as for the involved knowledges in the action of observation.

### **AN ETHNOMATHEMATICS POSTURE**

The ethnomathematics posture guaranteed the application of a study of the social life of the mathematics founded in the cultural roots existent in the encounter of the urban cultural groups, whether they are different or not. If this posture was not accepted, the risk to have a predominant view over the mathematical knowledges in the urban cultural groups would prevail. In the case of mathematical knowledges, the actual predominance is in the academics knowledges, and the children’s knowledges in question could be stifled and made invisible. This posture claim by dignity,

It is widely recognized that all the issues affecting society nowadays are universal, and it is common to blame, not without cause, the technological, industrial, military, economic and political complexes as responsible for the growing crises threatening humanity. Survival with dignity is the most universal problem facing mankind. (D’Ambrosio, 2007, p25)

One movement could be considering on the way of the dignity – the way of the interrelations looking to the ethical and power positions. The representations of ourselves out of us and our representation to and in others are understood as a cultural model, a political representation, or still as a social artefact. Both cases in which the children in

street situation developed their spatial construction in this PhD research project, they were embedded by their social construction, imbricated in all the complexities of their environment as well as in the multiplicity of the systems by which they are directly or indirectly surrounded.

If we did not know about the children in street situation's social construction some cases could sound very aggressive or without importance. However, knowing their social construction, it was possible to make a sociological analysis of their mathematical knowledges; looking to the intrinsic models, representation, and artefacts in their social life, as was constructed on this research.

### **THE FREEDOM OF KNOWLEDGE AND THE RESPONSIBILITY OF SAPIENCE: AN EXERCISE OF EQUITY BETWEEN TO KNOW AND THE PRACTICES OF KNOWLEDGE**

The possibility to be with both cultural groups, the Children in Street Situation and the Academy, allowed bringing different points of view to the same urban images and actions. From the confrontations of these differences appears the necessity of searching for material and intellectual artefacts to develop a symbiosis movement between them, to promote a dialogical process between them.

To observe that the space concept of the children in street situation's culture was different from the space paradigm of the urban population was the first step toward trying to find ways to understand their concept better. A paradigm controls the logic of the discourse; it is a way to control the logic and the semantics at the same time. It is a relationship that includes and excludes persons, ideas, artefacts, and values (Morin, 2002).

In some academic presentations, which this research brought the discussion about the children in street situation' space concept, it was normal to hear the criticism that "it is a social problem, not an academic problem", to the point of denying the "merit" of this research being actually discussed in the academic environment.

The actual position of the academic environment has been rethought by some "voices"; many of them are present in this PhD research project. Ubiratan D'Ambrosio (1999), one of those voices, is explicit when assuming an opposite direction to the etymological significance of academy; the word academy means "distant of people".

“... queremos ir na direção em que o povo está, nas praças, nas ruas, campos, construções, nos espaços abertos para o confronto, para a busca compartilhada do conhecimento.” (D’Ambrosio, 1999, pg70)

Sal Restivo insists, in his works, to affirm that the hegemonic system, in which Occidental societies are engaged these days, has supported the development of self-aware mathematicians working in an academic autonomous system to maintain the “bourgeois mathematics”. In that sense, his academic voice has discussed the necessity to act in the changing of the material bases and social structure of mathematics based in the changing of the social, economic, and political conditions of our lives.

“A radical change in the nature of our social relationships will be reflected in radical changes in how we organize to do mathematics – and these changes will in turn affect how we think about and the content of our mathematics.” (Restivo, 1983, pg 266)

Even though some voices claim the urgent movement inside the academic environment – not to let the science be the only requisite of the academic environment – in the practical sense, when the academic knowledges are confronted with the knowledges not recognized by the own academic environment as scientific, they are excluded from any academic act. In that sense, some questions are maintained such as: Why does the academic environment denies the knowledge from non-academic human beings? Why is the asphalt’ science is not Science?

This paper is not claiming a positivist perspective to destroy the value of science, as explained in the introduction of this research. It is only affirming that to deny the others, denying their knowledges, is on the height of the unilateral rationalism. From academic practices, exposing mathematical knowledges of the children in street situation, it was observed how intolerable it is for some academics to listen, interact, or even know about some knowledges not recognized by them as directly important - for example, developing chemical or nuclear weapons, strategies that funnel the human beings to the servitude of the capital, or still immaculate methods that support their own academic environment with power, maintaining it a closed system.

The movement of intolerance is a liberal characteristic for human beings; it is not only in academic institutions. The existence of the urban non-space is an example of this intolerance, which constitutes in part this movement. However, in a dialectical way, Slavoj

Žižek (2006) affirms that tolerance is the hegemonic ideology of global capitalism. In that sense, the argument is that the academy, as a structured social body where each part occupies its place, to recognize, validate and make compatible a part of the “partless” – the invisible ones – puts in a deep conflict the functional order of the relations inside academic environments. The recognizing, validating, and making compatible the mathematical knowledge of the children in street situation with the academic mathematical knowledges, as part of academic society, is an elementary gesture of “politization”. In an opposite way, to recognize, validate, and make compatible only the traditional academic knowledges characterizes the process of “depolitization”, feeding the marginalized conditions, increasing the urban non-spaces, and leaving the mathematical knowledges of the children in street situation invisible, as they are.

The act that the asphalt academic – scribbler of this research, claimed and claims is the openness of the academic system, which was exercised, in that case, through the work with the mathematical knowledge of the children in street situation, their contexts, and with the mixture of different voices around the same subjects under certain intolerance by the scribbler. The intolerance came in the sense to claim the own condition as an academic person (inserted in the bourgeois position), and the absurd silence around the knowledges of these children. The practices of living this intolerance taught me, as a scribbler, not to be tolerant to any closed system but to be “smart”, according to Capoeirinha (2000), with the attitude that treats each local culture as colonization processes.

”Nunca ninguém quis sabe o que a gente sabe, como agente faz as coisas. Sempre vem gente pra sabe como a gente está, porquê a gente faz. Ah! E porquê a gente está na rua!... Essa coisa de saber como a gente faz, de compreendê como a gente faz e aprendê como você faz deixou agente ser mais irmão e mais esperto. Até hoje temo vontade de sabê mais e mais como a gente faz (a gente quem?)... Nós tudo...(Quem?)... Eu, você, a Irmã Ana Célia, o cara da esquina, minha mãe.”  
(Antonio, 2002)

### **A TOPOLOGY OF VISIBILITY: CULTURAL CONTEXT, AUTHONOMY, AND STRATEGIES OF SURVIVAL.**

The cultural context in which the children in street situation develop their process of identity construction, stuffed with history from many generations, has mutant components just as the urban city in which they coexist. These components, as the places granted by the

larger society throughout their development or their self-assumed condition of invisible humans, are topological forms that have their characteristics modified but have no modification in its concepts; in that case, respectively, the limited spaces and the invisible condition are present in the three level of spaces worked in this research: Corp, Other, and EcoSpace. The continuity of these concepts, through their generations, guarantees the cultural model.

The autonomy of the children in street situation within the division of labour is linked with the simplicity of ethics and power relations developed culturally in this urban group. The simplicity coexistent with the net of complexity that involves them in a symbiotic process, mutually feeds them and gives transparency to the relations of their acts. They have knowledge about their social organization – their labour. In that sense, the simplicity of ethics and power relations guarantees their autonomy within the division of labour leading to their autonomous acts in Corp, Other, and EcoSpace as political representations.

Focusing on the strategies of survival of the children in street situation some intellectual and material artefacts are revealed. By one hand, the firmness with which these children do not represent themselves by means of drawing, dolls of bread (which were prepared/baked during one of the activities developed within this research), or any other non- verbal artifact (which they fail to do on their own accord) shows one of their intellectual artefacts socially constructed in their strategies of survival in the OtherSpace. By the other hand, the cones, symmetrically lined up in a diagonal line, funnelling the way of the cars that transited at the *Avenida da Liberdade*, shows one of their material artefacts socially constructed in their strategies of survival in the OtherSpace. In that sense, the strategies of survival are social artefacts that these children developed to maintain their urban group.

### **THE RIGHT TO EXIST**

From the fourteen children in street situation that had diary voices in this research, fourteen of them quit sniffing “shoemaker glue” during the two years of our project, no longer being tolerant with the perpetuation of the hegemonic system that sees them as consumers of shoemaker glue; it was an act. This is not the end! A radical change came; they have visibility to themselves and to some others through their knowledges. Now, reading the end



of this paper, they have visibility to you; it was another act. Once and again, time after time, this is not the end! These are some of the first steps towards the outsider; even if this outsider is inside us, in our multiple identities constructed by our social relations.

The direction to the outsider through the dialogical action and the understanding of the others, from the experiences of life, founded my incessant search for the social construction of knowledge; in knowledge lies the material substratum of the human society. The challenge in this direction is not to be a prisoner of a system, submitted to the anatomy and the perspective of rules. The knowledges of the children in street situation are of an apparent simplicity, not having a formal skeleton or, sometimes, their concepts are correlated to academic knowledge recognized by the larger society. However, this false simplicity is impregnated within an urban complex system where each one of us – the urban human beings – can recognize ourselves, as was described with details in this research through their complex space concept; totally linked with their (and our) survival.

The right of the children in street situation to exist, through their knowledges, includes non-omissions such as by public policies or academic institutions, excluding then any possibility to the simplistic rhetoric of “children’s right” to the children that are in street situation. As it was argued in this research, the children in street situation have different contexts than that of the children inserted in their biological or juridical intentional families. In this context, the “children’s rights”, as fixed and closed laws for one determined group of children, contributes to the chronic omission of the right that the children in street situation have of being visible, and this social fact is supported by the chronic omission of an academic environment that not recognizing, validating, and make compatible their knowledges.

Without omitting or denying... a new worldview was developed in these fourteen children and in me, after our experiences in this research: we have realized that in the visible and sensible/tactile discontinuity of the urban human relations, present on the urban non-spaces, is supported by the continuity of these relations. The meeting between the children in the street situation and the academics promoted the continuity of the urban human relations present on the urban non-spaces by the asphalt knowledge, which was possible through the

freedom of knowledge, exercised by both these urban cultural groups: the asphalt's academics and the children in academic situation.

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