

CHILDREN, SPACE, AND THE URBAN STREET: AN ETHNOMATHEMATICS POSTURE

Dissertation presented for the PhD Degree in Education Science – Curricular Theory and Science Teaching, by *Universidade Nova de Lisboa, Faculdade de Ciências e Tecnologia*.
The present dissertation was prepared under the auspices of the *III Quadro Comunitário de Apoio*, existing between European Social Fund and the national fund of *MCTES*, in the *Fundação para a Ciência e a Tecnologia*.

LISBON

2008

Mônica Maria Borges Mesquita

Some exercises observed during my life in Portugal...

The promotion of social interactions focusing the study of complexity that involves all life coexistent on Earth.

The listening of the voices that claim the emergent position of diversity, focusing the recognition and validation of different knowledges.

The struggle to have a space, being a woman in the current Western society.

The unconditional friendship.

The presence overcoming the physical absence.

Being Teresa Ambrósio.

“... na exigência sempre actual de dignificação e defesa do humano, nenhum plano de acção de aprendizagem ao longo da vida, poderá prescindir, qualquer que seja a sua uegência, da indispensabilidade de investigação e de avaliação contínua, crítica, reflexiva tendo como referência máxima o Homem na sua globalidade – fim e sujeito de toda a aprendizagem. Creio que o diálogo entre a comunidade de investigação, os técnicos, os políticos e os administradores dos sistemas é hoje mais que nunca imprescindível. Os quadros da preparação das políticas educativas em que nos baseávamos nos anos 60, 70 e 80, já não são adequados ao conhecimento compreensivo que temos hoje desta actividade social, que é a acção educativa e de aprendizagem ao longo da vida.” (Ambrósio, 2001 p169)

To Teresa with love

Chapter 3: Some mathematical “images & actions”	88
 The Sociology of Mathematics	92
 Mathematics and Space	97
 A Conception of Mathematics	97
 A Conception of Space	103
 Space in the material substratum of societies	105
 Levels of space	106
 Ethnomathematics	112

Part II

THE STRUCTURE AND DYNAMICS OF LEARNING: MULTIPLE, SYSTEMIC, AND COMPLEX INTERDEPENDENCIES

Chapter 4: São Paulo	118
 The Geographical and Historical Contexts	122
 <i>Terra da Garza</i>	122

To begin with ethnography is to begin in synchronism with the actions and images of this research.

"You learn ethnography through practices, and perhaps a little bit of apprenticeship. There are guidelines but few rules. More or less anything goes."
(Buraway, 2000, p25)

I grew up in an urban area, in the city centre of São Paulo – a megalopolis of Brazil, exchanging energy with certain modes of life – urban modes. The people that live in the street have their own mode of life and this mode impacted my own mode of life in many powerful ways. In the life of the street, a newspaper becomes a blanket, a button is changed into a weapon, or a piece of cardboard becomes a wall. These are some of the actions and images that showed me the connection between the production of knowledge and the rupture of the amorphous veil that covered the city of São Paulo at the end of 60s. The exercise of ethnography comes as a tool to know and describe knowledges existent in this mode of life, intrinsic to the urban space.

The urban space increasingly becomes a space managed by policies of beautification and controlled socialization; enclosed and watched spaces. Neoliberal is an example of the policy of beautification and controlled socialization, an example of the policy of " unique thought", and the new world order after the 70s. In a country like Brazil, tormented by a history of colonization and military dictatorship, the new world order has created gaps separating cultural groups within the urban population and making some of them invisible.

In that sense, this ethnography (*ἔθνος* *ethnos* = people and *γράφειν* *graphein* = writing), as a tool to know and describe processes of urban social human phenomena, has as its central focus some invisible human beings –children in street situation. The

ethnography was not a choice; it was the real movement around this research, which allowed the voices of all participants to appear constructing this research. This research began as part of a project of life and was “walking” as part of projects of lives. The social phenomena described in this research will always be linked with the mathematical knowledge of these children, more specifically, their concept of space. However, these knowledges, embedded in ethnographical images and actions, will be approached through the systems in which they are intrinsically linked, focusing on some of the contexts permeated by them.

The voices present here are in constant interaction with my voice, in a dialogical process, constructing a work in which I understand that every voice has the same energy, has the same rights, has the same values. These voices draw attention to the myth of the visibility that the large society has given to every “thing” that is in a marginal position. The myth is part of the neoliberal movement and it keeps even progressive governments from acting to unveil the myth and acting on behalf of the marginal groups and classes

The large society, arrogant in its material and intellectual predominance, fails to act legally or otherwise on behalf of marginal peoples. The welfare state is designed to maintain the new world order, watering the hegemonic system in which we are living, and keeping the marginal peoples invisible – unreal, inactive, docile, and as poor human beings. The tools of the new ethnography and the older tradition of action anthropology reveal that the urban population is also marginalized, acting and reacting in the process of urban social construction.

The first images and actions of Chapter 1 come to present problems and perspectives realized after and during this research; they come from my experiences in the urban space. At first, I invite the reader

this research and idealizer of a work where this research is inserted, and is founded in different modes of urban life and its social relations in urban non-space.

I am a human being, I am a social being, I am a product of the social and I produce the social, my mind and my actions are social and therefore a reflection of my social ecology in the systemic and complex nets existent where I am.

Where am I in this research? I can say that my social ecology was at the middle of an urban area. I was born in São Paulo, the third largest city of Earth – a megalopolis. To be born in an urban area, at the period that I was born – 1965, where the migration to this megalopolis was reaching its maximum, is to be born and raised with the question of poverty as one of the foundations of the urban social construction.

In the occidental mentality, that actually left its geographical position and could be found all around the world, human beings are recognized by their properties. The properties range from material things to intellectual things. The quantity of properties has a great value; the actual values are in what we have and not in what we are, or I can say that we are what we have. The quantity of properties is supported by the recognition and the validation of certain knowledges or by capital. It is these knowledges and capital that sustain the hegemonic systems that we know as urban areas. Knowledge and capital appear intrinsically linked by the value of intellectual and material properties.

The recognition and validation of certain knowledges, defined as correct and necessary, is determined by the necessity of maintaining the hegemony of the current system in urban areas occidentally organized. However, to recognize different knowledges, not recognized as correct and necessary for the urban

population, is a normal practice of the major society, fortifying the myth of “partners” as much in material as in intellectual properties. To know the knowledge of the “others” is a tool of the post-modern movement to promote corporification, letting the “others” become and be invisibles. These others are not responsible for their acts, their strategies are unusable, and they are “accepted” in a process of multicultural racism¹. The real validation of these different recognized knowledges has not been practiced; it has only been a matter of merchandizing human knowledges.

The central point in this research is to question why the mathematical knowledge of the children in street situation’s culture is not recognized and validated by the urban population? From this question, we are led to realize that the recognition and the validation of the children in street situation’s knowledge could be a step toward eliminating the idea that they are victims. We can come to see them as a real cultural group, as active human beings, and not as fragile, docile, or aggressive children.

The urban marginal space, like all marginal spaces and everything that they represent, is actually treated as “good” object and “bad” object. On the one hand, the “good” object of the marginal space represents a character of being passive, suffering, being a poor object. On the other hand, the “bad” object of the marginal space represents a character of being aggressive, being selfish in its ethics and power relations. Both sides of the urban marginal space promote the surplus value of the urban population; they are ways of manipulating capital through the appropriate knowledge of each

¹ Slavoj Žižek¹ identifies multicultural racism, as a post-modernist movement. I will discuss this in the next chapter.

allows the recognition and validation of mathematical knowledges of these children by different urban cultural groups.

WHY IS THIS IMPORTANT?

While working in two different urban cultural groups, it is necessary to consider why the primary question of "space", and all resonant effects that exist around it, is important to both groups and in the wider society.

Through the voices of the main actors of this research, we can listen to an invisible culture:

"Saca só Mônica, se tu canta pros home que nós sabemo o mesmo que eles, mas de outro jeito, eles pode enxerga agente e dexá agente sê o que somos, num é?"
(Priscila, 2000)

"Sei não Priscila.... Eles pode sumi cu'agente pra eles sê os bom!" (Capoeirinha, 2000)

"Tu acha brother, que eles vão fica preocupado cu'nóis? Tá noiado!" (Camila, 2001)

"Dô a maió força pra tu, Mônica. Quem sabe nós ganhamos cor... quem sabe eles começam querer saber o que queremos invéz de fazê agente querer o que eles querem!" (Antonio, 2001)

As the children in street situation argued above, one point of this research is to work at the intersection of the urban spaces that exist between different urban cultures – the non-space. My research is about arguing, sharing, validating, and knowing well their mathematical knowledges with the objective of giving more visibility to this urban cultural group. In that sense, the concept of space question is fundamental to the work of revealing the potentiality and limitations of these children and of the urban population that they live within. It is interesting that the dialogue proposed in this

“Ainda acho que vai sobra prá nós, sempre sobra! Mas não mando sozinho não... nessa somo o conjunto todo, fomo até agora e seremo até o fim. E também é bom que eles... (eles quem Capinha?) ... os home claro! ... eles saca que somo bom mesmo no que fazemo! Será que eles sabe o que faz? ... (Acho que sim! Mas o que tá rolando na sua cabeça pra pensa isso?). Tô pensanso se eles conhece o espaço deles, se eles ficam junto conversando o que nois som pra eles igual tamo fazendo aqui. (silêncio).” (Capoeirinha, 2001)

lil... tá noiado Bro? Claro que não! Nois, se somo alguma coisa, somo mesmo é fantasma... dos mal, dos fudido!” (Camila 2001)

In the voices of the team, even being fragile beings in an open space, arguing, sharing, validating, and knowing well their different knowledges relationship to the “large society”, it is necessary to exchange energy, to give life to this research, to let the voices come and be.

I have listened to the voices of these children in street situation, and this has led me to the concept of space question, and its echo: the value of their product. The social activities developed by the children in street situation during this research could be observed and discussed by the children themselves, from their historical urban position to their urban social acts.

From the academic point of view the question of the concept of space is approached in a large field of work in different areas. The relevance of this question in this research, looking through the academic lenses, is located in two facts: to bring new knowledge, to Mathematics Education, Sociology of Mathematics, and Ethnomathematics; and to explore the roots of these very same academic knowledges.

The academic works have not presented researches looking over the children in street situations’ space concept. In some cases, researchers have approached this question with other cultural

remind us of the human focus claimed by Marx, Durkheim, Restivo, and D'Ambrosio; he locates the origins of social life in human capacities and potentialities, which are able to develop through our social construction, our interaction with the others of any species.

Still in the academic scenery, but in all parts of the script as design costumes to compose a scene, the constant and deep interaction with Sal Restivo and Ubiratan D'Ambrosio and their works contributed to the overlapping of this scenery through our commitment with the same desires – the desire of knowing, recognizing, validating, making compatible the knowledges of the human beings, the desire to be in the boundaries, exchanging energy. Sal Restivo and Ubiratan D'Ambrosio's voices are the academic support that bring into my script mathematical language without mysticism, as a product of human being, socially constructed by different cultures in different times and spaces. The traditional and Platonic paradigm of mathematics is broken through their social speech about mathematics, making visible the mathematical knowledge of the children in street situation's culture.

Intensive desires can be found in the asphalt scenery through different voices. Many voices are in this scenery, including the voices of the children in street situation. However, the urban street is an open urban place where the plurality of these voices, excludes the voices of these children, sharing a "single thought" – the children in street situation are victims and they need help; distant help, as I will discuss during this research. However, it is necessary to note that in the actual political moment in Brazil, the necessity of letting the children in street situation be defined as victims is a socio-political focus.

In the middle of these voices situated in the asphalt scenery, claiming the character of victims to the children in street situation,

CHAPTER 2

SOME SOCIOLOGICAL

“IMAGES AND ACTION”

For Durkheim, human beings are social and dual. The desires of their biology are satiable and limited but the desires engendered by society are variable and potentially unlimited. The relationship between the *Homo duplex* and society is not that of a social template transfixing a passive imprint. Rather, the *Homo duplex* stands back from the social order and assesses the justice of the existing division of labour and rewards.

DURKHEIM AND THE DIVISION OF LABOUR

Durkheim (1893; 2002-1) acknowledges that Comte was the first to have recognized, in the division of labour, something other than a purely economic phenomenon.

"De tous les sociologues, à notre connaissance, il est le premier qui ait signalé dans la division du travail autre chose qu'un phénomène purement économique." (Durkheim, 1893; 2002_1, p66)

According to Comte (1853; 2002), the division of labour is one of the factors that links man to his fellows. To this author there are three factors to promote this link: language, religion and division of labour. These three factors, according to him, are the three categories of social statics. Social statics is the study of the conditions and pre-conditions of social order¹⁰. Social statics and social dynamics are the two dimensions of social action in society and of the sociological analysis of society.

The division of labour, according to Comte, creates social solidarity by awakening in each individual a sense of his dependence on others, but also appears to generate new social divisions between classes and between the private and public domains.

¹⁰ The social order, according to Comte, is the correlation or interconnection among the elements of society.

Comte (1853/2002) sees the division of labour as a powerful impulse of social evolution and social integration, not a spontaneous product of this division. An independent, governmental organ (i.e. the state as informed by the positive philosophy) is necessary to realize and maintain social unity, or social solidarity.

Durkheim (1893; 2002) supports Comte's argument that solidarity already presupposes the spontaneous existence of society but rejects the efficacy of government regulation of the economy; for him, the problems afflicting economic institutions arise from a multiplicity of particular circumstances of which only those closest to those problems have any knowledge. This author also rejects Comte's premise that, as with all organisms, the unity of society was to be obtained by the "spontaneous consensus of parts".

According to Durkheim (1893; 2002), the division of labour is another specific dimension by which we can explain the existence of kinds and types of social organization in a given society. Durkheim's vision of the division of labour is of a naturally occurring reality that becomes a force for social cohesion and solidarity, binding individuals in society more closely together and possibly interfering with individuality as a result.

Durkheim, in *De la division du travail social*, explains both the nature of society as well as the meaning of, development of and place of individuality within that structure. He tries to show that societies are real in the sense of having properties similar to material objects. The word "tissue" brings the idea of substance linking people together:

"... de même qu'une colonie animale dont tous les membres sont en continuité de tissu constitue un individu, tout agrégat d'individus, qui sont en contact continu, forme une société. La division du travail ne peut donc

cette loi... Adam Smith est le premier qui ait essayé d'en faire la théorie.
"(Durkheim 1983; 2002_1, p47)

According to Smith (1776; 2002), individuals are held together by the economic advantages of the division of labour. This association appears because, by each playing different parts in the production of economic goods, individuals produce more. Smith imagines individuals having a natural propensity to exchange things with one another.

In *De la division du travail social*, Durkheim agrees with Smith that the division of labour comes about by a natural process – it is not a product of human design - but he does not agree that the natural process is the hidden hand of the market guiding the selfish desires of individuals. Underneath the self-seeking of individual ends, Durkheim sees a pre-existing unity of purpose, a bonding of the individuals together into the social organism that pre-dates the differentiation.

DURKHEIM AND SOLIDARITY

Durkheim views society as being based in two types of solidarity: mechanical and organic. Mechanical solidarity is the basic solidarity that makes society an organism rather than just a pile of parts; and organic solidarity is the social glue – an invisible tissue linking the members – that comes from the division of labour.

"Deux sortes de solidarité positive, l'une qui dérive des similitudes, l'autre de la division du travail. Solidarité mécanique, solidarité organique. La première varie en raison inverse, la seconde en raison directe de la personnalité individuelle. A celle-là correspond le droit répressif, à celle-ci le droit coopératif." (Durkheim, 1893; 2002, p6).

As previously argued, the division of labour in society is a separation of its parts and there is a paradox in an organic

solidarity. Durkheim (1893; 2002) argues it is a strengthening of the bond between the parts. It is with this paradox that *De la division du travail social* started.

To understand how the individual, while becoming more autonomous, depends more upon society and how the individual can be at once more individual and more social is to understand the contradiction, because they develop in parallel fashion.

Durkheim (1893; 2002) argues that the nature of solidarity is being changed as society becomes more divided. Individuality and the division of labour are, in fact, the result of society's need for a new form of solidarity – organic solidarity.

At the same time, he continues to argue that the division of labour within modern society is much broader than a purely economic issue.

"... on en peut observer l'influence croissante dans les régions les plus différentes de la société. Les fonctions politiques, administratives, judiciaires, se spécialisent de plus en plus. Il en est de même des fonctions artistiques et scientifiques. Nous sommes loin du temps où la philosophie était la science unique ; elle s'est fragmentée en une multitude de disciplines spéciales dont chacune a son objet, sa méthode, son esprit." (Durkheim 1893; 2002_1, p48)

This differentiation of functions is a solidifying agent. That is to say, society is becoming more and more differentiated – people are specialising more and more – but as people become more different from one another people grow closer together – in an organic sense - rather than further apart.

According to Durkheim, common beliefs and practices – which are the characteristic of mechanical solidarity – are therefore the fundamental glue of all societies.

" L'ensemble des croyances et des sentiments communs à la moyenne des membres d'une même société forme un système déterminé qui a sa vie propre; on peut l'appeler *la conscience collective ou commune*... elle est indépendante des conditions particulières où les individus se trouvent placés; ils passent, et elle reste ... elle ne change pas à chaque génération, mais elle relie au contraire les unes aux autres les générations successives. Elle est donc tout autre chose que les consciences particulières, quoiqu'elle ne soit réalisée que chez les individus."
(Durkheim 1893; 2002_1, p81)

Durkheim defines the concept of the *conscience collective* as:

"... l'ensemble des similitudes sociales, sans préjuger la catégorie par laquelle ce système de phénomènes doit être défini. " (Durkheim, 1983; 2002_1, p74)

Organic solidarity develops out of mechanical solidarity. In this sense, the society makes us individuals – with the development of organic solidarity – rather than individuals making society – as state of nature theories suggest.

"C'est donc une loi de l'histoire que la solidarité mécanique, qui d'abord est seule ou à peu près, perde progressivement du terrain, et que la solidarité organique devienne peu à peu prépondérante. Mais quand la manière dont les hommes sont solidaires se modifie, la structure des sociétés ne peut pas ne pas changer. La forme d'un corps se transforme nécessairement quand les affinités moléculaires ne sont plus les mêmes. Par conséquent, si la proposition précédente est exacte, il doit y avoir deux types sociaux qui correspondent à ces deux sortes de solidarités."
(Durkheim 1893; 2002_1, p161)

Durkheim argues that societies are not so much the product of individuals as individuals are the product of society. In mechanical societies, human beings were not individualistic in the way they are in organic societies. The individual has evolved in the course of history. This has not happened because society has fallen apart, but because individualism provides a new and powerful way of holding

Durkheim distinguishes social facts, which he sometimes described as "states of the *conscience collective*", from the forms these states assumed when manifested in the private, *conscience individuel*. This distinction is most linear in cases like those treated in *De la division du travail social*; for example: customs, moral and legal rules, religious beliefs, etc. In these cases, existences that are independent of the various actions they determine are clear. It is considerably less obvious, however, where the social fact in question is among those more elusive currents that are reflected in lower or higher birth rates, migration, suicide rates, or emergent social and cultural groups.

According to Durkheim, the cause of social facts is:

"La cause déterminante d'un fait social doit être cherchée parmi les faits sociaux antécédents, et non parmi les états de la conscience individuelle. "
(Durkheim, 1894; 2002, p64)

However, on the other hand, Durkheim affirms that everything that precedes applies to the determination of the function, as well as of the cause. The function of a social fact can only be social, i.e. it consists in the production of the effects that are socially useful. Certainly, it can be done and it creates a result that, by effect, also serves the individual.

La fonction d'un fait social doit toujours être recherchée dans le rapport qu'il soutient avec quelque fin sociale. (Durkheim, 1894; 2002, p65).

Durkheim does not deny that such individual manifestations are in some sense social for they are indeed manifestations of states of *conscience collective*; but this is precisely because they also depend, in part, on the psychological and biological constitution of the individual, as well as the particular circumstances. Durkheim reserves for them the term *socio-psychique* suggesting that they

might remain of interest to the sociologist without constituting the immediate subject matter of sociology.

Les phénomènes psychiques ne peuvent avoir de conséquences sociales que quand ils sont si intimement unis à des phénomènes sociaux que l'action des uns et des autres est nécessairement confondue. C'est le cas de certains faits *socio-psychiques*. Ainsi, un fonctionnaire est une force sociale, mais c'est en même temps un individu. Il en résulte qu'il peut se servir de l'énergie sociale qu'il détient, dans un sens déterminé par sa nature individuelle, et, par là, il peut avoir une influence sur la constitution de la société. ... Mais on voit que ces cas sont dus à des accidents individuels et, par suite, ne sauraient affecter les traits constitutifs de l'espèce sociale qui, seule, est objet de science. La restriction au principe énoncé plus haut n'est donc pas de grande importance pour le sociologue (Durkheim, 1894; 2002, p65).

The external coercive power of social facts is derived from their being held in common by most of the individual members of a society; and that, in this sense, the characteristics of the whole are the product of the characteristics of the parts. The obligatory, coercive nature of social facts, the author argues, is repeatedly manifested in individuals because it is imposed upon them, particularly through education; the parts are thus derived from the whole rather than the whole from the parts.

Ce qui constitue cette société, c'est l'existence d'un certain nombre de croyances et de pratiques communes à tous les fidèles, traditionnelles et, par suite, obligatoires (Durkheim, 1897; 2002, p38).

Invoking a distinction introduced in *De la division du travail social*, Durkheim insisted that social facts were not simply limited to ways of functioning (acting, thinking, feeling, etc.), but also extended to ways of being (the number, nature, and relation of the parts of a society, the size and geographical distribution of its population, the nature and extent of its communication networks, etc.).

Les faits sociaux ne sont pas le simple développement des faits psychiques, mais les seconds ne sont en grande partie que le prolongement des premiers à l'intérieur des consciences (Durkheim, 1893; 2002_2, p101).

The author argues that the social facts should be treated as things¹¹ and proposes a sociological method to do so; through the main rule.

Règle fondamentale : Traiter les faits sociaux comme des choses. ... Les faits sociaux doivent être traités comme des choses parce qu'ils sont les données immédiates de la science, tandis que les idées, dont ils sont censés être le développement, ne sont pas directement données (Durkheim, 1984; 2002, p02).

DURKHEIM AND SOCIOLOGICAL METHOD

In *The Rules of Sociological Method* Durkheim shows that sociology is the study of society and that society has real substance. Social reality is as real as a physical object; it is not just an idea in our head.

"La sociologie n'est donc l'annexe d'aucune autre science ; elle est elle-même une science distincte et autonome, et le sentiment de ce qu'a de spécial la réalité sociale est même tellement nécessaire au sociologue que, seule, une culture spécialement sociologique peut le préparer à l'intelligence des faits sociaux." (Durkheim, 1984; 2002, p84)

In this work, Durkheim affirms a need for a distinct science of society – sociology. Durkheim's main argument is that even the subject is founded in the social orientation¹²; there is "not enough" from the science of psychology and biology.

¹¹ A thing, for Durkheim, is something that is real. It can hit you. Try walking into a lamp post as if it was not there, and you will discover what a thing is.

¹² This refers to the link and the movement between the psycho-bio-social individual.

In *De la division du travail social*, Durkheim argues that "sociology" is a science, which, like biology, studies the phenomena of the natural world and, like psychology, studies human actions, thoughts, and feelings. One year later, Durkheim conceived of sociology as the scientific study of a reality *sui generis*, a clearly defined group of phenomena different from those studied by all other sciences, biology and psychology included. It is for these phenomena that Durkheim reserves the term social facts in *The Rules of Sociological Method*:

... un ordre de faits qui présentent des caractères très spéciaux : ils consistent en des manières d'agir, de penser et de sentir, extérieures à l'individu, et qui sont douées d'un pouvoir de coercition en vertu duquel ils s'imposent à lui (Durkheim, 1894; 2002, p19).

Since these facts consist of actions, thoughts, and feelings, they cannot be confused with biological phenomena; but neither are they the province of psychology, for they exist outside the individual conscience. According to Durkheim (1894; 2002), they constitute a new species and they must be exclusively assigned the term 'social'. This is appropriate, because it is clear that the individual is not their substratum: they are grounded in society, either political society in its entirety or one of the partial groups that it includes. Moreover, it is for these 'facts' alone that the term is fitting, for the word 'social' has the sole meaning of designating those phenomena which fall into none of the categories of facts already constituted and labelled.

Nous arrivons donc à nous représenter, d'une manière précise, le domaine de la sociologie. Il ne comprend qu'un groupe déterminé de phénomènes. Un fait social se reconnaît au pouvoir de coercition externe qu'il exerce ou est susceptible d'exercer sur les individus ; et la présence de ce pouvoir se reconnaît à son tour soit à l'existence de quelque sanction déterminée, soit à la résistance que le fait oppose à toute entreprise individuelle qui tend à lui faire violence." (Durkheim 1894; 2002, p21).

In Chapter V of *The Rules of Sociological Method*, Durkheim describes some rules for the explanation of social facts and affirms that:

... la contrainte la caractéristique de tout fait sociale. Seulement, cette contrainte ne résulte pas d'une machinerie plus ou moins savante, destinée à masquer aux hommes les pièges dans lesquels ils se sont pris eux-mêmes. Elle est simplement due à ce que l'individu se trouve en présence d'une force qui le domine et devant laquelle il s'incline ; mais cette force est naturelle. Elle ne dérive pas d'un arrangement conventionnel que la volonté humaine a surajouté de toutes pièces au réel ; elle sort des entrailles mêmes de la réalité ; elle est le produit nécessaire de causes données." (Durkheim, 1894; 2002, p73)

It is not necessary, therefore, to resort to deception to induce the individual to submit to it absolutely of his own free will. In this chapter, Durkheim argues that it is sufficient to make him aware of his natural state of dependence and inferiority. He also argues that through religion the individual represents this state to himself via the senses or symbolically; through science the individual arrives at an adequate and precise notion of it.

According to Durkheim, the superiority that society has over the individual is not merely physical, but also intellectual and moral; it need fear no critical examination, provided this is fairly undertaken. He suggests that reflection – which causes humans to understand how much richer or more complex and permanent the social being is than the individual being – can reveal the reasons that make comprehensible the subordination which is required of him and the feelings of attachment and respect which logic – the rules that the mind should follow in order to arrive at truth – has implanted within him.

DURKHEIM AND LOGIC

In the conclusions of *Les Formes Élémentaires de la Vie Religieuse* (1912; 2002_3; 1989; 1995) Durkheim showed that logical thought has social origins and its basic material is made of concepts – abstract things. Therefore, Durkheim made a sociological analysis of logic that gives tools for making a sociological analysis of abstract things.

He suggests that to search for how the society could have played a role in the development of logical thought is the same thing as to search for how it can have taken part in the formation of *concepts*.

Many concepts have individual objects and Durkheim develops this argument when he affirms:

... dans toute espèce de religion, les dieux sont des individualités distinctes les unes des autres ; pourtant, ils sont conçus, non perçus. Chaque peuple se représente d'une certaine façon, variable suivant les temps, ses héros historiques ou légendaires ; ces représentations sont conceptuelles. Enfin, chacun de nous se fait une certaine notion des individus avec lesquels il est en rapport, de leur caractère, de leur physionomie, des traits distinctifs de leur tempérament physique et moral : ces notions sont de véritables concepts. " (Durkheim, 1912; 2002_3 / 1989 / 1995, p408, p511, p434)

Durkheim recognizes that these concepts are, generally, rather crudely formed and raises questions about whether scientific concepts are perfectly adequate to describe their objects. In this regard, the author affirms that our 'non-scientific' concepts and scientific concepts differ only in degree.

He suggests, therefore, that the concept, scientific or not, must be defined by other traits in the tangible representations of any order – sensations, perceptions, or images.

... Les représentations sensibles sont dans un flux perpétuel; elles se poussent les unes les autres comme les flots d'un fleuve et, même pendant le temps qu'elles durent, elles ne restent pas semblables à elles-mêmes. Chacune d'elles est fonction de l'instant précis où elle a lieu. Nous ne sommes jamais assurés de retrouver une perception telle que nous l'avons éprouvée une première fois ; car si la chose perçue n'a pas changé, c'est nous qui ne sommes plus le même homme. Le concept, au contraire, est comme en dehors du temps et du devenir ; il est soustrait à toute cette agitation ; on dirait qu'il est situé dans une région différente de l'esprit, plus sereine et plus calme. Il ne se meut pas de lui-même, par une évolution interne et spontanée ; au contraire, il résiste au changement. C'est une manière de penser qui, à chaque moment du temps, est fixée et cristallisée. Dans la mesure où il est ce qu'il doit être, il est immuable. S'il change, ce n'est pas qu'il soit dans sa nature de changer ; c'est que nous avons découvert en lui quelque imperfection; c'est qu'il a besoin d'être rectifié. " (Durkheim, 1912; 2002_3 / 1989 / 1995, p408 and 409, p511, p434 and 435)

Durkheim strengthens his argument by drawing upon the systems of the concepts that we use more frequently – the vocabulary of our 'mother tongue' – and showing how, as it changes slowly, it changes established ways of thinking.

... car chaque mot traduit un concept. Or la langue est fixée elle ne change que très lentement et, par conséquent, il en est de même de l'organisation conceptuelle qu'elle exprime. Le savant se trouve dans la même situation vis-à-vis de la terminologie spéciale qu'emploie la science à laquelle il se consacre, et, par conséquent, vis-à-vis du système spécial de concepts auquel cette terminologie correspond. Sans doute, il peut innover, mais ses innovations sont toujours des sortes de violences faites à des manières de penser instituées. " (Durkheim, 1912; 2002_3; 1989; 1995: p409, p435, p511 and p512).

In this work, Durkheim reminds us that we can "think" an object, whether it is present or absent, without "naming" the object; but that, particularly when the object is absent, the thought becomes more difficult, i.e. the memory of the object requires an effort, and

even then represents only a part of the experience of the object itself. Here, the sign performs a valuable service, i.e. although it does not relieve us of the need to think the object we express, it does relieve us of some of the operations necessary to make the complete thought. The sign immediately recalls the thing, without our having to laboriously reproduce the complete object in memory.

For Durkheim, these representations – social facts – such as language, signs, and symbols make sense only according to one social and historical context that is precise and denotes their position as a part of a whole set of relations.

He argues that (1912; 2002: 3; 1989; 1995) the *concept* is essentially both an impersonal representation because it is common to all (as a tool to promote communication among human intelligences) and a collective representation, because it is the work of the community that has no imprint of any individual intellect even though it is constructed by a single intellect in which all the others meet and recognize themselves.

The nature of concepts reveals their origins as social. To think logically – remembering that its basic material is made of concepts – is to think impersonally, is to think collectively.

Because the concept is a collective representation, Durkheim concludes that:

... les représentations collectives sont plus stables que les représentations individuelles ; car, tandis que l'individu est sensible même à de faibles changements qui se produisent dans son milieu interne ou externe, seuls, des événements d'une suffisante gravité peuvent réussir à affecter l'assiette mentale de la société (Durkheim, 1912; 2002_3 / 1989 / 1995, p409, p512, p435 and p436).

In this case, Durkheim says that concepts are the way that society conceives things, i.e. conceptual thought is contemporaneous, and refuses to see the society as the product of modern culture.

Un homme qui ne penserait pas par concepts ne serait pas un homme ; car ce ne serait pas un être social. Réduit aux seuls percepts individuels, il serait indistinct de l'anima " (Durkheim, 1912; 2002_3 / 1989 / 1995, p413, p517, p440)

In this work, the author is explicit when he says that *concevoir* is not *généraliser*. He is insisting that it is not only in the lower societies – which have only developed generalization, and the notions they use are generally not well defined – that concepts lack clear definition. Most of our present concepts also lack clear definition; they are defined only when we are cornered to do so – when the discussion appears with this objective and when they are operated by/to the scientist.

Penser conceptuellement, ce n'est pas simplement isoler et grouper ensemble les caractères communs à un certain nombre d'objets ; c'est subsumer le variable sous le permanent, l'individuel sous le social." (Durkheim, 1912; 2002_3 / 1989 / 1995, p413, p 518, p440)

Society is not illogical or alogical, inconsistent or changeable. Here, the manifestations of the collective conscience are at their highest level in the social life of the mind. It is a conscience of consciences.

The basic material of logical thought is concepts. Durkheim concludes that logic is always present in society and shows that it is necessary to search out both the different and the similar characteristics that logic presents in different historical moments.

"Le règne social est un règne naturel, qui ne diffère des autres que par sa complexité plus grande. Or il est impossible que la nature, dans ce qu'elle a de plus essentiel, soit radicalement différente d'elle-même, ici et là. Les relations fondamentales qui existent entre les choses - celles-là justement que les catégories ont pour fonction d'exprimer - ne sauraient donc être essentiellement

dissemblables suivant les règnes. ... elles se dégagent d'une façon plus apparente dans le monde social, il est impossible qu'elles ne se retrouvent pas ailleurs, quoique sous des formes plus enveloppées." (Durkheim, 1912; 2002_1 / 1989 / 1995, p27, p 48, p17)

Some categories are concepts – collective representations - and they have a preponderant role in knowledge. This is because they are instituted by society and because their content includes various aspects of the social being. These categories are: genus, time, space, personality, and causality.

THE REALITY OF SOCIETY

The work of Durkheim has one major theme: that society is real and that the reality of society is the subject matter of sociology. He explores different aspects of this theme in his different works. I have presented my reading of one aspect of his theory, an aspect that brings out the theoretical base of my research.

However, there is always danger when we hook our wagon to a star – to an icon of our field – for example Einstein in physics, Foucault in history, and Marx in political economy. The danger is multiple: we must confront the challenges of translation in some cases, and more often the conflicting interpretations among readers; we must be alert to the threat of the anachronistic. And we must, finally, be cautious about falling prey to hero worship. All of these dangers confronted me when I tied my wagon to Emile Durkheim.

My rationale for doing this is that I am still, in a very real sense, in the world of classical social theory; I am still the student of the era that produced Marx, Weber, and Durkheim – I am not yet their child. Sociologists in particular are still followers and leaders in Durkheim's ways. He has much to teach about what sociology is in the first place, and many resources at his disposal that can be useful to address the flaws and fallacies concerning the nature of objectivity that exist in postmodernism. So if I make myself Durkheimian here, I do so with sufficient self-consciousness to keep the dangers mentioned above in the forefront of my thoughts. This also alerts me to what I achieve by following this explicitly Durkheimian path.

Durkheim is invoked in the anti-essentialist spirit of this work claiming that his ideas was central to establishing sociology as anti-

essentialist. Indeed, the classical tradition in social theory, as it unfolds from the 1840s on, is in fact a movement to reject immanentism, and psychologism, and transcendentalism.

Durkheim (1912; 1995) discusses the source of the experience that religious feelings are "outside" of us and thus the origin of the sense of transcendence and immanence. This still confuses some of our most imaginative, intelligent, and creative intellectuals and scholars, for it is a consequence of not recognizing the social level of our existence, *society sui generis*.

The continuing defence of Platonic mathematics is founded on the same basis; mathematicians and logicians who cannot ground their experiences, who insist upon the certainty and indubitability of their results, locate them outside of society, history, and culture. The general problem here is the problem of the locus of abstract concepts. Durkheim deals with this by linking the sociological grounding of religion and the gods with the sociological grounding of logical concepts.

It is important to stress that Durkheim does not deny the reality or the significance of the experience of transcendence. People really do have experiences that come from "out there." The problem is that the "out there" surrounds them; it is society, and not some extra-sociocultural, historical, or material realm.

The reality of society that Durkheim has spoken of is an ensemble of invisible relations, those very relations that constitute a space filled with positions in relation to each other and defined by their proximity to, neighbourliness with, or distance from each other, and also by their relative position, above, below or in between, in the middle.



Basic Concepts: How and Where are They?

While practising as a teacher-learner in the city of São Paulo certain concepts revealed themselves to me as basic. As my contacts with the children in street situation “in locum” increased, and I came to know more and more about their actions, my awareness of the existence of structural concepts within the sociological analysis of mathematics emerged from the complex interconnectedness of our own actions. These structural concepts will be brought to light in this chapter.

Cultural Identity, Self-Governing, Corporification, Identification, and Multicultural Racism are concepts that need to be discussed in terms of how they are understood from my standpoint, within my assumed research role: I offer a sociological analysis of mathematics applied to these concepts, an analysis that became central to my research over time.

The basic qualities of these concepts were emphasized on two occasions: while observing the social practices of children in street situation, and while analyzing the data of those observed moments.

These concepts are highly complex, interconnected by invisible nets that exist within the social practices of the children in street situation to the extent that they inform and constitute themselves, i.e. coexist, within the social practices of these children.

CULTURAL IDENTITY AND SELF-GOVERNING

D'Ambrosio (2001a) argues that the human impulse to survive that exists through the inevitable interaction of the human being with nature and the other creates the exchange of knowledge and behaviours as a main interlocutor inside societies. Different societies around the world have different rhythms and ways of being that are constructed according to many social facts: for example, the prevailing model of urbanization and production, systems of communication and the power structures that circulate.

To *share* is a necessary action that must be taken in any society where knowledges (as in languages, systems of explanation, myths and cults, cooking and customs) are socially created, according the survival needs of that society. These knowledges are in constant movement, being recreated by intelligent lives to give support to the movement of that society. Knowledge is both a collective representation and a category of selection inside of society.

To *make compatible* and to *subordinate* are the actions that are necessary to recognize in any society in order to understand that the behaviours are socially developed, according to the rules and regulations – with their margins of flexibility - of that society. These behaviours are in constant movement, being recreated by intelligent lives to structure the movement of society. They are a collective representation and a model inside of society.

According to D'Ambrosio (2001a), the actions "to share knowledge" and "to make behaviours compatible" are synthesized as characteristics of a culture. Cultures are in constant transformation, being influenced by the cultural dynamics that are deeply embedded

through social facts such as the politics, economics, and religions within any society.

The concept of culture is intrinsic to society because the movements of society are the central objects of this concept. In my search to understand better how knowledges are shared and behaviours are made compatible and subordinated, I have sketched a view about these movements through looking to the social and historical context of the cultural identities and the self-governing of the human being.

Cultural identity and self-governing are deeply connected in this discussion because of the close connections and the complexity of their interrelations that I have found during my practice and my studying of actions. Therefore, to talk about culture is to talk about self, and seeing the self as a social structure.

The history of the human being that focuses upon its cultural world has been dealt with in many works. In *The Sociological Worldview*, Sal Restivo presents a critical historical view of the image of the self and discusses the self as a creator, agent, and product of society, culture, and sociocultural change. He makes explicit that:

"Some notion of "self" is necessary to account for the individual's experience of unity and continuity in him or herself and others." (Restivo, 1991, p99)

Restivo (1991) pointed to conceptions of the self that came before the emergence of social sciences and that range from metaphysical and theological ideas about the soul to views of the human being as a collection of somative sensations. The social perspective about self could only arise at the moment when the dominant view of human nature was brought down by the Enlightenment.

In *The Interpretation Of Cultures* by Clifford Geertz (1973; 1989), and *The Question of Cultural Identity* by Stuart Hall (1992; 2001),

critical historical construction is used to demonstrate that Enlightenment thinking has a uniform perspective on societies, where the essential centre of the self is the identity of a human being. This identity was born with the human being and has remained essentially the same - continuous or identical - during his/her¹³ existence. Essentially, the massive and wide variety of differences among human beings, in beliefs and values, in habits and institutions, both in time and from place to place, is without significance for the conception of the human being during this period: - an individual totally centred, unified, gifted with capacities of reason, conscience, and action.

Between the Renaissance Humanistic of the XVI Century and the Enlightenment of the eighteenth Century, the birth of this "sovereign individual" represented an important rupture with the past. The emergence of this conception can be related to the decline of the medieval cultural order. Indeed, this movement can be considered as the main lever that pushed all aspects of the cultural system of modernity into movement.

The increasing complexity of the modern world and the consciousness that the essential centre of the self is neither autonomous nor auto-sufficient but in continuous dialogue with the exterior – the cultural world – brought forward a new conception of the human being. The identity of the human being was conceived as being formed through interaction between the self and the other human beings that mediate the values, senses, and symbols of the worlds that she/he inhabits. These thoughts were based on the introspective analysis of the human being and his/her mental

¹³ I use the male gender to describe the identity because at this period the self was conceived of as male.

process by the Interactionists in the late XIX Century, who began to explore the self from a cultural perspective.

Symbolic interactionist approaches, keystones of this new conception of the human being, stressed this interactive conception of the identity and of the self but at the same time retained the essential centre of the self - an interactive self - in the human being. Here, cultural factors are recognized as necessary for understanding the self and the self receives the status of a social structure. There is a unification and a prediction so that the self and the cultural worlds co-exist through identity, where identity becomes the basis of the human axis.

According to Restivo (1991), the unity and structure of the self reflect the unity and structure of the world in which the person lives. The cultural world is never perfectly unified or structurally static, but varies with time and across geographical and sociocultural boundaries. Within this variation, what has happened to identity?

In Hall's view (1992; 2001), *identity* becomes *identities* and these identities of the human being are sometimes contradictory and thus remain unresolved. The process of identification, through which the human being projects his or her cultural identity, starts to be provisional, variable, and problematic.

At this point, the dependence of the self upon its social and cultural conditions begins to give out its first signals. According to Restivo (1991), Marx's observations on the alienation of the workers, and Weber's more general concern with the alienating effects of rationality and bureaucracy, were among the first signs.

As I have discussed in the section on *Thinking and Seeing*, the contribution of Durkheim's work to this discussion brings forward another strong perspective about the human being. According to Durkheim (1912; 2002_2), the social being is constructed by two beings that can only be separated in the abstract, and can never be truly distinct. One is constituted from all mental states that link only to ourselves and the events of our life: what can be described as "individual being". The other is a system of ideas, of feelings, and of habits that is expressed in ourselves, not through our individual personality, but through the group or the different groups that we are inside: religious beliefs, beliefs and their moral practices, professional or national traditions, the collective opinions of one gender.

In the second half of the twentieth century, while the final decentralization of self happens, part of social scientific theorization¹⁴ attempts to distinguish and to specify two concepts: social and cultural. The links between self, social, cultural, and sociocultural changes are in vogue, and the clarity of such concepts enables, according to Geertz (1973; 1989), understanding as much about the organization of social activities, their institutional forms and the system of the ideas as the nature of the existence of relations among social activities. Embedded in this dialogical approach to the self, the social and the cultural, I am intending to contribute to the theory that culture and mathematics are related in a way that is as strong as that which relates culture and social structures.

¹⁴Parsons, Shils, Nadel, Leach, Rediefield, Lévi-Strauss, Firth, Singer are some of the social scientists that deal this subject, in different ways.

During this same period, the human being has no fixed, essential, or permanent identity. According to Hall (1992; 2001), the identity is formed and transformed continuously in relation to the forms in which he or she is represented or interpreted in the social and cultural surroundings. Identity is *historically* rather than *biologically* defined. Here, the self assumes different identities in different moments and places, or more precisely, in different times and spaces.

Many factors could be considered relevant to this concept of the human being. One of the most important factors is contained within the rereading of the Marx and Freud's work "Freud e Lacan, Marx e Freud" (1964/1976; 1985) – a Brazilian edition of two texts by Louis Althusser. The author points out that Marx's and Freud's works modify the cultural worldview when the conditions previously recognized as normal are rediscovered anew. His studies are based in his rereading of Marx's work and in the rereading of Freud's work by Lacan - which inspired this interpretation of his work. For him, this renewal that is present for Marx and Freud is not about the discovery of a new study object - the class struggle and the unconscious - but in the discovery of the definition of an object, of its limits, and of its extension, of the characterization of its conditions, of its existential forms, and of its effects, of the formulation of requirements that it must carry in itself in order to understand it and act over it (the object). In other words, they conceive the process of knowledge as a modality of extraction of the true from the real.

At the end of the 20th Century, the social and the cultural values are shaken. The self appears as a social and cultural construct in constant movement. According to Restivo (1991), the self, in these

terms, is fragile. He argues about this fragility using the concept of open systems.

Open systems are ideal systems which do exchange energies across their boundaries. The social and cultural environment in which the human being is socialized - or programmed - determines the extent to which he or she will behave in ways that appear robot-like or in a ways that reflect independence and uniqueness (ibid, p104).

In terms of open systems, my work has looked within social and cultural environments as a way to offer alternatives and encourage individual choices that are bounded by constrained cooperation, decency, and dignity, and that focus on promoting the abolition of the situations in the street spaces of the city of São Paulo in which children are used as instruments in violation of their interests.

Self-governing is conceived of as the main way to make places that can be occupied by cultural identities. To share knowledge and to make compatible behaviours it is necessary to self-govern, it is necessary to decide in favour of listening, seeing, feeling, participating, and acting, and it is necessary to choose not by imposition but through agreements. In this mechanism, it is necessary to know; to know what is ethical and what is the power that is inserted into these agreements, by focusing on their external faces and observing their effects, not by interrogating the internal motivations of social agents – what could be the supposition of the existence of a centre of power and of ethics and that both could be withheld by someone. *Ethics* and *power* appear as crucial articulators in the capacity of the human beings to decide by themselves. Here we do not mean “decide” or “choose” in some magical unsocialized sense. Rather, we mean to decide or choose without the salient presence of constraining forces in the form of real representatives of, for example and most importantly, the state or religion.

CORPORIFICATION AND IDENTIFICATION

Power and ethics coexist within the dynamic process of human development as social practices; they permeate the self-governing and the identities of the human being in this dynamic process.

Many theorists have discussed the concepts of power and ethics over a long period of time and their discussions have taken many directions. My research concentrates on interpretations about the relationships between mathematical knowledge, power, ethics, and body. The body, here, appears as a social-cultural character that is always in social movement and never exists as a complete and independent structure in and of itself. The analyses of power and ethics emerge from domination strategies where they implant themselves and produce real effects through the body.

To work with these ideas, I mainly used the concepts of the disciplined body, focusing on what I call *corporification*, and the place of the body as advanced by Michel Foucault and the social formations and attitudes of body as advanced by Slavoj Žižek. This grounds my focus on *identification*.

Foucault proposes to understand the development of the forces of production through an exposition of the types of power that are able to work in the forces of production. The human body is a force of production, which exists inside and through the political systems; the productive forces that give a certain space to the human being at the same time invest it.

un espace où se comporte, où adapter une posture particulière, où s'asseoir d'une certaine manière, où travailler continûment (Foucault, 1978; 1994 p470).

An important element of power is to clean the city and “to put each one in its place”. Power occupies and delimits space, creates and discloses rules and patterns, looking to standardize the city, using strategies to control the bodies, to watch them and mainly to exclude them by creating marginal spaces, such as places of segregation and social exclusion. According to Foucault (1997; 2002), those boundaries, the spatial demarcations, classifications and organizations are strategies of power, are reality that is experienced, are lived spaces.

The space, or spaces, claim/s a decisive character within the relations of the human being, as affirmed by Santos (2006):

... o papel o do lugar é determinante. Ele não apenas é um quadro de vida, mas um espaço vivido, isto é, de experiência sempre renovada, o que permite, ao mesmo tempo, a reavaliação das heranças e a indagação sobre o presente e o futuro. A existência naquele espaço exerce um papel revelador sobre o mundo (Santos, 2006, p114).

In that sense, the concept of *corporification* was developed in this research to categorize the action that determinates the place of the physical (collective or individual), mind (knowledges), or institutional (juridical or political) bodies. I focus on the spatial demarcation of these bodies, the transformations of the social relations in the spaces within which these bodies act, and the order of the social things linked with these bodies.

In post-modern society, these strategies of power are based in many rules and regulations in the name of our well-being. An actual order of things, the world order, is Real; the Real, here, is not the means to the reality experienced by the social agents of the society, it is rather the key to maintaining the hegemonic systems via the strategies of power. Being undifferentiated within itself, it is opposite to the open systems.

Slavoj Žižek discusses the concept of *identification*, throughout most of his works, to explain the relationships that exist between the strategies of power and, what I call, a global ethics.

According to Žižek (1998), in a socially structured body where each part occupies its space, the existence of non-parts puts in checkmate the “natural” functional order of the relations inside this social body. On one hand, the identification of a non-part within the whole, within the universal, as a part of society, displaces the social agency of the body as a place with a voice. This is an elementary gesture of politicization. However, on the other hand, the identification of non-parts within the particular, that is characteristic of the depoliticization process and helps to maintain the condition of being excluded.

A global ethics centres on human rights (actually the main voices of the non-part body – of the excluded) as positioned within particular interests. The body here, conditioned under the global ethic, is the singular universal.

The singular universal is a group that, although without any fixed place in the social edifice (or, at best, occupying a subordinated place), not only demands to be heard on equal footing with the ruling oligarchy or aristocracy (that power) but, even more, presents itself as the immediate embodiment of society as such, in its universality, against the particular power interests of aristocracy or oligarchy (Žižek, 1998, online).

The body is controlled as a strategy of power to occupy and delimit spaces and the body is, at the same time, manipulated as a strategy of the global ethic to maintain the elitist spaces. The relation between power and body is linked with the process of pleasant submission where duty becomes pleasure. The relation between ethics and body is linked with political correctness where pleasure becomes duty.

The interrelations between power, ethics, and body are linked with the process of controlling and manipulating; it is intrinsic to logical thought, which is a collective representation. Power and ethics combine to take a treacherous hold upon the body, a hold that simultaneously relies upon and produces knowledge (including mathematical knowledge). Both concepts are manifest in the mathematical knowledge relations that are conditioning the emergence of the human being by focusing on the body. The body passes through this process with the intention of becoming, itself, able to participate in economic activity where the terms are of uninterrupted subjection and to the detriment of its potential for plea and revolt:

Se forme alors une politique des coercitions qui sont un travail sur le corps, une manipulation calculée de ses éléments, de ses gestes, de ses comportements. Le corps humain entre dans une machinerie de pouvoir qui le fouille, le désarticule et le recompose. (...) La discipline fabrique ainsi des corps soumis et exercés, des corps "dociles" (Foucault, 1975; 2001, p73).

The body here is fragile. It appears targeted and produced by the hegemonic system and then becomes unknowable outside of its cultural significations; social and historical forces directly construct the corporeal reality of the body.

However, it is important to stress that the mechanisms of power and the global ethic discussed here are not reducible to repression. Power and ethics are not only negatively linked in this vision. If the mechanisms of power and the global ethic were exerted only in a negative way they would be very fragile. If it is strong it is because power and ethics produce positive effects at the level of wish, of obligation and of knowing. From a wish, an obligation and a knowing over the body appeared a physiological knowing, the organic one.

If it possible to constitute a wish, an obligation and a knowing over the body they have happened by means of related disciplinary links that are promoted by institutions such as church, school, and army. The teaching of mathematics, as it is working in the school, is an important support to maintain the hegemonic system that is targeting and producing bodies. The non-recognition of mathematical knowledges from others as valid, apart from the scholarly or academic culture, is a very clear example of the totalitarian force that uses power and ethics to exist in these times.

To understand the enrolled subjection in the relationships between mathematical knowledge, power, ethics, and body that are not centred upon the obedience paradigm but are dispersed through the social body, I observe the constitution of the body in certain spaces, the control and the manipulating relations that occur inside of the process of constitution, the interactions of the body in the space, and the concrete effects that these interactions produce in certain spaces. To understand this observation process, it is necessary to profile the importance of dislocating the focus to the outskirts of the zone (since this outskirt is actually at the centre), to the extremities of the social body, to the local institutions, apart from the law, and to the rules, in order to observe the techniques of intervention by power and ethics in the productions, and to observe the material effects that are produced over the bodies.

MULTICULTURAL RACISM

Multiculturalism is present in the post-modern world. Technological progress brought to the human being the possibility of being in different places for a short time and, sometimes, the possibility of being in many places at the same time.

I start by giving some examples in a global sense. That is, I observe where and when the human being is inserted into elitist spaces, usually in urban centres, and has financial support to use (and to be in) the technological process. In the universal sense, technological progress has brought the necessity of the human being to survive into elitist spaces. The social thought "money" is present in both cases and this thought puts the human being inside the Post-Modern dialogue, in the reality experienced of the human being in the occident; in one case this thought appears as product and in another it appears as production.

According to Žižek (1997), multiculturalism is the ideal form of the ideology of planetary capitalism. Ethnic property and communitarian identity are "reterritorialized" to the force and subjected to social bow-Capitalism, in which multicultural tolerance is a basic behaviour.

An attitude that treats each local culture to a version of colonialism – as a colonizer with the native people of the colony, for example, or as a colonized group where the customs must be delicately studied and "respected" - is a globally empty position. I write "respected" in quotation marks to denote the non-respect that is produced through the totalitarian meetings that exist between who is colonized and who colonizes.

Multiculturalism is evidently an inverted and un-confessed form of "distant" racism: "respecting" the identity of the other, conceiving the other as an "authentic" closed community against which he, the multiculturalist, maintains a distance made possible by his privileged universal position. In other words, multiculturalism is a form of racism which empties the position of all positive content (the multiculturalist is not an open racist, he doesn't oppose the other's particular values of his own culture), but nevertheless preserves this position as an empty and privileged essence of universality, from which the other specific cultures can be adequately appreciated: multiculturalism's respect for the

specificity of the other is the most efficient means of reaffirming his own superiority (Žižek, 1997; 2002, online).

Žižek alerts us to the danger of reactionary and conservative multiculturalism, of racist multiculturalism. The respect and the tolerance with the other are present in our daily routine; the respect and the tolerance exist while the other does not show his or her truths. The mystical knowing of the other cultures is tolerated but when the confrontations come through cultural practices as in cannibalism, the death penalty, tribal tortures, robbery (characteristic inside some social groups as a ritual to be recognized by the group), the clothed or unclothed styles, that is, with their own form of how the other practices his or her culture, multicultural tolerance lingers and the imposition of occidental values is promoted through "democratic" values, as in freedom and equality.

Democracy (camouflaged by technological knowledge, ruled by power, and in name of the ethics) is present as a totalitarian system in the meetings between cultural groups, "well" structured in name, especially by freedom and equality. However, at the same time, the society of technology¹⁵ recognizes that multiculturalism (or cultural pluralism) is a term to describe the existence of many cultures in a place, city, or country, without any of them predominating.

The process of the "word without word", of theory in opposition to practice, is linked with market logic, with the non-political and, as such, it is far from social freedom and social equality. They are based in social agreements and supported by the non-imposition of the occidental and democratic values onto other cultures.

¹⁵ In Wikipédia: <http://pt.wikipedia.org/wiki/Multiculturalismo>

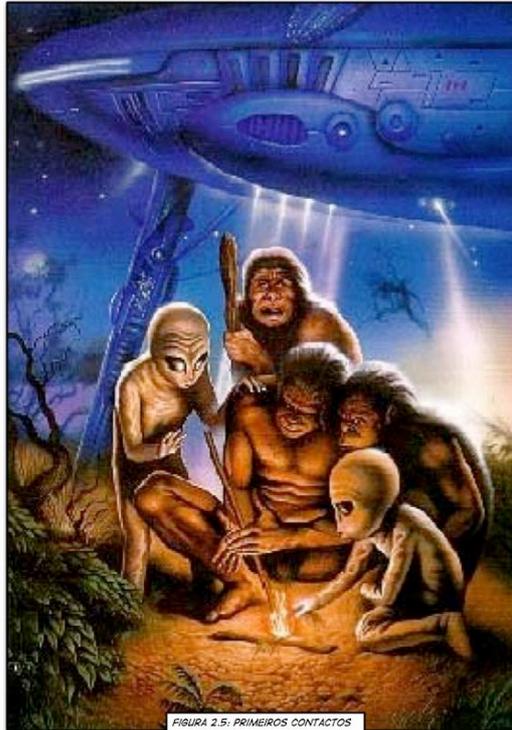
Social agreements are in open systems, where the word is recuperated to give voice to the social voices inside the society, to give voices to the different groups that are not in the “winning culture” of the market logic. The inconsistency of the word, as demonstrated through the intrinsic meaning of the term *occidental*, cannot survive in open systems where the social and the cultural are tools that promote the exchange of energies across boundaries, and the process of knowledge is the main way to promote the movement of exchange.

The denial of access to knowledge is a strategy for the exclusion of the different (D'Ambrosio, 1998, p 70).

To share knowledge across boundaries is a social fact. The process of knowledge production is, however, sometimes blocked in practice by hegemonic systems. The institutions of knowing (the school, for example) and the learning and teaching formal processes that are inserted into these institutions (such as the process of learning that is actually practiced in schools) can be “food” to this hegemonic system. The correct and well structured nature of these institutions does not permit the exchange of energies across boundaries, is not prepared to listen to the voices from other cultures; working only in pre-definitions, made up of correct and ready models, and only using the daily examples that go with the current forms of multicultural speech.

According to D'Ambrosio (1986), the knowledge makes sense if it is understood as cultural. The places of the production of knowledge are the cultural places, embedded by traditional rules by power relations in the name of the particular ethics. Agreements among cultures are involved in the exchanges of cultural knowledges, of power relations, and of particular ethics in order to search the universal knowledge rules through new power relations in the name

of the universal ethic; respecting the incessant movement of life across time and spaces.



Sociology and the Truth of Knowledge

When I talk about sociology, I am talking about the study of society and the connections within and across societies. In *Thinking and Seeing* and in *Basic Concepts* I developed a discussion about sociology from a point of view, supported by some theoretical work and focused upon my sociological images and actions and the connections between them and the children in street situation. It is not the truth; as I have argued in *the reality of society*, it is only a position in the face of what I have observed, analyzed, read, learned.... It is a truth; it is a social truth, it is mine and is part of my way of being in the world, as others.

According to Maturana (1999), nobody is the owner of the truth, and the truth of other is as legitimate as any other.

... a reflexão e a aceitação do outro e, sobretudo, a audácia de aceitar que as diferentes ideologias políticas devem operar como diferentes modos de ver os espaços de convivência, que permitem descobrir diferentes tipos de erros na tarefa comum de criar um mundo de convivência, no qual a

pobreza e o abuso são erros que se quer corrigir. Isto é uma coisa diferente da luta pelo poder (Maturana, 1999, p76).

Maturana (1999) attributes the failure of dictatorships and totalitarian and statesman systems, whether of a socialist character or not, to the fact that any one of them deposits all the wisdom in only one human group. This is how a tyranny is generated: because the others are refused.

My intention with this discussion is to attract attention to the process of the truth of knowledge and not to the final product (if is truth or not), to the complexity of this process, to the complexity of social structures, to the earthbound nature of social and cultural experiences, and to social knowledge and truths.

In that way, the basic claim of the truth is the objectivity. The level of the objectivity represents the level of the truth. Objectivity requires truth and the truth is produced within a context, within a regime and this regime also requires this truth to produce, reproduce and sustain itself.

Maturana (1999) brings his own understanding to this relationship between truth and objectivity, sharing the objectivity in two ways. In one way, Maturana argues that what is said is valid because it is objective and rational, not because of who is saying it. If it is said that you are wrong, it is not somebody who determines that you are wrong but the reality. Here, the clarification does not occur in the mutual acceptance, but in the exclusion that it is different from the truth. Whatever is not with the "truth" is against it. Here, the person from whom the truth is withheld is always irresponsible in the negation of the other because it is the reality that denies it. In this case, the body appears as an instrument of expression and also as a limit to its expression. If an account of the truth is not given it is because we have some deficiency that needs to be surpassed.

In another way, Maturana argues for the possibility of objectivity that promotes the capacity to make reference to a reality independently of who makes it. Thus, there is no relative truth but many different truths. When the opposition to a domain of a reality happens, it is against a truth that walks in this domain, in this referential world that is not pleased, and because of that it is not recognized. It would be a responsible negation, that is, a negation of the other and of her/his ecosystem. Here the body appears as something that constitutes and makes a reality possible. The truth is ours and is part of our way to be in the world, alongside others.

In the first sense, objectivity is seen as a pure way to make an accurate description of reality. In that sense, the children in street situation's reality will have a static truth forged by their own reality; a picture focusing just upon their actions over the world and not on the relations between their actions and their ecosystems, would deny their truths.

In a second sense, objectivity is seen as a mode of inquiry, relying on no arbitrary and no subjective criteria to develop, accept, and reject the hypotheses and theories that make up the view. In that sense, the relations between the children in street situation and their ecosystems will be recognized, thus recognizing their truths.

The fundamental question here is more than arguing about objectivity and the kinds of truths that these ways promote, delegating the better or true way to promote the recognition of the different truths. My main focus is – affirming objectivity as a political action – to argue what these different truths do in the social relations of the children in street situation.

One way to analyze it is through showing how logic is an important tool in the relationship between objectivity and truth, since logic functions as a resource of power.

It is not just that something is or is not logical in some absolute sense. It is that logic - and certainty relations in general - are cultural resources that can be used to defend or attack a social order by affirming or denying self-evident statements (Restivo, 1992, p114).

According to Restivo (1994), the individual human being cannot be logical or illogical; rather, h/she can only be in agreement or disagreement with the objectivity of the community, the thought collective to use Fleck's term. To think logically is to think impersonally, is to think collectively.

As I have argued in *Durkheim and Logic*, the basic material of logical thought is made of abstract concepts – collective representations. Concepts, like all knowledge, are the ways that society conceives things. They are productions that are created and experienced by the human being within social practices, enrolled in a cultural framework that is both limited by, and limiting, in its power. Most of our present concepts lack clear definition; they are defined only when we are cornered to do it – when the discussion appears with this objective – and when they are operated by/towards the world of science, the owner of scientific knowledge.

Scientific knowledge, the knowledge accepted by the body of scientists called the academy, is the strong link between truth and knowledge in our time. During the history of human beings, truth and knowledge have coexisted and it has happened because some social body, embedded by its collective representations, solidifies or strengthens the power of its truth through its logic. This resource of power is always used by any social bodies that work with knowledge. Power is a construction of a reserved space, a monopolized space, that has mechanisms of power over the bodies that are on the outside. Essentialism, Platonism, Catholicism, and apriorism are some examples of these bodies developed to withhold knowledge.

According to Restivo (1994), social relations as constituted within science, truth, and logic can embody inequalities, destroy ecosystems, limit individual growth and development and undermine inquiry. In that sense, the processes of human beings can inhibit growth. Knowledge can be the secret key to promote this process. If, in the process of knowledge production, *power* and a *truth* are instituted without interaction among all bodies that are involved in the production process, it can be seen as linear. All bodies that constitute the social relations in this process need to have a voice and this voice needs to contribute by bringing to life the dynamic side of the process of knowledge production and to respect that dynamism.

The alternative to this secret key becomes *critical knowledge*, *critical thinking*. Both human thought and the human capacity to think need to be respected and free. The degrees of freedom in this capacity are restricted by the extent that one's wishes are in accordance with the wishes of others, and of the constraints of the ecosystem. Wishes are movements of knowledge production that involve all living species of the social world. The world of science is much more than the scientists' world; the science world is much more than the body of scientists – the academy. The science world is a social world, as convincingly argued by researchers in the new sociology of science.

If the truth of knowledge, in modern society, is the truth of scientific knowledge, it can also be argued that it is imperative that critical thinking returns the truth of knowledge to the hands of the workers, while the scientific body removes itself from the centre of this process and locates itself at the boundaries, to be questioned, and discussed.

The dynamic process of knowledge production in the social world involves economic, political, cultural, religious, biological, and all sorts of others factors. In face of that, the content and the structure of knowledge is not "given" by logic or the nature of reality – a transcendental explanation of knowledge – but is constructed by social phenomena.

Many thinkers, both academics and non-academics, have made contributions to our examination of the processes of knowledge production through more mundane explanations of it.

Understanding the processes of knowledge, in the academy and through the study of the social world, has taken the form of an awakening of the sociology of science. David Bloor and Barry Barnes are leading proponents of the strong programme in the sociology of science, which aims to investigate all knowledge using sociological methods and considers sociological factors as the decisive ones. The key features of the strong programme, according to Bloor (1976, 1991), are that knowledge can be explained in causal terms, that explanations can be impartial and symmetrical with respect to the truth or falsity of the beliefs being explained, and that the theory can be applied to itself, can be reflexive.

In the 1980s, Sal Restivo and Daryl Chubin, proposed a weak program in the sociology of scientific knowledge in response to the strong programme presented by Bloor and Barnes, and to other branches of the old and new sociologies of science. The key features of the weak program are, according to Chubin and Restivo (1983), breaking down the distinction between doing and thinking in theory construction, and criticizing the ideal of the value-neutrality of the strong programme. Restivo (1994) emphasizes theory as political action, criticizing the scientism of the strong programme for adopting the 'successfully proven' scientific methods

as universally valid. In this theoretical framework, I can view the researcher as part of her/his theory, as more than a detached observer, and argue that she/he should be critically involved as part of the process and within the role of citizen. The sociological factors are important in science, and the pre-eminent factors in whether a theory is accepted as being true or not. This is so in a complex way based on the way bio-ecological factors are intertwined with social and cultural factors and part of the same natural order. The weak program treats science as

... a worldview, a value system, a mode of inquiry and a way of living and working subject to criticism and to fundamental changes coincident with fundamental changes in its socio-cultural surrounding (Restivo, 1994, p22).

The weak program is a way to bring knowledge to the hands of the workers, as a worldview that permits the truths of knowledge to be questioned and discussed. Whether or not any form of knowledge, scientific or otherwise, deserves special treatment must become an empirico-practical question, a question of praxis; this is not to be left to philosophers as putative experts on rational minds and methods.

The methodology of the strong programme is not at all free from the critique of the political-activist perspective. In this movement the locus of reflexivity in the strong programme is the individual. Theory is a practical political action and the relativism embedded in the strong programme does not give flexibility or permit the pursuit of political implications. Restivo (1994) seems to warn that the strong programme would be in danger of lacking interest in the methodological colonialism of successful Western science.

Chubin and Restivo (1983) argue that the role of the social study of science in the policy process should be:

... to challenge conventional policy wisdom and jar the policy-maker into perceiving a complex (and if our efforts succeed unexpectedly, a “multiple”) reality (Chubin and Restivo, 1983, p73).

Social theory is not only a route to critique theory in science studies, but also a route for ‘saving’ science as an intellectual enterprise. The social, as a background of all processes of knowledge production, must be reinforced to give credibility and legitimacy to the knowledge that is, literally, created by social relations.

So far, I have promoted a trip through some sociological images and actions by means of social theory to develop a theoretical sociological support system for my research. This will help me to highlight the link between the space concept of the children in street situation and their social practices. In this theoretical practice it is still necessary to discuss how I understand some mathematical images and actions; this understanding will contribute to the credibility and legitimacy of the children in street situation’s knowledge about space, constructed by their social relations, as all knowledges are constructed. Through social theory, I am proposing another trip through some mathematical images and actions to develop a mathematical theoretical support to reinforce, in another view, the link between the space concept and the social practices of the children in street situation.

CHAPTER 3

SOME MATHEMATICAL
"IMAGES AND ACTIONS"

After Non-Euclidian Geometry, and through its practical application in astronomy, after the new conceptions of space and time that resulted from the relativity revolution of Einstein and the *quantum* revolution, after a humanization of science brought about by the collapse of deterministic conceptions through thinkers such as Marx and Freud, it became impossible to live believing in what they were believing in and in their truth, as well as in the world constructed by their laws and beliefs. The dialogical movement around different practices, including the intellectual life, brought new views over the human relations showing how complex, non-linear, intra and interconnected, and systemic the relations among nature, society and human beings are.

The human being stops feeling strange in the world that he/she lives when they come to know that the world, and the scientific attitude in the world, is not mere contemplation, but the movement of social constructions. The interactions of the human beings constituting and reconstituting the world and science studies, that is recognized beyond the occidental system (more precisely – the academy), is the transforming action that has come from the whole social and cultural system.

The materia prima of science is in the ecological environment where social and cultural practices transform it, in its composition, via productive forces and the relations of production. This is the mathematics that I am addressing in this thesis: the mathematics of Action that is removing all possibilities of working with mathematics in a platonic way, in closed systems; while not forgetting the mathematics of Reaction, the mathematics that is the inhibiting agent of 'justice'.

We are living in a moment where no conflict has a regional character and no responsibility has a limited character. The human

being is in the centre of the universe, and at the same time is the main author of a history, responsibility from which they cannot exempt themselves. We have become implicated in the big contestation of the world from the moment of discovery of the electromagnetic waves that constitute each human being, simultaneously rendering us actively and passively present in the totality of Earth.

In this indubitable commitment, pure mathematics appears as an excluding factor, as a boundary, not permitting the engagement of all human beings. But mathematics is a language of the world; it is a tool to communicate that must belong to all. I understand that for mathematics to be a common tool, it is first necessary to recognize the mathematics that exists inside the different cultures around the world. It goes beyond recognition alone though. It is necessary to think of mathematics as more than occidental imposition, more than Euclidian and non-Euclidian ways, more than the mathematician's way. As Sal Restivo has highlighted, to think about how deeply politics, education, and other social factors are implicated in mathematical work and mathematical knowledge, and how modern mathematics is itself a social institution, a social problem in a modern society, is a perspective that is focussed on transforming ways of living, alongside our social relationships, and the values that are evident in society at large.

Mathematics is present in all cultures. Mathematics is the techniques applied to solve problems. Conventionally, we imagine that some problems are concrete and some are abstract in a 'more or less' sense. It is better to eliminate this distinction between concrete and abstract because the supposed world of the abstract is always allowing platonic views of everything inside our thinking. It is an exercise to show how mathematics is a social construction and how it is in fact socially constructed. Giving a focus to the

materialism of mathematics offers a way of making the mathematics of everybody accessible to everybody. As we are a complement of each other, our mathematics is a complement of the mathematics of the other.

The academic mathematics is one; it is the only one recognized as scientific in the occidental world and those regions which have had the occidental ways imposed on them by way of colonial and imperialistic practices. In parallel, each cultural group has different techniques to solve their problems, establishing what some authors have called different mathematics, in a plural sense. The autonomy of their branches is relative and its relativity is associated with the social constructs of each cultural group.

Embedded in all these concepts, this study addresses mathematics, more specifically space, in order to report and to make recognizable some techniques of children in street situation's culture that solve their problems.

Topics such as the Sociology of Mathematics, Mathematics and Space, and Ethnomathematics are being brought forward as ways to give to the Space Concept the reality that is experienced by the other, that show the importance of the other in contemporary discourse.



The Sociology of Mathematics

I start this discussion about the sociology of mathematics by bringing forward Durkheim's reality of society as an ensemble of invisible relations. It is these very relations that constitute a space of positions; to which I add that the positions are internal and external to each other, defining proximity to, neighbourhood with, or distance from each other and also their relative position: if they are above or below or in between, in the middle. Sociology, in its objectivist moment, is a social topology, an analysis situs as this new branch of mathematics was called in Leibniz's time, that is, an analysis of relative positions and of objective relations between these positions.

Dorothy Smith (1999) has argued that sociology has idolized a false objectivity in which the observer stands apart from the human being studied. According to this author, there should be knowing society from within, building understanding from the location where personal experience rubs up against the fabric of social institutions. The process of globalization brings to sociology a global view over

the interrelation between economic issues, ecological phenomena, political awareness, cultural trends, and information streams. The possibility of knowing society from within derived with this process more clearly, more evidently – from social to social.

According to Skovsmose (2005), in postmodernism the sense of being together and of sharing concerns with each other is a part of the globalisation process. But this author also alerts us to the dangers of this process as being irreversible, not transparent, and destructive. In preference to discussing the good and bad sides of globalization, I focus here on one of the things that came out of sociology through globalization: studies about the relations between concentrated capital and mathematical knowledge.

The senses of being together and sharing concerns in a postmodernist world opened up the possibility of clarifying a strong movement that is oriented around the concentration of capital, and that includes to the excluded of this movement, who are without decent conditions to live or even survive.

In this context, one role of the sociology of mathematics, among others, is to discuss how the concentration of capital is directly linked with knowledge about mathematical concepts: learning or constructing in the face of the necessity to survive. My purpose here is to draw attention to the social life of the mathematics studied in the sociology of mathematics. I intend to expose the power of corporification and the ethics of identification that the formal mathematical knowledge, with its models, representations and artefacts that emanate out of – or even inside – occidental culture, exercise over the informal mathematical knowledges to exclude, separate and even strangle them. This purpose draws attention to the social relations that cohabit with mathematical knowledge through the process of human life as a whole.

Inevitably, the sociology of mathematics has been an influencing factor in mathematics education. It has brought the role of informal/non-formal mathematics to formal mathematical practices as an interaction among many other social facts, including economics and political and cultural acts. Cognisant of the complexity of human life that is manifest through our practices and discourses in mathematics learning networks, as a movement, this sociology of mathematics has caused two significant effects: it has introduced and then brokered the idea that "mathematics is for some people".

In my life, the development of these ideas about the sociology of mathematics has been directly affected by my having practiced theory closely with Sal Restivo, sociologist of mathematics. This relationship has involved constant discussion together and my reading of his many works. Sal has made an historical trip to create a sociological view about the process of mathematical knowledge. In Maths Worlds, Chapter Thirteen, Sal Restivo presents a compelling discussion about the social life of mathematics. Here, among many other important points about the social construction of mathematics, Restivo highlights a sociological story about mathematics that is important to share:

Mathematical workers use tools, machines, techniques, and skills to transform raw materials into finished products. They work in mathematical "knowledge factories" as small as individuals and as large as research centers and worldwide networks. But whether the factory is an individual or a center, it is always part of a large network of human, material, and symbolic resources and interactions; it is always a social structure (Restivo, 1993, p254).

The explicit idea that mathematical workers produce mathematical objects comes from Restivo (1993, 254). Through his consideration of the experienced mathematical practices of the human being as work, he conceives all human beings as mathematical workers. The

mathematicians, according to Restivo, are the category of mathematical workers who are considered the experts. The academic mathematics, positioned at a specific level in the occidental hegemonic system where it does the most specialized and organized mathematical work, appears in his discourse as the tool of separation between the practices of mathematicians – theories – and the mathematics from practices. The culture of the mathematical producers – the mathematicians – is in a process of closure, of living in a closed system. Restivo brings attention to the danger of closure for the *math world*¹⁶; closure is where formal mathematics and its models, representations, and artefacts are. The workers of this culture work only for themselves, they only have access to the necessities for survival through their productions and Restivo considers this to be a very dangerous cycle.

Following the same thoughts from the mathematicians' culture and the objects that they produce, exposed above, I claim to focus to the formal process of mathematical learning in the occidental culture. In this process many different institutions, rules, and cultures are involved such as ministries of education, schools, local curricula, teachers, and students; but they are positioned at a specific level in the hegemonic occidental system – the level of mathematical education. Mathematics education carries out the most specialized and organized process of mathematical teaching and learning, being a tool of separation between the practices of the formal process – academic mathematics – and the informal or non-formal process of mathematical learning. Mathematics education lives in a process of closure where academic mathematics loads itself up with all the formal mathematics of the academy, without

¹⁶ It is an expression used by Sal Restivo

having space for the informal or non-formal mathematics in the settings within which it embeds itself.

The sociology of mathematics could be seen as a mode of mathematical production in a sense of enclosing the productive forces and the social relations of production inserted in the process of the mathematical knowledge. In this case, the sociology of mathematics is the way the mathematics organizes itself to guarantee its condition of survival and mode of life. In this relation, the important thing is not what is produced in a society, but the way it is. The way of mathematics through the world is not only in the mathematical world. According to Restivo:

The interaction of insider and outsider sociologies of mathematics, mathematical and nonmathematical ideas, and pure and applied mathematics are all aspects of the opening cycle that are necessary for creative, innovative changes in mathematical ideas and in the organization of math worlds (Restivo, 1993, p255).

By definition, the mode of production, that is, the sociology of mathematics, is a socioeconomic, political, and cultural complex constituted by two elements: the productive forces, that understand the produced elements (models, representations, artifacts, social behaviours) and the elements of production (formal, informal, and non-formal mathematics and mathematicians - schools – teachers – students); the relations of production, that determine the social position in the society according to its function (axioms, theorems, postulations, definitions, rules - of inference or not, ethics, power, racism, love).

I have discussed this sociological history and made a brief analysis of it in order to reinforce the necessity of embracing this new view about mathematical knowledge: the Sociology of Mathematics.



Mathematics and Space

A CONCEPTION OF MATHEMATICS

Mathematics is a category of knowledge. It is a social thing: a product of collective actions. It is a collective representation that expresses collective realities.

However, mathematics is not simply a system of ideas; it is particularly a system of force. This force becomes visible through a consideration of the modes of production in human evolution. Mathematics appears in the productive forces and in the relations of production as a set of social relations through which the human being produces and reproduces its life. Mathematics, by itself, is a food that feeds and is fed, with vigour, to satisfy the mode of production.

Mathematical objects (as models, representation and artefacts) and the mathematician are productive forces that have been

domesticated within the contemporary mode of production – capitalism. However, the relations of production, the axioms, theorems, postulations, definitions, rules of inference etc., are in conflict with the praxis of survival of the human being as a species (intelligent) in the universe.

In pure mathematics, which has become institutionalized as academic knowledge, there is a lack of connectivity between the work of mathematicians (the theory) and social mathematical practice around the world (the practices). This is signified by the paradigm in the academic *metier* that derives from the flagship of postmodernism. It theorizes all practices, including that of recognizing multiculturalism and tolerating it, and thereby falsely accepts the 'other' mathematics. In this *metier*, the productive forces work as a tool of alienation, a tool of closure, because the relations of productions remain locked inside a closed system.

Leaving aside the essentialism of pure mathematics, mathematics is a social thing because everyone, including the mathematician, produces mathematics; it is a social production.

Sal Restivo's *Mathematics in Society and History* (1992) alludes to the social relations of pure mathematics by looking carefully at the historical mechanisms that are intrinsic to these relations. Restivo analyzes, among others, the historical mechanisms that forbade or falsified the dialogue between academic mathematical theory and social mathematical practice around the world by blocking the exchange of energy that could have fertilized across these two bodies and, ultimately, created an increasingly systemic disequilibrium between them.

The hegemonic system has recognized the different social practices of mathematical knowledge, but only the group where these practices are socially developed can practice it because, while the

social practices of mathematical knowledge around the world are recognized, they are not, normally, permitted; the knowledge about them is shared but not used. Thereby, a causal relationship links the theory and the practices of mathematical knowledge. It is an example of multicultural racism, an example of the human being serving the science.

Writers over time have discussed explicitly the dual position of theory and practice through other dualities as, for example, humanism and materialism. Paulo Freire (1970) looked at this process, not as a dialectal relation, but as a dialogical one. He argues about the dialogical process between theory and practice thus:

Nosso papel não é falar ao povo sobre a nossa visão do mundo, ou tentar impô-la a ele, mas dialogar com ele sobre a sua e a nossa. Temos de estar convencidos de que a sua visão do mundo, que se manifesta nas várias formas de sua ação, reflete a sua situação no mundo, em que se constitui (Freire, 1970, p87) .

What happens when this way of thinking is inserted into formal mathematics? Is the *verbalism*¹⁷ of formal mathematics, which consists in putting strength or value only into the theory, contemptuous of the practice? Verbalism is a process that contributes to the consumption of ideas: it is not a process that is designed to produce and to transform, from and to action. This verbalism is fundamental to the maintenance of the hegemonic systems – the closed ones.

Activism¹⁸ appears in opposition to verbalism. By the same token, mathematical activism is the condition of allowing mathematics its

¹⁷ In Paulo Freire's sense.

¹⁸ In Paulo Freire' sense

real position: as a social thing that is developed by everyone in different cultural conditions. To be active, mathematically speaking, is to be situated spatially; the activism appears linked with space, in the sense that it is engaged with existence. However, this existence is understudied and therefore under-theorised and under-praxised as a material and human existence of the human being: as a social existence. Freire claims this engagement when he discusses the state of being in a situation.

Sendo os homens seres em "situação", se encontram enraizados em condições tempo-espaciais que os marcam e a que eles igualmente marcam. Sua tendência é refletir em sua própria situcionalidade, na medida em que, desafiados por ela, agem sobre ela. Esta reflexão implica, por isso mesmo, algo mais que estar em situcionalidade, que é sua posição fundamental. Os homens são porque estão em situação. E serão tanto mais quanto não só pensem criticamente sobre sua forma de estar, mas criticamente actuem sobre sua situação em que estão (Freire, 1970, p101).

The situcionalidade of the human being emerges as a way for human beings to think inside of their own existence. To have knowledge about their own space, about their own situation, is to be engaged.

By inserting the human being into a position that faces the imperialist world in which we are living, is to focus in on how things are globalized, without universalizing them. The sole purpose of globalizing things is to know hegemonic power and its ethic of delimiting our spaces, physical and mental, in order to stop them. It is possible to stop them by taking the moment to make a revolution in mathematical theory and thereby expose the potency of the academic mathematical approach that offers only one possibility for mathematical knowledge to be theorized "in the face of the world". Like the medieval era where the church predominated above all, "in the face of the world", formal

mathematical knowledge reinforces our socioeconomic environment to maintain the 'anti-transformation', to maintain the closed system.

Ubiratan D'Ambrosio, a mathematical educator, has totally focused on human relations and on the importance of human being facing the mathematics programs and mathematical subjects that have been inserted into the formal learning process. He alludes to the process of the academic mathematical approach, the rationality that it involves and its connotation of infallibility, of rigor, and of precision that secures present exclusion of other forms of thought.

Na verdade ser racional é identificado com dominar matemática. Chega-se mesmo a falar em matematismo, como a doutrina Segundo a qual tudo acontece Segundo leis matemáticas. A matemática se apresenta como um deus mais sábio, mais milagroso e mais poderoso que as divindades tradicionais e de outras culturas (D'Ambrosio, 2002, p75) .

Some social acts, such as the emergence of Critical Mathematics Education and of Ethnomathematics that have been inserted into Mathematics Education, show the social voices that claim the revolution in mathematical knowledge. These mathematical pathways attend more to the interests of human beings and less to market interests. They offer ways to insert the human being into mathematics, to counter exclusion, because they focus on the process and not on the final product. They offer ways to break with essentialist ideas about the existence of heroes in mathematics.

Critical Mathematics Education and Ethnomathematics were born out of questions about the dual position between theory and practices that are founded in Critical Theory, and in Social Theory, and in actions/reactions that have been inserted into the formal educational process over the last thirty years. These socio-political actions have reinforced the excluder role of formal mathematics

that has become inserted into the basic structures of the hegemonic system and now claims to embody the dialogue in mathematics education. While their actions closely connect, their theories are dichotomized by the duality of the relative positions that they occupy: mathematical materialism and mathematical humanism.

Human relations are the central focus of this coexisting duality (theory and practices, materialism and humanism, process and product, right and wrong, positive and negative). Behind this main focus of human relations where mathematics is a fruit of social being, of the material world, is the assumed idea that, being born from human relations that are social, mathematics is material beyond the human because the bodies are socially constructed and socially constructive agents have a social existence in a precise place: the social existence of the human being in the material world.

There is a similarity between existence - acquired or imposed space good and evil. These mathematical pathways exist, through acquired or imposed space and the similarity of good and evil that is the living out of essentialist judgments that have been generated mainly through the body of Catholic Church and the arbitrariness of hegemonic systems. In this post-modern moment, the social claims the need for a bigger search for something that is evident through existing practices.

At this moment, to be with the other and with nature is vital and it is still material, though it is beyond the human. The productive forces and the relations of production, that is, the power of corporification and the ethics of identification as producers of the body, and the relations of power and ethics as production relations, are still human nets that exist beyond vulgar materialism.

In the search to be with the other we now insert this net of power and ethics, where the mathematics of mathematicians as a language form (embedded in the power of corporification and the ethics of identification), as an adequate temporal form (above all in this post-modern world), and as a hegemonic spatial form (that locates cultures, delegates quality, institutes hierarchical levels) promotes exclusion.

The conception of mathematics claimed here is beyond that of pure mathematics, being a conception of the mathematical body as a way into the insertion, as an active producer of bodies that can react within production relations. The mathematical body must be seen as a part of human culture.

A CONCEPTION OF SPACE

In *Les Formes Élémentaires de la Vie Religieuse* (1912; 2002_3/1989/1995), Durkheim approaches space as a category of knowledge, a collective representation, and a social thing.

According to Durkheim, to talk about this category is to talk about the relations that the space expresses, in implicit ways, through the individual conscience. The individual is situated in a determinate point of space and he/she can hold him/herself, so that all sensations embody something of the spatial. This is a personal relation of the individual who is involved with the space but, at the same time, the author affirms that he/she has no individual experience that could make them even suspect the notion of the whole.

Les images génériques qui se forment dans ma conscience par la fusion d'images similaires ne représentent que les objets que j'ai directement perçus ; il n'y a rien là qui puisse me donner l'idée d'une classe, c'est-à-dire d'un cadre capable de comprendre le groupe total de tous les objets

possibles qui satisfont à la même condition. Encore faudrait-il avoir au préalable l'idée de groupe, que le seul spectacle de notre vie intérieure ne saurait suffire à éveiller en nous. Mais surtout il n'y a pas d'expérience individuelle, si étendue et si prolongée soit-elle, qui puisse nous faire même soupçonner l'existence d'un genre total, qui embrasserait l'universalité des êtres, et dont les autres genres ne seraient que des espèces coordonnées entre elles ou subordonnées les unes aux autres (Durkheim, 1912; 2002_3 / 1989 / 1995, [p133](#) and [134](#), p 519 and 520, p442).

The notion of “whole” does not come from the individual because she/he is just a part – the minimum fraction of the reality – in relation to the whole. At the same time, for Durkheim, the space occupied by the individual could not be the space as a whole, which contains all the individual spaces.

... l'espace que je connais par mes sens, dont je suis le centre et où tout est disposé par rapport à moi ne saurait être l'espace total, qui contient toutes les étendues particulières, et où, de plus, elles sont coordonnées par rapport à des points de repère impersonnels, communs à tous les individus (Durkheim, 1912; 2002_3 / 1989 / 1995, [p134](#), p520, p442).

The concept of the totality is only the abstract form of the society's concept. The author affirms that, if the world is in society, the space that the society occupies can be confused with the whole space.

... le concept de totalité n'est que la forme abstraite du concept de société: elle est le tout qui comprend toutes choses, la classe suprême qui renferme toutes les autres classes. Tel est le principe profond sur lequel reposent ces classifications primitives où les êtres de tous les règnes sont situés et classés dans les cadres sociaux au même titre que les hommes (Durkheim, 1912; 2002_3 / 1989 / 1995, [p134](#), p521, p443).

To talk about space is to talk about a first coordination that introduces itself among the data of tangible experiences. This first coordination will be impossible if the parts of the space are mutually equivalent qualitatively: if they could replace themselves with

others. To be able, spatially, it is necessary for things to be able to be pointed out in different forms: to put some to the right, others to the left, these in top, those low down, in the North, in the South, to East or West, etc. (Durkheim, 1912; 2002_3 / 1989 / 1995).

In this context, to represent the space is, essentially, to order the heterogeneous, that is, to produce, spatially talking, sense.

By itself, the space has neither right nor left, neither top nor bottom, neither North nor South, etc.... All of these distinctions come from the fact that they can be attributed to the regions having different affective values. As all the people of one culture represent the space in the same way (Durkheim, 1912 ; 2002_3 / 1989 / 1995), it is evident that these affective values and their distinctions – what they depend upon – are equally common; as Durkheim implies, that they have social origins. In this way, the space is not dissociable from the society that inhabits it. Rather, the space is the construction of a material base over which the society produces its own history.

SPACE IN THE MATERIAL SUBSTRATUM OF THE SOCIETIES

Durkheim's vision of space is not limited to the dimensions of its representations. As I discussed in my treatment of Durkheim and Logic, in Chapter Two, the space also has a material dimension that must be studied.

In 1899, Durkheim made an entry in the journal *Année Sociologique* entitled "Social Morphology", and in 1904-1905, Mauss, re-editing a previous text, defined social morphology as being the science that studies the material substratum of societies not only to describe but also to explain them. That is, we have to explain the form that

societies assume when establishing themselves on the ground, the volume and the density of the population and the way this is distributed, as well as the set of things that compose the collective life.

Mauss (1904/5, 1974) exemplifies his proposal with his study on seasonal variations among the Eskimo (Inuit). This author affirms that these peoples live in two spaces, each with a completely different material organization, where each corresponds to a station of the year.

Among more contemporary studies of social morphology Pinxten's ethnography of the Navajos is notable. During 1976 and 1977, Rik Pinxten studied and lived with the *Navajos* of Arizona. In 1983, in the work entitled *The Anthropology of the Space*, Pinxten presented a complex analysis of the spatial relations of the Navajos. He examined the extensive natural philosophy of this culture and showed that, in essence, the Navajos live in a dynamic space: for them "all is in movement", where the temporal scale that is implicated is not always able to see the movement.

LEVELS OF SPACES

Pinxten (Pinxten et al., 1983) examines how different cultures establish space concepts and considers, as referential for any culture, three levels of space: physical space, socio-geographical space and cosmological space. Here, the "world" of the space has multiple perspectives; not only by means of geometric notions but, also, through notions of manipulated, non-manipulated, and spaces untouched by humans such as, for example, spaces of and for dogs, a mountain, and the sun.

Pinxten, van Dooren, and Harvey analyse, specifically, the Navajos' space through a strong philosophical and epistemological research program, combined with semantics of spatial terminologies, fixing their speech by an anthropological framework. The movements inserted in their work about the Navajos open possibilities to a further understanding of the relationship between language and thoughts beyond an anthropological way, giving a consistent background to understand the language, thoughts and behaviours as social things, following a social order.

Founded in the social order, working within these multiple perspectives of the space and searching transforming actions¹⁹ to understand the knowledge by "what it is" and not by "where it comes", I observe that the notions of physical, socio-geographical, and cosmological spaces are intimately linked with our own image of our identities, in other words, that the concepts of space are intimately linked with the systems of social relations – with our life.

A tool for analysing these multiple perspectives, and their relations with our own inner images, can be found in the definition of the "life phenomenon" by Ubiratan D'Ambrosio. According to D'Ambrosio (2002), life is the result of three facts: individual, other, and nature. These facts and the relations between them are indissoluble; one does not live without the two others. These three facts, which I understand as three spaces, and the relations among them, find a certain correspondence with the image of the physical, socio-geographical and cosmological spaces established by Pinxten, van Dooren, and Harvey (1983). This correspondence could reveal interconnections between the material dimensions of space.

¹⁹ in Paulo Freire' sense

Founded in those thoughts, and in my experiences in urban life, I classify, in a sociological view, three levels of spaces as being:

- o CorpSpace – intrinsic to the *social unitary space*, it has as its center the body; internal and external space. The body is a social structure, a system of social relations, a material entity that holds the self. The CorpSpace is a social space where the body can act without direct interaction with other bodies. The body has a certain level of freedom.
- o OtherSpace – intrinsic to the *social collective space*, it has as its center the social relations between the bodies; intra and inter-relational space. The OtherSpace is a social space where the body can act only through direct interaction with other bodies. The social relations between the bodies have no level of freedom.
- o EcoSpace – intrinsic to the *environmental space*, it has as its center all phenomena that are involved in the survival of the body; universal space. The EcoSpace is a biosocial space where the body cannot act directly, even with direct interactions with other bodies. The phenomenon has a certain level of freedom relative to the body but doesn't have a level of freedom in relation to the other phenomena.

These three levels are fruits from the theoretical framework developed by Pinxten and his colleagues, and by Ubiratan D'Ambrosio. They are intrinsically connected through their own social relations; one does not exist without the other two; it forms their social humanity²⁰.

The social humanity, in its structure and dynamical relations embedded in multiple, systemic, and complex interdependences,

²⁰ It is a term used by Sal Restivo.

produces spaces through morphologies, practices, and representations of the places where they are constituted and are constitutors. The morphology, the practice, and the representation appear in the three levels previously categorized and they are not disassociated. In each level are found voices from morphologies, practices, and representations inserted at the space where they are being experienced, which give form to our space in that moment, in that context.

The morphology, following the Durkheimian definition presented in this work, means the dimension of the moment and the movement of the forms and the contents of the social life, that is, the bodies. It could be understood as social individual body, institutional body, network body – the bodies of the social humanity.

The practice, following the Freirian definition used in this work, means the dimension of the transforming action of the social life, that is, the praxis. The notion of practice in Freire²¹ is founded in the Hegelian dialectic of relations between “servile consciousness” and “consciousness of the master” and in Marx’s conceptualization of praxis, to enclose the relation subjectivity-objectivity; the practice is a movement to transform the world, and not only to know it. The act of knowing, according to Freire (1970), is not a passive act of the human being facing the world, it is an act of engagement; education is in the relations of the human beings and is mediated by the social world.

The representation, following the D’Ambrosian definition used in this work, means a dimension of worldview inside the social life, that is, a tool of the action of knowledge. In the active process of

²¹ This definition is present in almost all the works of Paulo Freire, but can be found, in more detail in *Pedagogia do Oprimido* (1970).

representation, the codified and symbolical communication with the proximal and distant other, according to D'Ambrosio (1996), is the search for communication with some other, common to all. This tool of action is inserted in a process, which is constituted by reducible movements (the consciousness collective passing to a tool) and magnifiable movements (the tool as social and cultural strategies for survival).

These spaces produced by social humanity are promoted by knowledges and behaviours. According to D'Ambrosio (2002), to share knowledge and to make compatible behaviours cannot be restricted to specific cultures – intrarelatinal OtherSpace - nor to the personal exchanges of cultural dynamics – inter-relational OtherSpace. Rather, in this moment, knowledge and behaviour are *transcultural* (knowledge and behaviours are subordinated to cultural dynamics). This transcultural movement is manipulated by the power of corporification and by the ethics of identification that is current in one culture – the occidental culture, and it is embodied by its hegemonic political regime that maintains its economical situation by sinking roots into an OtherSpace.

The balance and the harmonization between the facts, or the spaces, in the process of transculturalism, that is, the exchange of energy across the different cultures, is enabled within the open systems and disabled within the centralization in one specific culture, its political regime, and its economic placement. The exchange of energies between the spaces is constituted, according to D'Ambrosio (2002), by the ethics of diversity, or alternatively by the establishment of an order in these exchanges of social life. This order demands respect for the other, solidarity with the other and cooperation with the other, and it is founded in the voices and in the actions of diversity.

Based on this theoretical framework, I affirm that the concepts of spaces coming from different cultures must be respected, learned, and argued in dialectical processes and with the intention of realizing the material side of mathematics. Human beings construct and reconstruct themselves and each other through their moment by moment, day by day interactions. At the same time, human beings are also constituted in relation to a natural order that is not simply connected with time, space, and society, but literally and materially constituted of time, space, and society.



Ethnomathematics

The pathways of certain institutions such as state, school, family and church, in the concentrating process of capital, promotes material and affective misery, domestic violence and tension, unemployment, the absence of a link between school knowledge-making and knowledge-making in practice, and the absence of social, sportive, and leisure activities of urban people.

In the process of urban life, the knowledges used in it and the cultures within it are the main facts that claim a pathway to contemporary discourse, the discourse of Ethnomathematics.

Ethnomathematics is a system of force that could be considered as a practice of social freedom; it is a political action, it is a transforming action. Social freedom is a dialogical process, in constant movement and adaptation, which takes place intra- and inter- societies, in order to constitute a new truth in the societies involved. It is action against absolute truths and against vulgar causality. The insertion of process is intrinsic to Ethnomathematics;

being a universal view that moves this process so that the productive forces are not centred in a closed system but, being located in different reference frames, brings the voices and practices of diversity.

The active process of Ethnomathematics is capable of creating a possibility, doing, and making viable, the allocation of specificity to new mathematical objects (new models, representations, and artefacts) as well as creating conditions where every human being can exercise his/her mathematical work through transformative productive forces. As human beings develop their work and distribute relations through the processes of production and reproduction, new forms of social life emerge from the process of transformative productive forces that usher in new relations of production. In turn, these relations permit new modes of productions that can cultivate societies that are transcultural.

Ethnomathematical practices propose another model of human relations and of the relations among different cultural groups. It proposes community models that oppose totalitarianism or the models of individualism. The processes of these practices allow us to establish mathematical relations that are not mechanical, hierarchical, and deductive between the ends and the means, but rather a dialectical mathematical relation of interaction by agreements, that is, of insertions that construct new mathematics.

Ethnomathematics awards a new dimension of learning, even of being with mathematics. It does this by substituting an instrumental conception of mathematical learning as a technique of abstract alienations and an excluding fact, by one conception, committing the human being as a whole or allowing cultural action as the expression of its ideology.

This “dialogue of the civilizations” combats the pretentious isolation of “small me” and claims the tonic of the reality of other that is, in the first place, relations with the other and relations with nature.

In my life, one important factor in developing this conception of mathematics, or this view through Ethnomathematics, was to be practicing theory closely with Ubiratan D’Ambrosio, the pioneer ethnomathematician, by our constant discussions and reading his many works. In 1977, at the annual meeting of the American Association for the Advancement of Science in the United States of America, Ubi formally introduced the term “ethnomathematics” in a lecture to attend his new holistic view over the diversity of the learning process of mathematics.

... para compor a palavra etno matemá tica utilizei as raízes tica, matema e etno para significar que há várias maneiras, técnicas, habilidades (ticas) de explicar, de entender, de lidar e de conviver com (matema) distintos contextos naturais e socioeconômicos de realidade (etnos) (D’Ambrosio, 2002, p70) .

As D’Ambrosio explains above, Ethnomathematics is not only a study of “different mathematics”, it is a way to deal with the distinct forms of “to know”; it is a social act. Ethnomathematics is an answer, in practices, to the decline of the idea of mathematics as a pure thing, founding social and cultural roots to explain mathematical practices. The system of Ehnomathematics is an open system because it survives from exchange among cultures, and as a bridge between cultures, being a way to express behaviours through the exchange of mathematical knowledges. Founded in Social Theory, History of Mathematics, and Mathematical Education, Ethnomathematics offers a new approach inside of the international academy.

The life of Ethnomathematics around the world is new. According to Sebastiani Ferreira (2004), the process of Modern Mathematics' decline brought many voices from Mathematicians Educators against the existence of a common *curriculum* and the imposed way to present the mathematics of one view, as a universal knowledge characterized by claims of absolute truth. The value of the previous knowledge, not acquired in formal academic contexts begins at this point to be considered by some mathematics educators. In 1973, Cláudia Zaslavsky introduced Sociomathematics; in 1982, Ubiratan D'Ambrosio introduces Spontaneous Mathematics, Jill Posner gives us Informal Mathematics, Eduardo Sebastiani defends Mathematics and Society, Therezinha Caraher, David Caraher, and Analucia Schikieman champion Oral Mathematics, Paulo Guerdes writes about Oppressed Mathematics; in 1985, Paulo Guerdes introduces the idea of Hidden Mathematics or Frozen Mathematics; in 1986, Melin-Olsen draws attention to Folk Mathematics and Eduardo Sebastiani discusses Mathematics Codified in Know-How; in 1987, Paulo Guerdes, Therezinha Caraher and Harris give us Non-Standard Mathematics. Through these efforts voices from around the world of pre-academic or non-academic begin to be known and valued. Mathematical knowledge as the product of social relationships throughout lifelong practical learning processes begins to have a life alongside formal academic mathematics.

In *Etnomatemática: Elo entre as tradições e a modernidade* (2002), Ubiratan D'Ambrosio offers a powerful explanation and defense of the ethnomathematics program. In this discussion, he presents the various dimensions of ethnomathematics and discusses the actual position of ethnomathematics in the Post-Modern world. He assumes that the main energy in the development of ethnomathematics has been the search to understand mathematical knowing/doing during the history of humanity. To maintain the

central focus on the organization of knowledge and behaviours, D'Ambrosio proposes a *trivium* from the concepts of Literacy, Materacy, and Technoracy to the modern education process.

In the actual legal process of education, based on academic knowledge that has been developed in formal places – the schools, normalized by national *curricula*, and provided through unsuitable evaluations, does not make possible the acquisition and utilization of communicative, analytical, and material instruments which D'Ambrosio considers very important in the construction of the ethics of diversity. Literacy, Materacy, and Technoracy were not introduced as simple neologisms, but to support the acquisition and utilization of these instruments. According to his definition:

Literacy - is the capability of processing information, such as the use of written and spoken language, of signs and gestures, of codes and numbers. Clearly, reading has a new meaning today. We have to read a movie or a TV program. It is common to listen to a concert with a new reading of Chopin. Also, socially, the concept of literacy has gone through many changes. Nowadays, reading includes also the competency of numeracy, the interpretation of graphs and tables, and other ways of informing the individual. Reading even includes understanding the condensed language of codes. These competencies have much more to do with screens and buttons than with pencil and paper. There is no way to reverse this trend, just as there has been no successful censorship to prevent people from having access to books in the past 500 years. Getting information through the new media supersedes the use of pencil and paper and numeracy is achieved with calculators. But, if dealing with numbers is part of modern literacy, where has mathematics gone?

Matheracy is the capability of inferring, proposing hypotheses, and drawing conclusions from data. It is a first step toward an intellectual posture, which is almost completely absent in our school systems. Regrettably, even conceding that problem solving, modelling, and projects can be seen in some mathematics classrooms, the main importance is usually given to numeracy, or the manipulation of numbers and operations. Matheracy is closer to the way mathematics was present both

in classical Greece and in indigenous cultures. The concern was not with counting and measuring but with divination and philosophy. Matheracy, this deeper reflection about man and society, should not be restricted to the elite, as it has been in the past.

Technoracy is the critical familiarity with technology. Of course, the operative aspects of it are, in most cases, inaccessible to the lay individual. But the basic ideas behind technological devices, their possibilities and dangers, the morality supporting the use of technology, are essential issues to be raised among children at a very early age. History show us that ethics and values are intimately related to technological progress (D'Ambrosio, 1998, on line).

From D'Ambrosio, there is a new voice, a mathematical knowledge where the communicative, analytical, and material instruments are mathematical tools to model, to represent and to produce artefacts. Founded in this view it is possible to realize how a dialogue (communicative instrument), a signal (analytic instrument), and the body (material instrument) are mathematical objects, productive forces that are, in their relations of production, modelling, representing and producing artefacts.

This brief analysis of ethnomathematics is intended to reinforce the idea of the necessity of creating a new posture over mathematical knowledge.

CHAPTER 4

SÃO PAULO

When I read the book "*Cidade de Deus*" I could realise that Paulo Lins, its author, wrote about a scenario inside his own life; he was born and raised there. Instantaneously, I recognized my writing in his writing. To be *in locum*... it is a statement not about a work but about our lives, making us a character of our writing and transforming our eyes into the window of our own scenario.

Our common "*in locum*" was watered by the capitalistic system that is present in the construction of every big city. The main contribution of the state, in this case, is to favour the accumulation of capital through the valorisation of space as merchandize. Inside this scenario, the urban space, localization is a product of the work that continuously (re) produces the space in accordance with the always *mutante*²² requirements of the accumulation. A systemic view of totalitarian mode of production of the city supports our writings through an exercise of a critical analytically design study of the cities in which we were born; our design expresses, in affective and symbolic ways, some models, representations and artefacts used during their constructions.

Paulo was born in the City of God, in Rio de Janeiro, while I was born in city centre of São Paulo. These places have similar environments even though they have two different types of borderline zones: one is in the peripheral zone of a big urban city and the other is in a central zone of the major city of Brazil. In both places, a 16 year old child, being in a street situation, knows the top of her/his life... and it is my main focus in the description of some contexts of São Paulo.

²² Is a word frequently used by São Paulo's people and it represents a different transformation and a multicultural evolution that this big city presents in the process of acculturation suffered by the people that live there, distinguishing it from other big cities.

In the process of opening up the city of São Paulo in its social and cultural contexts to my readers, other contexts were born and took on their own shape from my writings. In face of that, I decided to describe not only the social and the cultural context, but to describe the geographical, the historical, and the love contexts of São Paulo from some experiences of life, from a space of collocation, an emplacement, *in locum*.

The geographic, the historical, and the love context came as a tool to support the complexity of the social and the cultural contexts; those were structuring points to support my eyes into the window of my own scenario. Therefore, in this chapter I bring three different moments founded through five different contexts in which I approach the city of São Paulo.

In a first moment, I work with the Geographical and Historical Contexts. I start by describing a geographical mosaic passing to the historical mosaic constantly connecting them to show the complexity that is involved in the attempt to situate the space of the children in street situation of São Paulo.

In a second moment, I work with the Social and Cultural Contexts. I bring my life history as a local person, to reinforce the social and the cultural environment of São Paulo. From this point of view, the discussion of these contexts gets life, revealing the interaction in *locum* between the actions and the main actors – children in street situation.

The Love Context comes at last, in a third moment, after the social and cultural contexts. The Love Context comes to affirm the love space as a possibility, love as a social construction, and love as the major social thing to be engaged in and with the other and nature.

My life is one indivisible whole and all my activities run into one another,
and they all have their rise in my insatiable love of mankind (Mohandas
Karamchand Gandhi, 1958; 2005, p45).



The Geographical and Historical Contexts

TERRA DA GAROA

São Paulo was known as the land of the drizzle – *terra da garoa*. To be the land of drizzle is to be the land of possibilities – possibilities for weather that involves the feelings, that invades the hearts... a bohemian, philosophic, and romantic climate, as defined by my cousins. I can remember the end of this period, around the end of the 60s, when the people used hats, layers of rain and umbrellas, hidden from the drizzle, searching wrapped places to be or searching the drizzle to walk along the streets... hand in hand with someone, since this someone was yourself. When the drizzle finished, I remembered in the *Pinheiros'* neighbourhood, the people came from the wrapped places to outside but in the same movement of possibilities and the people walking in the streets

during the night and, in the summer time, the sidewalks were extensions of their houses.

São Paulo has a moderated climate, not too much sun neither too much rain, only too much drizzle at the afternoon – the famous moderated rain. It was a perfect weather to lock people, to wrap places to let the people come together.

The drizzle came every afternoon to calm the people and nature... the drizzle came to bring me a notion

of the equilibrium between quantity and quality. The movement of agglomeration in this city was reinforced by the weather but, at the same time, was promoted by other reasons founded in the social space.

São Paulo, land of drizzle, was and is constitutive of the people from land of sun, land of ice, land of orient, land of occident, land of forest, land of oceans, land of all parts of Brazil, and many parts from abroad. To learn to read the images of this city, and not only imagine through the senses, is a way to be a critical and participative actor of this scenario. To neglect these social and cultural processes that involve São Paulo, not accepting to exchange the learning and the teaching from new knowledge that is born inside an urban mix space, in a mutant movement to survive,



BAR II ATO (PINHEIROS) - 2003
WATERCOLOR BY HELENA INVERNIZZI



CHUVAS NO GLICÉRIO - 1980
WATERCOLOR BY HELENA INVERNIZZI



is to develop a new form of exclusion, founded in a new form of literacy.

In this land of urban mix, the geography and the history, inserted at the process of colonization, can give some support to better understand the social and cultural context of São Paulo, namely focused in the children of street situation.

The city of São Paulo is the capital of São Paulo' State. The state of São Paulo is one of the twenty-seven states of Brazil. In 2000, during the development of this research, São Paulo was the largest city in South America, with more population than the others, with about 10.287.695 habitants. Today²³, it has 11.016.703 habitants. Its metropolis, with its 38 municipalities, has approximately 19.677.00 habitants and it is a number that gives to it the characteristics of the most populous city of Brazil and the third city of the world after Tokyo and Mexico City.

It is so normal for a foreigner to be lost in São Paulo and it is not necessary to be foreigner for this to happen. The local person of a neighborhood can be lost in a different one. However, the children

²³ Dates of IBGE in July of 2006

http://www.ibge.gov.br/home/estatistica/populacao/estimativa2006/POP_2006_DOU.pdf

in street situation are never lost, and this discussion is taken up in the following chapters.

In a very large plateau, São Paulo is installed, near to Santos – the most important port of Brazil. The *Serra do Mar* shares the plateau of the port; it is the green area that was most preserved since the colonial period. We can find different ethnic groups living there. The weather in São Paulo is officially called Tropical and the Tropic of Cancer passes near to the

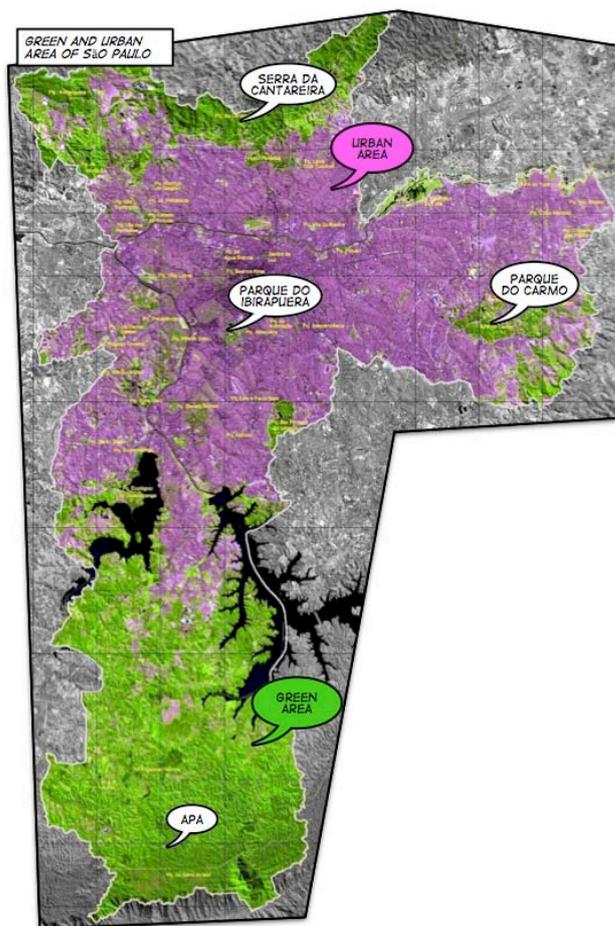


city, in São Paulo State. Actually, the summer is hot and a little bit wet, with quick and strong rains; many parts of the city find big problems in the summer with floods; some neighborhoods may be under water. During the rest of the year the drizzle is not the normal characteristic, but the old drizzle is one of the reasons why, in the literature about children in street situation of São Paulo, the name "wet children" appears.

The microclimate in São Paulo, after the 60s, had an abrupt change based on the increase of the temperature and the reduction of the humidity caused by the lack of green areas, substituted for by the concrete and asphalt, the construction of buildings that hinder ventilation, the increase of the industrial activity and automobile pollution. Sal Restivo suggested we appropriate the term used by others for children in street situation, "children of the asphalt" or asphalt children.

The air pollution is a hard problem in the city of São Paulo. The industrialization is one reason for that; many industries were located in Greater São Paulo and some are near to the city centre. Another reason of the air pollution in São Paulo is the precariousness of public transportation; most people prefer to use their own cars. The people inside the cars, in city centre and on its

outskirts, are one of the main targets of children in street situation's robbery, known as "trombadinhas".



The *Serra do Mar* is a natural barrier that prevents the massive pollution from go out to the plateau in the direction of the Atlantic Ocean.

Green areas can be found in the city at *Parque do Ibirapuera* in the central area, *Horto Florestal* in the north located in the

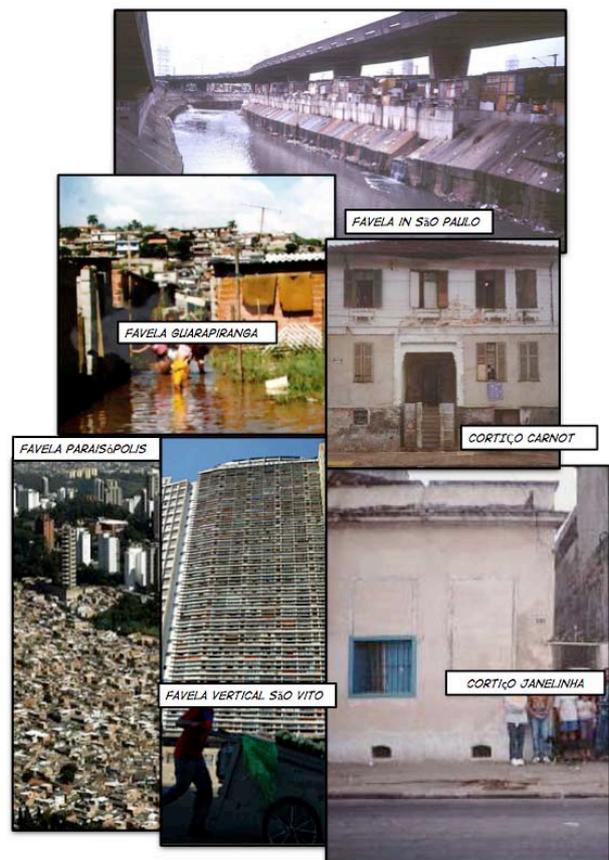
Serra da Cantareira, *Parquedo Carmo* in the east, and *Area de Proteção Ambiental (APA) Capivari-Monos* in the south. In most cases, these areas are very far from the city center and the children in street situation do not recognize them as their spaces. In the cases of these green areas being in the city centre, the children in street situation cannot be there because the public security guards control access. These children cannot be at any places – they have

the character of "invisible children". The places to the children in street situation are everyone and anyone.

São Paulo is the main financial city of Brazil. Large areas of industries are present in São Paulo, as well as the main banks and multinationals of the world, and brands of clothes and accessories recognized around the world. One can come to São Paulo to work, to become rich, and to become unemployed. There is misery in São Paulo on a large scale.

The agglomeration of people trying to live near to the city centre brought to this area different styles of residences, including cortiços and *favelas*. *Cortiço* is a Portuguese term commonly used in Brazil and Portugal to describe an area of urban housing where many people live in conditions of poor hygiene and poverty. Cortiços differ from *favelas* in being large houses divided into small rooms, rather than autonomously-built

neighbourhoods. People who live in cortiços are normally families in one very small room who have to share one bathroom and have no privacy. Sometimes, they use the kitchen and the bathroom as common area, but sometimes, they improvise the kitchen and the bathroom inside their room, because these spaces become a room (house) of a family.



There is a *Mafia do Cortiço* –people expert in renting houses to sub-let. The *cortiços* have a specific name, *Scoppeta*, in a neighborhood called *Brás*, *Casa Rosada*, in a neighborhood called *Higienópolis*, or *Carnot* and *Janelinha* in a neighborhood called *Pari*, in the city center. This style of habitation was born in the city of São Paulo with the European Immigration, at the end of the XVIII Century brought by Italian people.

Favela is a common name of a tree with thorns (*Jatropha phyllacantha*) and the natural place of this tree is the northeast of Brazil; it was very frequent in *Canudos*, in the *Bahia* State. The *faveleiras* were the houses in the village called *Antonio Conselheiro* in the *Favela* Mount. At the end of the XIX Century, the *Cariocas* soldiers came back from the campaign against the villagers of *Canudos* where they had lived in tents at the *Morro da Providência* (*Providência* Mount) in Rio de Janeiro. Here they found the same tree that they had seen in *Canudos* and just after that, the mount became *Favela* Mount. Since that time, *Favela* became a name to designate a set of precarious houses in the urban spaces.

In São Paulo there are two styles of *favelas*. One style is composed by *barracos*, in horizontal areas. The *barraco* is normally constructed with recycled material, in communities where there are two rooms per residence. In one room the residents create the kitchen and the living room, and in the other one they make a bedroom – the collective bedroom. The bathroom of the *barraco*, in the case of São Paulo, is outside directly connected with the rivers, its affluent, and the weirs - the *favela* is always constructed near these points. The other style of *favela* is developed in abandoned buildings, in a vertical form. In this case, the vertical *favelas* are normally big communities of a kind of people in street situation – the ceilingless. The communities are constituted from the famous “urban re-qualification” instituted by some political actions where

their old habitations are destroyed to be replaced by big avenues, new buildings, and some “public” gardens. The *favelas* and *cortiços* are the main places where the children in street situation had their parents or first social references; another name for the children in street situation could be “*faveladas children*” or “*cortiço's children*”.

On the one hand, society turns its back on the *cortiços* which is a movement of small groups of poor families. On the other hand, the *favelas* are recognized by society; normally this movement contains a large group of people and today the constructions are by masonry, making it more difficult to destroy them. Some *favelas*, such as *Heliópolis* in *Ipiranga's* neighborhood generate interesting and supportive community movements; but *favelas* are, in general, excluded places and marginalized by the rest of urban society.

The movement of conurbation forms the metropolitan region – called Greater São Paulo. This movement joins the urban areas of two or more cities. The geographic boundaries are lost, bringing to the peripheral zones some characteristics of the middle zones of a big city. While the parts of the city nearest to the city centre are rich and developed in general, the peripheral zones are normally poor, without infrastructures, and with precarious houses. But it is necessary to remember that the city centre of São Paulo is a mix of peoples from these different places inside the metropolitan region and then it is a place where the rich needs to see the poor, where the differences are in shocking contrast, where the city could be better represented.

As I reported in Chapter 2, the city center is a social space and then it is in the interface between material causality and functional relations. If the morphological plane (the material one) can be analyzed in terms of material density, the other plane can be

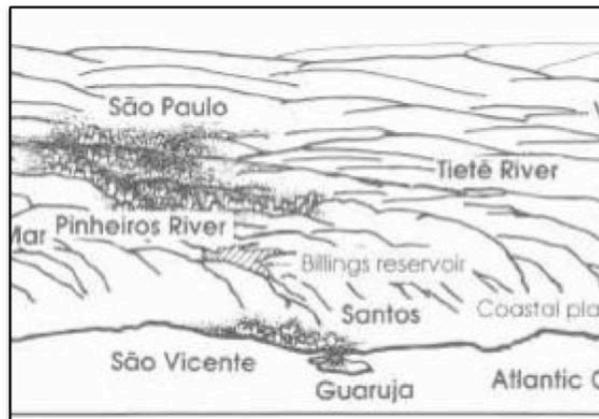
analyzed in terms of moral or dynamic density. When the morphological plane modifies itself, the transformations appear gradually in the collective representations. With autonomies, the collective representations restructure themselves during a long time and persuade a new social space, giving form to the geographic space, in a constant movement.

In this social geographical panorama, the children in street situation have been a culture existing in the city centre of São Paulo since this city was born. In the movement of the restructuring of the collective representations, as a spiral, the generations of children in street situation were always constructed by the city of São Paulo and were constructors of this city.

The morphology, the practices, and the representations are three dimensions mediated by social space, but independent and not necessarily coincident. In that perspective, the social space of the city centre became more complex and now requires the use of multiple levels of analysis – a systemic analysis, where the historical context is decisive if we are to understand the social space present in the city centre of São Paulo.

The first inhabitants of the São Paulo region were the natives – the natives of that place. Many ethnic groups constituted the so called “native people” that inhabited the land that now we call São Paulo. The social organization of these communities had many similarities like religion, division of labour, worldview, cultural values, and war strategies, among others but it also had some diversities and rivalries that resulted in interminable war. The *Tupis* were the main ethnic group in the São Paulo region before the colonization process. Inside this group, the *Tupiniquins* and the *Tupinanbás* were predominant and rivals.

In this large plateau, São Paulo is in the middle of two rivers: Tietê River and Pinheiros River. The *Tietê River*, in the colonial period of the XVI Century, was originally called the *Anhembi River* because it has been present on the place of many birds called *Anhuma*; *anhembi* means many *anhumas* in the Tupian Language²⁴. The fauna of the *Tietê River*, at this period, was highly diversified with *quatis*, capybaras, *colhereiros*, monkeys and many birds, including the *Anhumas*. *Tietê* is a Tupian word that means “good water”.



The *Tietê River* was geographically important in São Paulo's history; it was the main geographical contributor to the colonial development that enlarged the limits of Portuguese America. The river comes from *Serra do Mar* at one thousand meters high and extends up to 22 kilometers until the Atlantic Ocean. Against the course of most rivers, it goes into the state, crossing the city of São Paulo. These characteristics are such that its waters only flow into the sea after covering 3,500 km; after meeting with the *Paraná River* – currently of *Mato Grosso do Sul* (another state of Brazil), they turn into Rio de la Plata - Paraguay. With this route, the *Tietê*

²⁴ A linguistic trunk from an ethnic group of native people from Brazil – the *Tupi*.

River became one of the most important for the country's territorial expansion. The fleets of commerce, during the XVIII century, also known as "monsoon", gave particular emphasis to the *Tietê* River. Canoes with weapons, salt, slaves, wine, olive oil, brandy and manufactured articles supplied the residents of the occupied areas near to the river during the colonization process and the discovery of *Cuiabá* Mines, in the *Mato Grosso* State (the delimitation of São Paulo State at the west side). It was a river of social and cultural mediations the history of São Paulo.

The *Pinheiros* River, with less geographical importance in the history of the colonization process, was very important to the city of São Paulo as a natural delimitation, as a boundary between the unknown and feared forest and the Portuguese people that lived in the São Paulo region. Before colonization, this river was called *Jurubatuba*; it means in Tupian "place with many *Jerivás* Pines". The name *Pinheiros* appears in 1560 when a native village was developed in the margins of this river abundantly surrounded by pines; pines in Portuguese is *pinheiros*. The main way to go to this village was the "way of pines", nowadays called *Rua da Consolação* and it was inhabited, among others, by children in street situation. The *Pinheiros* River is born from the junction between two other rivers: *Guarapiranga* River and *Grande* River – and flows to *Tietê* River.

The *Tietê* and *Pinheiros* Rivers shelter during the night, under their bridges, some groups of people in street situation, including children. The bridges in São Paulo were considered more than a place to cross-rivers or for train lines; they are like caves, urban shelters, that is, urban caves.

Two other rivers, *Tamanduateí* and *Anhangabaú*, were more important during the first stages of the colonial period in the city of

São Paulo as the first natural barrier to the central urban space of São Paulo region; today they are canalized in the central region of São Paulo. *Tamanduateí* River is born in the *Serra do Mar* and flows to *Tietê* River. In Tupian, the word *Tamanduateí* means many rounds. The *Anhangabaú* River is a little stream that had its source in "open skies" and flows to the *Tamanduateí* River. The native people of the São Paulo region knew about the water of this river - it was not potable. This social fact could be recognized through the fear that the native people had of the river which was reflected in its name: in Tupian the word *Anhangabaú* means malefic, spell, action of the evil one.

The birth of São Paulo, at the middle of these rivers, did not happen by chance; besides being a natural barrier they were at the top of a plateau and this position is associated with having military control. The history of São Paulo started in the colonial period and its constructor social agents were mainly the Jesuits, the *Bandeirantes*, the Portuguese settlers, the different ethnic groups of that region (the natives of the region) and finally the mix of races that was born from this relationship between Portuguese and Natives – the *caribocas* or *mamelucos*.

The Jesuits are a Catholic Congregation and were very active in the period of the Age of Navigation. This congregation was developed around the end of XIV Century to be a leading force in the counter-reformation – a movement by the Catholic Church to contest *Martin Luther's* ideas²⁵. The Charisma of Jesuits is founded in works of evangelization and theological study.

²⁵ The 95 theses of *Martin Luther* condemned the sale of indulgences and are considered the foundation of the Lutheran religion. In accordance with *Luther*, the salvation of men occurred while still alive for their acts and their faith. Although Luther was opposed to commerce, he had great support from kings and princes of that time. Luther condemned the cult of images and revoked celibacy, accenting the idea that only faith and workmanship could lead to salvation.

The *Bandeirantes* were the people that constituted the exploratory expeditions called *Bandeiras*; these were private initiatives sponsored and carried out mostly by settlers of the São Paulo region interested in profitable enterprises. These private initiatives were divided into three types: *apresador* – to capture the native people to sell them as slaves, *prospectador* – to search for precious rocks and metals, and *sertanismo de contrato* – to fight with native people and, some years later with African people.

Caribocas or *Mamelucos* are terms used in South America, first by native people and then by the Portuguese, to designate the new race, mixed from European and different natives from Brazil, born in the colonial era. *Caribocas* (*kariboka*) is a Tupian word and means mixed white and native peoples. *Mamelucos* is an Arabian word and means slave or servant.

The colonization of the Brazilian lands was marked by the system of *Capitanias Hereditárias*, which had previously been successfully used in the colonization of Madeira Island. The costs were transferred to private hands, saving the Portuguese crown from the high costs of colonization. The Portuguese crown supported only the *Entradas* – the expeditions less frequent than *Bandeiras*, nonprofit, and mainly focused on the exploitation of the territory. Brazil was divided into 15 parts, which were given to Portuguese noblemen who wanted and had the means to administer and explore them. The captains were granted ample powers to administer and profit from their possessions. The São Paulo region was in the São Vicente Captaincies, owned by *Martim Afonso de Sousa*, and besides producing sugar, its main economic activity was the traffic in indigenous slaves.

In 1553, Father *Manuel da Nóbrega*, leader of the Jesuits in Brazil, arrived in *São Vicente* – the first city founded in the south of Brazil

by *Martim Afonso de Sousa*. At that time, the Jesuits had built a church and a house on the coast near the settlement founded by *Martim Afonso de Sousa*. The Jesuit fathers were members of *Companhia de Jesus* – Society of Jesus; which is a Christian religious order of the Roman Apostolic Catholic Church with a main ideal: "*Ad Majorem Dei Gloriam*" – everything to the greater glory of God. This company was founded in 1534 by *Íñigo López de Loyola* and six other students at the University of Paris (four from Spain, one from France, and one from Portugal).

The *Companhia de Jesus*, to develop its missionary objective inland, installed themselves in a village with a certain distance from the coast called *Vila de Santo André da Borba do Campo* – where today we find the metropolitan region of São Paulo. *João Ramalho* founded this village in 1550 and with the arrival of Jesuits this village became a town. *João Ramalho* was a Portuguese castaway rescued by the *Guaianases* Tribe and colonized by them.

The *Companhia de Jesus* recognized, through constant conflicts with the Tribe of *Carijós* that belonged there, that *Vila de Santo André da Borba do Campo* was not the best place to fix a permanent village. The importance of this area was the support of the *Bandeiras*, a place from which the Jesuits could promote their Charisma among the native people – the main reason of the Jesuits' inland expansion.

In 1554, the *Companhia de Jesus* recognized in *Piratininga* Planate a perfect region to create a fixed place to exercise its objectives. The *Piratininga* Planate had a very similar weather to Spain's weather (cold and temperate air), and a high and flat hill with two rivers (*Anhangabaú* and *Tamanduateí*) blocking it. The top became the point of power; from this position they could control the native people who were in conflict. At this place, Father *Manuel da*



PRIMEIRA MISSA
WATERCOLORS BY VITOR MEIRELES

Nóbrega and young Father *José de Anchieta* founded the *Colégio dos Jesuítas*, in January 25th of this year. Some *Casas de Taipa* - rammed earth houses – were built around the *Colégio dos Jesuítas* and this movement gave birth to the village of *São Paulo de Piratininga*.

Soon in that time, in São Paulo's region, it was usual to hear about the "released

children". The process of acculturation imposed by the Jesuits over the native people changed their social organization. In this process, many native adults offered resistance and the native children, the curumins, were considered "less hard" souls by the Jesuits; in other words, they were more prone to accept the Christian doctrine. To the *curumins*, in the first steps of his or her social construction, the survival was conditioned to change radically their point of view over the world passing from a society inserted in the mechanic solidarity to the one inserted in the organic solidarity.

During the conflicts between settler and colonized, many children were released in face of their social position in this new society: some of the *curumins* were captured and their parents were killed, leading to the orphans curumins. In other cases, the parents of the *curumins* were captured and obliged to give them to the Jesuits

– adopted curumins – or they were killed; or even the children that were born through relations between Portuguese men and native women normally were treated as orphans – orphans mamelucos or Christian children.

These children lived in the social space of the XVI Century where the rights to live and to die were exercised by the Catholic Church anchored in the ethics of identification and the power of corporification that was manipulated by the Crown. The control of the right to be born, of the right to exist and of the pure race started in São Paulo while São Paulo was being born.

Father *Manuel da Nóbrega*, in a letter to Father *Luiz Gonçalves da Câmara* in 1553²⁶, reported great initial success with *curumins* and *mamelucos* children. According to *Nóbrega*, the "*Indian catechumens know the doctrines better than many Old Christians*" and "*discipline themselves with such great fervor that it creates confusion among the whites.*"

In the catechesis, beyond of the Old and New Testament, the Jesuits taught the *curumins* and *mamelucos* boys to read, write and count. The official language was Portuguese; other languages were banned. Some Jesuits taught music and poetry to the boys, even though it was against the rules of *Companhia de Jesus*. To the *curumins* and *mamelucos* girls, making income, sewing, washing, and cooking replaced the catechesis.

The Jesuits hoped not only to convert the *curumins* to Christianity but also to replace their traditional life-style with one more in keeping with European notions of religion, family, and community life. The Jesuits established *aldeias*, or Missions, where they moved

²⁶ in Serafim Leite (1940), *Novas Cartas Jesuíticas*. São Paulo: Nacional.

native tribes to facilitate their conversion. In São Paulo a ring of satellite *aldeias* was created, such as *Pinheiros*, *São Miguel*, *M'Boi*, and *Guarulhos*. In *aldeias*, they taught the people from the native tribe new cultural values and new forms of subsistence and introduced them to new social institutions. The congregation of the native people into these villages, their conversion to Christianity, and their exposure to a new life-style began to unravel the fabric of native tribal society in the areas of Portuguese colonization.

The catecheses led the *curumins* and the *mamelucos* children far from their families, from their culture and social environment; normally they were out of the Mission's region. Since 1550, since the *Vila de Santo André da Borda do Campo*, there were the Houses of *Muchachos*, a place where the *curumins*, or children of land as the Jesuits called them, were sheltered. The Portuguese Crown supported these houses providing the food and other products. With the *curumins* were formed a little Jesus' Army; they collaborated in the Christian peregrination through the forest. They had other important tasks; they were the translators between the Jesuits and the native people – they were the children-speaking. About the *mamelucos* children, normally they were in the house of their fathers, or in other houses of settlers, as non-remunerated workers, as an enslaved workforce, as slave children.

Some names appear to describe the children in street situation in the first years of São Paulo, as I have related. Around the world, the first reference to a child in street situation appeared in an autobiographical novel called *La vida de Lazarillo de Tormez y de sus fortunas y adversidades*, in the same year that São Paulo was born – 1554. This history was about a child who walked the streets in Spain and was written by an anonymous author. A period of transition between modes of production was being lived, in which the idea of children in street situation was revealed in parallel with

the mode of capitalist production and it was opposed to the place and role that was reserved to the children in feudalism, in which it was inserted – direct productive process. Being so, the children in street situation in São Paulo colony, normally mestizos children and illegitimate children, were seen as a work force.

From the beginning of São Paulo's history, the children in street situation were present; the Catholic Church had the responsibility to take care of them. The approach to this responsibility was founded in the Christian ideology and the church's main exercises were in character development, led by the private initiative of a religious and charity matrix. In this movement, to be far from the family, to be catechized, to be preacher, to be translator, to be beggar, to be slave, to be excluded by race, by social condition, and to suffer sexual abuse were some lessons that the first houses to receive these children – the Houses of *Muchachos* – taught to these *curumins*.

Around 1560, the *Confraria da Misericórdia de São Paulo dos Campos de Piratininga*²⁷ was born inside the *Pátio* of the *Colégio dos Jesuítas*. This initiative was supported by the first *Confraria*, founded in Santos (1543), and both of them were based in the Portuguese charity institution – *Misericórdia de Portugal*, which was commonly called *Santa Casa de Misericórdia*. Rainha D. Leonor, the Queen of Portugal at that time, founded this institution on the 15th of August in 1498, in Lisbon – *Misericórdia de Lisboa* – that had its first place inside the *Catedral da Sé de Lisboa* in the *Capela de Nossa Senhora da Piedade*. The first step of the Queen of Portugal

²⁷ <http://www.santacasasp.org.br/>

to promote the *Misericórdia* was the development of a brotherhood - *Irmandade de invocação a Nossa Senhora da Misericórdia*.

The *Santa Casa de Misericórdia* was (and is) an institution linked with the Catholic Church, the State, and in that earlier time, with the Portuguese Crown. The *Compromisso da Misericórdia* was a statute, where fourteen works ruled the tasks of *Misericórdia* at that time, seven spiritual and seven physical. From these fourteen, three spiritual works (to teach the simple one, to give good advice, to console the ones that suffer) and three physical works (to dress the naked, to feed the hungry, to give drink to the thirsty) were more relevant. They were basic laws that gave to the *Confraria da Misericórdia de São Paulo dos Campos de Piratininga* the status of main guardian of the local orphan children.

In this year, the village was promoted to a town but, because of the distance between the town and the coast, *São Paulo de Piratininga* had an insignificant position during Portuguese rule. Today, we can find this part of São Paulo delimited by the Old Centre. The Old Centre was known by the name of Historical Triangle; the apexes were three convents: *Convento de São Francisco Convent*, *Convento de São Bento* and *Convento do Carmo* – the apexes of Christ. It is interesting to note that the Historical Triangle was and is the main space recognized by the children in street situation as a place to spend their days.

In 1681, the town of São Paulo was considered the *Capitania* of São Paulo's region. At the same time, the British crown started to control the Portuguese crown among others; the oppression over the native people from Brazil was shared with the African people, with more intensity. The Catholic Church had an important role in the traffic of African people. The fathers started to promote the "defense" of the native people in opposition to having more African

slaves. The children of street situation, at that time, grew up comprising also the African children. It is important to remind ourselves that it was not possible to accept children from Africa in *Santa Casa de Misericórdia*, doubling the exclusion over these children.

The violence against the African children was enormous, such as: to share the parents, the families, and the tribes; to kill the child when they were not robust or healthy; to preserve the adolescent because of their labor potential; to sexually abuse the African women. It was normal that these African women, normally African girls, were pregnant, because the sexual abuse was constant. The children that were born from these forced relations were a new style of the slaves "more clear" and "weaker"; they were called mulatas children (mulatto children). These children were considered weaker, having no market value; they were not used in the workforce. From this non-space created by the society for the mulatto an equation was born: mulatto + non-space = *malandro*²⁸. Only some of these children had an "opportunity" to have a space, being domestic workers inside the houses. It was a movement to create and stimulate the situation of children in the street.

The cafusas children appeared when the African people arrived in Brazil. *Cafuso* is a mixture between the native people from Brazil and the African people. The cafuso children had no value in the slave market and the cafuso children were the main resident of the streets of São Paulo at that time. They had no value because they were considered to have less potential for work; they were a mixture and not African descendents – those who were considered the best workers at that moment. The *cafuso* was the

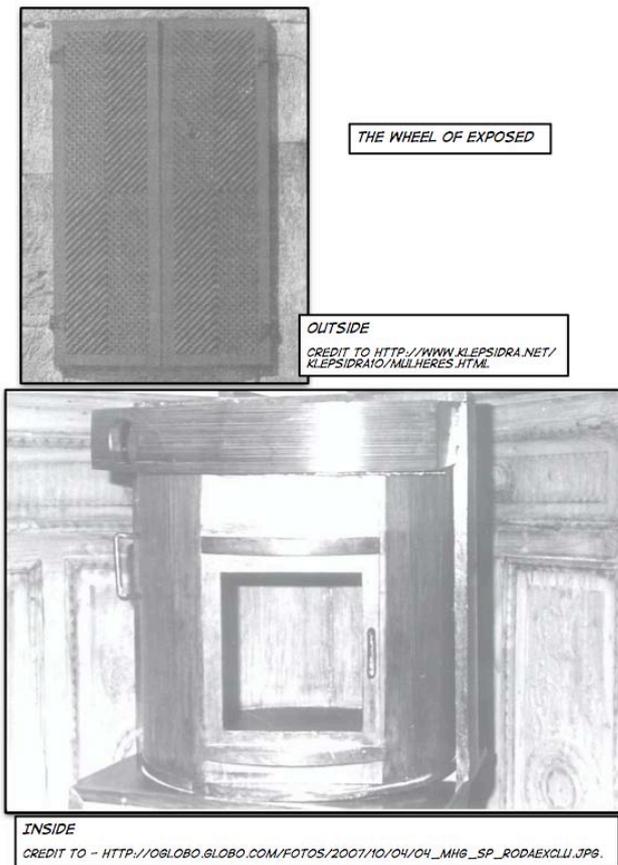
²⁸ Brazilian Portuguese word to represent the person that is considered sluggish, loafer and thief.

representation of the mixture between two non-Europeans races.

Some years after the arrival of the African people in Brazil, the crioulos children appeared. The word *crioulo* came from *Cabo Verde* and is the name for the language of this archipelago. In Brazil, the word crioulo means exclusively Brazilian people with African ancestry; it was common to refer to a slave born in Brazil as a *crioulo* and to a slave from Africa as an *African*. So, the word *crioulo* in Brazil was no longer used for people of African descent born and raised there, but instead used for slaves born and raised in Brazil. Later, the word *crioulo* would refer to all people of African descent. This word was, and is, associated with *malandro* as well as the word *mulatto*.

In 1711, the town of São Paulo was elevated to the category of City. Even so, São Paulo, until the XVIII century, was only the headquarters where the *Bandeiras* found some support and the *Companhia de Jesus* had a fixed place to practice its charisma. São Paulo, as a headquarters, made no direct contribution to economic growth but had an important statutory responsibility in a sense to enlarge the Brazilian territory in the south and southwest regions. At this period, in São Paulo it, was common to see the pardas children – the *pardo* is a mixture of European, African, and Native people varying from light to dark complexion. They were accepted in their families, when their families were African or Native, but when they came from European families they were excluded, they were released or used as domestic slaves.

In the XVIII Century, the colonial system was in decline and, at this period, the world passed through many transformations, as the end of the Ancient Regime (Absolutism in the political plane, Mercantilism and Commercial Capitalism in the economic plane, and Statesman Society in the social plane), the Industrial Revolution,



the French Revolution, and the Napoleonic Wars. At this period, the control of the bodies became the control of the bodies and the lives as the capitalist mode of production rooted itself.

In São Paulo, during this transition time, population increase was negatively affecting economic performance, limiting the increase of the wealth of São Paulo; the extermination of

poverty was an urgent task. The poverty became a burden on the Crown and the children in street situation were increasing. The Portuguese Crown supported, until that period, the *Santa Casa de Misericórdia* and the families in conditions to take care of them, even though these families were interested in their education or in using them in the tasks of their houses. In the face of these data, the Catholic Church founded, in 1726, the *Casas de Recolhimento dos Expostos*, houses to receive the abandoned new born, normally of mixed races and illegitimate. In most cases, these houses worked inside of *Santa Casa de Misericórdia* itself and the main tool of these houses was a wheel.

The Wheel of Exposed was a cylinder of wood, hollow and revolving, where the abandoned children were placed. The identity of the abandoner was kept in silence. These wheels were installed in constructions of rich families, convents or public institutions beyond

the *Santa Casa de Misericórdia*. The main belief of using these wheels was focused in maintaining the secret identity of the abandoner as well as decreasing the mortality of the abandoned.

Exposed was the name, in that time, for the children in street situation – exposed children. Because of the precarious conditions and bad resources in *Casas de Recolhimento dos Expostos*, children that were sheltered there frequently died. The Wheel of the Exposed was used in São Paulo until 1948.

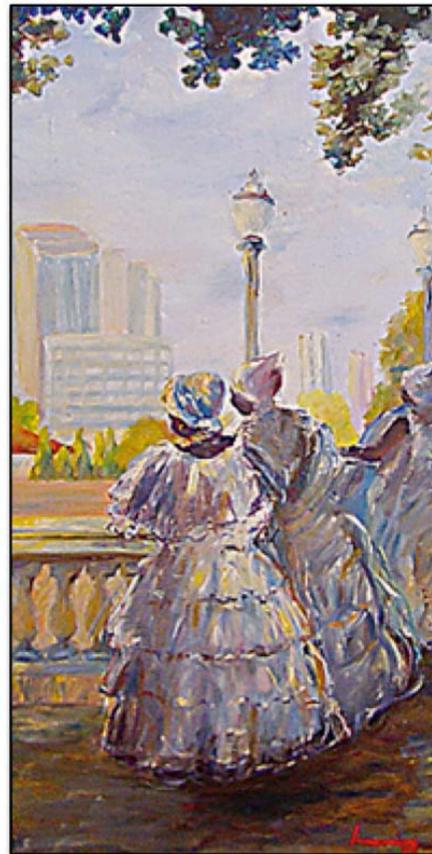
The *Casas de Recolhimento dos Expostos* could be considered the first action in favour of the children in street situation, if its primary preoccupation was the children.

At this period, one Orphans Judge was constituted and, in 1775, a law to regulate the question of the exposed children, withdrawing this responsibility from the local government, was decreed.

In parallel, around the world, one of the first demonstrations of the decline of the colonial system happened when the United State of America declared independence in 1776.

Around 1819, *Simon Bolívar*, a soldier and statesman from South-America, led wars of independence in Colombia, Bolívia, Venezuela, and Peru.

In 1822, Brazil negotiated its independence, the Monarchial regime was in power, and São Paulo established its status as the capital of



BAIANAS NO BEXIGA
WATERCOLORS BY
HELENA INVERNIZZI

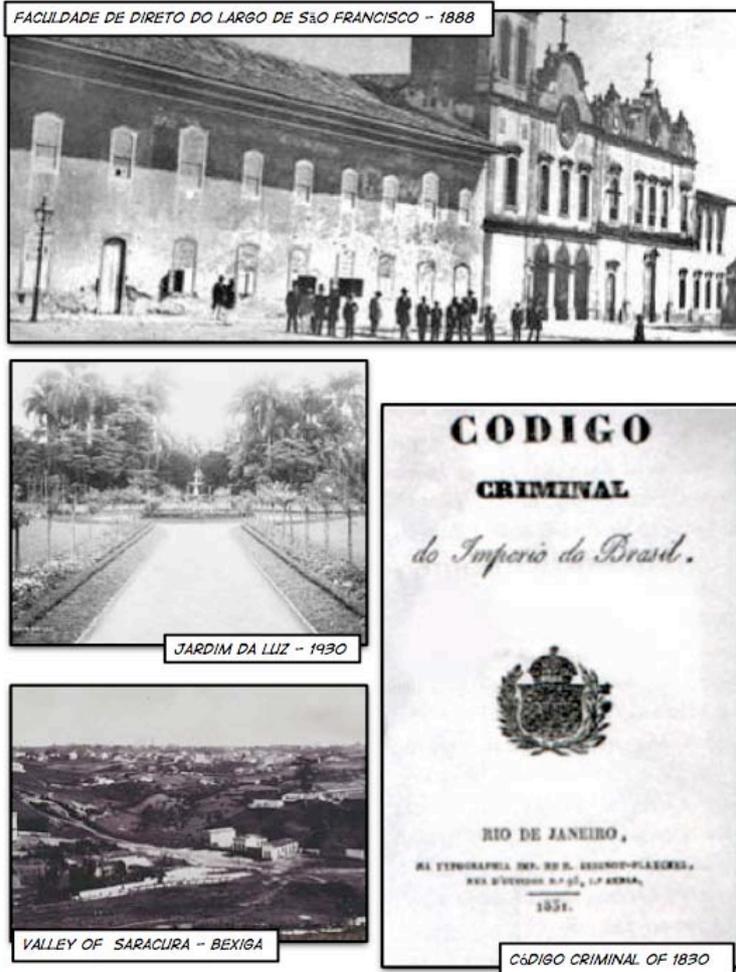
the province of the Empire. Brazil, among all other countries of South America, was the only one to maintain the Empire as a political regime after independence. Slavery was in the center of this regime but, at that time, the knowledge of the slaves (that were born in Brazil) about their space – the Brazilian territory – had been developed. The slaves were born in this land, they knew this territory and the cultural customs that were in this environment, and this knowledge was the main key to their freedom. Many guide children, fugitive slave children, worked in their communities promoting the escapes and guiding the fugitive slaves until the *quilombos*²⁹.

In the city of São Paulo, more specifically in *Bexiga* neighborhood, an urban *quilombo* was developed – the *Quilombo Saracura*³⁰ – in the period of Empire. It is interesting to bring the concept of *quilombo* to an urban city³¹, something far from the free population, and with obstacles in the way of finding it. The fugitive slave children living in this place had the responsibility to maintain the relations between the *Quilombo Saracura* and their social environment in an economical way; they were social bridges to guarantee the subsistence of their group, sailing river steamers they themselves manufactured. These children were recognized as *negrinhos do Bexiga*. The main reason that the society of São Paulo allowed the "invisible" *Quilombo Saracura* to exist was the mysticism of Afro-Brazilian religion they practiced which was a sort

²⁹ In Brazil it is recognized as autonomous communities of fugitive slaves but it was common to find a minority of marginalized Portuguese, Brazilian Natives, Jews and Arabs, and/or other non-black, non-slave Brazilians that faced oppression during colonial and empire period.

³⁰ *Saracura* – According to Aurélio Dictionary, is a "distrustful bird, that passes the day hidden in the vegetation, leaving, in general, to the afternoon, to feed itself of insects, crustaceans and small fish"

³¹ More details in Paulo Koguruma (1999), published in *Revista Brasileira de História* called "A *saracura: ritmos sociais e temporalidades da metrópole do café (1890-1920)*"



of magnet for the society at large.

The first law in favour of children that I know of was established in the Brazilian empire as a project aimed at defending and protecting infants. This project, in its bigger scope, enclosed the slavery in Brazil and included a direction to protect the descendants of the slaves. The

project³² was sent to the *Assembléia General Constituinte e Legislativa do Império do Brasil sobre a Escravatura* in 1823, by José Bonifácio. The law directed to the children became represented by Article XVIII of *Constituição Brasileira – Escravatura* and supported the women slaves during their pregnancies. The woman slave was not obligated to carry out hard tasks after the third month of pregnancy, and after the eighth month, she was occupied only inside the "big house"³³. After going through labor this woman

³² http://www.camara.gov.br/aldorebelo/bonifacio/vo_representacao.htm

³³ The house of her owner.

had the right of a month of convalescence and during a year she had the right to work near her baby.

To develop São Paulo in the direction of becoming an important cultural, intellectual, and political nucleus of the New Empire the first public garden— the *Jardim da Luz* with its arc lamps, French landscape, lake, Greco-roman statues arranged in the shape of the cross-of-Malta - was installed in 1825 in this city of symmetrical tree-lined avenues; the first Academy of Brazil as established in 1827 – the *Faculdade de Direito do Largo de São Francisco*; and the first public detention house was opened in 1852 – the *Casa de Correção da Luz*. The main focus with these actions was to bring to São Paulo a certain normality characteristic of the big European cities. The basic idea was to create a city centre on the model of the city centres of the major European cities. Europe was the main reference point for the Brazilians at this time.

The second law showing the preoccupation with the children came with the *Código Criminal* of 1830, when through two articles, X and XIII, the children were identified as non-criminals. Article X, paragraph one, specifically affirmed that children under fourteen years old were not to be judged criminals. Article XIII referred to the cases where children under fourteen years old committed some criminal act. In this case, according to this article, they were punished and sent to the correction houses, for a time decreed by the judge; the retention could not extend beyond the childrens' seventeenth birthday. To punish was the way to correct these children – this idea was fashionable in Europe at this time.

In Europe, at this time, two important children in street situation arrived and were recognized in society:



Charles Dickens, in 1838, brought Oliver, in his second novel entitled "Oliver Twist". *Vitor Hugo*, in 1862, brought *Gavroche* from his romance entitled "*Les Misérables*". They brought from London and Paris, respectively, to all occidental society the reports of the cultural and political situation of two urban and important cities of Europe. The street urchin or gamin was socially confirmed. The urban culture of children in street situation became recognized in the main European capitals.

In 1871, the third law was promulgated in favor of children – the law of "free bally"; it was the first abolitionist law in the Brazilian Empire in favor of children or in favor of the new mode of productions that was consolidating at this period. This law was imposed by British imperialists who wanted to encourage the 'free'

people to consume. The law supported the capitalist class' interests. The law of "free bally" freed the descendents of slaves. The child was born free but subjugated to the cultural and social prison that their antecedents lived in; they were recognized as "free bally children". It was the main lever to develop the culture of the ex-slave or the victim of the rural exodus, where the unspecialized and, obviously, underpaid task was their only option. The sub-proletariat was born in São Paulo, in this case, in Brazil; and the Republic was proclaimed in 1889.

An avalanche of children came from African ethnic groups and out of the mix among African, Native, and European ethnic groups. Along with them came the poor families and the children of prostitutes, after this law. When the abolition of slaves arrived in Brazil, this scenario was worst; the poverty and the misery were expanded and the numbers of the abandoned accelerated.

At the end of the XIX Century, São Paulo passed through deep economic and social transformations promoted by the coffee activities around the city, by the construction of a railroad between the coast and the city, and by the influx of European immigrants. This immigration, destined to facilitate the agriculture of coffee, brought with it sophisticated political theories such as anarchism and communism.

The development of São Paulo during this period was dizzying. The initial urban area was enlarged with the opening of new streets: *Rua Líbero Badaró*, where the Italian groups gathered, *Rua Florêncio de Abreu*, where the Portuguese groups gathered, and the streets of the Historic Triangle (*Rua Direita*, *Rua XV of November*, and *Rua São Bento*), centered in the commercial area, in the bank districts, and in the area of the main services of São Paulo.

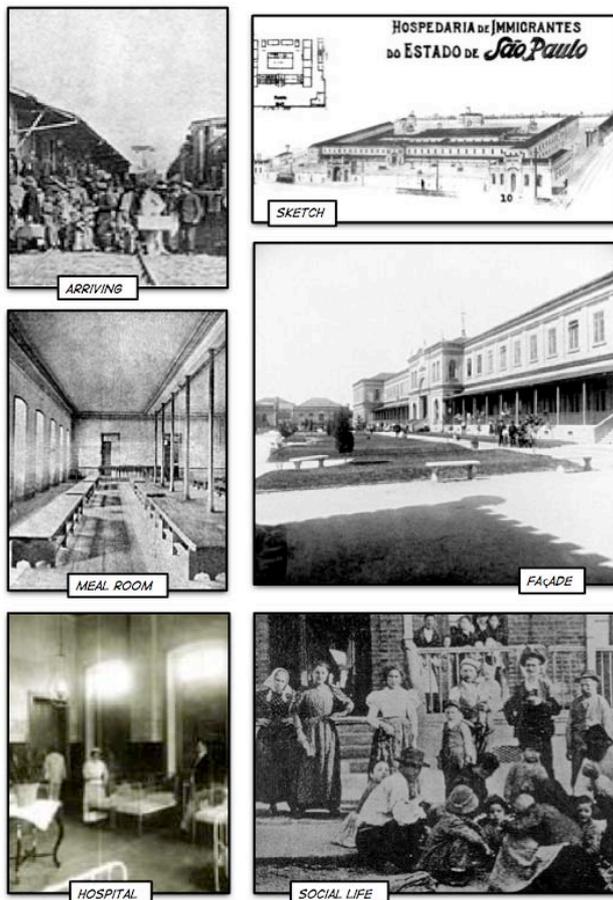
The discussions around the solutions to the abandoned children

grew more significantly in Rio de Janeiro, still having as an example the urban cities of Europe, more specifically, Paris and Lisbon, where the *Casa dos Expostos* had been implemented.

During 1895, by the initiative of the administrative staff of *Santa Casa de Misericórdia*, the *Casa dos Expostos* was created. It was an answer to the quick increase of the population of children who lived

in the street or in the wheel of exposed. The *Casa dos Expostos* started to work in a place called *Chácara Wanderley*, in a neighborhood nowadays called *Paecambú*³⁴, in 1897 when the building was concluded.

In 1885, the population of this city was a hundred and thirty thousand inhabitants, of which seventy-one thousand were foreigners, and in 1900 there were,



approximately, two hundred and thirty-nine thousand inhabitants. In 1885, the Brás neighborhood was developed, a special place to receive the immigrants – *Hospedaria dos Imigrantes*. The urban area expanded the Historical Triangle's perimeter. The

³⁴ In Tupian Language *córrego das pacas* means stream of pacas.

development of gas production, a water reservoir, and train lines were the first signs of the industrialization of São Paulo.

An industrial park was developed across the urban space. A few working districts were born, as *Brás* and *Lapa*, where the industries were concentrated near to the railroad. The Italian immigrants, the most relevant in São Paulo, occupied the *Bexiga* and the coffee-growers, with their masons, occupying the *Avenida Paulista*, an avenue with wooded, elevated and aired areas. In many cases, the children in street situation were workers – worker children, in a situation that amounted to slave labor. The worker children were present since the colonial period but at this time, they had this name because they had to be viewed by the employers as workers; once these employers lived in the capitalist mode of production, they developed a discourse against slavery.

In 1900, a project of law to create the *Instituto Educativo Paulista* was presented to the government of São Paulo – an educational institute for the city of São Paulo. The main objectives of this institute were to reeducate, to give industrial, agricultural, and literary instruction to young people between nine and twenty-one years old. In 1902, this project of law was promulgated – Law 844, and an institute was born under another name: *Instituto Disciplinar*. This institute changed the name again to *Unidade Educacional Modelo e a Colônia Correccional*

The names changed but the social assistance character was the same in all of them. Nevertheless, the *Unidade Educacional Modelo e a Colônia Correccional* was the first formal house that made explicit, in its name, how society looked to the children in street situation, as young delinquents – delinquent children.

This house assumed, in its objectives, the necessity to correct and to punish the child and the young people. The project presented had

a technical, scientific, educative, human, and Christian aspect, according to the author of the project: *Cândido Mota*. However, the previous project, although it conserved the general lines given by its author, presented a repressive, correctional and punitive character as a tool of the recuperation of the young delinquents. The structure of the power "had no places to put" these children without making visible what was invisible to many eyes of São Paulo's society.

Some other houses like the *Unidade Educacional Modelo e a Colônia Correccional* were opened during this period. The most famous was in the *Chácara de Belém*. It is necessary to highlight that in the republic's the repressive policies over the poor people increased.

The situation of children in the street was getting worse, and violence against the children in street situation was the main characteristic of the city's efforts to abort the situation. The *Revolta da Chibata* was an important historical example of the "abortion." The Navy was modernized in the beginning of the XX Century with British shipyards building warships with the capacity to reach far corners of the globe. The structure of relationships within the Navy, however, remained archaic. This is revealed in the treatment of the youngest sailors – aged around fourteen years old –, the recruitment process, and the establishment of a social distance between officials and sailors. Recruitment targeted excluded social groups, including children in street situation, and the treatment of these people was the worst that could be imagined. The slightest misstep could lead to being put in irons in solitary confinement. Many children could not resist! The misery and oppression was the main key to the revolt by the street's sailor children.

At the end of XIX Century and beginning of the XX Century, the

most important urban realizations were made in São Paulo with the opening of *Avenida Paulista* (1891), the construction of *Viaduto do Chá* (1892) – a bridge to link the old city with the new one, and the new rail station of São Paulo called *Estação da Luz* (1901).



All of these places, created at that period, are the most important places to these invisible children that coexist in São Paulo. Nowadays, the *Avenida Paulista* is one of the favorite places of the children in street situation to work. The *Avenida Paulista* as a commercial and bank place, beyond tourism, concentrates vulnerable people, target-people to rob. It has a perfect geographical localization; it is on top of the hill, with many streets down to different gardens and tunnels, making possible the use of perfect tactics to scatter. The *Viaduto do Chá* offers the same conditions of the *Avenida Paulista* but with different clients. It is more central and the people that cross this bridge normally come from different social classes but at the same time, this place is filled with many foreigners, the main target of robbery. The *Estação da Luz* is one of the major places that the children in street situation spend their nights.

When these places were created the children in street situation were limited to the old centre of São Paulo and, sometimes, in industrial places. These three places were spaces impossible for these children to be. They were radically excluded. Only in one situation could you find the children in street situation in these spaces; as workers, as, for example, shoeshine children.

During the XX Century, in its economics, cultural, and artistic manifestations, São Paulo became the synonym of progress. The coffee wealth scatters itself in the modern city of São Paulo. The houses of the repression and correction were also coexisting with the modern city, with the same laws inside it. In this same century, more exactly in 1927, the first Code of Minors was promulgated. Ironically, in the 20s, the army was responsible for sending many children in street situation to the *Companhia Marechal Rondon*, to explore the Brazilian inland – Rondon children. The anarchists and the communists were against all these processes imposed on these children, but the police repression was strong during this period.

Subsequently, in 1936, the *SAM – Serviço de Assistência ao Menor* - was created. It was subject directly to the Minister of Justice. It worked in conjunction with the penitentiary systems and was developed throughout Brazil. The *SAM* was a correctional and repressor space, condemning the children that were there to bad treatments and to misery.

The House of the Newsagent was developed at this period and it was the first official program for children in street situation in Brazil. In this program, these children could work in the street (for example, selling newspapers) and could learn to become shoemakers or carpenters.

The first skyscrapers started to appear and the children in street situation continued to see the sky. Trains, electricity, phones, cars,

parks, viaducts emerged as the city grew, renewing some spaces and conserving the same eyes over its children in street situation, the eyes that couldn't see the invisible ones. The democratic process that came with the Republic in Brazil was broken with the military coup in 1937.

Many things were different and one of them was the reality of the children in street situation in face of the strong migration from the northeast of Brazil. At the middle of the XX Century, under a dictatorial regime, São Paulo was dominated by authoritarianism. The city was too small for the many migrants it was receiving. São Paulo had no political, economical, physical, or health measures. The organic solidarity, as the major social fact for structuring a society, was living through a complex and chaotic moment.

In the 50s, the *SAM* was living under this complex and chaotic moment and passed through its worst situation: corruption and extreme violence were the main reasons. The style of *SAM*, repressing and humiliating, revealed itself to the public opinion. Nevertheless, at the same time, the people that were protesting against *SAM* were considered "enemies of society" and their voices were isolated and very low. The *SAM* was to history "Crime University" and "Branch of Hell" and was an historical mark to the power of corporification.

In 1964, under the military regime (1964 – 1985) the *Pnbem – Política Nacional do Bem-Estar do Menor* was created. Its line of action was decreed by *FUNABEM – Fundação Nacional do Bem-Estar do Menor*. The *FEBEM – Fundação Estadual do Bem-Estar do Menor*, was created at this time. Each state of Brazil, and no longer the federal government, was responsible for the *FEBEM* in its state, in our case, in São Paulo State.

The São Paulo's *FEBEM* inherited the buildings, the equipment, and

the repressive forces from *SAM*. Even the main intention of the federal or state governments was to create laws and spaces where the children in street situation found support to live as children. The distortion of the legal objectives of these laws and places was grounded in the complex and chaotic moment of the organic solidarity. The life of *FEBEM*, even though it walked against the Code of Minors, lasted a long time. All the political and social processes that Brazil was living through were mirrored in *FEBEM*. Tortures, repressions, total obedience (in all cases, including here the sexual abuses) were the main lines that guided *FEBEM* in the city of São Paulo.

The aspects of the city of São Paulo were much more industrialized. The city of São Paulo was connected with São Paulo Region; a form of conurbation was concretized. Many little cities, that were dormitories or industrial areas, were connected by streets among them and the city of São Paulo. The conurbation movement happened and a Greater São Paulo was born, working in its full potential.

The city center and the *Avenida Paulista* were in decline. The rich people that lived in *Avenida Paulista* and worked in the city centre moved to other places. They developed new places to live, such as *Morumbi*, and chose new places, such as *Avenida Paulista*, to work. The references of the cities suffered some alterations, but the life of the children in street situation around the city centre and in industrial areas was the same. At this period, the children in street situation were named street children.

The social and political scenarios were in ebullition, a time for big movements of the society against the military regime and the false ends of the dictatorial regime. Music, painting, sculpting, poetry, books, newspapers, and voices, repressed but not quiet, were the

major vehicles to find a way to democracy. Some voices started to echo around the children in street situation from society as a whole.

In 1979, the new Code of Minors was promulgated. In 1983, the direction of *FUNABEM* changed and the political life inside this institution was divided into three levels: repression, welfarism, and criticism. The critical level adopted Paulo Freire's method, appearing in the *Projeto de Atendimento a Meninos de Rua*, where the children in street situation were understood as all children that were out of school and were involved with the income generation. The foci of this project were preventive and alternative. This project contributed immensely by registering and identifying the childrens' experiences (in videos, pictures and writings), and spreading the information and knowledge about these children with meetings and congresses. The movement attracted the attention of important national and international institutions including *OAB – Ordem dos Advogados do Brasil*, and the Commission of the Human Rights.

In 1985, the project called *Movimento Nacional dos Meninos e Meninas de Rua* (MNMMR) was created from the innovating experiences of the *Projeto de Atendimento a Meninos de Rua*. It was a strictly non-governmental and autonomous movement, organized by volunteers acting directly with children in street situation, fighting for the achievement and defense of their citizenship rights. But the assistance character was the majority factor of this project in its first years of life.

The Decree *Bom Menino* was born in 1987 as an answer from the federal government to the movement around children in street situation, developed in the previous years. This decree gave some economical benefits to the businessmen and strengthened the right of these worker children.

São Paulo was one of the main centres of the new institutions

around the 80s: the NGOs – Non-Governmental Organizations. Some NGOs focused on people that lived in the street and some groups of these NGOs gave food, clothes, and some attention to the children who were in the street. However, nothing was effectively done to recognize these children as people that had rights and duties, as citizens of the city of São Paulo. Shelters for adults were built by the government of São Paulo but the children that were in the street had no place to sleep.

In 1988, a new Constitution was put in place in Brazil and, according to its article 227, the basic rights of the children and teenagers were recognized, affirming that it is duty of the society and of the state to ensure that children and teenagers are an absolute priority - and they have the right of life, health, food, education, leisure, training, culture, respect, familial and community relations – as well as to ensure that they are not subject to any form of negligence, of discrimination, of exploitation, of violence, of cruelty or of oppression. No law was promulgated to attend directly to the children in street situation until this time. It came to affirm that even if the children in street situation have had many generations, they were not recognized as citizens.

At the end of 80s, houses called “open doors” started to open in São Paulo to receive children in street situation during the day. It was an initiative of the *Pastoral do Menor* – an institution developed by the Catholic Church.

In 1990, while the Federal Law nº 8069 was decreed and sanctioned – ECA – *Estatuto da Criança e do Adolescente*, São Paulo was witnessing the height of the process of efforts to exterminate the children in street situation. Ironically, this law recognized the integral protection as a duty of the federal government and defined children as people under twelve years old, teenagers as the people

between twelve and eighteen years old, and a special category for people between eighteen and twenty-one years old.

Until 1990 – excluding the experiences developed by *Secretaria do Menor do Estado de São Paulo* and the project *MNMMR* at the 80s – the policy of centralization preponderated, opening the possibility to the administrative decentralization and to the recognized participation of the organized society in actions through *Conselhos Tutelares*. It was not the decentralization of the power: the society was formally called to participate on the state side, constituting an institutional extension to the “negotiation of interests”.

The situation of poverty lived by many people of São Paulo, at the end of the XX Century, mobilized the society as a whole, especially intellectuals, artists, and politicians, which re-dimensioned this situation as a misery situation or, in some moments, as an absolute misery situation. The children in street situation inhabited this scenario; they were actors in this situation – miserable children. This re-dimension revealed the inefficiency of interventionist social policies such as the *Conselhos Tutelares*, which exchanged their energies forwarding the children in street situation back to their homes or sending them to *FEBEM*. The houses of these children, when they had them, were places of absolute misery in terms of economics and affection.

Emerging from the lack of public policies, on July 23rd, 1993, the extermination of children in street situation reached its height in Rio de Janeiro. The *Chacina da Candelária*, as the national and international media recognized it, brought to Brazil the eyes from abroad. After that episode, and supported by *Conselhos Tutelares*, the idea to open a place to receive the children in street situation was accepted, even though they were considered orphans or delinquents. A shelter for children in street situation called *Albergue*

Noturno Gasômetro was born. The bureaucracy to open this place was enormous and only in 1995, after a strong community movement, the first shelter of children in street situation in South America opened its door. Its main objective was to receive these children during the night, only during the night, while the night watchmen came over the city.

http://ao.com.au/economics/1776/wealth_nations_content_s.htmThe land of the drizzle at that moment was the land of invisible children in street situation that started to be seen but still had their knowledges invisible. This movement gave some conditions for these children to begin conquering their space doing more than responding to social assistance work. So while there was some growing respect for these children as a part of a culture, all the movements around them were movements of insertion, not considering their process of learning, of living. My scientific work is around knowing better their knowledges, and their social relations, affirming their spaces as an urban culture existent in São Paulo.

Following Mario de Andrade (1976), an artist that was born and lived in São Paulo...

"Lá fora o corpo de
São Paulo escorre
vida ao guampasso
dos arranhacéus"
(Andrade, 1976, p242)

The gaps in structured public policies from municipal, state, and federal governments was filled by movements that came from the community and from NGO's.

Many public policies appeared around the subject “street children”³⁵ at that period, under the eyes of international society, but all were in the form of palliative and social assistance ways. The wish of São Paulo’ society was still to “clean the streets of this curse” and do not change the actions of public power. At the beginning of the XXI Century, the mark of the lack was present and this lack is still present nowadays.

Finally, the “opposition” won the elections in Brazil in 2002, with the repertoire against the unacceptable differences that happened in Brazil. The eyes to the precarious position of the population in general were the focus of this government. But the eyes were not over the population that lived in streets; it was a fact.

The *Fundo contra a Pobreza*, developed in this last government, was the most important example of maintaining the same public policies used, until then, to the children in street situation; this programme was not focused on the street population. The other good example, developed under the same, and actual, government, was the *Programa Fome Zero*. This programme did not attend people that were eating in the dustbin.

In parallel, some NGO’s, during these last years, learned to work with ECA and their work was increasingly better and better in a sense to bring the recognition of the children in street situation to society.

Nowadays, the shelter, which was created in a precarious place under a bridge in the Brás neighbourhood with a capacity of ninety children, became a house to attend thirty children in street situation as a boarding school and is leaving again the majority of these

³⁵ The terms to identify the children in street situation’s culture will be discussed in Chapter 5.

children vulnerable in the streets, especially during the night. Other projects adopted the same design of this boarding school as directresses came directly from the government of São Paulo; if it was accepted, they could have support from the Government.

“Eu não tô lá (in the actual shelter) porquê aquilo é uma prisão, a mema coisa qu’a FEBEM, vai e vê! (...) Sinto saudade da nossa casa (the shelter); sinto saudade dos brother de lá. Sinto saudade sua! ” (Capoeirinha, 2003)



The Social and Cultural Contexts

SÃO PAULO IN MONI

I was born there, in the center of the city of São Paulo. I always lived with the multicultural practices, with the diversity from many cultures “knocking at my door”. I am Brazilian; my mother’s family is from the Austria-Hungary region and my father from Portugal. Like me, every *paulista* is not a “pure” race, we are all mixtures. I ask which are the cultural bases of *paulista*, I answer: the world! At the beginning of its formation, some different ethnic groups from São Paulo’s region and the Portuguese were there. After that came different ethnic groups from Africa; and three parts of the world were there. The immigrants came to São Paulo, at the end of XIX Century, and nowadays this city is considered the third major Italian city outside Italy, the major Japanese city outside Japan, the third major Lebanese city outside Libya, and the major Portuguese and Spanish cities outside Portugal and Spain, respectively. In the last big migration, São Paulo became the major northeastern city

outside the northeast of Brazil. The mixing of races marked deeply the cultural, social and economic life of this city.

During my childhood, I spent my time at the city centre with my mother Margarida, my grandmother Anna, and the family of two aunts of mine, Benedicta e Therezinha; it was a matriarchal family. We have always lived in apartments; I am an urban breed! My mother had no car; walking and riding the bus along the center of this city was one of our distractions during Sundays and our necessity during the week. We always lived at the center of this city; first, I lived with my mother in a special house to attend singles mothers in *Higienópolis* neighborhood, supported by the Catholic Church and the Municipal Government. When I was ten months, we moved to an apartment in *Praça Roosevelt*, at the center of the city.



The *Praça Roosevelt* was starting to be constructed when we moved to this place. It was constructed to conceal a very large open hole caused during the construction of an express avenue to link the east and west zones of São Paulo. It is not a typical square; it has an urban beauty. Two floors composed this square and it was very well

architected to be the symbol of the visual pollution at the city centre of São Paulo; a hundred percent of it is concrete. However, when it was ready and it was all still new, that urban beauty was used by me along my childhood.

I spent much time, after the mass of Sunday morning in *Igreja da Consolação*, in the curvilinear areas of *Praça Roosevelt* with my mother, and some cousins: Helena, Hilda, Victor, Ana Maria and Heitor. A concrete playground and nice open spaces constituted this concrete garden. These cousins, the youngest thirteen years older than me, had a strong social influence on my worldview, giving me the opportunity to grow up by their side and letting these concrete places of São Paulo become the warmest in my life.



While I lived in *Praça Roosevelt*, still before my first birthday, my grandmother came from the countryside of São Paulo state to live with us and help my mother take care of me. Now, we were three! Three women!

We moved to *Pinheiros*, a place near the city centre with many more trees and a more reasonable rent; we lived at this place for one year. After that, we returned to *Praça Roosevelt*.

My first friends were from *Praça da República*. It was my mother's favorite square with trees, lakes, ducks, a bandstand at the centre, hippies, artists like painters and musicians, Catholics, Protestants, policemen, beggars, and children in street situation. Nowadays, this garden has railings with gates and the children in street situation

cannot be there; the gates are open only to the rest of the old inhabitants.

The *República Square* is located at the city centre area and it is the most visited square in São Paulo. A long time ago, it was known as *Largo dos Curros*. It was a place where the people from São Paulo, during the XIX Century, enjoyed themselves watching the *rodeos* and *touradas* at that period. It had many different names after that, such as: *Largo da Palha*, *Praça dos Milicianos*, *Largo 7 de abril*, *Praça 15 de Novembro*. Finally, in 1889, it was defined as *Praça da República*.

In 1894, in *Praça da República*, a building in the shape of an "E" (for *escola* – school in

Portuguese) was founded to receive *Escola Normal Caetano de Campos*, with a new name *Escola Estadual de Primeiro e Segundo Grau Caetano de Campos*; where I concluded my primary and basic school. I do not remember any class or any activity from this school around the cultural differences existent in São Paulo. The only link that I have in my memories is the fact that we learned about the first steps of our country – that according to the teachers started when the Portuguese arrived there, and in this speech, we were told about Natives.



PRAÇA DA REPÚBLICA - 2000



PRAÇA DA REPÚBLICA AND ESCOLA ESTADUAL DE PRIMEIRO E SEGUNDO GRAU CAETANO DE CAMPOS
CREDIT: [HTTP://WWW.CIDADEESAOPALLO.COM/TURMETROP.HTM](http://www.cidadeesaopaulo.com/turismetrop.htm)



The mixing of the São Paulo people is mentioned but not worked in a critical sense. The Natives in school were Natives, as if it was possible to categorize all different native ethnic groups in São Paulo, not considering the cultural and social differences among them. The Natives were *Tupis* and *Guaranis* – the major ethnic groups that lived on the coast of Brazil in 1500. I only realized this lack in my information, as a local person, when I was thirty-four years old and was invited to work in *Parque Indígena do Xingu*³⁶, with many ethnic groups, and I could realize the beauty of the differences existent among them. The lack of knowledge promotes the exclusion; I excluded them from my life during many years.

In 1956, in *Praça da República*, an artisan fair was founded by the philatelist Barros Pimentel and every Sunday, until today, it happens with more than six hundred stands of artisans from different parts of Brazil; my cousin Helena had a stand there for a long time – she is a painter and I spent lots of time by her side at this place. This practice let me near a class marginalized by the large society – the non-professional painters, and of their process of survival between work and labor, the obliged work and the work which is the basic necessity of the human being.

Praça da República was also an important place to “receive” the migration from northeast of Brazil: the famous rural exodus in search of survival, besides being a mark of the political actions. Around this place, we could see buildings and more buildings.

³⁶ A Natural Reserve in the middle of Brazil, created in 1961 by Brothers Villas-Boas. More details in: <http://socioambiental.org/pib/epi/xingu/xingu.shtm>



My mother once invited me to a corner of this square and explained the process of implosion; the first implosion of a building in Brazil happened in 1975, near to *Praça da República*, in *Praça da Sé* – geographically speaking, the zero mark of this city. My mother, even though our relatives and friends advised her not to show me this event, showed it to me. I stood by her side, holding her hand. Many people were there and the silence was the

main presence among us, after the implosion. While we were walking to our apartment, and the silence was still imperative in the streets, I asked my mother: *Did they construct and deconstruct it, why?* And she answered: *They, or better, we had this power.* There, I could realize that “I” was “the others” and the “others” were “I”. I was ten years old.

At this period, it was very usual to go to *Bixiga*, an Italian and African neighborhood in the boundaries of the city center region, every Saturday or Sunday afternoon, to watch children’s theater at *Teatro Brasileiro de Comedia*, *Teatro Oficina* and, in most cases, *Teatro de Imprensa*. The *Sertões* written by Euclides da Cunha, *Macunaíma* written by Mario de Andrade and *Marroquinhas Fru-Fru* written by Maria Clara Machado marked my childhood.

The *Sertões* discusses the *Guerra dos Canudos* and it is composed of five plays: *A Terra*, bringing the geographical and historical context of Brazilian *Sertão*; *O Homen*, showing from the development process of the major Brazilian men to the discussion of

the specifics of the northeastern people; *Homen*, focusing the social transformation of Antonio Maciel in Antonio Concelheiro; *Luta 1*, abording the Brazilian Army Expedition to Canudos, and, finally *Luta 2*, bringing the outcome of the *Guerra dos Canudos*. It was fruitful in a sense of knowing better the northeastern, what brought to me the chance to understand better their situation in São Paulo. This social movement around knowledge (their history, culture, voices) seeded the non-space of multicultural racism in my formation. To know the social things is to be engaged to promote changes by agreements in the social facts.

The *Macunaíma* works with some basic ideas as background like heroism, Brazilian hero that represents the Brazilian mixture; cultural roots, using natives myths, legends, sayings of the Brazilian people and registering some aspects of the folklore of the country quite unknown until then; utopia space, showing the attraction of big cities, in this case São Paulo, of new technologies, in this case machines, and of laziness, in this case survival without labor as the labor was not a pleasure; natural language, which brings a critical position of the Brazilian autonomy before Portugal, showing the difference existent between both Portuguese Languages – from Brazil and from Portugal. *Macunaíma* was a lived experience, a theoretical experience, in a sense to find some categories of analysis in my life with the children in street situation.

The *Marroquinhas Fru-Fru* is a typical theater play for child, with a moral lesson – the good is rewarded and the evil is punished. But the way chosen by Maria Clara Machado to discuss this lesson was approaching various types of covert, false, and cowardly acts. Nevertheless, the fact that Marroquinhas was born a doll and, from ona stage with puppets, she met the interaction with the others that were in the auditorium. This fact promoted my first thoughts around the existence of different spaces of existence, of our conditions as

actors of a big history, important and to be in the stage sometimes being listened to by our own auditorium. To have voice and to give voice, the difficult balance in social relations.

When I was four years old, six years before the implosion, my mother, my grandmother and I moved to the Copan³⁷ building – a little city inside a big city. Copan was projected by Oscar Niemeyer and developed by Carlos Lemos, between 1957 and 1966, in the shape of an “S” as a tribute to the city of São Paulo.

This building was projected with “*brise soleil*” - horizontal blades that trim the solar rays. On the 15th and 23rd floor, there is no “*brise soleil*” only for esthetic reason. Using the same quantity of concrete



EDIFÍCIO COPAN - 1966
IN [HTTP://WWW.ADMINISTRADORNET.COM.BR/MATERIAS/COPAN.HTM](http://www.administradornet.com.br/materias/copan.htm)



"BRISE SOLEIL" - 2007
BY VOIZINE

used to build these blades, it would be possible to construct a ten-floor building.

Copan is the biggest structure of armed concrete in Brazil.

Copan has one thousand, one hundred and sixty apartments and about five thousand people live there. The ground floor was designed to receive eighty-two shops and one cinema to about

³⁷This name comes from a king in the Mayan Culture in the classic era. Today, it is a Mayan city in Honduras.

three thousand and five hundred people.

Between the ground and the first floor, there are two more pavements: one mezzanine and one *foyer*. Nowadays, the mezzanine is a commercial area and the *foyer* is closed. In its lower level, there is a parking garage with the capacity to receive two hundred and twenty-one cars and at the top of the building there is a heliport, the house of the manager of the building *Sr Elzio* (that was a close friend of my mother, grandmother, and aunts from the time that they lived in Franca³⁸), and the house of machines.

The demographic density was so huge that a specific postcode was created exclusively for the building. In its thirty-two floors, the Copan is one hundred and fifteen meters tall. Copan looks over São Paulo and marks the center of this city. It is a mark of the capitalist eyes in many senses. Copan, the lives of the Copan, turned into the main reference of São Paulo in me.

COPAN IN MONI

Copan... Copan in Moni! It was the first school of my life; school in a sense of being a special place for the learning process. This building is situated on *Ipiranga Avenue*, number "200", residence of five thousand people, and has got one thousand, one hundred and sixty apartments. I learned to survive in it; I learned about the relationships, I learned about urban human values, I learned to count, I learned to think about the order and position of the numbers, I learned to read the symbols and the feelings in the curves and lines of Copan. This ghetto was a revolutionary construction in São Paulo and in me.

³⁸ A city in the São Paulo' state where my mother and aunts spent their childhood.

The internal ways of Copan are curvilinear and according to Minoru Naruto, an architect at the Universidade de São Paulo, this design favors the relations among human beings. I could reinforce it, with



my experiences there, adding to the “among human beings” the “static and dynamics references”. This big social lab was nicknamed “ants’ nest” and “building of unmarried” at the 70s.

Six blocks of apartments compose the Copan building, and, in my time as a resident, these six blocks were constituted and constitutor of

social stratifications. The relations among salary, size of apartment, and choice/recognition of the group marked this stratification, in this case.

The similarity of the occupied work positions by the Copan’s habitants determinates the size of their apartments. The main mark of choices or recognition of the groups inside Copan were in the link between the salaries of its habitants and the blocks where they lived. The order of production of the habitants was categorized

by the order of choices/recognition of the group that lived on the same block.

In some blocks, there were two "social" lifts and one "service" lift. The word social, here, is used to express the main door, the entranceway to the owners and to the people that the owners chose as "social" relations. The word service, here, is used to express the secondary door, the entranceway to the home-maids, servants of Copan, and who the owners chose as their laborer and not as "social" relations.

All blocks from Copan had doormen, always a man, as I illustrate with this picture. They had a uniform, like a guard, with hat and tie. They were our security guards and not doormen as it was explained to me. I was really born during the military regime.



In Block A, the apartments have two bedrooms and the people that lived there were mainly the intellectual power holders such as teachers, theater directors, writers, artists, and art critics. This block has sixty-four apartments, two per floor; it corresponds to 5,59% of the apartments. The main entrance of this block is on the street. It has two "social" lifts and a service one. I lived there on the 5th floor, in apartment number "51".

The Block A has no direct windows to outside, except for the apartments ending with the number one; it had a little window in a bathroom and in one bedroom, in the top of the wall, making it very difficult to see the outside. In another bedroom and in the living room, we could see the city through *brise soleil*. The habitants from this block could see a part of the center of the city through the kitchen door.



Whenever I opened this door, I found a spiral staircase in the open air. The staircase was categorized by the “internal rules of Copan” as a fire stair but, for me, it was another thing. The open hall at the 5th floor, between my door and the city center, was my garden, was a place to relax and to be outside; I had picnics there.

In Block B, the apartments have no bedroom, they are kitchenettes, and we could find the revolutionists, the creative power holders in many areas of the arts, politics, and social, cultural and intellectual arenas. This block has six hundred and forty apartments, twenty by floor; it corresponds to 54,20% of the amount. The main entrance of this block is inside of the internal area of Copan. It has the same lifts for everybody. My cousins, Helena and Hilda, lived there; they were my main educators at that time through their styles of life – political positions, feminist behaviors, their values, their choices searching new knowledges, living in open systems, in the boundary lines.

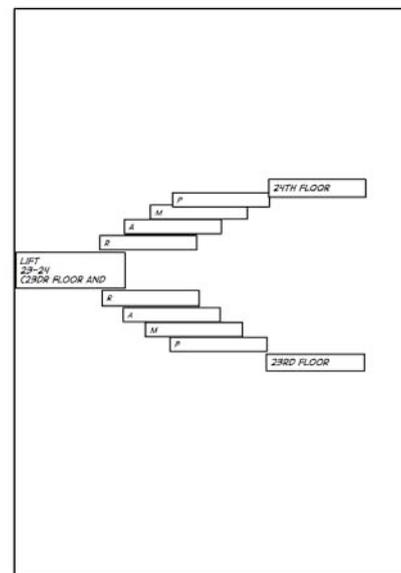
Helena, Hilda, and Ana Maria were university students and became

teachers in the public schools. The apartment of Hilda, in Block B, was filled with many friends – some of them were the main activists against the military dictator in Brazil. They were present in the repressive movement of the regime against students of the *Universidade de São Paulo*, in *Rua Maria Antonia*. At that period, they had a



special (for me) revolutionary friend called Dirceu; he was a friend to them, a new cousin in my life, and the main person responsible for introducing me to social theory through his point of view over the world and his speech guided by Roger Garaudy's thoughts.

The Block B has a particular thing: the lift stops in the intermediary floor, with two ramps for accessing two different floors. If I decided to visit my cousin Hilda, for example on the 24th floor, I must choose the button of the lift that said "23-24", get out of the lift on the 23rd and a half floor and go up the ramp. The reality of the non-natural number, the non-pure number, was camouflaged by the representation of two natural numbers in the button of the lift. The buttons of the lift show two numbers each, starting from "1-2" (the first button), "3-4" (the second one), "5-6" (the third one), and so successively until the "31-32" (the last button). The real here was not real.



All apartments from block B have their unique window without "brise soleil", making the view over the city centre possible from the living room/bedroom. Each window means one apartment.

In Block C, the apartments have three bedrooms and the job holders lived there: the small and middle-level businessman, and directors of banks or multinationals, politicians, and contractors. This block has sixty-four apartments, two per

floor; it corresponds to 5,59% of the amount. The main entrance in this block is in the street. It has two “social” lifts and a service one. My aunt Benedicta and my uncle Júlio Oswaldo lived there on the 18th floor, apartment number “182”, and from him, an Italian by heritage, came my first knowledges about anarchism. In this apartment lived Ana Maria, Victor and Heitor, my cousins, and Teda, Benedicta’s worker considered a relative.

The Block C has a big window, like the window of Block B, in the laundry. The inhabitants of this block had a view over the city



MY COUSINS IN APARTMENT OF THEIR FAMILY ON BLOCK C - VIEW FROM "BRISE SOLEIL" - 1969



STAIRS TO MEZZANINE AND FOYER - 1969

centre but not a main view – from the living room – but a back view.

In Block D, the apartments have four bedrooms and the service and production corporate persons - the top of the mode of production in the capitalist structure – lived there as the owners and/or the partners of the industries. This block has sixty-four apartments, two per floor; it corresponds 5,59% of the apartments. The main entrance in this block is in the

street. It has two social lifts and a service one. I had a colleague that lived there. It was really different, starting with the doorman.

Kitchenettes and apartments with one bedroom compose the blocks E and F, respectively, a hundred and sixty-eight and a hundred and sixty apartments. Which means 14,69% of the amount is in Block E and 14,34% is in Block F. In the first project, this area was destined

to contain only big apartments, as in Block D. For economic reasons, it was changed.

I could not remember much of this area in Copan. It is at the end, or the beginning, of the S and the main entrance of both these blocks are inside of the internal area of Copan, and not outside like the others. Maybe it was a reason for a child not to go to the blocks E and F; it was a secret part of the Copan to me. I only remember some doormen chasing my colleagues and me because we tried to spend some time at the ramps of these two blocks (they were very perfect, radically, ramps for skateboard practice). Block B is like block E and F in the sense of having the main entrance situated inside of an internal area, but it was the centre of the framework; the administration staff was there, and it was located at the main way inside of the common area of this building, near to the cinema.

I lived in Block A... my mother was a teacher. But think well, my mother being the only person of our house with an income, it would be impossible for us to live in this block if it was not for my aunt Therezinha and my uncle Sergio who bought the apartment there and afterwards lent it to us.

Inside this scenario, my role was to go alone every morning to the public school situated in *Praça da República*; one block was the distance between both places. After school, I would return to my house and have lunch with my grandmother, then prepare my bag to go to YMCA; I practiced sports all afternoon. Once a week, I would go to the guitar class, until the age of ten and after that, to the classical ballet class. My guitar classes were in an orphanage, near my house, and my teacher was an orphan; the price of the class was very reasonable. I can realize how these classes were strong in the musical formation of my life. The ballet classes were in the Municipal Theater and were free of charge. The practices of

these activities provided me a complex journey everyday. In this journey, day-by-day, I was free to contact the people that were in Copan, to walk inside its "streets". I had many references inside its corridors – static references as the places of the blocks, the cinema, the different entrances of this building – dynamic references as to walking through the streets of the city centre, choosing my ways and guiding myself by the intensity of light, sunshine, clouds, and rain, always experiencing many sensations during this free time. The street, a place that must be a passage place, was for me a space of provisory stops, considering, sometimes, a space to rest the body and to work my mind and feelings.

CITY CENTRE IN MONI

The main slogan in the coat of arms of the city of São Paulo is a Latin phrase "*Non Ducor, Duco*", that in English means, "I am not led, I lead". This slogan represents, in my point of view, the main relation among urban people, especially in big centers. It was a translation of my sensations through my daily journey through the centre of the city, at that time. The space produced by morphologies, practices, and representations of the places where I walked, brought to me the state of a child in street situation. I comment about this feeling in a sense to feel freedom for some time, freedom to observe my state of loneliness since my time to feel freedom was shorter than the time of the children in street situation, and the reality of the affection and of the marginality was different.

At the same time, the same space produced by these three dimensions brought to me significance in the links among me, the people who I lived with, the people who I had connections with outside of my apartment (that was not mine!), the ghetto (Copan)

that I lived in, and the things that were in my way. The scenario, as a word to integrate the three dimensions referred above, was the main structure to concretize the actual environment that I am talking and living now. To concretize all of this here is to soak up all movement and flexibility that we can find in a lifetime of learning.

The movement from the micro city centre - the Copan Building – to the macro city centre was an important step to transpose a set of relations and of logics of collocation, produced by these relations, to organize and give some form to my space. It was an active space – a space of production, interaction, recognition, subjugation and power – a learning space.

The relations of neighbourhood, in different situations, promote the different logics of collocation. Different logics of collocation give form to many places – emplacements. To describe and understand these emplacements it is necessary to consider the cultures that are involved in it. Normally, the street and the bus are places of passage but in São Paulo and, particularly, to the culture of children in street situation, it could be considered as a place to rest.

During a journey, through the city centre of São Paulo, the scenarios were different day after day; the relations of neighbourhood were founded in the expansive forces and in the capacity of functional adaptation of the members of these relations. Independently of a previous intentional plan of regulation of conduct of the members and of the arrangement of their reciprocal interdependencies, the automatism and self-sufficiency in the relation of neighbourhoods were the usual exchange intrinsic in the centre of that city. Reaching the collective authority becomes less significant because the free action of the exchange increases and the importance of the contractual relations increases too.

The actions of returning typically (*typication*) and making positives (*positivation*) of some contractual situations establish, at the space, some normative expectations of social individuals. The private interest is the main lever of this movement.

The centre of São Paulo was, in my history, driven by joining of the multi-diversity of people that cohabit in the same space and by the eyes that never cross each other. For a long time, I thought that my eyes were the only ones that were seeing all the other eyes; the superiority of the human being is impressive! Knowing about the contractual relations gave me the opportunity to think well about these eyes, including mine.

Many lines of limits – boundaries – were present in the space of the centre of the city, some could be seen at determined spaces but others could not be seen. The salience of these lines through action situations presupposes mutual expectations among social individuals pointed out socially and culturally. It is a matter of accepting power in a sense related to survival, defined by actions of dissuasion intrinsic in hegemonic spaces.

In the organic solidarity inserted in the space of the city centre of São Paulo, dissuasion appears as a particular form of social action, as a deceptive form that lead to the nullity that I could find in my journeys. A strong perception of it, instead of having a tendency to produce events, blocks the dialogical actions with the invisible beings. For example, I can remember a frequent situation during my journeys: to see the children in street situation as a normal social fact of urban life and to see them when the society of that city needs to find a reason to explain “dangerous acts” inside the city and do not see them in a sense of learning something from their culture, do not see them in a sense of exchanging knowledge, and do not see ourselves recognized in them. The dissuasion opens

a space to strange events, incomprehensible to our senses, and has non-negative forces as revolutionary forces.

The only negativity of the dissuasion act is in the fact of it having no places itself. I can remember many people that were around me trying to dissuade my sight constructing the relations of my social me, with the children in street situation around my journeys, with all that were excluded from a certain normality – inside my cultural condition, as the excluded things, excluded acts and facts, excluded cultures. Looking at our multiple cultural identities, in this case, that were not part of the expected life lived in my familiar cultural identity.

The fact of living at the centre of a city was crucial in the history that I am living now. It was my social construction, in which I was an actor, and also a constructor. To talk about this part of my life is an introspective moment and permits me to read, with another type of dissuasion, some dissuasions the people that were in my way exposed me to, the reflections of it over my steps and some dissuasions I myself have made.

In the structure of collective life in São Paulo's centre, the organic solidarity and the dissuasion actions maintain exclusion as a form of life, as a social construction necessary to maintain the things as they are, searching out normality.



The Love Context

SAMPA

SAMPA is a nickname of São Paulo – the mutant São Paulo – accepted and used by many people that live there, whether they were or were not born there. In 1978, Caetano Veloso, a Brazilian singer-songwriter, affectionately named the city of São Paulo in a song where he related the feelings that were born from relations that came from São Paulo – from its corners, from its crossings, from the mixture born from the crossings.

The immense and impersonal São Paulo was felt and expressed by Caetano in its whole sense, which he did with his foreigner eyes – he was born in a city called Salvador in a northeast state of Brazil called Bahia. It is a way to express São Paulo that I recognize with my local eyes.

“ Alguma coisa acontece no meu coração
que só quando cruzo a Ipiranga e a Avenida São João
é que quando eu cheguei por aqui eu nada entendi
da dura poesia concreta de tuas esquinas
da deselegância discreta de tuas meninas
Ainda não havia para mim Rita Lee, a tua mais completa tradução
Alguma coisa acontece no meu coração
que só quando cruzo a Ipiranga e a Avenida São João

Quando eu te encarei frente a frente não vi o meu rosto
chamei de mau gosto o que vi
de mau gosto, mau gosto
é que Narciso acha feio o que não é espelho
e a mente apavora o que ainda não é mesmo velho
nada do que não era antes quando não somos mutantes

E foste um difícil começo
afasto o que não conheço
e quem vende outro sonho feliz de cidade
aprende de pressa a chamar-te de realidade
porque és o avesso do avesso do avesso do avesso

Do povo oprimido nas filas, nas vilas, favelas
da força da grana que ergue e destrói coisas belas
da feia fumaça que sobe apagando as estrelas
eu vejo surgir teus poetas de campos e espaços
tuas oficinas de florestas, teus deuses da chuva

Panaméricas de Áfricas utópicas, tórumulo do samba
mais possível novo quilombo de Zumbi³⁹
e os novos baianos⁴⁰ passeiam na tua garoa
e novos baianos te podem curtir⁴¹ numa boa. (Veloso, 1978; 1992 , 7º music and
19º music)

³⁹ Leader of the major *quilombo* in Brazil.

⁴⁰ The person that is born in Bahia.

⁴¹ A popular verb meaning to enjoy itself, to delight itself

Following Caetano Veloso, and paraphrasing Tom Jobim⁴², "*São Paulo is a shit but is good*". Many hours spent in the rush time, in the bus and subways, inside the car, and under the horror of robbery and the shadow of buildings - urban life in a country where the differences do the difference, or better, where the difference does the differences.

The inequality is scattered in the map and at the corners, the unemployment, the misery, the *barraco* and shop of luxury. The queues are in all places such as the cinemas, the public institutions, the hospitals, at the restaurants, etc. Traffic and massacres are present. *Cortiço* and ostentation are parts of the same violence: the violence becomes routine – an accented dichotomy between violence and routine.

São Paulo is a difficult city to live in and a difficult city to live outside of. I only realized the difficulty to live out of there when I came to live in Lisbon, more exactly, in *Costa de Caparica*. The "quality" of life in Europe is evident; the tolerant multiculturalism, in Žižek's sense, is more evident, bringing other types of inequality that reinforce the cynical view of equality... leaving the place more safe. And I, still at a distance, was looking for a manifest against the city of inequality through my keyboard when I could realize how I miss São Paulo.

The lack I felt, and feel, is not a new sensation as well as the love that I feel towards this city, towards the social space of this city. My pleasure in admitting the beautiful façade found in the buildings in the city centre, the haunted romances in the derelict masons in *Avenida Paulista*, and the color of sunshine through the buildings

⁴² A Brazilian songwriter.

reflecting over the trees in *Praça da República*. And so I remember that I mixed with this admiration all my experiences in the city, lived day after day. New places and new people were born, for me, promoted by the big movement of the social relations in different spaces of São Paulo.

The *paulista* expressionism is marked by the end of the skyscrapers heading to the sky, carefully expressed by different lines and in constant dialogue with the clothes. The *Escola Paulista*⁴³ is a conquest in the world of architecture.

From some anonymous places and people, considered ugly or out of society by the majority that live and know São Paulo, I keep my deep feelings. In the disorder of the city centre, my place, a beggar – Sr. José – was with me during my childhood. Every Sunday, when we went to the mass at *Igreja da Consolação*, he was there, standing in front of the left door – left looking to the church, “*never inside*” – said Sr. José. It was not the main door, but he told me, and I could only understand later, that he would always be to the “left side”; the space produced by his political representation. He knew about his options. By sitting there, he would get less money after the mass; most people would go out through the main door. Sr. José had three sons and after a rupture with his wife, the custody of his children was taken from him; he therefore lost the pleasure to live as he used to, with a job, a house, and a family deciding to walk and read. “*Walk until I am tired and read to know where I am walking*”. It is a choice, why not? Maybe everybody in the city would have done it but following different steps such as working to death, getting money until becoming rich, winning the

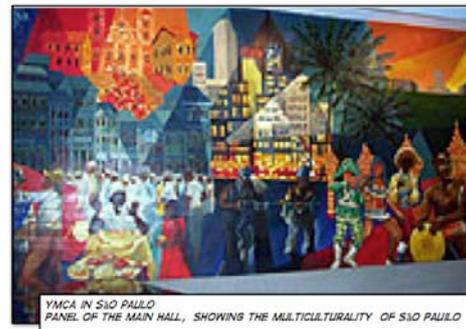
⁴³ It is a style of art inside the Architecture School.

election until having the political power, studying to get the most important power of this era: the intellectual power.

Sr. José, with his black beard, white skin and brown eyes, started to walk from *Mato Grosso*, a state in the middle of Brazil, from a city called *Vila Rica*, and stopped in São Paulo. He passed through many states; his route was not a straight line between *Vila Rica* and São Paulo, and so before arriving at this city he passed by all states of the north and northeast from Brazil. My mass was divided in two turns: the first one was outside of the church with my friend José, and the second one was, after the sermon, inside the church. We talked about his life, my life and the things that we were doing and had done. From our interactions, marked by the respect of our *situcionalidade*, I did learn more about our condition as social beings, about our connection with others, about the eyes from the others to us – our own eyes, and it gave me happiness having him in my history.

Dona Ernestina was another person that was in street situation during my childhood. It was my first experience around the assistance act. For many times I have seen Dona Ernestina sit down in a small street that was the link between *Avenida São João* and the internal street of Copan. Whenever I passed this place, she was there, standing in the same position, asking some help to survive. She was old, to my eyes; I did not know her real age. Sometimes, my grandmother would ask me to give her a piece of bread and a glass of hot milk; the wintertime was the worst time to see Dona Ernestina in the street. One day, I decided to give her a new and “imported” blanket, which I had received as a gift. At the same day, when the people that lived with me realized my act, for me an assistance act not different from my grandmother’s, the first reaction was to give me a sermon. In this discourse, they pointed out my fragility in the sense of my autonomy, my irresponsibility in

a sense of giving the new blanket and not the oldest one (*"it was imported"*), my innocence in face of the practices of Dona Ernestina that, on the day after receiving my gift, recreating her morphological space, was not using the blanket; according to their discourse, it was a common practice of the people that were in the street to evoke the compassion, the pity.



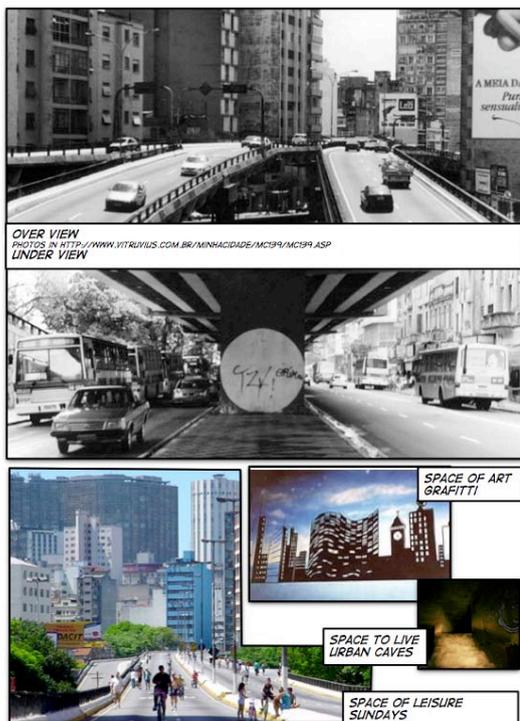
The social construction of compassion is linked with the space, that it is exercised. In occidental urban spaces the compassion has a direct link with the capitalist mode of production and with the charisma of the Catholic Church through the process of possession of objects, including bodies, claimed by these systems. In this case, the compassion means social assistance, which is an anchor to maintain the hegemonic system in its normality; the key force of production includes the production of the effective hegemonic system itself, that is, the social assistance maintains a stratum of the population necessary to the survival of the normality of São Paulo.

The *Rua Nestor Pestana* and the *Rua Amaral Gurgel*, without significance for many people, are in my feelings marked with the relationship that I founded there. The YMCA, in *Rua Nestor Pestana*, and the building number "593", in *Rua Amaral Gurgel* were important references of myself. The strong representation of the expressions "YMCA" and the "Building 593" – for me they are expressions besides being words, they are in the lived practices at these places. It is a good example of the link among morphological, practice and representation dimensions. These were some parts of

the support for my morphological eyes over the children in street situation.

At the YMCA, I made some relations with the orphanage called *Orfanato Nossa Senhora da Consolação*, near to the *Praça Roosevelt*, in *Rua Gravataí*. Led by Sister Irene, in the 70s I found there my first contact with the children in street situation. I was a volunteer in this institution, along with my friends from the YMCA. We would spend all Sunday afternoon playing special games, from YMCA camping, with the children of this place. The engagement of my family, in an assistance way, was immediate. I started to take music classes with a girl from this institution, as I related before, and it was considered a financial contribution to them. The insistence of the institution to send these children to their houses, trying to do a reinsertion, was strange for me since that time.

From *Rua Amaral Gurgel* came my first contact with children in street situation in *locum*. In this street was constructed the *Elevado Presidente Costa e Silva*, named by *paulistanos*⁴⁴ as *Minhocão*. It is a viaduct, which is parallel and over this street; going, side by side, from the beginning until the end of this street. This construction brings to this street a perfect place for the children in street situation to



⁴⁴ The name of the person that is born or lives in the city of São Paulo.

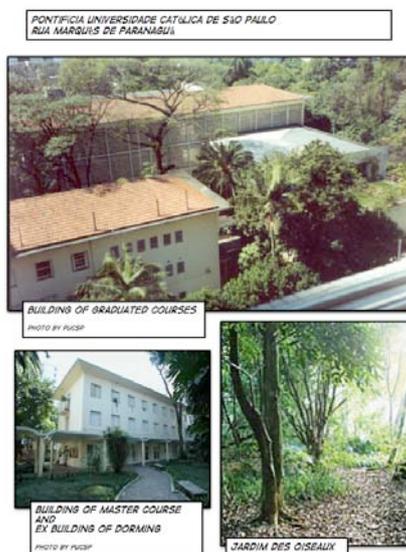
live and survive. Under the viaduct, they had some caves making perfect subterranean cities over the street – urban caves. A place to learn, to observe, to find refuge, and to live: it was my place! The pronoun “my” here is not a possessive feeling but a part of my construction and constructor of it, showing my process inserted in the relations of production.

When I moved from Copan, I went to live one block away from this street but, I spent most of my time at the building where my aunt Benedicta had her new apartment, in the number “593” of the *Rua Amaral Gurgel*, facing the main entrance of the children in street situation’s cave. I had some friends in the “593” and in the cave; my feelings grew in these relationships founding my practices and eyes over the children in street situation.

While I was growing up, I was discovering more spaces to cultivate my regard towards São Paulo. The pleasure to watch the movies from abroad, to know more about the different (and sometimes the similar) in the *Elétrico Cineclube*, in the *Cinesesc*, and in the *Sala Cinemateca* were such places. Also, the Sunday morning’s *matinéés* in *Teatro Municipal* around ballet and classic music, where I would go to dance during the week, “obliged” and for such a short period of time that I would rather be there on Sunday morning’s *matinéés*. The strong movement that I had around the theaters of the city centre of São Paulo with my mother led me to discover different representations of our histories.

The *Pontifícia Universidade Católica de São Paulo (PUC-SP)*, in *Rua Marquês de Paranaguá*, was for me a significant space of art, an art of closure – of the monological knowledge, and an art of opening – of the dialogical knowledge. *PUC-SP* brought me more knowledges about life, about São Paulo, and about how deeply politics, education, and other social factors are implicated in the academic knowledge, especially by some voices such as Paulo Freire, Ubiratan D’Ambrosio, and José Predebon. Helena and Hilda studied at this building when it was *Des Oiseaux*; the history of this building was alive inside my family. I was a “daughter” of *PUC-SP* during more than ten years.

In the art, I could find some echoes of my feelings from the movies, paintings, songs, plays, classes, urban designs, human relations, and poems, only poems... I did not like to read! São Paulo as representation... a new world, another city, totally waiting for me, or better, infinites cities to discover and explore. It was a movement of recognition of my own city in feelings from work of arts of different areas, different ages, sometimes almost a century old. With this movement, I could recognize and construct my eyes over the children in street situation, through the representation eyes.



Inserted in the process of the social space analysis of São Paulo, it is possible to observe that the public spaces are a relevant mark of the difference. Actually, I can realize that the public spaces are not intrinsically linked to the collective interest. The middle class is satisfied with the shopping centers and the “right” society creates its own bunkers, with leisure and security

included in the taxes for the maintenance of condominiums. Squares, gardens and cultural centers are not scattered by the neighborhood to attend the demand from all social strata of this society. To the majority of the *paulistanos* there is no place to practice sports, to go out with a boy/girlfriend, to walk, to live with others, without having to consume something.

The lack of these places conspire to promote loneliness in the social space of the city; loneliness in a sense of being attracted to the empty space of the non-mobility. It is an inner city, where everything spins around inside.

At the same time, São Paulo touches the people that pass by through its receptivity; it has always a way to find a place to recognize oneself – the multiculturalism inside it is the main key, where the different is normal. In its social space, São Paulo is so many cities that it is none; probably it is the explanation of the integration phenomenon that exists there.

I choose to present São Paulo from my experiential memory; the only one that I could present and that no longer exists. My lived city is partial and incomplete, in some parts forgotten, in others enhanced with bits of other cities. Without realizing, I look back to determinate morphological, practical, and representation bits, that are impossible to include all at one time. I can not live in a city without making it a little of what I am – my social being; without cutting from the urban landscape the pieces that make sense to me and to date it back in the order of my desires and my setbacks.

It was in São Paulo that my style to live in a city was shaped. Nowadays, living in *Costa de Caparica*, I can see the sunshine reflecting over the trees in the *Praça da República*. I bring with my social self, alongside with the maternal language, the love towards the space in which I was born and raised, in all dimensions. And it

is not a choice, like the memory, it is a social construction made by the social space. It is my contribution to show love towards an urban city that constructed me and that I constructed too, that is inserted in the relation of production as others, and that is the space for hundreds of children in street situation.

CHAPTER 5

CHILDREN IN STREET SITUATION

To talk about children in street situation is to discuss about children, human beings in their first ages of life, existing social subjects, social actors/actresses, and not about a problem, about objects of interventions. As a human, the child in street situation acts and reacts in a marginal social context, is active, and is a subject of rights as all human beings are. It is a social fact; even though it is not the main way used by the majority society.

The body of literature that argues about children in street situation, in the last thirty years, is increasing in a vertiginous sense but the material existent in which the knowledges of these children are investigated to be recognized and legitimated is rare⁴⁵. It is normal to find works about the behaviours of the children in street situation within the economical, sociological, anthropological, psychological, social assistance and legal areas. Some of these works⁴⁶ are giving important contributions to understand better the *situcionalidade*⁴⁷ of these children: they constitute an inclusive part of urban society that marginalizes a parcel of its population – they are a marginalized part.

These works, that cover the behaviour of the children in street situation are the basis of this chapter, after an exhaustive exercise in order to know more and more, from different points of view, the lives of these children around the world. The contacts with some specialized organizations⁴⁸ that work with children in street situation are also the basis of this chapter, in a sense to bring different experiences with these children around the world. But, the main basis of Chapter 5 are in the nine years that I lived by their side, in

⁴⁵ it will be argued at the next chapter.

⁴⁶ I am presenting some of them in the addendum of this thesis.

⁴⁷ In Paulo Freire' sense.

⁴⁸ I am presenting some of these specialized organizations in the addendum of this work.

streets, in a shelter, in some places of our community, in my house, in our street family.

In the first two movements of this chapter, "Who are they?" and "How do they live?", I maintain a dialogue not only with some consistent works that I could find around the world identifying them, and not only with the specialized organizations that I had contact with, producing their own local categorization about them but I do maintain a dialogue with the children in street situation that I lived *in locum*, relating their *situcionalidade* through my experiences with them and through their own identification and categorization.

The third and last movement of this chapter, "Space, Social Structure and the Street", has as its objective to discuss the social construction of the urban streets to point out some social acts and facts from this environment. The central focus is to know more about the social background of the children in street situation to understand their culture, their knowledge.



Who are They?

WE ARE...

"Nós somos agente. Agente é brother de rua, não filho da rua" (Capoeirinha, 2000)

"Quem? Agente aqui (os 14)? Sei lá!... Somo gente que incomoda gente, mesmo que essa gente não saca a gente... Não saca pra agradar, só saca pra machucar... Só agente agrada agente" (Camila, 2000)

"Nós sozinho não somos nada, agente é fraco. Nós precisamos de nós pra ser alguém." (Priscila, 2000)

"Crianças que nem as outras... as outras que não é agente. Não gosto desse nome criança de rua que falam. Agente tá na rua agora, é nossa casa que nem o albergue é. Agente é igual a uma família, não é?" (Antonio, 2000)

THEIR *SITUCIONALIDADE*

They are children and adolescents that spend a large time in the streets of urban cities, that live periods completely on their own, without adults responsible for and to them. It is the first mark of their *situcionalidade* around the world. This *situcionalidade* is the expression of their identities and self-governing through their labour found in marginal works as, for example, windshield cleaner (*flanelinha*), prostitution (*puta/puto de rua*), drug dealer (*mulas*), pickpockets (*trombadinhas*), and beggar.

The second mark of the *situcionalidade* of children in street situation around the world is characterized by the limit-situation that they live delimited by the power of corporification and ethics of identification. It is constituted in an extreme of social inequality scenario coherent with the mode of production existent in urban societies, based on private property and on the unequal appropriation of the socially produced "goods".

Multicultural racism is the basis of the third mark of the *situcionalidade* of the children in street situation. It is strongly witnessed by the non-accessibility of these children to public spaces such as health services, squares, and schools.

Around the world, in urban environments, it is possible to find different styles of children in street situation and different names to identify them, but these three marks of their *situcionalidade* are present in all of them.

THE TERM

To discuss the term by which the children in street situation are named by society, actually around the world, sounds important to me in the sense of normalization that every term has when defined.

"Street children" is the term that is most commonly applied to children in street situation around the world. Antonio, whom I cited earlier, does not like this term. Capoeirinha explained earlier too that he does not understand the street to be his origin. The child in street situation recognizes her/his street moment, and is aware of coming from human beings and not from the street; she/he has a history, has a past. The street is her/his house for the period that she/he lives in the street.

These previously presented testimonials and many testimonials from other children in street situation show that this term, against their notion about themselves, seems to me to normalize these children. A term to define some cultural group needs to respect, minimally, the history and the self-recognition existent in this group. It is normal to apply pejorative terms to marginal groups; it is a way to sustain their marginality and to maintain the funds to help them.

A few works argue against the term "Street Children" but in most cases it is not remarked on; it is just used. It is also possible to find a few works defending this term to categorize children that spend all their time in the street, differing from children that spend a large part of the day in the street – "Children in the street".

Zoran Roca, the author of the book *"As 'crianças de rua' em Angola"*, affirms the term "street children" is correct and an appropriate term for the children in street situation (p17).

According to Roca (2000), this term includes two different groups. One is “children of the street”. This term identifies children who spend twenty-four hours in the streets. According to him, it happens because they do not want, do not permit, or do not have a family and a house to return to. The other is “children on the street”. This term identifies “worker children” or “ loafer children”. In both cases, working and loafing, this author characterizes the “children on the street” as being children that spend their days in the street and their nights at their homes. During the days, in the streets, they are involved in marginal economic activities, normally as salesmen because they have a safe place to keep their merchandizes – their houses.

These terms, used by Roca (2000), are in accord with the definitions presented by UNICEF in 1988:

- Children on the Street: This category comprises children working in the street but maintaining somewhat regular ties with their families. Their focus is their home to which they return at the end of the working day and they have a sense of belonging to the local community.
- Children of the Street: Children in this category maintain only tenuous relations with their families, visiting them only occasionally. They see the street as their home where they seek shelter, food and companionship.

“Children in Especially Difficult Circumstances” (CEDC) is a general term created by UNICEF that encompasses both categories above; and one more term is used by UNICEF:

- Abandoned Children: Children in this category are also children of the street but are differentiated from Children of

the Street by the fact that they have cut off all ties with their biological families and are completely on their own.

“Children in difficult situation” is a term used in a few works but UNICEF defines this term to point out “children that suffer from natural calamities, wars, economic crises, family problems, and mental or physical deficits.” (MED/UNICEF, 1993, p25)

“Children at Risk” is another term that I found to designate children in street situation. This term is related to child labour; it refers to a category of children that are inserted in the generation of production.

The term presented during this work – children in street situation – is a term suggested and accepted by all the people involved in our project called Children in street situation’s Culture and Concept of Space. “Children in Street Situation” was born in our group as the term that they use to identify themselves.

AGES AND GENDERS

Ages and genders are important facts of the children in street situation’s culture as axes of social domination, and as tools in the exercise of corporification and identification. Age and gender are social facts, in the process of the children in street situation’s culture that have important roles in the social construction of these children.

The concepts of age and gender to the children in street situation are linked, respectively, with the concept of oldest and strongest in the street. In both cases, the knowledge is the most important “gun” to the children in street situation’s culture.

To be the oldest and the strongest, in the children in street situation's culture, means having more knowledge about the three dimensions of life in street situation: the self-governing within the division of labour; the cultural context, in which is developed the processes of identity construction; the strategies for solving problems every day and night.

“com 10 fui pai de rua” (Capoeirinha, 2000)

“mãe de rua precisa saber da rua, não precisa de força não” (Priscila, 2000)

The relations of ages are inserted in the cultural context that determine hierarchically the different ages of the life in the street situation to determinate the social power, as it is related by Capoeirinha and Priscila.

The street situation argues through the knowledge of the children in street situation, not directly through gender or age but transforming the street into a place where the children, with different genders and ages, have conditions to develop their culture of the street situation. The knowledge of the children in street situation makes sense to them because it is understood as cultural, is in the practices of their lives.

In other perspective, the concepts of age and gender, in the majority society, are linked with a central preoccupation: normality.

As the reality of society is in constant movement, running away from normality, children in street situation corresponds, actually, not only to the children but, inclusively, to adolescent and adults. It seems strange to affirm that the children are not only children. But is necessary to observe that I am talking about human beings inserted in the culture of the children in street situation, and they are not only children.

"cê sabe... tenho 20 mas na ficha tenho 17 e o Alemão tem 24 e na ficha 17."

(Priscila 2000)

"tenho quase 5" (David, 2000)

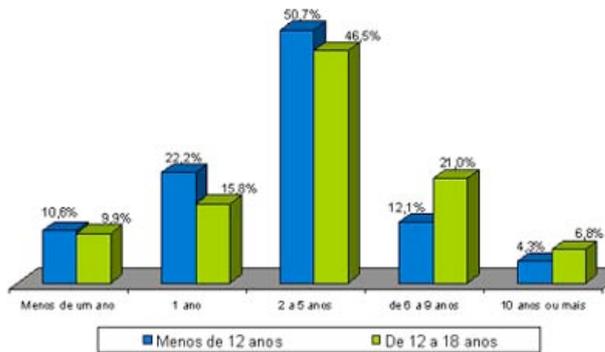
In the reality that I have experienced, the ages of human beings inserted in the culture of the children in street situation have varied from three to twenty-four years old.

Mainly, the results of works presented around the world about the age of the children in street situation show that the interval of the age range is based on the level of the economic development of the place that is available. According to them, the curve of the age of these children is inversely proportional to the curve of the economic development of the place in which these children live.

"The typical age of a street child varies from place to place. In developing countries children as young as eight live completely on their own. In developed countries, street children are usually over the age of twelve" (WHO, 2000, p06)

In the first census of children in street situation developed in the city of São Paulo in 2007, by *Fundação Institutos de Pesquisas Econômicas* (FIPE), the age of these children had been represented in a bar chart concomitantly with the time of life of these children in street situation. Analysing all reports of the census, I could not find any discussion around the concepts of the age and gender under the voice of the children in street situation's culture, through their eyes. However, this style of representation illustrates the different values inserted in the official discourse and the children in street situation's discourse.

Distribuição de Crianças e Adolescentes em Situação de Rua por Tempo de Rua e Faixa Etária. Cidade de São Paulo. FIPE 2007



The children in street situation are categorized in terms of the intrinsic values of the body that categorizes them, and self-categorization is not considered. In the representation about age, proposed by this census, the children in street situation appears as being divided in two blocks: one block composed of children with less than twelve years old and another block composed of children between twelve and eighteen years old, not referring to the internal division of their culture.

This same representation about age illustrates the strong possibility of having a leader of a sub-group younger than twelve years old, as the blue bar in the middle of the bar chart shows. The majority of the children in street situation are not counted by their ages, but in terms of the years spent in the street situation. This representative discourse, fixing the maximum age of the children in street situation on eighteen years old, is an ideological discourse. From my practices with the children in street situation, supported here by the testimonials from Alemão and Priscila previously shown, a considerable number of human beings older than eighteen are inside of the present percentage of the green bars of the bar chart

in question. The actual law⁴⁹ of the penal majority in Brazil, which occurs at the age of eighteen, delimits the flexibility of variation of the ages of the children in street situation, beyond contributing to the long life of the human beings inside this culture as “children”, demanding of the children such behaviour, that is actually foreseen by this “law”.

Returning to how the street situation argues, not with the eyes of children in street situation but with the eyes of the majority society, the genders appear divided by the sexual difference. After the 80s, the subject “street girls” had a special significance in the academic community, reinforced by the feminist speech of that period. The feminine gender, and its link with sexuality reinforced by pregnancy, brings a certain non-normality to understanding the sexual behaviours of girls in urban hegemonic society.

“... prá eles (*the majority society*) sô puta. Passei mal lá com o dotô, ele queria trepa comigo de barriga. Fugi e num volto mais. Tô cum barriga, mas tô no comando... essa barriga é do Alemão também.” (Priscila, 2001)

Like age, gender is embedded in an ideological discourse, which delimits a standard value; in the street situation the female gender is represented by the girl in street situation that is actually not only a child, but also an adolescent and a woman. The standard value determines, for example, that a girl in street situation of, let's say, seventeen years must have specific attributes in accordance with her age, as if she had another situation of life, one not in the street. Her sexual behaviours, proven by her pregnancy, must come out of these specific attributes, denying the reality of her culture. This standard searches a chronology of the age-gender-related pathway.

⁴⁹ Article 27 of the *Código Penal*, reinforced by Article 228 of the *Constituição Federal de 1988* and by Article 104 of the *Estatuto da Criança e do Adolescente (ECA)*

The identity of age and gender of the children in street situation's culture does not correspond to the expected social role by the majority society and so is not respected in its cultural sense. The sub-divisions made inside of the categories of age and gender, into two static categories, are social acts that represent one of the most important forms of violence against the children in street situation's culture. From these divisions, some directresses are being born to guide their lives in the institutions that receive them. Normally, biological brothers and sisters are separated by age and gender, violating their historical links, and street brothers, sisters, mothers and fathers are separated also due to age and gender categories, violating their familiar choices; the human body is fixed to follow what the majority society understands as gender – being sex, and age being fixed stages.

POLICIES

Around the world, children in street situation are a reality, even being invisible to the eyes of the urban population. In each place that I found the children in street situation, I could observe different histories based in different cultures but they have one mark in common: the children in street situation do not have individual official documents for each one of them. The basic world law for a human being to be an active citizen is to have a registration; due to this they are invisible to the majority society. The closest they have to an individual official document is a criminal or in-shelter register; they are also "counted" in groups in official *censuses*.

A strong predominance to view and conceptualize the children in street situation comes from the European view, giving us a Eurocentric view over them. Therefore, the policies developed in Europe are prevalent around the world.

In Europe, I could observe two large branches delimited by old⁵⁰ and new⁵¹ countries of the European Union. In the old countries, I could find some public policies, to combat poverty and social exclusion, which are extended to attend the children in street situation, but not directly to them, as a major subject. In the Amsterdam Treaty, signed in 1997, the amendment to new provisions on social policy was a fundamental political movement to guarantee, in a formal way, the rights of the children in street situation. This policy appears as a voice from worldwide community movements around these children, especially after the *Chacina da Candelária* in 1993, in Rio de Janeiro on Brazil, and a work developed in 1994 by *End Child Prostitution Pornography and Trafficking of Children for Sexual Purposes – ECPAT*, showing the child prostitution in Manila, Philippines. Financial supports to institutions to attend these children are the main policy assumed by this branch.

In the old countries of the European Union, the children in street situation could be recognized as being children and adolescents that spend a large time in the streets of urban cities, but that sleep in their houses, in most of the cases. At the beginning of the school year, they are enrolled in school but their attendance during the school year is composed of short breaks and truancy is their main characteristic.

Officially, in the new countries of the European Union, the number of the street children is larger than in the old countries of the European Union. When the new countries started to integrate into the European Union, the preoccupation over the children in street

⁵⁰ France, Germany, Italy, Belgium, Netherlands, Luxembourg, Denmark, Republic of Ireland, United Kingdom, Norway, Greece, Spain, Portugal, Austria, Sweden, Finland,

⁵¹ Romania, Bulgaria, Slovenia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia,

situation increased. Some characteristics of these children in the new countries are different from the characteristics present in the old countries. For example, it is more frequent to find children in street situation spending their nights in the streets of the urban cities of new countries.

The actual European official view over the children in street situation is founded in two official movements. One is the study presented in 2004, during a symposium called European Network on Street Children Worldwide – ENSCW; it was the first formal meeting to discuss social inclusion policies for the new Member States in Central and Eastern Europe. The other is the set of the voices present in the European Foundation for Street Children Worldwide – EFSCW, after 2006, when this foundation obtained participatory status in the Council of Europe on child protection.

The assistance discourse that views “children as victims, and not as criminals”, pronounced by Ms. Boer-Buquicchio during a spring session of the Council of Europe held in Strasbourg on March 27th 2007, gave the main European official position. This discourse, which sees the children as victims, does not open space to the alterity; the tendency of this discourse is to open space to the colonization process; the third *situcionalidade* of these children – based on multicultural racism – is a strong characteristic of their situation in Europe.

The major policies to attend the children in street situation in Africa and in Central and South Americas come from an ethics of identification concerning the European policies. To create possibilities so the local policies can be developed is urgent in order to give the children in street situation total freedom on expressing their knowledges, needs, and views through their own voices.

This sub-topic, Policies, comes not only to bring a discussion around the political details or specific laws to attend the children in street situation. It also comes from the necessity to establish, or claim, a certain highlight to the different knowledges developed in the children in street situation's culture, in different parts of the world, according to their lifestyles, according to their spaces. The proposal, presented here, is an exercise of alterity which I complete with the exercise of praxis that I present in the next step.



How do They Live?

THE SOCIAL STRUCTURE OF THE URBAN STREET

Urban cities have a high level of similarity, but they also hold many differences. Political factors, physical and economic geography, architecture, culture, and history all play a role in the particular ways urban areas develop and are sustained over time. Urban streets have the same dynamic of looking alike but being different in important ways based on many factors categorized by their ecosystem.

To understand better the ecosystem of the streets, I have looked to the process of the construction of the urban cities. Jean Pelletier, a geographer, and Charles Delfant, an architect, developed a study about cities and urbanism around the world. In this study, shared in their book *Ville et Urbanisme dans le Mond* (1969; 1997), they analyse urban cities though their external physiognomy, functional context, social classes, and political facts. By this analysis and using different systems, they bring a discussion about centrality and

architectonical symbolism in the urban cities that I identify as being tools of power (of corporification) and ethics (of identification) to maintain the social order.

Hervé Le Bras, a demographer, brings a strong discussion about the geometry of the cities in his book called *Essai de Géométrie Sociale* (2000) through topics such as the elementary structures of population, the division of the territories, the laws of movement, and the great invasions. In this discussion, the social geometry appears to construct foundations for understanding the social movement around the concentration of populations and the circulations of immigrants and migrants that is happening in the urban cities, that is, in the urban streets, that I identify as being tools to socially construct the multiple identities that exist in us as members of urban populations.

The urban street, like the urban city, is a domain of reality in contemporary society. The dimensions of this reality include territory and unity of the collective life; means and mediation; physical places that nourish and sustain social relations; and social-spatial organization. The urban street is like the veins in the human body. The streets are links among the many parts of the urban body, and places of passage. An urban city cannot exist without the urban street; the street is a dynamic symbol of the urban. To the children in street situation the urban street is a space to be, it is their "house" for a certain period of their lives where they construct their street family and where they are constructed by the majority society.

The urban street can be constructed under modern projects, such as the Brasilia' streets of the 60s, or re-constructed maintaining their cultural traditions, as in Tokyo in the 50s, or keeping the modern infra-structures in dialogue with the traditional centre, as in

Aleppo, Syria, or Herat, Afghanistan. In fact, the process of the physical construct is permeated by the social, cultural and natural environment where the streets are. This process is dialogical, that is, the urban society constructs and is constructed by these urban streets.

HOW DO CHILDREN MANAGE IN THEIR GIVEN SPACE?

The space of the children in street situation is an urban space, is a space where the urban street, and its ecosystem, are the main points of reference. To have literally an open space as the main reference in life, where the concepts about properties are different from the rest of society in the same space, is a hard task in the sense of managing a system that involves constantly other multiple systems, increasing the complexity in the social relations.

To manage the given space by the society – certain urban spaces - the children in street situation need to act directly or indirectly in their own culture, in the culture of the urban spaces (composed of different urban cultures), and in the natural urban space. The children in street situation live in the boundary of their systems exchanging energies all the time with other systems; they are not self-centered. They live in the open space in more than a literal sense. The culture is transversal in the constitution of the human beings with relation to a natural order that, as I discussed in Chapter 3, is not simply connected with time, space, and society but literally and materially constituted of time, space, and society.

At this time, the concept of culture is a complex concept, as I pointed out in Chapter 2. Culture, here, is considered to be a system formed by tools and instruments of work or production, by institutions (education, legal, religious, professional, etc.), by language, by traditions (social, entertainment, etc.), by religious

beliefs and rituals and by scientific and technical knowledge (that passes from generation to generation), which a group of human beings has created or adopted to live.

I categorize the children in street situation as being a cultural group formed by the way certain institutions – state, school, family, church – react (see Chapter 4) when confronted with complex situations. By “complex situation” I mean the material and affective misery, the domestic tension and violence, the unemployment, the lack of links between the school knowledge-making and the knowledge-making in use, the non-recognition of the knowledge acquired throughout life, and the lack of non-scholar, sportive and leisure activities inside the urban population.

The children in street situation find a way to survive being always in groups; they consider their groups as being their street family. They identify through some names who are the leaders of their groups and who has the same rights and obligations. The leaders of the groups are recognized as being street fathers or street mothers, while the street brothers, or only brothers, are the rest of the group. “Brother” is used to identify the male and female members of the groups.

In the children in street situation’s culture there are, clearly, inter- and intra-groups hierarchies. Between the groups, for example, there is a respect for territories, which means their “performance areas”. The places to sleep and to work of each group are respected by other groups; each group has its performance areas. Inside the groups, I can say there is respect and loyalty from the new ones to old ones. The “new ones” should be understood here as the children that have just arrived in the streets, so they are children with less street-living time. The leaders of the group are always the children that have more street-living time.

The hierarchy also appears in inter- and intra-group relations. Imagine two different groups are becoming one big single group, for territorial power reasons. If the leader of one of the groups is a male and the other leader in question a female, the male leader will always assume the general command of the new group. When disputing the leadership of a group the male leader, which they call street father, will always be considered stronger than a street mother even if the second one has more street-living time and is considered "older" in this culture.

In the children in street situation's culture, a street ethics is identified. These children, who live with other children in street situation, respect a "sort of ethics of the street code". They have their behaviors subordinated and made compatible with systems of values existing among them; for example: the conquered food must not be taken from the one who conquered it, but it should be shared with them all without the exchange relation between them. I consider this the strongest example of this code of ethics, since it is insurmountable to any situation lived by these children.

Still mentioning this specific code, there is the necessity of respecting pacts, of liquidating debts and of maintaining loyalty to hold the positional space. Even with these necessities, the relations in the streets are considered, for these children, "lighter" than the relations they used to have at their old homes.

The children in street situation's culture can also be recognized by means of their own language, of their own explanation systems, of their own subsistence methods, of their own dance and of their own rituals.

One example to distinguish the culture of the children in street situation is to point out that they live in two spaces, which I categorize as static and dynamic. I categorize the static space as

being the space that these children identify with the aid of inanimate objects such as, for example, the buildings, the parks, the bridges, the telephone booths, etc. At the same time, I categorize the dynamic space as being the space that these children identify through objects from nature such as, for example, the sun, the moon, the wind and the stars. To find these images of the space among the children in street situation I looked at the street, the house, the shelter, and the relations between the children and these places in what concerns the space notion. In all these relations, I found not only a mere spatial knowledge but a whole and complex spatial question that involved gender, power and culture as constructors and at the same time as constructions in the management of their given space.

OUR PROJECT

The project Children in street situation's Culture and Concept of Space was born from an idea given by Ubiratan D'Ambrosio in the light of my active work in social assistance with a group of street children in the city of São Paulo. After observing, for a long time, that the children in street situation have different ways to solve problems I conceived in terms of their concept of space, I shared this observation with some people who worked with me. Some questions came from my observations in my discussions with Ubiratan D'Ambrosio, my teacher at that time.

Ubiratan D'Ambrosio finished a lecture, on History of Mathematics, in *Pontifícia Universidade Católica de São Paulo – Campus Marquês de Paranaguá*, where I was doing my Masters course and I asked to him a time to talk about my work as volunteer in a shelter to attend children in street situation. Before we established this speech, I would never realize that the episteme of my questions, that came

from observations *in locum*, was linked with mathematical knowledge of the children in street situation's culture.

After our discussion, D'Ambrosio suggested that I immediately start (if the children allowed this) a search of facts to analyse and discuss, with them and with the academic scientific environment; what is the concept of space of the children in street situation. We spent a long time together and he suggested practical and theoretical ways to approach this problem. In theoretical ways, among others, he strongly recommended that I read the works of the sociologist of mathematics, Sal Restivo. Practically speaking, the next step involved following through on the suggestion from these authors and readings. The idea was to propose a cartographical exercise to these children. The motivation for this project started at that moment and, a month after this meeting, we were living our project.

WE, here, were twenty-nine people: twenty-eight children in street situation and me. During the project, we had some people that engaged us as our guests, to show new ideas, new points of view, and new discussions about subjects that were born during our project.

On March 2000, I shared with some children in street situation the desire to work on some activities with them. The agreement was immediate, even though all of them had shown a non-desire to work like a school. From May, 2000 to the September, 2001 I worked, twice a week, on this research with twenty-eight children in an institution called "*Centro Comunitário da Criança e do Adolescente*



- *Casa Arte e Vida*". This institution was the first shelter for children in street situation created in the city of São Paulo under the name "Albergue do Gasômetro". I participated in the initial project and trod a long way as a volunteer – about nine years. It was a long path of learning and integration with these children.

Of these twenty-eight children, the data presented here mention only fourteen, since these fourteen had been actively engaged in all the session's proposals. The children and adolescents who participated in this research were between four and seventeen years old. In fact, one of these children was twenty years old when we started the project and she was considered a child by herself and by the other children in street situation. The "age of street" of these children was from six months up to eleven years. All the sessions were registered by a description of the session during and after, some were recorded and others were filmed.

These fourteen children are identified as being of two different street groups. One of them had six children and was led by a street mother; it is represented in the first table below as "*Rua*". The other group with eight children and led by a street father is represented in the second table below as "*Capa*". The leaders of the groups gave these names when the groups started.

RUA		
Child	Age of Street (in years)	Age (in the registration form of <i>Casa Arte e Vida</i>)
Priscila (street mother)	11	17 (official time 20)
Antonio	10	15
Geni	6	17
Pinguinha	5	17
Pablo	4	9
Amarelinho	3	13

CAPA		
Child	Age of Street (in years)	Age (in the registration form of <i>Casa Arte e Vida</i>)
Capoeirinha (street father)	10	14
Camila Chupeta	8	13
Núbia	8	14
LauLau	7	17
Elizete	6	13
Waldemir	4	15
Toninho	1	6
David	0,5	4

The institution *Casa Arte e Vida* had two groups of educators alternating during the weekdays. The function of these educators, according to the municipal politics of those days, was to create and to carry through activities for these children. In general, these activities had an employment and/or educational character – manual works, playful games, etc. In general, the educators work at civil services during the day and spend nights carrying through this work as educators, in this shelter.

With my insertion of this project into the street situation, I observed, inquired, and participated in colloquies, not only with these children but with all the involved people during their daily routine; the educators themselves, the cook, the housemaids, the guards, the doctors, the psychologists, the social assistants, the responsible parents for these children (when they existed), the neighborhood of this shelter, and the community in which both groups belonged – “performance areas.” I also observed and

interviewed all the participants in the administrative part of the shelter.

Moreover, I reviewed all the effective laws, at that time, which concerned the children in street situation and brought these laws to be discussed with these children. Our discussions were founded in the rights and obligations that we had, or understood that we had, with respect to the corporal, positional, and ecological spaces.

We collected a lot of data during the period that we were involved with this project. We mean here the twenty-nine members that were involved in the project; the children themselves were the observer in many cases. The project was an extension of our lives. In each meeting, we began to rethink our practices; we were living our praxis and in it, everyone had the stature of participative researcher. The practices that we had in our day-by-day were in connection with our thoughts, with what we had constructed, by our discussions, in our theoretical meetings.

These theoretical meetings were centered in exchanging energies, listening to the experiences of the others, explaining our experiences, discussing our corporal, positional, and ecological spaces, and sharing in these new experiences together. The proposal activities were primarily sketched by me, but we redraw them during the discussions, and sometimes during the applications. Some of these activities consisted of observing these children *in locum*: working, sleeping, and eating. In these activities, they were normally observed without warning. At the same time, they knew about the project and about the necessity to know their culture that put me inside their group, as a participant observer, an outsider observing their behaviors in relation to the behaviors of society.

Our project was focused on our knowledges and behaviors, to learn with our knowledges and behaviors, and to understand a collective environment of learning, but the strongest intention, developed during the research process, was to be together. The knowledge of our multiple identities management in this project as actors, observers, and researchers, was constructed during the project itself; it was not determined before the project as a goal. Faced with this emergent necessity, I have decided to share two activities where the spatial knowledge of the children in street situation is a tool to manage the multiple identities of their day-by-day, as well as a tool manipulated by the social structure where it happens.



52

Space, Social Structure, and the Street

HOW DO THE CHILDREN CREATE AND DEFINE THEIR SPACE?

The space has been worked in this research as a social construction, where more than mere physical elements are intrinsic; it defines itself according to a multiplicity of concepts that interact in and with it. From these interactions comes the concept of space; its dialectical movement defines itself as a system. The space has a dynamical character; it transforms and changes itself by the social movements.

The constitutive bodies of a space are much more than physical places, they are all bodies that are present in the ecosystems of this

⁵² Walking by the city centre of São Paulo with my friend Wenda, we met Camila and Pablo ; or they met us. This picture represents the moment of this meeting and one of the first movements of a new intra- and inter-group structure. - both these groups that were directly linked with the project of this thesis became three.

space and they are not rigid, which allows the exchange of energy among them reinforcing the systemic character to the space. The bodies that are in a certain space are structured by their roles of action (even when the action is inaction), their states, and their social relations, and not only through their physical and particular representation.

In a system which involves human beings, such as the system of space, it is not the human being that is a body, but its role, the state, and the social relation are the bodies. The dislocation of the bodies through different places and times modifies the constitutive bodies of a space; the bodies are mutable.

To create and to define a space are social actions delimited by the relations where these acts happen; the relations of power and ethics are implicated in all social acts as important tools in the construction of these relations. The construction of the children in street situation's space is developed through their social interactions; they do not simply reproduce it. However, the actions of construct and reproduce are similar; to construct is limited by the structure that is present in the ecosystems of the children in street situation; to create and to define a space is socially linked with its social structure.

Therefore, I have decided to present two representative activities to let in the children in street situation's voices show how they create and define their space. To share these voices, through the following activities, I begin with some preambles regarding the analysis of space which I introduced earlier.

The three levels of space, developed in Chapter 3, are the main categories in the sociological analyses of the space concept. These three levels coexist; they are interlinked in the complexity of the space concept as a category of knowledge:

- CorpSpace;
 - OtherSpace;
 - EcoSpace.
- To analyze the space concept of the children in street situation, I maintain as background three dimensions of the place where the spaces are produced:
 - Morphological;
 - Practical;
 - Representational.
 - I choose to highlight the three contexts of the children in street situation's life,
 - Social Context;
 - Cultural Context;
 - Spatial Context.

A common and important characteristic of the human beings that are involved in this data, these fourteen children, is that they have never been to school; they have never gone to a traditional classroom, only their own school of life. I am the only human being of this group that has had contact with the mathematical knowledge of the school.

THE PYTHAGOREAN THEOREM IN SURVIVAL

Focusing on mathematical learning as practice and discourse, I develop, in the following steps, an analysis focusing on the children in street situation's knowledge from the group RUA about the Pythagorean theorem. The group *RUA* volunteered for this activity.

This activity was developed in four parts, one being the original discussions and observations about their practices of labor, about their *situcionalidade* in their marginal works. The other three parts are:

1. The choice of the practice to be analyzed;
2. The observation of the practice by the other group - *CAPA*, and by me;
3. The discussion about our practices as actors, observers, and researchers.

Our choice, of the practices to be analyzed was the practices of the robbery. During the practice of robbery, considered by the children in street situation as one of the practices of their work, the children of *RUA* reveal specific mathematical knowledge of space through the language, the ritual, the cooperation used in this practice, evidenced in the three levels of space. Some mathematical knowledges about space are evidenced through their own practices using what we define in the academic environment as being the Pythagorean theorem.

The term Pythagorean is an adjective that is related to the Greek mathematician and philosopher Pythagoras. His works are influential in different scientific and non-scientific areas, including mathematics and, more specifically, geometry – the latter being the focus of my attention here. Pythagoras developed theoretical

knowledges about the relations between the sides of a right triangle, **involving** knowledge of Pythagorean triples, where the square on the hypotenuse (the bigger side) is equal to the sum of the squares on the other two sides. Founded in this theory, I analyze the orientation, localization and geometrical concepts of the children from *RUA* group.

To robbery is a process that involves many complex systems; the children in street situation spend a lot of time developing this process. Submerged in a ethics of identification, every child in street situation who is part of a determinate group must be present in the practices of their work, independently of the work that they decide to practice. A child of the group can be absent only if she/he is absent of the street situation at the moment of the practice.

The robbery is divided in three phases, according to the children in street situation:

- organization;
- action of the robbery;
- pos-action of the robbery.

During the three phases, all children of the group have voice and are stimulated by the street mother/father to be engaged in different tasks. Normally, the children themselves delegate their tasks – the tasks that are routine for them; each one choose what they are responsible for but this choice is linked with their previous performance at these same tasks. The street mother/father can change the tasks among them when she/he decides to, but she/he needs to give a reason based in some practical event to justify her/his attitude to all members of the group. In some cases, when in the same group there are children with the same choices or a

new child, the street mother/father decides what they will be responsible for.

The voices in this activity come from *RUA*, the group led by Priscila as street mother, with the following street brothers: Antonio, Geni, Pinguinha, Pablo, and Amarelinho.

The children of the *RUA* construct their space conception through their own language, showing their cooperation in the practice of the robbery and notions about orientation, localization and what we in academy recognize as geometry. Claiming the central focus to these previous marked concepts and founded in my theoretical framework, I share how these concepts appear in the three contexts:



Cultural Context

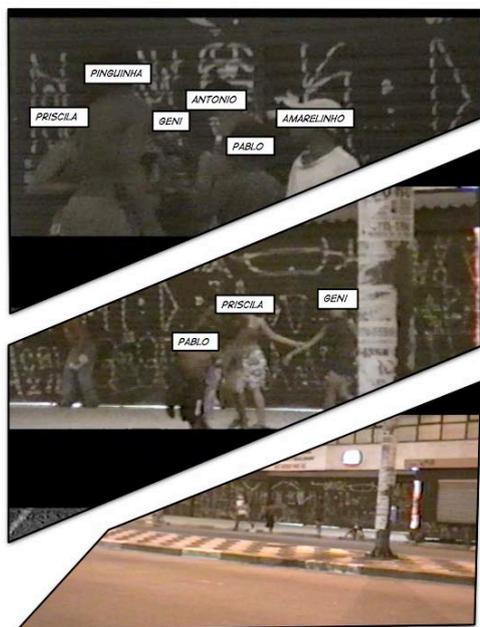
- What is cultural... (that I have decided to select to this analysis)
 - Language used among CSS*
 - Practice of Robbery differentiated by CSS (ritual)
 - CSS' Cooperation style - in the robbery
 - Space concept of CSS
 - CSS' Geometric and/or localization and/or orientation notion

* CSS - Children in Street Situation

Spatial Context

- What is spatial... (that I have decided to select to this presentation)
 - Specific language (gesture or verbal) in daily activities, in that case robbery, that show specific knowledge of CSS' space concept.
 - Evidences in the practice of robbery that show specific knowledge of CSS space concept.
 - Cooperation style in the robbery that suggested specific knowledge of CSS space concept.
 - 3 levels of space that CSS reveal in robbery activity which evidence specific knowledge of CSS' space concept (it is necessary to talk about the coexistence of this 3 levels- they are linked - they show the complexity of the space concept as a category of knowledge)
 - CorpSpace (intern e extern); intrinsic to the social unitary space - direct idea of volume, of space occupied by a body - proximity, contact, reach.
 - OtherSpace (intra and interrelational); intrinsic to the social collective space - direct idea of space occupied by the relationship with the other/me - identity, situation - (style, appearance, social class), attitude, (recognition, negotiation, interaction, experience, domination, equation).
 - EcoSpace (universal view); intrinsic to the environment space - direct idea of part/whole, of space occupied by the part in front of the whole and by the whole in front of the part - set , addition , generality, indetermination.
 - CSS' Geometric and/or localization and/or orientation notion as specific knowledge of CSS' space concept.

As the first collective decision in the organization phase, the *RUA* decided to go to *Avenida Liberdade*, in the city centre of São Paulo.



It was the place where they had decided to work that evening, because they knew that this place would be “clean” – without policemen. The specific language (gesture or verbal) among the children of *RUA* is the main tool to organize the robbery inside the EcoSpace that they are in. Through the gesture and verbal language, they start to draw a sketch of the robbery in the sidewalk, with a bit of

rock, gesturing with their fingers and arms and in constant dialogue. The street mother, Priscila, starts to draw but Geni and Antonio give their opinions, modifying the original idea. They construct collectively the local strategy for that specific robbery. During this phase, they choose some material that they find in their EcoSpace to use as tools of action. In that specific activity, they use some cones from the traffic police, available in that place.

The tasks of this activity: Pinguinha and Priscila are responsible for robbing the people inside the car; Antonio and Amarelinho are responsible for crossing the avenue at the end of the “*caminho*” developed by the cones, obliging the cars to stop; Geni and Pablo are responsible for giving assistance if something goes wrong and to control the different people that are in the street. For this activity, the tasks are rotated, with the exception of Priscila and Pinguinha’s tasks.

Inside the organization phase, Pinguinha starts to take the cones and bring them to the proper location, while Priscila sits down on the sidewalk with the others.

When Pinguinha brings the second couple of cones, the rest of the group stand up and start immediately to arrange the cones based on the sketch that they constructed before. The objective here is to put the cones on a diagonal with respect to the sidewalk and in the middle of the avenue separating the two ways of this avenue.



In the action of robbery, in the second phase, the *RUA* group tries four different placements for the cones until they find the “perfect” place. The first three places where they put the cones brought difficulties in accomplishing the action. At this phase, they were acting directly in the OtherSpace and they showed a deep knowledge of that space. They have an integrated movement among themselves, obeying a ritual; just as in a game when a player is absent from her/his place, another player comes to cover her/him. This integration is also based in their cooperation; they help each other understanding and executing the tasks. The ethics of the street, developed by them, is a social clue among them and the relations of power are working through this ethics.

The street father from *CAPA* Capoeirinha, and Camila were observing the movement with the cones and both said, at the same time, that the cones needed to be more "in line" and "near" to be



on a diagonal so that the action could be developed. They knew where they needed to put the cones to be in a "perfect" action point. At the same time, they were very nervous while observing the action; some ordinary people that were walking in the street stopped and stayed, observing us. All members of *CAPA* uttered phrases such as "it is dangerous ... there are too many people here", during all the actions.

The attention to the position of the moon and the strong wind that was rising was remarked by both groups during this phase. After four robberies, the *RUA* stop with the action and came to be with us; they shared the third phase with all of us.

In the third phase, post-action of robbery, we decided "*vazar*" from that place – to go out and to be together in the *Casa Arte e Vida*. During our trip, Capoeirinha and Priscila discussed about the positions of the cone and the time that *RUA* spent to put the cones in "perfect" position. Priscila said that what was important was that nobody was wounded, not the brothers of *RUA* nor "*os manos*" – the people that were inside the cars. At the middle of the trip, Priscila decided to stop and to share what they had stolen and make some comments...

“Ei... Temo que para e faze a féria... e discuti um treco” (Priscila, 2001)

Capoeirinha did not want to stop but, at the same time, he had made an agreement with me and *RUA* about the activity and then, he also decided to stop. It is important to remember that they have described the three phases of the robbery activity, in one of our dialogical moments – it was not an imposition developed by me. We stopped in *Praça Roosevelt*, as Priscila decided.

Priscila took all the material from the robbery – money, documents, three wristwatches, and two rings. All the documents that *RUA* had taken from the robbery, Priscila gave to some priest from *Igreja de São Francisco*; this movement starts after our sessions. Priscila kept one of the wristwatches and Capoeirinha had the other one, while the rings stayed each with one of them. The money was shared equally between *RUA* and *CAPA* groups.

The discussion about “*um treco*” that Priscila wanted focused on the strong style that Pinguinha used to act in the second car of the robbery. She insisted to her street daughters and sons to be direct, quick, but never hard in the robbery activity.

“Pinguinha, forte demais! Os bacana e tu fica de cu e ai dá merda.” (Priscila, 2001)

“Pega leve Pinguinha!” (Geni, 2001)

For Priscila, the street mother, it is not necessary to spend energy, especially when it is about stealing from somebody that is inside of a car.

During Priscila’s speech to the *RUA* group, Camila started to draw with the pens and papers that I had in my bag; she drew the robbery activity. When Priscila finished her speech, I suggested that we draw what we had lived a few minutes ago. The suggestion was accepted and we were deeply in phase three.

All children of both groups, and I, drew the sketch of the robbery. While we were drawing, we discussed what, how, and why we were involved in practices such as robbery, what it means to be a "*trombadinha*" from our point of view.

"tamo nessa pra come... é nosso trampo!" (Antonio, 2001)

"Não Bro!" (*Contesting the answer from Antonio*) "tá zicado, cacete?... agente tá nisso pra ficá no comando, pra saí da bunda e não sê comido, como os bacana foram. Comida, caralho, sempre tá na oferta! (*smiling*) (Capoeirinha, 2001)

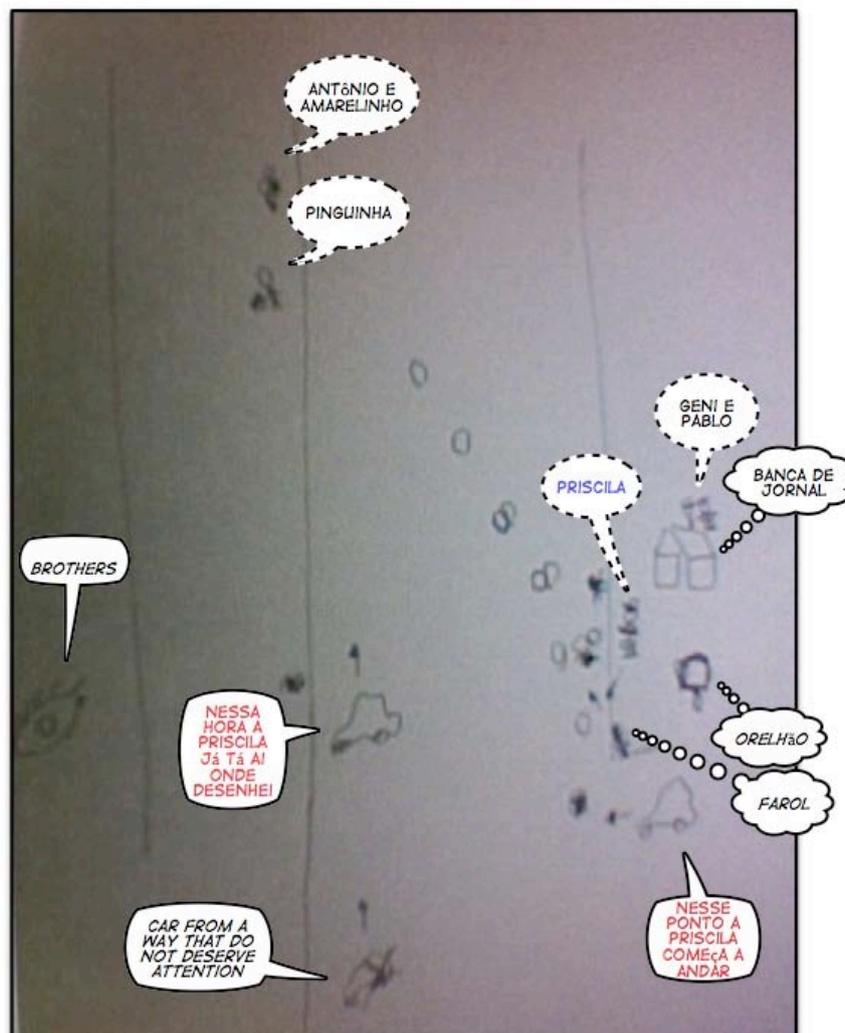
"Eh Capoeira, se liga Bro! É muito mais que isso! Nosso trampo faz da gente superio sim, mas deixa agente unido pra caralho e larga nós na parada certa... sempre ligado um n'outro. Tamo nessa pra sobrevive e não só pra come." (Priscila, 2001)

"Saca só pai... ela saca tudo! É isso aí... assim como agente, junto. Cada um no seu comando, só aprendendo e ficando pronto pra assumi. É a vida cacete... sabemo coisa que os bacana e os figura não sabe... é nossa arma! (Camila, 2001)

During all my observations, over many years, I realized that some mathematical knowledges were involved in the practices of robbery. Analyzing and interacting with the sketches drawn by the children, I could understand how they develop the concept of the Pythagorean theorem in action.

Antonio and I share, in the next step, the sketch developed by him, one of the brothers of *RUA*. In the sketch, Antonio showed clearly the same car in two different positions – the car that is the object of action; the cars that came in a straight line did not deserve attention, as I describe through Antonio's voice inside the sketch. Antonio, and the other children, showed the knowledge about how and from where Priscila had to start walking to be at the same place as the car at the end of the "*caminho*" developed by the cones, in order to act on this car. The cones were arranged on a diagonal line with the sidewalk situated at the left side, following the movement

of the cars. At the end of the "caminho" Pinguinha was standing, to act with Priscila in the robbery. Antonio and Amarelinho are a little further from Pinguinha; they would stop the cars, slowly crossing the avenue. Geni and Pablo are behind the newspaper stand; they are there to give support in case something goes wrong. The static things such as the cones, the telephone booth – "orelhão", the traffic lights – "farol", and the newspaper stand – "banca de jornal", are present in Antonio's sketch and are present in most of the sketches. The observers – CAPA group and I – are represented in all sketches of the RUA groups but in the sketches of the CAPA group, and in mine, the observers are not there. Antonio did not represent himself as he represented the other brothers of RUA, he drew himself as a dot, not as a human figure.



To affirm the analysis in this activity, I selected some examples of the children in street situation's language, ritual, and cooperation in the robbery activity that can illustrate the action of these children in the three levels of space, through their mathematical knowledge, supported by three dimensions and three contexts that I highlighted at the beginning of the analysis.

In the robbery activity is revealed specific knowledge of space concept through..

- Verbal language : (I have selected some examples inside this activity)
 - "um tiro" = near, > orientation
 - "lua (s)" = far, > orientation
 - "cara" = front, > localization
 - "bunda" = behind, > localization
 - "final" = diagonal, > geometric
 - "corredor" = parallel; > geometric
- Gesture language : (here I will pass a movie from CSS doing this gesture language - 1min and half)
 - Synchrony in the disposition of the cones forming a "final" (geometric)
- Ritual of the practice : (1 hour before to start the robbery)
 - clarification of objective - "só figura, hein!" (localization)
 - delegation of tasks - "tô no comando, tu fica no bunda e tu come eles" (localization and orientation)
 - impositions of rules - "na vez sempre no corredor os que vão come", "dá cara pros figura", "se sujá, fica luas e avisa o brô que pinta primero"; (localization, orientation e geometric)

... and thought...

- Cooperation style evidenced:
 - In the understanding of delegation of tasks - "mãe, não saque!" (asked Pinguinha)... Pinguinha, se liga que tu fica na bunda, só no visu dos mano" (answered by Priscila) (orientation)
 - In the execution of tasks - "... no corredor Pablo, no corredor!" (geometric)
- 3 levels of space evidenced in:
 - CorpSpace
 - » proximity, reach
 - OtherSpace
 - » correct positioning in the moment of the proposed action in relations with others, respecting the rules imposes previously;
 - » identity fixed express by the behaviors and the faces expressions;
 - » interpersonal attitudes of protection and aggression.
 - EcoSpace
 - » correct positioning in the proposed action in relations with the whole.. dynamic and static references around them;
 - » The notion of the set express by the individual behaviors and actions.

THE CARTESIAN COORDINATE SYSTEM IN THE ACTION

Following the same focus of the previous activity, the mathematical learning as practice and discourse, I develop, in the following steps, an analysis focusing the children in street situation's knowledge from both the *RUA* and *CAPA* groups about the Cartesian coordinate system. The *RUA* and *CAPA* groups were volunteers in this activity.

This activity was developed in some sessions during six months, with different parts in each one, having one of them as a previous part of all activities. In this case, the previous part enclosed the observations and discussions about their practices of being in São Paulo, about their *situcionalidade* in their marginal position as human beings of the São Paulo' society. I highlight two sessions of two different sub-activities:

1. Being – part 5 – session 2
2. Making Bread – part 2 – session 4

From session 2, I bring part 5 as a representation of their voices in their *situcionalidade*, exploring their notion about orientation with the theme of “getting lost”. From part 2, of session 4, I bring as a representation of the first moment that they recognized, in that activity, their conditions as an auto-sufficient being and, at the same moment, absent from themselves.

The Cartesian Coordinate System is a reticulated project necessary to specify points in a “certain space” with “n” dimensions. The letter “n” here is a trick of the academic mathematics language to represent the dimensions that will be considered in this “certain space”. It is important to remember that I consider the material dimension of space and, in this activity, I am looking for three dimensions: morphological, practical, and representational.

Therefore, in this activity, the space has these three dimensions (it could be considered as a stereometrical space, by some geometers, and not a geometrical space) and the analysis is in three contexts, as the previous activity: social, cultural and spatial.

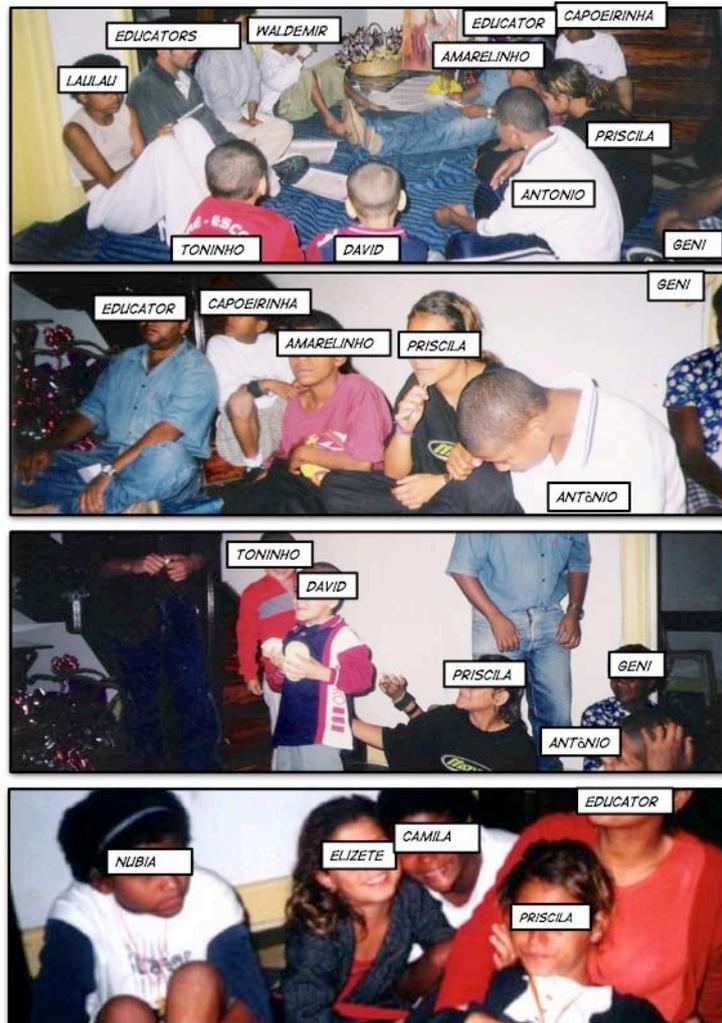
The term Cartesian is an adjective that is related to the French mathematician Descartes. His works permitted the development of such scientific areas as analytical geometry, the calculus, and cartography, the latter being the focus of my intentions. In the second part of his work known as Discourse about Method, Descartes presented a way to specify the position of a point or object on a surface, using two axes that intercept themselves. Founded in this theory, I analyze the conception of orientation of the children from *RUA* and *CAPA* groups.

BEING

In this part 5, both the groups – *RUA* and *CAPA* - were sitting in a circle and engaged in an open collective interview – conducted around the theme: “*What do you do when you are lost?* ” This theme appears from other activities and we decided to open an activity to focus on this theme.

In this session, we are working with two more educators of the *Casa Arte e Vida*. The discussion started with a question from Priscila.

“Hoje tava foda de bom!... agente falou pacas, ficamos cantando e também pensamos muito... como sempre acho o caminho que quero acha!” (Camila, 2000)



We all listen to our colleagues and their explanations about what they do when they are lost. The children had difficulties in understanding how they could be "get lost". By means of intrarelational explanations (child to child), the answers started to appear, always in the same direction:

"Volto pra casa... ou pra onde eu quiser... vo andando comigo" (Toninho, 2000)

Discussing this reply, I confirmed the suspicion – realized in earlier observations - that these children could not have the conception of "to lose yourself". We continue:

"How?" (Moni, 2000)

"Eu sempre faço isso! ...Eu sempre volto pra casa quando eu quero" (Antonio, 2000)

"Caralho... pode me pô d'um outro lado qualquer da cidade que eu volto. Já num viu???" (Capoerinha, 2000)

"Agente tá na rua e sabemo voltar... ir, sempre!" (Priscila, 2000)

"Tu tá duvidando da minha capacidade? Porra! Não sei explicar, mais sei volta" (Pinguinha, 2000)

"Num fico de otário não... tô sempre ligado como chego" (Amarelinho, 2000)

"Sempre sei... tando tiro, tando lua, sempre volto." (Nubia, 2000)

"Vô na cola do meu irmão!" (David, 2000)

The biggest difficulty of this question for the street children – "how?" – was in understanding what it is to "be lost". The word "lost" was used in some previous sessions, by means of games and interviews. We played "hide-and-see" in part 1, "blind man's buff" in part 2, and "Detective" in part 3, besides having an important part – part 4 – with a game we created. This game was shared over five days and involved different places in São Paulo. The name of the game is "*Quem chega primeiro?*" – Who arrives first? – and they chose it after a dialogical process in the final phase of part 3.

We developed in a collective way the structure of this game. The structure consisted of identifying two points of the city, in the periphery zone, and the goal of attempting to arrive at the *Casa Arte e Vida* before dinner time. The game started after breakfast and each group – *RUA* and *CAPA* – chose different places to be the departure point of the other. A friend of mine, from *Casa Arte e Vida*, and I would leave two members of both groups in these different and chosen places. Some of the suggested places were unknown to both of us. During five days, at 10am and from the

departure place selected by the opposite group, each pair must return to *Casa Arte e Vida* before dinner time, while the rest of the group continued with their routine in the city centre. My friend and I stayed together with each pair from the groups, during these five days. At any moment, no children of both groups demonstrated “to be lost”. Normally, during the first moment when they arrived at the departure place, they demonstrated interest in observing the sun to know in which part of the city they were.

“Saca só... (*seeing the sun*) tamo mais pro norte de São Paulo” (Pablo, 2000)

All the pairs arrived before dinner time and every night, during this activity, we discussed how they found the way to come to *Casa Arte e Vida*. The word “lost” was known by these children.

With these previous knowledges, I brought another question:

“What do you do when you get lost? (Moni, 2000)

The children did not answer my question – for them, it was very difficult to understand the expression “get lost” as coming from themselves. Some of the reactions were:

““Me” perder? Como?” (Capoeirinha, 2000)

“Eu, “me” perder de mim? Como assim?” (Priscila, 2000)

“Como posso “me” perder de mim?” (Antonio, 2000)

“Caralho, não sei “me” perder de mim não!” (Camila, 2000)

Trying to understand what is “me” for them:

“When you get lost!” (Moni, 2000)

“Tá tirando onda comigo? As gente me perde mas eu não me perco não! Essa parada é de doido! Eu me tenho e isso ninguém leva não, só eu. Eu sou meu e da rua!... mas a rua não é gente, né? ... a rua é onde vivo, onde mando e fujo... é onde eu tô. (Capoeirinha, 2000)

“Eu não sou dois não pra perder um!” (Priscila, 2000)

“Tenho eu em mim, num me perco não!” (Pablo, 2000)

“Não consigo me perder de mim... eu sou eu, eu tenho sempre a rua e ela me tem... mais ninguém me tem, não sou mais ninguém!” (Antonio, 2000)

“Me perder... me perder... tá afins de me deixar doidona?... Não posso me perder de mim, já falei!” (Camila, 2000)

“Eu não me perco de mim não!” (Waldemir, 2000)

“Que maluco! Se eu me perder o que sobra? Isso não rola não!” (Laulau, 2000)

“To na rua Bro, to ligado só em mim... não me perco!” (Elizete, 2000)

Their “me” appears as being the central point to them, in terms of understanding what is the expression “get lost” to them. The street is their space of reference to their “me”. In the middle of this analysis, I bring part 2 of session 4 of this activity.

MAKING BREAD

In part 2, of session 4, I invite them to “make breads” – the children from *RUA* and *CAPA* work in pairs in the development of bread maquettes. The exercise of cartography is developed by the donations of raw dough that we received from the baker Benjamim Abraão; we are in the same neighborhood. Every Tuesday and Thursday this baker would donate, at 7PM, raw dough so that we could make our maquettes and eat breads, with the most different shapes, in the following day. This was the main action for two months while we were engaged in session 4.

They used the dough of breads to represent how they could find their routes to go to *Casa Arte e Vida*, in part 4 of session 2, previously presented. I chose “to make breads” for the necessity of

baking it for the breakfast. Using the bread maquettes, I wanted to observe certain mathematical knowledges or practices of these children during the simulation of the situation deeply lived by them as "getting lost".



COLLABRATIVE WORK

FOUR PAIRS

TWO PAIRS FROM RUA: ANTONIO AND PABLO PINGUINHA AND AMARELINHO	TWO PAIRS FROM CAPA: CAMILA AND TOINHO NUBIA AND DAVID
--	--

TWO PAIRS PREPARING THE DOUGH OF BREAD
WHILE
TWO PAIRS DEVELOPING THE MAQUETTES

They have shown a deep knowledge of the urban topography; they really knew every street of our neighbourhood and the streets of

the city centre by their names. Each pair constructed sophisticated maquettes; it happened after dialogues to find a common idea about what static references they would have in their routes. These maquettes were constructed with the dough in the baking bread with ideas of orientation.

In this exercise, the children from *RUA* and *CAPA*'s groups strengthened the knowledges of spatial propositions (as they also showed in the previous activity) as, for example, "*bunda*" (behind), "*um tiro*" (near), "*cú*" (below), "*cara*" (in front of), "*cola*" (over), "*lua (s)*" (far), "*de cara*" (against) as well as strengthened and revealed geometric knowledges with the use of the terms, for example, "*final*" (diagonal line), "*corredor*" (parallel line), "*justo*" (midpoint), "*cenário*" (ray), and "*pico*" (point).

While they oriented themselves using their maquettes through their language, they illustrated their knowledge of reference point such as telephone booths, bridges, specific buildings – thus living in the static space and they also illustrated knowledge of the sun, the moon, the stars and the wind thus living in the dynamic space. Each pair constructed some maquettes under the subject "*what is the way to come back for the Casa Arte e Vida*".

"Vim de bunda com me'irmão. Só um tiro daqui foi que vim só!" (David, 2000)

"Esperto na área, saquei o cenário e andei junto com o sol.... Saquei que fomos de cara c'um sol. ... Tava luas daqui! (Capoeirinha, 2000)

I observed some difficulty, from the children, on accomplishing this activity. None of them – not generalizing – had represented him or herself in their maquettes. They, in bread's shape, do not make their own image; they indicated with their finger the way that they would take, after finishing the maquettes, but they did not make their own figure. I would like to point out that I developed, in my

maquette, my way with a small bread doll; this example was not followed by any of the children. I provoke them asking:

“Why they did not make a doll to represent themselves”

and

“Why they would represent with their finger the way that they covered in the
maquettes”

and they answer:

“uhmm Mônica... porque não quis! Mas eu tô lá!” (Camila, 2000)

“Não sei fazê isso não... faze eu” (Priscila, 2000)

“Caralho! Sô bom de mais pra sê pão!... Não sei faze eu. (Capoeirinha, 2000)

“Ninguém fez né? Acho que é porcausa que ninguém saca a gente” (Antonio,
2000)

CHAPTER 6

THE FREEDOM OF KNOWLEDGE

During all the trajectory of this script, 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 the project with the children in street situation, in locum. However, the present option was developed under the real way 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 sociological perspectives can be found during this script. 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 with 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 Durkheim and 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.

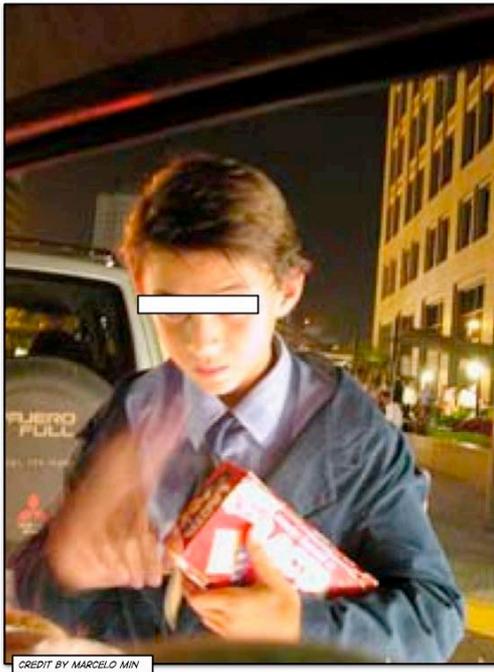
The fact that the sociology of mathematics involves two academic environments (traditionally recognized as different and, before Durkheim and Spengler's works, as antagonists) itself, promotes a change in the position of an observer capable of exercising the observation with more sets of eyes. With this,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

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 mathematics

knowledges in the urban cultural groups would prevail. In the case of mathematical knowledges, the actual predominance is in the academic knowledges and the childrens' knowledges in question could be stuffed.

The purpose of the first part of this chapter is to argue about the process of the meeting that occurred on São Paulo's asphalt promoted by this research – the asphalt children and the asphalt academics, in search of this freedom of knowledge.

In a final moment, I present the next steps discussing that it is not the end.



Asphalt Academics and Asphalt Children⁵³

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 the cases in which the children in street situation developed their spatial construction 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 the cases previously observed in chapters 4 and 5 could sound very aggressive, in the first case, or without

⁵³ Asphalt Children... is a term that I justify in Chapter 4 through the historical context where it appeared and it is as this concept that I am using it here. However, I would like to highlight a book that has this name in its title written by the Brazilian journalist Marcelo Spalding. I have not had time to read this book before finishing this script, for it was only published in Brazil. Being so, I have no contact with the script of this book neither with their personages, but it will be my first reading after finishing this script.

importance, in the second one. 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.

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: Corp, Other, and EcoSpace. The continuity of these concepts, through their generations, guarantees it as a 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 artifacts are revealed. By one hand, the firmness with which these children do not represent themselves by means of drawing, dolls of bread, or any other non-verbal artefact, 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 in 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.

In some academic presentations that I have done 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*". Some of those outcries redirected my observations to develop at the Social Assistant Department, denying them, in a strong way, as an observation stuffed with mathematical knowledges, or any knowledge deserving the attention of the academic environment.

The actual position of the academic environment has been rethought by some voices; many of them are present in this research. Ubiratan D'Ambrosio (1999), one of those, is explicit when assuming an opposite direction to the etymological significant 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, I maintain some questions such as: Why does the academic environment deny the knowledge from non-academic human beings? Why is the asphalt science not Science?

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

The movement of intolerance is a post-modern characteristic for human beings; it is not only in academic institutions. The existence of the urban non-space is an example of this intolerance,

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, I argue 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 – put in a deep conflict the functional order of the relations inside of academic environments. The recognizing, validating, and making compatible of the children in street situation’s mathematical knowledges with the academic mathematical knowledges, as part of academic society is an elementary gestured 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 in a closed system.

The act of the asphalt academics claiming to open the academic system was exercised through the work with the children in street situation’s mathematical knowledges, with their contexts, and with the mixture of different voices around the same subjects under a certain intolerance by me – the scripter. The intolerance came in the sense to claim my 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 not to be tolerant to any closed system but to be “smart”, according to Capoeirinha (2000), with the attitude that treats each local culture in a colonization process.

“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)



Next Steps: This is not the End

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 asphalt research, 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 by the social construction of knowledge; in the knowledge lies the material substratum of the human society. The challenger in this direction is not a prisoner of a system, submitted

to the anatomy and the perspective of rules. The children in street situation's knowledges are of an apparent simplicity, not having a formal skeleton or, some times, 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 I described it, through their complex space concept; totally linked with their (and our) survival.

The children in street situation's rights to exist, through their knowledges, includes the non-omission 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 juridicially intentional families. In this context, the "children's rights", as fixed and closed laws for one determined group of children, contribute to the chronic omission from the larger society's face the children in street situation's rights of being visible and this social fact is supported by the chronic omission of an academic environment face for not recognizing, validating, and making 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 felt discontinuity of the urban human relations, present on the urban non-spaces, is supported by the continuity of these relations. The meeting between the asphalt children and the asphalt 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.

"Saca só a barra que foi no começo. Nem nós mesmo sabia o quanto nós sabia, lembra? ...(*Lembro. Aconteceu o mesmo comigo. E agora?*) Agora? Agora é mais fácil entende os outros e nós mesmo! ... (*Como assim "mais fácil"?*) Ah, é diferente. Somo menos bravo, mais esperto e posso sentir que sou importante mesmo estando na rua. ... (*Como assim Camila?*) O que nós fazemo, não fazemo só pra nós, fazemo também pra tudo que está com nós, tudo e todos. Sabe isso e sabe melhor o que sabemo é deixar a gente esperto pra vive e pra entender quem a gente é. ... (*E você quer falar pra gente quem você é?*). Quero porquê sei quem a gente é! Sou a Camila, sô uma criança que tá numa situação de rua, que a rua finge que não vê mas que agora sei que vê. Sou a Camila, sô o centro da cidade, sô nosso grupo, sô tudo o que fiz e tudo que vô fazê, sou tudo que fizeram e tudo o que vão fazê. Sou a Camila, que sabe muita coisa e que quer aprendê muito mais. Sou a Camila!!!! (Camila, 2001)

The central point here is not knowing, in the end of the script, how me and the fourteen children are now. It is not relevant data in a sense to conclude or to institutionalize some concepts and neither are our intentions. In addition, the historical and geographical distance between us, each one of us, do not give credibility for me, as a scripter, to report about them at this moment. The central point here is knowing how these asphalt knowledges are integrated in more acts towards the freedom of knowledge, is knowing that it is the end of this script but it is only the starting point of this research, for me and for them.

"Agora estamos seguindo em frente com mais conhecimento de nós e do mundo. Podemô escolher mais, sabê mais e continuá nossa vida pra aprendê mais." (Priscila, 2001)

The exploitation of the idea of the discontinuity of the urban human relations in the urban non-space through the space concept, and of the three levels of space developed in this research, has just begun. The idea of this discontinuity has been developed by different asphalt academics as, for example, Slavoj Žižek and his concept of the parallax gap. He searches this concept inside physics to observe, sociological and philosophically, the reality through a

confrontation of two closely linked perspectives between which no neutral common ground is possible.

“Every exclusive focus on the First World topics of late-capitalist alienation and commodification, of ecological crisis, of the new racisms and intolerances, and so on, cannot but appear cynical in the face of raw Third World poverty, hunger and violence; on the other hand, attempts to dismiss First World problems as trivial in comparison with “real” permanent Third World catastrophes are no less a fake - focusing on the “real problems” of the Third World is the ultimate form of escapism, of avoiding confrontation with the antagonisms of one’s own society.”
(Zizek, 2006, p129).

Based on the life experiences lived in this research, including all asphalt knowledges that interacted in it, the search to understand the movement of the society face-to-face with the urban non-spaces, the intrinsic connectivity in the urban human relations on the urban non-spaces, and the repulse of the urban human being when confronting the antagonism existent in the urban spaces.

“Saca só Mônica que hoje, depois do nosso projeto, vejo o mundo e sô quem eu sô, Capoeirinha com muito amor!” (Capoeirinha, 2001)

“To see the world,” the consequence of this research, around a new movement, is being born in *Costa de Caparica* and Manchester, in a collaborative asphalt work. As cities of immigration in Portugal and England, both of them are young and old urban spaces, respectively, where the urban non-spaces have been increasing with an amazing speed through different ways and characteristics. This new movement, engaged in communitarian projects in both cities, “*D.A.R. à Costa*”⁵⁴ in Portugal and “*RAPAR*”⁵⁵ in England, consists in developing with the receptive communities a study about the visible discontinuity of the human relations on their urban non-

⁵⁴ http://www.programaescolhas.pt/modules.php?name=Projectos&op=show_project&project_id=148

⁵⁵ <http://www.rapar.org.uk/>

spaces. Both cities have a strong charity support, that feeds the increase of the urban non-spaces, and both communities claim to understand the movement of society in relation to these urban non-spaces.

“Eu sou um intelectual que não tem medo de ser amoroso, eu amo as gentes e amo o mundo. E é porque amo as pessoas e amo o mundo, que eu brigo para que a justiça social se implante antes da caridade.” (Freire, 1997, online)

In this direction, I intend to share some ideas of tracks that could contribute with the march of the “partless”, of the science of life, of the freedom of all knowledge, and of the existence of love as social construction of the life relations.

“Eu morreria feliz se eu visse o Brasil cheio, em seu tempo histórico, de marchas.
... Marcha dos que não tem escolas, marcha dos reprovados, marcha dos que querem amar e não podem, marcha dos que se recusam a uma obediência servil, marcha dos que se rebelam, marcha dos que querem ser e estão proibidos de ser. Eu acho que, afinal de contas, que marchas são andarilhagens históricas pelo mundo.” (Freire, 1997, online)

REFERENCES

SOME BIBLIOGRAPHICAL

"IMAGES & ACTIONS"

- Althusser, L.* (1964/1976; 1985), *Freud e Lacan. Marx e Freud: introdução crítica-histórica*, tradutor Evangelista, W., Revisora Gonzales, A., Rio de Janeiro / Brasil. Edition originale 1964, Freud et Lacan, p88: 108, En *La Nouvelle Critique*, 161-162, Paris / France. Edition originale 1976, Sur Marx et Freud, p226: 240, En *Ecrits sur la Psychanalyse*, Paris / France.
- Amarelinho*, (2000), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.
- Ambrósio, T.* (2001), I - Contributo para uma mudança reflexiva da Educação, Em *Educação e Desenvolvimento*, UIED – Unidade de Investigação, Educação e Desenvolvimento da Faculdade de Ciências e Tecnologia – Universidade Nova de Lisboa, Edição apoiada pela Fundação para a Ciência e Tecnologia – Ministério da Educação, Monte de Caparica / Portugal.
- Andrade, M.* (1976), Improviso do Mal da América, p252, Em *Poesias Completas* (poesia escrita em 1928) Circulo do Livro, São Paulo / Brasil
- Antonio*, (2000), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.
- (2001), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.
- Aptekar, L.* (1988), *Street Children of Cali*, Duke University Press, Durham / USA.
- Augé, M.* (1992; 2005), *Não-Lugares: Introdução a uma Antropologia da Sobremodernidade*, Tradutor Pereira, M., Revisora Marques, T., 90 Graus Editora Lda, Lisboa / Portugal.

Baldino, R. (1997), On the Epistemology of Integers, p211:250, In *Recherche en Didactique des Mathématique*, volume 17, number 2, Paris / France.

Baleiro, Z. (2005), Balada do Asfalto, 2ª música, Em *Baladas do Asfalto e Outros Blues*, MZA Music - <http://www.mzamusic.com.br/>, Rio de Janeiro / Brasil.

Barcellos, C. (2003), Abusado: O Dono do Morro Dona Marta, 2º Edição, Editora Record, Rio de Janeiro / Brasil.

Bauchspies, W. (1998), Science as stranger and the worship of the word, p189:211, In *Knowledge and Society*, volume 11, JAI Press, Greenwich / Uk.

___ (2000), Images of mathematics in Togo, West Africa, p43:53, In *Social Epistemology*, volume 14, number 1, Taylor & Francis Ltd, London / Uk.

___ (2000a), Cultural re-constructions of an adoptive child: science, p237:260, In *Cultural Dynamics*, volume 12, number 2, Sage, London / UK.

___ and Restivo, S. (2001) - O arbítrio da matemática: mentes, moral e números, p102:124, Em *BOLEMA*, número 16, Rio Claro / Brasil.

___ *W., Croissant, J., and Restivo, S.* (2006), Science, technology, and society, Blackwell Publishing Ltd, Malden / USA.

Bishop, A. (1991, 1999), Enculturación matemática: La educación matemática desde una perspectiva cultural, Tradutor Barberán, G., Paidós Ibérica, Barcelona / España. Original edition 1991, Mathematical Enculturation, Kluwer, Dordrecht / The Nerthelands.

Bloor, D. (1976; 1991), *Knowledge and social imagery*, 2º edition, Chicago Press, Chicago / USA. Original edition 1976, *Knowledge and social imagery*, Routledge, London / UK.

Boff, L. (1997) *A águi e a galinha*, 39º Edição, 2002, Editora Vozes, Petrópolis / Brasil.

Borges, J. (1998), *A Biblioteca de Babel*. P483:489, In *Obras Completas*, Castro, F. (Ed.), volume I, Círculo de Leitores, Lisboa / Portugal.

Buraway, M. (2000), *Reaching for the Global*, In *Global Ethnography: Forces, Connections, and Imaginations in a Postmodern World*, University of California Press, London / UK.

Caetano, A. (2004), *A Complexidade dos Processos de Formação e a Mudança dos Professores*, Porto Editora, Lisboa / Portugal.

Camila, (2000), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.

— (2001), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.

Capoeirinha, (2000), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.

— (2001), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.

— (2003), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.

Carraher, T., Carraher, D. and Schliemann, A. (1995), *Na vida dez, na escola zero*, 10ª edição, Cortez, São Paulo / Brasil.

- Certeau, M. de* (2001), *A invenção do cotidiano – 1, Em Artes de Fazer*, 6^a edição, Vozes Editora, Petrópolis / Brasil.
- Charoula, S.* (2007), *The way a Romany (Gipsy) community perceives space notions and some educational implications for Romany students*, p31-39, In *Revista em Literacia e Bem-Estar da Criança – 1*, LIBEC-CIFPEC Editora, Braga / Portugal.
- Ching, F.* (1998), *Arquitetura, forma, espaço e ordem*, 4^o Edição 2005, Martins Fontes, São Paulo / Brasil.
- Chubin, D. and Restivo, S.* (1983), *The "mooting" of science studies: research programmes and science policy*, p53:83, In *Science Observed: Perspectives on the Social Study of Science*, Knorr-Cetina, K. and Mulkay, M. (Eds.), Sage Editor, London / UK.
- Clareto, S.* (1993), *A Criança e seus Dois Mundos: A Representação do Mundo em Crianças de uma Comunidade Caiçara*, Dissertação (Mestrado em Educação Matemática), Orientador Márcio D'Olne Campos, Universidade Estadual Paulista, Rio Claro / Brasil.
- Clareto, S.* (2003), *Terceira Margens: um estudo etnomatemático de espacialidades em Laranjal do Jarí (Amapá)*, Tese (Doutorado em História da Ciência), Orientador Ubiratan D´Ambrosio, Instituto de Geociências e Ciências Exatas da UNESP, Rio Claro / Brasil.
- Clifford, W.* (1873; 1956), *The postulates of the science of space*, p552:567, In *The World of Mathematics, volume I*, Newman, J. (Ed.),, Simon & Schuster, New York, USA.
- Collins, R.* (1988), *Durkheimian Theory of Moral Solidarity*, p188:203, In *Theoretical Sociology*, Chapter 6, Harcourt Brace Jovanovich Publishers, New York / USA.

- Costa, A.* (2002), *Exclusões Sociais*, 3ª Edição, Série Cadernos Democráticos, Gradiva Publicações, Lisboa / Portugal.
- Cotton, T.* (2002), *Young, Gifted and Excluded*, Paper presented to Network 20: Research in Innovative Intercultural Learning Environments, http://brs.leeds.ac.uk/cgi-bin/brs_engine In *European Education Research Association Conference*, Lisbon / Portugal.
- Croissant, J. and Restivo, S.* (Eds.) (2001), *Degrees of Compromise: Industrial Interests and Academic Values*, New York Press, New York / USA.
- Crump, T.* (1990), *The anthropology of numbers*, Cambridge University Press, New York, USA.
- D'Ambrosio, U.* (1986), *Da Realidade à Ação: Reflexões sobre Educação (e) Matemática*, Summus Editora, Campinas / Brasil.
- ___ (1991) *Ethnomathematics and its Place in the History and Pedagogy of Mathematics*, p15:25, In *Schools, Mathematics and Work*, Harris, M. (Ed.),: The Falmer Press, Hampshire / UK.
- ___ (1994), Prefácio do livro *Com quantos paus se faz uma canoa*, Ferreira, M., MEC, São Paulo / Brasil.
- ___ (1996), *Educação Matemática: da Teoria à Prática*, Editora Papirus, São Paulo / Brasil.
- ___ (1997), *Transdisciplinaridade*, Editora Pallas Atenas, São Paulo / Brasil.
- ___ (1998), *Criatividade, para quê?*, Conferência proferida em 1998 no Congresso Internacional de Criatividade, em <http://sites.uol.com.br/vello/conferencias.htm>.
- ___ (1998a), *Mathematics and Peace: Our Responsi-*

Bilities, p67:73, In *Zentralblatt fur Didaktik der Mathematik – ZDM*, number 30, volume 3, Springer, Dordrecht / The Netherlands.

___ (1999), *Educação para uma Sociedade em Transição*, Editora Papirus, São Paulo / Brasil.

___ (1999a), Ethnomathematics and its First International Congress, p50:53, *Zentralblatt fur Didaktik der Mathematik – ZDM*, number 31, volume 2, Springer, Dordrecht / The Netherlands.

___ (1999b), Literacy, Matheracy, and Technoracy: A Trivium for Today, p131:53, In *Mathematical Thinking and Learning*, 1(2), Routledge, New York / USA.

___ (2001), Figura 1 - Dinâmicas Inter e Intra Cultural e a Busca de Valores Humanos, Palestra ministrada no Congresso Internacional Valores Universais e o Futuro da Sociedade, SESC – Vila Mariana, São Paulo / Brasil.

___ (2001a), The role of mathematics in Building up a democractic society, In *Mathematics and Democracy: The Case for Quantitative Literacy*, on http://www.maa.org/QL/pgs235_238.pdf.

___ (2002), Etnomatemática. Elo entre as tradições e a modernidade, Coleção Tendências em Educação Matemática, Editora Autêntica, Belo Horizonte / Brasil.

___ (2002a), Complexidade e seus reflexos na Educação, em <http://www.tvebrasil.com.br/salto/boletins2002/cre/index.htm>

___ (2004), A relevância do projeto Indicador Nacional de Alfabetismo Funcional – INAF como critério de avaliação da

qualidade do ensino de matemática, p31: 46, Em *Letramento no Brasil: Habilidades Matemáticas*, Fonseca, M. (org), Global Editora, São Paulo / Brasil.

___ (2007). Peace, Social Justice, Ethnomathematics, p25: 34, In *International Perspectives on Social Justice in Mathematics Education*, Monograph 1, Sriraman, B. (Ed), The Montana Mathematics Enthusiast, Montana / USA.

David (2000), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.

Demo, P. (2002), *Charme da exclusão social*, 2º Edição, Editora Autores Associados, Campinas / Brasil.

Donnadieu, G and Karsky, M. (2002), *La systématique: Penser et agir dans la complexité*, Éditions LIAISON, Paris / France.

Durkheim, É. (1893; 2002_1), *De la division du travail social*, Livre I, un document produit en version numérique par Jean-Marie Tremblay,
http://classiques.uqac.ca/classiques/Durkheim_emile/division_du_travail/division_travail_1.doc . Étude originalement publiée 1893, *De la division du travail social: étude sur l'organisation des sociétés supérieures*, Alcan, Paris / France.

___ (1893; 2002_2), *De la division du travail social*, Livres II et III, un document produit en version numérique par Jean-Marie Tremblay,
http://classiques.uqac.ca/classiques/Durkheim_emile/division_du_travail/division_travail_2.doc . Étude originalement publiée: 1893, *De la division du travail social: étude sur l'organisation des sociétés supérieures*, Alcan, Paris / France.

___ (1894; 2002), Les règles de la méthode sociologique, un document produit en version numérique par Jean-Marie Tremblay,

http://classiques.uqac.ca/classiques/Durkheim_emile/regles_methode/durkheim_regles_methode.doc, Étude originalement publiée 1894, Les règles de la méthode sociologique, Les Presses Universitaires de France, 16e édition, Paris / France.

___ (1897; 2002_1), Le suicide. Étude de sociologie, un document produit en version numérique par Jean-Marie Tremblay,

http://classiques.uqac.ca/classiques/Durkheim_emile/suicide/suicide_Livre_1.doc, Étude originalement publiée 1897, Le suicide. Étude de sociologie, Les Presses Universitaires de France, 2e édition, Collection: Bibliothèque de Philosophie Contemporaine, Paris / France.

___ (1897; 2002_2), Le suicide. Étude de sociologie, un document produit en version numérique par Jean-Marie Tremblay,

http://classiques.uqac.ca/classiques/Durkheim_emile/suicide/suicide_Livre_2.doc. Étude originalement publiée 1897, Le suicide. Étude de sociologie, Les Presses Universitaires de France, 2e édition, Collection: Bibliothèque de Philosophie Contemporaine, Paris / France.

___ (1898; 1970), Cours de science sociale, p23:48, En *La Science sociale et l'action*, Filloux, J. C. (Ed.), Presses Universitaires de France, Paris / France.

___ (1912; 1989), As Formas Elementares da Vida Religiosa, Tradutor Pereira Neto, J., Revisor Dalbosco, H., Editora Paulus,

São Paulo / Brasil. Étude originalement publiée 1912, Les Formes élémentaires de la vie religieuse. Le système totémique en Australie, Édition Alcan, Paris / France.

___ (1912; 1995), The Elementary Forms of Religious Life, Translation: Karen Fields, Free Press, New York / USA. The original publication 1912, Les Formes élémentaires de la vie religieuse. Le système totémique en Australie, Édition Alcan, Paris / France.

___ (1912; 2002_1), Les Formes élémentaires de la vie religieuse. Le système totémique en Australie, Livre I: Questions préliminaires, un document produit en version numérique par Jean-Marie Tremblay, http://classiques.uqac.ca/classiques/Durkheim_emile/formes_vie_religieuse/formes_elementaires_1.pdf, dans le cadre de la collection: "Les classiques des sciences sociales" http://www.uqac.quebec.ca/zone30/Classiques_des_sciences_sociales/index.html, l'Université du Québec, Chicoutimi / Canada. Étude originalement publiée 1912, Les Formes élémentaires de la vie religieuse. Le système totémique en Australie, Édition Alcan, Paris / France.

___ (1912; 2002_2), Les Formes élémentaires de la vie religieuse. Le système totémique en Australie, Livre II: Les croyances élémentaires, un document produit en version numérique par Jean-Marie Tremblay, http://classiques.uqac.ca/classiques/Durkheim_emile/formes_vie_religieuse/formes_elementaires_2.pdf, dans le cadre de la collection: "Les classiques des sciences sociales" http://www.uqac.quebec.ca/zone30/Classiques_des_sciences_sociales/index.html, l'Université du Québec, Chicoutimi / Canada.

Étude originalement publiée 1912, Les Formes élémentaires de la vie religieuse. Le système totémique en Australie, Édition Alcan, Paris / France.

___ (1912; 2002_3), Les Formes élémentaires de la vie religieuse. Le système totémique en Australie, Livre III: Les principales attitudes rituelles, un document produit en version numérique par Jean-Marie Tremblay, http://classiques.uqac.ca/classiques/Durkheim_emile/formes_vie_religieuse/formes_elementaires_3.doc , dans le cadre de la collection: "Les classiques des sciences sociales"

http://www.uqac.quebec.ca/zone30/Classiques_des_sciences_sociales/index.html, l'Université du Québec, Chicoutimi / Canada.

Étude originalement publiée 1912, Les Formes élémentaires de la vie religieuse. Le système totémique en Australie, Édition Alcan, Paris / France.

___ (1914; 2002), Le dualisme de la nature humaine et ses conditions sociales, Un document produit en version numérique par Mme Marcelle Bergeron, http://classiques.uqac.ca/classiques/Durkheim_emile/sc_soc_et_action/texte_4_15/dualisme_nature_humaine.pdf, dans le cadre de la collection: "Les classiques des sciences sociales"

http://www.uqac.quebec.ca/zone30/Classiques_des_sciences_sociales/index.html, l'Université du Québec, Chicoutimi / Canada.

Étude originalement publiée 1914, Le dualisme de la nature humaine et ses conditions sociales, En *Scientia*, XV, p206:221, Bologne / Italie.

___ (1915; 2002), La Sociologie, un document produit en version numérique par Jean-Marie Tremblay,

http://classiques.uqac.ca/classiques/Durkheim_emile/textes_1/textes_1_04/la_sociologie.html, dans le cadre de la collection:

"Les classiques des sciences sociales"

http://www.uqac.quebec.ca/zone30/Classiques_des_sciences_sociales/index.html, l'Université du Québec, Chicoutimi / Canada.

Étude originalement publiée 1915, La sociologie, extrait de *La Science Française*, Larousse et Ministère de l'Instruction publique et des Beaux-Arts, volume 1, 1915, p5: 14.

___ (1918; 2002), Le "CONTRAT SOCIAL" de Rousseau , un document produit en version numérique par Jean-Marie Tremblay,

http://classiques.uqac.ca/classiques/Durkheim_emile/Montesquieu_Rousseau/Rousseau/Durkheim_Contrat_social.doc, dans le

cadre de la collection: "Les classiques des sciences sociales"

http://www.uqac.quebec.ca/zone30/Classiques_des_sciences_sociales/index.html, l'Université du Québec, Chicoutimi / Canada.

Étude originalement publiée après la mort de Durkheim par Xavier Léon dans la *Revue de Métaphysique et de Morale*, tome XXV, 1918, p1:23 et 129:161, Paris / France.

Elizete (2000), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.

Esteves, A. (1999), *A Criminalidade na Cidade de Lisboa. Uma Geografia da Insegurança*, Edições Colibri, Lisboa / Portugal.

Faubion, D. (Ed.) (1994; 2000), *Power: the essential works of Foucault, 1974 – 1984*, *Rabinow, P.*, Series Editor, New York Press, New York / USA.

Ferreira, S. (1994), A importancia do conhecimento etnomatemático indígena na escola dos não-indios, p89:95, Em Em Aberto, ano

14, número 62, Brasília / Brasil.

<http://emaberto.inep.gov.br/index.php/emaberto/article/viewFile/935/841>

Ferrez (2000), Capão Redondo, Labortexto Editorial, São Paulo / Brasil.

Field, J. (1988), Perspective and the mathematicians : Alberti to Desargues, p236:263, In *Mathematics from Manuscript to Print 1300-1600*, Hay, C. (Ed.), Oxford University Press, London / UK.

FIPE – Fundação Institutos de Pesquisas Econômicas (2007),

Foucault, M. (1976), Histoire de la sexualité, volume I, La volonté de savoir, Gallimard, Paris / France.

___ (1975; 1997), Nietzsche, Freud and Marx, Tradutor Barreto, J., Princípio Editora, São Paulo / Brasil. Edition Originale 1975, Nietzsche, Freud et Marx, Theatrum Philosophicum, Paris / France.

___ (1978; 1994), Dialogue sur le pouvoir – Entretien sur le rapport entre discours et pouvoir, p464:477, 2^o ed., In *Dits et écrits 1954-1988*, volume III, 1976-1979, Defert, D. et Ewald, F. (Eds.), Gallimard, Paris / France.

___ (1970; 2000), A ordem do Discurso, 6^o edição, Tradução Lura Fraga de Almeida Sampaio, Edição Loyola, São Paulo / Brasil. Edition originale 1970, L'ordre du discours. Leçon inaugurale au Collège de France prononcée le 2 décembre 1970, Fruchud, F. et Foucault, D., Paris / France.

___ (1984), Des Espace Autres, In *Architecture/Mouvement/Continuité*, Paris / France.

___ (1994; 1997) The essential works of Foucault, 1954-1984, Paul Rabinow series editor, The New Press, New York / USA.

Edition originale 1994, choix à partir Dits et écrits, 1954-1984, Defert, D. et Ewald, F. (Eds.), assistance Jaques Lagrange, Gallimard, Paris / France.

___ (1995), *A Foucault primer: discourse, power and the subject*, Routledge, New York / USA,

___ (2000), *Arqueologia das ciências e história dos sistemas de pensamento*, Organização e Seleção de Textos Motta, M., Tradutora Monteiro, E., Forense Universitária, Rio de Janeiro / Brasil.

___ (1975; 2001), *Surveiller et punir: Naissance de la Prison*, 2^a ed., Gallimard Editor, Paris / France.

___ (1997; 2002), *Em Defesa da Sociedade: curso no Collège de France (1975-1976)*, 3^a ed., Tradutor Galvão, M., Martins Fontes Editora, São Paulo / Brasil. Edition originale 1997, *Il faut défendre la société*, Édition du Seuil, Paris / France.

___ (1979; 2004), *Microfísica do poder*, 20^a ed., Organizador e Tradutor Machado, R., Graal Editora, Rio de Janeiro / Brasil.

Freire, P. (1970), *Pedagogia do Oprimido*, 17^o Edição, Paz e Terra, Rio de Janeiro / Brasil.

Freire, P. (1997), *Última Entrevista em 17 de Abril*, on line, Parte I - <http://www.youtube.com/watch?v=DO75Pa6dXcg>, Parte II - <http://www.youtube.com/watch?v=8-kbIUQUltw&feature=related>, São Paulo / Brasil.

Gandhi, M. and Kripalani, K. (1958, 2005), *All Men Are Brothers: Autobiographical Reflexions*, Continuous International Publishing Group, New York / USA. Original version, *All men are brothers* –

- Life and Thoughts of mahatma Gandhi as Told in His Own Words.
Kripalani, K. (Ed.), Columbia University Press,
- Garaudy, R.* (1965), *Perspectivas do Homem*, Tradutor Ávila, R.,
Editora Civilização Brasileira S. A., Rio de Janeiro / Brasil. Édition
originale 1959, *Perspectives de l'Homme*, PUF, Paris / France.
- ___ (1977), *Para um dialogo das Civilizações: O Ocidente é um
Acidente*, Tradutores Palmerim, M. E Palmerim M.M., Editorial
Império Lda, Lisboa / Portugal. Édition originale 1977, *Pour un
dialogue dès Civilisation*, Éditions Denoel, Paris / France.
- Geertz, C.* (1973, 1989), *A Interpretação das Culturas*, LTC – Livros
Técnicos e Científicos Editora S.A., Rio de Janeiro / Brasil.
Original edition 1977, *The Interpretation Of Cultures*, Basic
Books, New York / USA.
- Geertz, C.* (1983), *Art as a cultural system*, In *Local Knowledge*,
p102: 109, Basic Books, Inc., New York / USA.
- Geni,* (2001), *Voices do Projeto Cultura da Criança em Situação de Rua
e Conceito de Espaço*, São Paulo / Brasil.
- Gerdes, P.* (1983), *Karl Marx: arrancar o véu misterioso à
matemática*, TLANU-Brochura número 5, Departamento de
Matemática e Física, Faculdade de Educação, Universidade
Eduardo Mondlane, Maputo / Moçambique.
- Giddens, A.* (1972, 2005), *Capitalismo e Moderna Teoria Social*, 6^o
Edição, Tradutora Cary, M., Editora Presença, Barcarena /
Portugal. Original edition 1972, *Capitalism and Modern Social
Theory*, Cambridge University Press, New York / USA:
- Grafmeyer, Y.* (1994, 1995), *Socioilogia Urbana*, Tradutora Parro, M.,
Publicações Europa-América – Lda, Mem Martins / Portugal.

Édition originale 1994, Sociologie urbaine, Éditions NATHAN,
Paris / France.

Hagen, M. (1986), *Varieties of Realism: Geometries of
Representational Art*, Cambridge University Press, New York /
USA.

Hall, E. (1969), *The Hidden Dimension*, Anchor Books, Doubleday &
Co., Inc., New York / USA.

Hall, S. (1992, 2001), *A Identidade Cultural na pós-modernidade*,
Tradutores Silva, T. e Louro, G., 5^o edição, Rio de Janeiro /
Brasil. Original edition 1987, *The question of cultural identity*, In
Modernity and its future, Hall, S. And McGrew, T. (Eds.), Politic
Press/Open University Press, London / UK.

Harley, D. (1996), *Justice, nature, and the geography of difference*,
Blackwell, Massachusetts / USA.

Heelan, P. (1997), *Space-Perception and the Philosophy of Science*,
University of California Press, London / UK. First Publications
(1983).

Hobbes, T. (1642; 1997), *The Citizen*, In *Constitution Societ*, Roland,
J. (Reed.), Liberty Library,
<http://www.constitution.org/th/decive.htm>. Exemplar 1642,
Elementorum philosophiae sectio tertia de cive, Cf. Macdonald
and Hargreaves, Paris / France.

IBGE (2006),
http://www.ibge.gov.br/home/estatistica/populacao/estimativa2006/POP_2006_DOU.pdf

- Inoue, A., Migliori, R., and D'Ambrosio, U.* (1999), *Temas Transversais e educação em Valores Humanos*, Editora Peirópolis, São Paulo / Brasil.
- Invernizzi, H.* (1980, 2003), *Aquarelas expostos em* http://www.itaucultural.org.br/aplicExternas/enciclopedia_IC/index.cfm?fuseaction=artistas_obras&cd_verbete=2014&cd_idioma=28555.
- Iturra, R.* (XXXX), *O Processo Educativo: Ensino ou Aprendizagem*, p20:50, In *Educação, Sociedade & Cultura*, número 1, Editora Afrontamento, Lisboa / Portugal.
- Laulau* (2000), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.
- Le Bras, H.* (2000), *Essai de Géométrie Sociale*, Édition Odile Jacob, Paris / France.
- Lefebvre, H.* (1991), *The Production of Space*, Basil Blackwell, New York / USA.
- Leite, S.* (1940), *Novas Cartas Jesuíticas (de Nóbrega à Vieira)*, Companhia Editora Nacional, São Paulo / Brasil.
- Lima, R.* (1997), *A Antropologia da Academia: quando os índios somos nós*, 2º Edição, EDUFF, Niterói / Brasil.
- Lins, P.* (1997), *Cidade de Deus*, Companhia das Letras, São Paulo / Brasil.
- Locke, J.* (1764; 2004), *The Second Treatise of Civil Government*, chapter II, Of the State of Nature. Electronic publish In: <http://etext.library.adelaide.edu.au/l/locke/john/l81s/>, last update visited – 2004.

Lucchini, R. (1988), *Enfants de la rue, survie et adaptation: projet de recherche dans trois pays de l'Amérique Latine*, Institut des Sciences Economiques et Sociales, article nombre 120, Fribourg / Suisse.

___ (1993), *A criança da rua e o consumo de droga no Brasil: reflexões sobre a toxicodependência*, In *Infância e Juventude*, número 4, p9:62, Lisboa / Portugal.

___ (1994), *The street children of Montevideo and Rio de Janeiro: elements for a differentiation*, Institute for Economic and Social Sciences, working paper n° 237, Fribourg / Switzerland.

___ (1996), *Theory, Method and Triangulation in the Study of Street Children*, p167:170, In *A Global Journal of Child Research*, volume 3, number2, Sage, London / UK.

Marx, K. and Engels, F. (1872; 1987), *Preface to the German Edition of 1872*, in *Manifesto of the Communist Party*, Pathfinder, New York / USA.

Maturana, H. (1998), *Emoção e linguagem na educação e na política*, UFMG Editora, Belo Horizonte / Brasil.

Maturana, H. and Varela, F. (1984; 2001), *A árvore do conhecimento: as bases biológicas da compreensão humana*, Tradução Humberto Mariotti e Lia Diskin, Editora Pallas Atenas, São Paulo / Brasil. Edición original 1984, *El árbol del conocimiento*, Editora Universitária, Santiago / Chile.

Mauss, M. (1904/5; 1974), *Ensaio sobre as variações sazonais das sociedades esquimó*, em *Sociologia e Antropologia*, volume 2, EPU, São Paulo / Brasil. Edition originale 1904/5, *Essai sur les variations saisonnières des sociétés Eskimos. Étude de*

morphologie sociale, En *l'Année Sociologique*, tome IX,
collaboration de Beuchat, H. , Paris / France.

Mead, G. (1934; 1967), *Mind, Self, & Society: From the standpoint of a social behaviorist*, 3^a ed., Morris, C. Ed., Chicago Press,
Chicago / USA.

MED/UNICEF (1993), *A criança em Situação Difícil – Manual de Informação para Professor do 1º Nível*, MED/UNICEF, Luanda / Angola.

Meirelles, F. e Mantovani, B. (2003), *Cidade de dues – Roteiro do Filme*, Editora Objetiva, Rio de Janeiro / Brasil.

Meireles, V. (1861), *Aquarela exposta no Museu Nacional de Belas Artes*, Rio de Janeiro / Brasil.

Meneses, R. (2006), *O Movimento e o Espaço Segundo Kant*, p61:74,
In *Revista de Filosofia*, volume 31, número 1, Servicio de Publicaciones de la Universidad Complutense, Madrid / España.

Mills, C. (1965), *A Imaginação Sociológica*, 4º Edição, Tradução Dutra, W., Zahar Editores, Rio de Janeiro / Brasil.

Milovanovic, D. (1997), *Postmodern Criminology*, Garland Publishing, New York / USA.

Monroer, A. (2005), *Interrogation machine: Laibach and NSK*, edited by Slavoj Žižek, MIT Press, Massachusetts / USA.

Morin, E. (1977), *Méthod: La nature de la nature*, Édiiton Seuil, Paris / France.

___ (2001), *A Cabeça Bem-feita: Repensar a Reforma e Reformar o Pensamento*, Tradutora Jacobina, E., 3^a ed., Bertrand Brasil, Rio de Janeiro / Brasil.

- ___ (2002), Pour une politique de civilization, in Arléa Poche nombre 76, Éditions Arléa, Paris / France.
- Nubia*, (2000), Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço, São Paulo / Brasil.
- Pablo*, (2000), Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço, São Paulo / Brasil.
- Passeti, E.* (Coord.) (1999), Violentados: Crianças, Adolescentes e Justiça, Editora Imaginário, São Paulo / Brasil.
- Pelletier, J. et Delfant, C.* (1969; 1997), Cidades e Urbanismo no Mundo, Tradutora Canape, S., Instituto Piaget, Lisboa / Portugal. Édition originale 1969, Ville et Urbanisme dans le Mond, Masson, Armand Colin/Masson, Paris / France
- Pinguinha*, (2000), Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço, São Paulo / Brasil.
- Pinxten, R., van Dooren, I. and Harvey, F.* (1983), Anthropology of Space, Penn State Press, Philadelphia / USA.
- Pires, E.* A Sociedade sem Centro – Diferenciação funcional e unidade política da sociedade, Autonomia 27, Azeitão / Portugal.
- Poincaré, H.* (1908, 2005), The relativity of Space, online In <http://www.marxists.org/reference/subject/philosophy/works/fr/poincare.htm>. Original edition 1897, La Relativité de l'Espace, p5151:65, Chapitre I, Livre II, In *Science Et Méthode*, Ernest Flammarion Ed., Paris / France. Un document produit en version numérique par Alan Blachair, <http://www.ac-nancy-metz.fr/enseign/philo/textesph/Scienceetmethode.pdf>
- Priscila*, (2000), Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço, São Paulo / Brasil.

___ (2001), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.

Ramos, F. (2002), *Análise Espacial de Estruturas Intra-Urbanas: O Caso de São Paulo*, Dissertação (Mestrado em Sensoriamento Remoto), Orientadores: Prof. Dr. Antônio Miguel Monteiro e Gilberto Câmara Neto, INPE, São José dos Campos / Brasil.
Disponível em 2004 - versão eletrônica

<http://www.obt.inpe.br/pgsere/Ramos-F-R-2002/publicacao.pdf>

Raucci, M. (2002), *Meninos de Rua: Modos de Vida e Perspectivas da Cidadania*, Dissertação (Mestrado em Sociologia), Orientador Mario Antonio Eufrazio, Faculdade de Filosofia, Letras e Ciências Humanas, Universidade de São Paulo, São Paulo / Brasil

Restivo, S. (1983), *The social relations of physics, mysticism, and mathematics*, Episteme (D. Reidel), volume 10; Pallas Paperback, Dordrecht / Neitherlands.

___ (1991), *The sociological worldview*, Blackwell, Boston, MA, USA.

___ (1992), *Mathematics in Society and History*, Episteme, volume 20, Kluwer Academic Publishers, Dordrecht / Neitherlands.

___ (1993), *The Social Life of Mathematics*, p247-78, In Restivo, S., Van Bendegem, J.P., and Fischer, R. (eds.), *Math Worlds: Philosophical and Social Studies of Mathematics and Mathematics Education*, SUNY Press, Albany / USA.

___ (1994), *Science, Society, and Values: Toward a Sociology of Objectivity*, Lehigh University Press, Bethlehem / USA.

___ and *Bauchspies, W.* (1996), How to Criticize Science and Maintain Your Sanity, p396-413, In *Science as Culture*, volume 6, Part 3, Number 28, Routledge, Oxford / UK.

___ (1998), Mathematics, Mind, and Society: an anarchist theory of inquiry and education, Proceedings of the International Conference in Mathematics Education and Society 1, In <http://www.nottingham.ac.uk/csme/meas/plenaries/restivo.html>

___ (2000), The cultural dynamics of science, in *Cultural Dynamics* number 12, volume 2, p131: 133, SAGE Publications, London / UK.

___ and *Loughlin, J.* (2000), The invention of science, in *Cultural Dynamics* number 12, volume 2, p135: 149, SAGE Publications, London / UK.

___ (2002), Romancing the Robots: social robots and society, Workshop on *Robots as Partners: An Exploration of Social Robots*, Lausanne / Switzerland.

<http://imtsg14.epfl.ch/socialrobots/papers/11-restivo.pdf>

___ (2003), Robots 'r' Us: The Local Production of Socially Intelligent Machines, Keynote Lecture, Hixon /Riggs workshop on Social Studies of Social Robots, Harvey Mudd College, March 27-30, Claremont / USA.

<http://www.rpi.edu/dept/sts/restivo/socialrobots/zurich.doc>

___ and *Bauchspies, W.* (2004), What does mathematics represent? A sociological perspective, In <http://www.rpi.edu/~eglash/isgem.dir/texts.dir/WillToMath.00.doc>.

___ (ed. in chief) (2005), *Science, Technology, and Society: An Encyclopedia*, Oxford University Press, Oxford / UK.

___ (2005a), *Theories Of Mind, Social Science, And Mathematical Practice*, in Van Bendegem, J. P. and Van Kerkhove, B. (eds.), *Perspectives on Mathematical Practices*, Kluwer, Dordrecht / Neitherlands.

___ and Croissant, J. (2008), *Social Constructionism in Science and Technology Studies*, p213-229, In *Handbook of Constructionist Research*, Holstein, J.A. and Gubrium, J.F. (eds), Guilford, New York / USA.

Rhomberg, C. (2004), *No There: Race, Class, and Political Community in Oakland*, University of California Press Lda, Los Angeles / USA.

Ribeiro, A. *Abrigos: condições das cidades e energia da cultura*, Edições Cotovia, Lisboa / Portugal.

Ribeiro, J., Domite, M. e Ferreira, R. (Orgs.) (2006), *Etnomatemática: papel, valor e significado*, Zouk, Porto Alegre / Brasil.

Roca, Z. (2000), *As "Crianças de Rua" em Angola*, Edições Universitárias Lusófonas, Lisboa / Portugal.

Rossato, G. (2003), *Menin@s de rua: Representações Políticas*, Editora Massoni, Maringá / Brasil.

Rousseau, J. (1762; 2002), *"Social Contract: or principles of political right"*, translated by G.D.H. Cole, public domain, electronic publish in: <http://www.constitution.org/jjr/socon.htm>. Edition originale 1762, *Du Contrat Social: ou Principes du Droit*

Politique, A. Amsterdam, Cher Mark-Michel Rey, Genève / Suisse.

Santos, B. de S. (2000), Para um novo senso comum: a ciência, o direito e a política na transição paradigmática, Editora Cortez, São Paulo / Brasil.

Santos Junior, D. (2007), Geografia do espaço percebido: uma educação subjetiva, Dissertação (Mestrado em Educação em Ciências e Matemática), Orientador Regis Alexandre Lahm, PUCRS, 280 f., Porto Alegre / Brasil.

Santos, M. (1978), Por uma Geografia nova, Hucitec-Edusp, São Paulo / Brasil.

___ (1978), Pobreza urbana, Hucitec/UFPE/CNPV, São Paulo-Recife / Brasil.

___ (2006), Por uma outra globalização: do pensamento único à consciência universal, 13^a ed., Record Editora, Rio de Janeiro / Brasil.

Serres, M. (1993, 1997), As Origens da Geometria, Tradutores Simões, A. e Pinhão, M., Terramar, Lisboa / Portugal. Édition originale 1993, Les Origines de la Géométrie, Éditions Flammarion, Paris / France.

Sheepers, I. (2004), Graffiti and Urban Space, in http://www.graffiti.org/faq/scheepers_graf_urban_space.html, Honours Thesis – University of Sydney, Sydney / Australia.

Silvano, F. (2001), Antropologia do Espaço: Uma Introdução, 2^o Edição, Celta Editora, Oeiras / Portugal.

Skovsmose, O. (2005), *Traveling Through Education: Uncertainty, Mathematics, Responsibility*, Sense Publishers, Rotterdam / The Netherlands.

Smith, A. (1776; 2001_1), *An Inquiry into the Nature And Causes of the Wealth of Nations, Book 1: Of the Causes of Improvement in the Productive Powers of Labour, And of the Order according to which its Produce is Naturally Distributed among the Different Ranks of the People*, an electronic version by Adam Smith Institute, <http://www.adamsmith.org/smith/won-b1-c1.htm>, London / England. Original edition 1776, *An Inquiry into the Nature And Causes of the Wealth of Nations*, 4 Volumes, Edinburgh / Scotland.

Smith, D. (1999), *Writing the Social: Critique, Theory and Investigations*, University of Toronto Press, Toronto / Canada

Spengler, O. (1918/1923; 1991), *The decline of the West*, Oxford University Press, Oxford / UK. Originalausgabe 1918, *Der Untergang des Abendlandes – Umriss einer Morphologie der Weltgeschichte*, Band 1: *Gestalt und Wirklichkeit*, Verlag Braumüller, Wien / Österreich, und Band 2: *Welthistorische Perspektiven*, Verlag C. H. Beck, München / Deutschland.

Srour, R. (1982), *A política dos anos 70 no Brasil*, Econômica Editora, São Paulo / Brasil.

Telmo, I. (1986), *A Criança e a Representação do Espaço*, Livros Horizonte, Lisboa / Portugal.

Toninho, (2000), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.

UNESCO, Childwatch Internations, and UNICEF, (1995), Directory of European Research and Documentation Institutions on Children's Rights, 1ª Edition, United Nations Educational, Scientific and Cultural Organization Press, Paris / France.

UNICEF (1988), Annual Report, UNICEF, New York / USA.

Valor (2003), Igualdade na diversidade, Jornal publicado a 26 de Junho, Edição Especial, 6 páginas, São Paulo / Brasil.

___ (2003), Educação como Negócio, Jornal publicado dias 4, 5 e 6 de Julho, Edição Final de Semana, 20 páginas, São Paulo / Brasil.

Varella, D., Bertazzo, I. e Jacques, P. (2002), Maré, vida na favela, Casa da Palavra, Rio de Janeiro / Brazil.

Veloso, C. (1978; 1992), Sampa, Em Circulandô Vivo, 19ª música, Polygram, Rio de Janeiro / Brasil.

http://www.caetanoveloso.com.br/sec_discogra_view.php?language=pt_BR&id=28. Gravação original 1978, Sampa, Em *Muito – Dentro da Estrela Azulada*, 7ª música, Polygram, Rio de Janeiro / Brasil

http://www.caetanoveloso.com.br/sec_discogra_view.php?language=pt_BR&id=17

Vithal, R. and Skovsmose, O. (1997), The End of Innocence: A Critique of "Ethnomathematics", p131:157, In Educational Studies in Mathematics, number 34, Kluwer, Dordrecht / The Netherlands.

___ (1998), Learning to Teach Mathematics at Tennyson House, in Proceedings of Mathematics Education and Society Conference, Nottingham University Press, Nottingham / UK.

<http://www.nottingham.ac.uk/csme/meas/discussions/vithal2.html>

Waldemir (2000), *Vozes do Projeto Cultura da Criança em Situação de Rua e Conceito de Espaço*, São Paulo / Brasil.

Weber, M. (1904/1905; 2005), *A Ética Protestante e o Espírito do Capitalismo*, 6ª Edição, Tradutores Bastos, A. e Leitão, L., Editorial Presença, Barcarena / Portugal. Originalausgabe in zwei Teilen 1904 und 1905, Die Protestantische Ethik Und der "Geist" des Kapitalismus, In *Archiv Für Sozialwissenschaft und Sozialpolitik*, Deutschland.

White, J. (1972), *The birth and Rebirth of Pictorial Space*, Faber and Faber, London / UK.

WHO (2000), *Working with Street Children*, 10 Modules, World Health Organization, Mental Health Determinants and Populations, Department of Mental Health and Substance Dependences, Geneva / Switzerland.

Whyte, W. (1980), *The Social Life of Small Urban Spaces*, Project for Public Spaces – Inc., New York / USA.

Žižek, S. (1994; 1996), *O espectro da ideologia*, p7: 38, In *Um mapa da ideologia*, Adorno, T., Contraponto Editora, Rio de Janeiro / Brasil. Original edition 1994, *Mapping Ideology*, Verso Press, London / UK.

___ (1994; 2005), *As Metástases do Gozo: Seis ensaios sobre a Mulher e a Causalidade*, Tradutor Pereira, M., Revisão Santo, J., Relógio D'Água Editores, Lisboa / Portugal. Original edition 1994, *The Metastases of Enjoyment: Six Essays on Women and Causality*, Verso Press, London / UK.

___ (1997; 2002), Multiculturalism or the cultural logic of multinational capitalism, In

http://www.infoamerica.org/teoria_articulos/zizek01.htm.

Original edition 1997, Multikulturalizem ali kulturna logika multinacionalnega kapitalizma, In *Razpol 10 - Glasilo Freudovskega polja*, Politika skozi psihoanalizo, Ljubljana / Slovenia.

___ (1997a), Desire: Drive = Truth : Knowledge, Umbr(a), online

<http://www.lacan.com/zizek-desire.htm>

___ (1998), Excerpt from A Leftist Plea for 'Eurocentrism', In

<http://www.egs.edu/faculty/zizek/zizek-a-leftist-plea-for-eurocentricism.html>. Original edition 1998, Excerpt from A Leftist Plea for 'Eurocentrism', In *Critical Inquiry Journal*, volume 24, number 4, University of Chicago Press, Chicago / USA.

___ (2000), The fragile absolute or, why is the Christian legacy worth fighting for?, Verso Press, London / UK.

___ (2002; 2003), Bem-vindo ao deserto do Real!: cinco ensaios sobre o 11 de Setembro e datas relacionadas, Tradutor Castanheira, P., Boitempo Editora, São Paulo / Brazil. Original edition 2002, Welcome to the desert of the Real! Five Essays on September 11 and related dates, Verso Press, London / UK.

___ (1917/2002; 2005), Às portas da revolução: seleção dos escritos de Lenin de fevereiro a outubro de 1917 / V. I Lenin, Tradutor dos textos de Slavoj Žižek de Pericás, L. e Rigout, F., Tradutor dos textos de Lenin Jinkings, D., Boitempo Editora, São Paulo / Brasil. Original edition 2002, Revolution at the Gates: Selected Writings of Lenin from 1917, Verso Press, London / UK.

___ (2006), *The parallax view*, The *Short Circuits* Series, The MIT Press, Massachsets / USA.

VOICES

SOME ASPHALT ACADEMICS'

"IMAGES & ACTIONS"

A non-formal space, where I am inviting some human beings to let their voices, as is possible to understand reading the follow invitation:

Dear Voices,
Queridas Vozes,

The end of my PhD arrived and so did the opportunity to open spaces, at the end of the thesis, to your voices.

O final do meu doutoramento chegou e com ele a oportunidade de abrir espaços, no final da tese, para as vossas vozes também chegou.

During the formal process of my PhD, I have met, or re-met, some voices that helped me a lot to construct the final document of this work. Some of you were present since my childhood, others I have met during my life, even a few days ago. However, what I am looking for is the quality of our meetings, conversations, music sessions, intellectual recognitions, corporal expressions, works, tea or beer times, street places... all of those based in the love that fed me in these meetings!

Durante o processo formal do meu doutoramento fui encontrando, e re-encontrando, algumas vozes que ajudaram-me muito a construir o documento final deste trabalho.

Alguns de vocês estavam presentes na minha infância, outros encontrei durante minha vida, mesmo que há dias atrás. Entretanto, o que procuro é a qualidade dos nossos encontros, conversas, sessões de música, reconhecimentos intelectual, expressões corporais, trabalhos, tempos de chás ou cervejas, lugares de rua... todos estes baseados no amor que alimentou-me nestes encontros!

In that sense, I am sharing with you some space of my thesis, which each one of you helped me to write! Therefore, I invite you to send me some words/drawings/pictures/poems or any kind of expression that you desire to expose when you think about these words (concepts) below, which are the roots of my work:

Neste sentido, estou dividindo algum espaço da minha tese, o qual cada um de vocês me ajudaram a escrever! Convido-vos a me enviarem algumas palavras/desenho/fotografias/poesias ou qualquer tipo de expressão que desejarem expor quando pensam sobre as seguintes palavras (conceitos) abaixo, as quais são raízes do meu trabalho:

- 1) Children Crianças
- 2) Space Espaço
- 3) Urban Streets Ruas Urbanas
- 4) Diversity Diversidade
- 5) Freedom of Knowledge Liberdade do Conhecimento

... or about what you want "to say" about children and mathematics education.
... ou sobre o que quiserem "falar" sobre criança e educação matemática.

It is very important to know that this space will be named "asphalt voices" and it will not be a space only for academic researchers... it will be a space to receive voices from everywhere, space of diversity!
É muito importante saber que este espaço chamará "vozes do asfalto" e não será somente um espaço para os pesquisadores acadêmicos... será um espaço para acolher vozes de qualquer lugar; espaço da diversidade!

It is not the end!
Isto não é o final!

Thank you very much for feeding me during this process,
Muito obrigada por me alimentarem durante este processo,

Moni
(31st, July 2008, by email)

On next pages are the academic voices, in a sensible received order:

ANA VIANA - PORTUGAL

A palavra a verter-se em mundo

Perdida num não espaço, uma parede. A ondular horizontalmente.
Parede pele anil, transparente. E, nela, palavras brancas. Murmúrio de silêncios a desprender-se da pele. Traduzindo palavras em mundo. Em lugar da pele.

Uma linha de luz e sombras

A linha é contínua. Os espaços intermitentes são apenas sombras que precisam ser iluminadas. O fundo é luz quente, que a pouco e pouco se transmite, até a linha também o ser. E resolver assim o paradoxo.

RODRIGO ROJAS – BRAZIL



PETER GATES – UK

Sometimes for me the words that describe how life is difficult for some make me very angry. To think of children on the streets and the associated loss of innocence and possibilities is a crime against humanity. But to think of knowledge being somehow "free" and a possible cause of liberation is also harmful. Oppression and exclusion are human acts and practices and a result of an inhumane world system. I fear "knowledge" on its own will not help us. Only collective action can.

RHETTA MORAN – IRELAND

- 1) Children Crianças THE FUTURE
- 2) Space Espaço IN REAL TIME: WHERE WE LIVE - AND TRY TO UNDERSTAND - OUR LIVES
- 3) Urban Streets Ruas Urbanas PACKED WITH MOVING PEOPLE
- 4) Diversity Diversidade COMPLEXITY
- 5) Freedom of Knowledge Liberdade do Conhecimento POWER TO THE PEOPLE

PRISCILA – BRAZIL

Passou tanto tempo e o que vivemos ficou pra sempre. Nossa voz pro mundo de um jeito que nunca foi. Isso fez de nós muito amigos, pra todo sempre e uma comunidade unida, até hoje rola muita coisa junta. O que conhecemos e vivemos ninguém tira de nós. (Essa frase tem que sair num lugar desse livro).

It cannot be denied that ethnomathematics was based on an emancipatory and critical attitude that promotes the emancipation and equality of discriminated groups (Powell and Frankenstein 1997). In line with the metaphor Gilligan (1982) uses we can put that ethnomathematics is the different voices in mathematics education. If we carry this emancipatory objective to education in general, we have to establish that the institutions that organize education do so from a viewpoint of emancipation of each child and because they postulate the equality of each child. This general idea of emancipation can also be found in the UNESCO's view on education. Moreover we see in its mission a tight connection with the socio-economic development, with working on an enduring and peaceful world, while respecting diversity and maintaining human rights. Education here is obviously connected with the political factor.

UNESCO believes that education is key to social and economic development. We work for a sustainable world with just societies that value knowledge, promote a culture of peace, celebrate diversity and defend human rights, achieved by providing education for all.

The mission of the UNESCO Education Sector is to:

Provide international leadership for creating learning societies with educational opportunities for all populations;

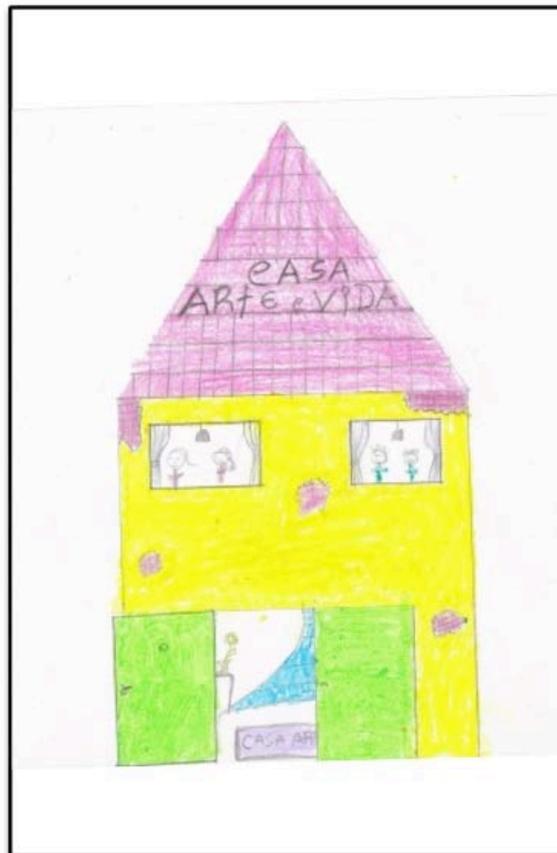
Provide expertise and foster partnerships to strengthen national educational leadership and the capacity of countries to offer quality education for all. (UNESCO 1948)

Taking into account these general stipulations we have to conclude that the explicit values of the general education objective connect to

the values of equal chances which are central within ethnomathematics (François and Van Kerkhove 2009).

- François, Karen; Van Kerkhove, Bart (2009) Ethnomathematics. An Inclusive Philosophy of Mathematics (Education). Philosophy of Mathematics: Sociological Aspects and Mathematical Practice. PhiMSAMP-3, Germany.
- Gilligan, Carol (1982). In a Different Voice: Psychological Theory and Women's Development. Harvard University Press, Cambridge.
- Powell, Arthur B.; Frankenstein, Marilyn (1997). Ethnomathematical Praxis in the Curriculum. In Powell, Arthur B.; Frankenstein, Marilyn (eds.) Ethnomathematics, Challenging Eurocentrism in Mathematics Education, State University of new York Press -SUNY, Albany, pp. 249-259.
- UNESCO (1948) Universal Declaration of Human Rights. <http://portal.unesco.org/education>.

RENAN LAPORTA – BRAZIL / PORTUGAL



MARTA TABARES – COLOMBIA

"Ser niños, es un espacio temporal donde se suman los sueños, se restan los sin sabores de los adultos, y como resultado de esa operación solo queda la felicidad de un mundo indescriptible. Por eso es importante hacer de esta ella una función eterna independiente de la suma de los años, la multiplicación de los problemas y la división de los seres que amamos"

CLAUDIO DE JESUS – BRAZIL



... no curso em agosto de 2001 com os professores indígenas Mebêngrokê, Panará e Tapajuna, propiciando a emergência das diferentes noções de espaço, geometrias e dentre outros que nem imaginamos. Esta foto retrata a postura de uma educadora que na primeira vez ao pisar em terras indígenas, tenta-se colocar no mesmo campo de visão do outro. Axé, te amamos!

Sal Restivo sings this song of Nietzsche's in praise of the freedom needed to inquire, the anarchy needed to do science.

Prince Vogelfrei
[Literally, "Prince Freebird."]

On a crooked branch I sway
On a knoll high above the sea:
A bird invited me to stay;
I flew to its nest to rest today,
And beat my little wings for me.

The white sea stretches, fast asleep,
It sleeps with me through each pain and hurt.
Forgotten aims and harbors deep,
I forget fear, praise, and punishment steep.
Now I fly after every bird.

Step upon step—this is not existence!
This pace is heavy and unrefined!
The breeze lifts me up without resistance:
I love it, on wings floating to the distance
I leave all birds behind.

Reason?—that is bad business:
Reason and tongue stumble just the same!
Flight teaches me a new art—yes,
I learn a more beautiful business,
Song, joke and the melody-game.

To think in solitude—that is wise.
To sing in solitude—that is foolish!
Hence listen to me: you'll hear my cries
Filling the quiet beneath the skies,
Among the birds, a beautiful wish.

SILVIA MACHADO – BRAZIL

querida criança Monica

que abriu espaço no meu coração desde o tempo em que debruçamos sobre a matemática e outros tantos assuntos mais importantes que esse e que me permitiu compartilhar da alegria de viver com o compromisso da procura da essência e da liberdade do pensamento!

LAMBRECHT SPIJKERBOER– NEITHERLAND

- 1) Children *Crianças* The most important generation for our near future. So help me to understand them
- 2) Space *Espaço* What we share
- 3) Urban Streets *Ruas Urbanas* Unfortunately, the home of the children you're working with, but not the home of mathematics education.
- 4) Diversity *Diversidade* From diversity we can learn to know ourselves better, if I differ from you, what is the meaning of my personal life, attitude, knowledge, behaviour,.... ??
- 5) Freedom of Knowledge *Liberdade do Conhecimento* Knowledge is not only what we tried to understand in school, but can also be the knowledge of different people in the (urban) streets to survive in that circumstances, so what knowledge to teach?

CRISTINA MARANHÃO – BRAZIL

liberdade-criatividade-eixo-potência-alegria-carinho-cuidado

MARGARIDA BELCHIOR – PORTUGAL

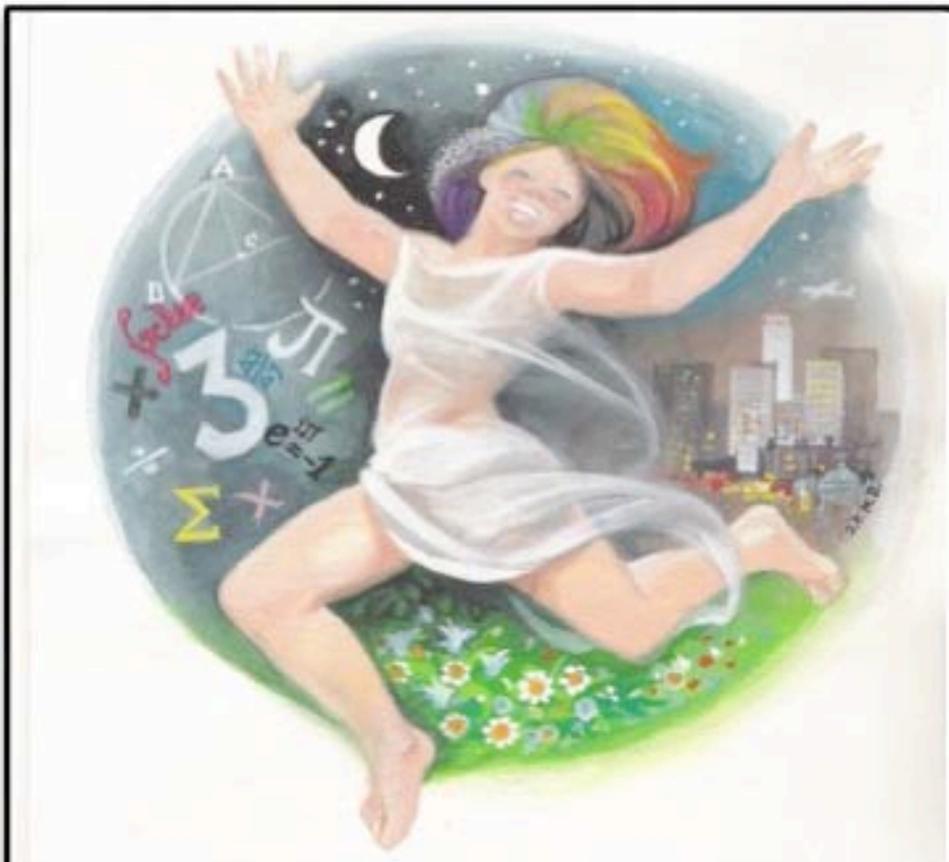
- 1) Children **Crianças** - a Vida a crescer!! o futuro em movimento!
- 2) Space **Espaço** - a nossa Casa! ... a Casa de todos nós!!
- 3) Urban Streets **Ruas Urbanas** - organizações de casas, prédios, movimentos - são de quem as usa!
- 4) Diversity **Diversidade** - uma fonte de criatividade e de conhecimento
- 5) Freedom of Knowledge **Liberdade do Conhecimento** - é para todos e construída por todos!

Crianças e educação matemática - a educação matemática só existe porque alguém vai à procura dela no meio das crianças ... mas as crianças estão sempre lá com a sua Vida, energia e curiosidades contagiantes - assim a sociedade e nós adultos saibamos cuidar delas e ajudá-las a cuidar da sua Vida, da sua energia e da sua curiosidade sem dar cabo delas!!

MARK BOYLAN – UK

- 1) Children **Crianças** - hope
- 2) Space **Espaço** - freedom
- 3) Urban Streets **Ruas Urbanas** can we reclaim them for joy, love, and community
- 4) Diversity **Diversidade** - humanities challenge and humanities potential
- 5) Freedom of Knowledge **Liberdade do Conhecimento** Yes!

José Pedro Barata – Portugal



Isto é o essencial da minha tese!

Mas parece-me que para o Doutoramento nas universidades a pessoa escreve muitos volumes de folhetos de estudo, trabalhos científicos, estatísticas, biografias, entrevistas, resumos, fichas, referências, e essa lista toda!

Por isso, penso limitar o meu doutoramento só com honras, na Universidade de Trás-os-Montes e Alto-Alentejo, (a Campolide), e passar ao lado do doutoramento prático mais!