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## **WASTE AND GLOBALISED INEQUALITIES**

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ISABELLA DE CARVALHO VALLIN,  
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**The Double Burden of Environmental Injustice in a  
Female Waste Pickers Cooperative in Brazil**

*ABSTRACT* This article examines the relationship between the environmental injustice and the consubstantiality present in everyday life of female waste pickers from a cooperative in Brazil. For the French materialist feminists perspectives, consubstantiality means intersection among class, race, and gender. In this case-study, were interviewed 16 female waste pickers of the Rose Cooperative in Flowers Garden Slum, City of São Paulo. In order to analyse the consubstantiality, three concepts were adopted: urban spatial segregation to understand class aspects; racial division of labour for race; and, sexual division of labour for gender issues. These three concepts are related to environmental injustice and form the framework applied to analyse waste pickers' housing conditions and workplaces. Environmental injustice in housing was identified. Environmental risks associated with the waste picking activity and the infrastructure conditions of the cooperative were also recognised. It has been observed that women are more exposed to risks on account of the double burden. The consubstantiality defines the daily life of the housing and working conditions of the female waste pickers. It was concluded that the female waste pickers are exposed to a 'double burden of environmental injustice': one related to housing risks and the other one to the precariousness of their work.

*KEYWORDS* gender and environment, consubstantiality, environmental injustice, sexual division of labour, female waste picker

## **I. Introduction**

Solid waste generation in big cities is one of the most significant global urban environmental conflicts (Wilson et al. 2012). In most countries of the Global South, especially in Latin America, Africa and Asia, large scale recycling became possible because waste sorting is a cheap labour: unemployed workers turn into waste pickers that accept low wages to survive in economic adversities (Samson 2009; De Pádua 2008). Besides that, waste picking is characterised as a precarious and unhealthy activity due to the working conditions. The exploitation of cheap labour and the resulting generation of profit for the recycling industries exacerbate the unequal distribution of the environmental costs and benefits related to recycling, demonstrating how the waste picker's work constitutes an issue of environmental injustice.

In this context, studying the Brazilian case is relevant because the precarious working conditions of the waste pickers is closely linked to the number of women and black people working in the area. According to the Brazilian National Movement of Recyclable Materials Waste Pickers (Movimento Nacional de Catadores de Materiais Recicláveis – MNCR; cf. MNCR 2014), approximately 70 per cent of the workers in this sector are women and represent 59 per cent of those working in cooperatives. The participation of blacks is 66.1 per cent of total workers (Silva et al. 2013). These data which may indicate a feminisation and racialisation in the sector (Cherfem 2014).

And then, the research questions is: how the environmental injustices inherent to waste picking activities are related to the massive presence of black women in the sector. Thus, this study aims to examine the relationship between environmental injustice and the French materialist feminism concept of consubstantiality, in the daily life of female waste pickers of cooperative in the city of São Paulo, Brazil.

The intersection between environmental justice and consubstantiality arises from the fact that both consider that social relations of class, race, and gender affect parts of the population in an unequal way. In this sense, the dialogue between these two theories becomes possible. While environmental injustice helps to identify environmental inequalities, the concept of consubstantiality helps to analyse the intersection between

these inequalities and social relations. It is assumed that the combination of these theories is consistent with the context of the daily life of female waste pickers. The hypothesis of this research is that the environmental injustice experienced by those women exceeds the limits of the waste picking activity; therefore, housing was also defined as analysis axes.

This study assumes a material perspective based on French materialist feminism (Kergoat 2010; Hirata 2014) and Environmental Justice (EJ) (Porto 2011; Acserald et al. 2004). Once the majority of conflicts in unequal societies still related to survivability of the individuals, it is understood that the material perspective is necessary to better understand these contexts. Further, the concepts of urban spatial segregation, racial division of labour and sexual division of labour complement the framework of this study. These concepts integrates the analysis of class, race and gender, and enable the connection between environmental injustice and consubstantiality.

Often, environmental injustice studies address class and race analysis, but few include gender (Unger 2008). Furthermore, in general these studies do an isolated analysis of social relations (Acserald et al. 2004). In these terms, this research contributes to the environmental justice field, pursuing an analysis that integrates gender through the consubstantiality concept.

The extended case study of Burawoy (1998) was adopted as a reference method. The case study was conducted during three years in the Rose Cooperative<sup>1</sup>. The cooperative is a group composed only of female waste pickers, located in the Flowers Garden Slum, a territory of the City of São Paulo.

This article is divided into three sections. The first one presents the research framework and background of the recycling chain and the waste pickers' cooperatives in Brazil. Secondly, the methodology adopted and the case study itself are exposed. In sequence, the results are presented through the axes of housing and work. Thus, the discussion was done regarding the existing similarities and differences in the daily life of women waste pickers, in which the intersection between environmental injustice and consubstantiality is evident. Finally, this study concludes that poor black women who work as waste pickers experience a 'double burden of environmental injustice': one related to reproductive work with a greatest exposure to risks in housing, and another with the precariousness and risks of the workplace.

## 2. Literature review

### 2.1 Framework: integrating inequality perspectives

One possibility for understanding the inequality between social groups is through an Environmental Justice perspective. An EJ approach, known as “environmentalism of the poor” highlights the fight against environmental impacts that threaten the poor in various ways (Martinez-Alier 2003). In addition, it considers the environment in terms of its material perspective, as “source and condition for sustenance” (Martinez-Alier 2003: 34). Even though this research is aligned with this perspective, it utilised Brazilian authors who address the work and health of workers (Acserald et al. 2004; Porto 2011).

The idea of Environmental Justice adopted in Brazil is given as a set of principles and practices. This set ensure that any social group, defined in terms of ethnicity, race or class, supports a disproportionate share of the negative environmental consequences of economic operations, federal, state, and local policy and programme decisions (Acserlad et al. 2004). The absence or omission of public policies are also considered questions related to EJ (Acserlad et al. 2004). In this way, environmental injustice is understood as a condition of unequal societies in which the greatest burden of environmental damage of development is directed towards the more vulnerable social groups (Acserald et.al. 2004).

Another way of analysing inequalities is through the consubstantiality concept. It establishes that the social relations of class, race and gender are intertwined. In other words, they are coextensive and mutually constructed with the same relevance (Kergoat 2010). It is important to note that consubstantiality concept (Kergoat 2010) differs from intersectionality concept (Crenshaw 1989).

Intersectionality refers to a transdisciplinary theory that aims to understand the complexity of identities and social inequalities through an integrated approach (Bilge 2009). While consubstantiality addresses class, race and gender as fundamental and transversal elements (Hirata 2014), intersectionality considers multiple social aspects beyond these three, such as age, religion, nation and ethnicity, and places them all on the same plane. Further, it emphasizes the gender-race relationship, putting social class on a less visible plane (Hirata 2014). Because this study has

its subject of analysis female waste pickers, it was necessary to adopt a work perspective. Hence, the concept of consubstantiality was taken as the central approach.

In order to facilitate the connection between the two theories, this study used three key concepts: urban spatial segregation, racial division of labour, and sexual division of labour. Urban spatial segregation can be understood as a process in which different social classes tend to live in different neighborhoods of the metropolis, functioning as a spatial mechanism that controls the displacement and time of individuals (Villaça 2011). In this dynamic, it can be noted that public resources are primarily directed to places where reproduction of capital is possible, as noble districts and central areas (Acserald et al. 2004).

It is assumed that urban spatial segregation is related to the racial division of labour, since most of the population living in peripheral areas and slums of Brazil are black (IBGE 2010). The idea of race arose from an Eurocentric worldview, in which the population was classified as the exploited (black) and the coloniser (white) (Quijano 2005). In this context, race and division of labour were structurally associated and reinforced each other, initially by through slavery, and these constitute the racial division of labour (Quijano 2005). This division establishes that there are positions for whites and positions for blacks, in which the former is better valued and recognised, while the latter is marked by subalternity and precariousness.

The reality of black women is very complex, since the sexual division of labour ensures that the reproductive, and less valued work is destined to women (Kergoat, 2010). While the productive work is destined to men (Kergoat, 2010). There are two organisational principles for sexual division of labour: a) separation, exists kind of works directed for men and other ones for women; b) hierarchy, in which the work directed for men is associated to a better 'status quo' than that directed for women (Kergoat, 2010). The accumulation of both reproductive and productive positions leads women to a double burden, which puts them at a disadvantage.

The poor are exactly the ones who are spatially segregated. In this way, it is demonstrated that the three concepts presented connect with one another. The racial and sexual division of labour are presented here



as a vector of urban spatial segregation, and ‘vice versa’. Furthermore, the intersection between racial and sexual division, and spatial segregation reinforces the difficulty of people achieving better positions. Finally, the intersection mentioned above promotes a feedback among social and environmental inequalities that can shape environmental injustice situations, as presented in this case-study (figure 1).

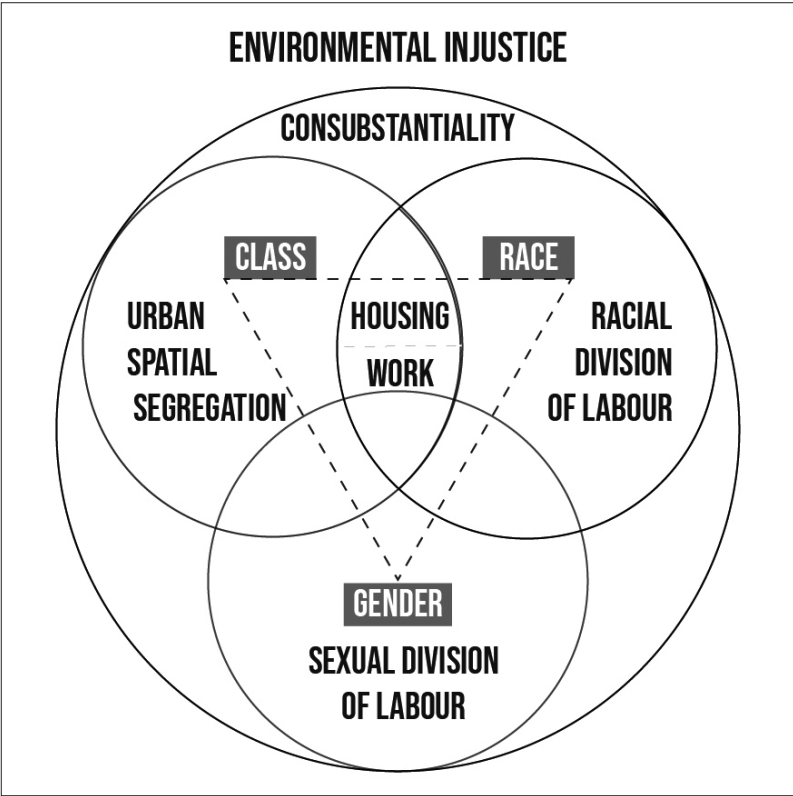


Figure 1: Key conceptual framework of this study  
 Source: own elaboration

## 2.2 Context

In Brazil, spatial segregation plays an important role in the shaping of urban space (Villaça 2011). Most of the residents of slums areas in the country are black (IBGE 2010), which can be considered an inheritance from the Brazilian colonial period and its slave roots (Pádua 2002). Due to the slavery abolition, work positions were created. Consequently, in the early twentieth century, a few decades after the slavery abolition, immigrant people (in general from Europe and Asia) came to Brazil. They started to work in positions previously occupied by slaves, both in cities and in the countryside (Pádua 2002). In this process, paid and privileged work were associated with white people, while black people became marginalised and underemployed, remaining vulnerable and extremely poor (Hasenbalg/Silva 1999). Because of the few existing opportunities, an educational and salary gap was created between white and black people. In the following centuries, few blacks managed to ascend to the middle and upper classes (Hasenbalg/Silva 1999), and the vast majority were segregated in marginalized residential areas and positions. This process implied in disadvantages in terms of access to education and the formal labour market (Hasenbalg/Silva 1999). In summary, in Brazil the class structure was established by racial oppression and it accentuated the mechanisms of racism, which since then have been constantly updated (Hasenbalg/Silva 1999).

The slums are “segregated spaces, where the highest environmental loads are concentrated for discriminated and low-income populations” (Bullard/Johnson 2000: 26). It can also be understood that the slums are territories marked as “sacrifice zones”, in other words, they are areas with high deprivation. Slums are places without basic infrastructure, with risks, dangers, which concentrate incidences of environmental injustice, and where the poorest are forced to live (Bullard/Johnson 2000). Accordingly, Davis (2006) states that “such sites are poverty’s niche in the ecology of the city, and very poor people have little choice but to live with disaster” (Davis 2006:121f.).

However, even in the slums, which are segregated spaces, another spatial segregation occurs. Typically, in Brazilian slums, the households headed by black people are the ones with worst conditions of access to public service, such as the general network of water, energy, sewage and garbage collection (Bonetti/Abreu 2011). The precarious or non-existent

access to these services configures an “iniquitous ecological distribution” (Acserald et. al. 2004). This iniquitous distribution exposes population-wide illnesses, such as amebiasis, hepatitis A, tuberculosis, dengue, and toxoplasmosis, among other diseases (Davis 2006). In addition, due to economic factors, the women’s housing, especially that of black women, in the slums’ territories occur in the most precarious areas, and are exposed to environmental risks (Tavares 2015).

Although there are specificities within the space and the population living in the slums, they cannot be considered as singular and standardized. Slums are “urban spaces where a dialectical relationship between resistance processes and socio-spatial segregation are established” (Tavares 2015: 19). The emergence of slums can be understood as a resistance movement in the face of real estate speculation and urban development projects that limit the access of low-income and ethnic groups to live in central areas of the city. Due to this limitation the groups became displaced to the outskirts (Tavares 2015: 19).

Many workers are disadvantaged, as regards both their work and housing environment. In this dynamics, the individuals who receive the least advantage of production are precisely those most exposed to environmental degradation and risks. Exclusion from the formal market has led to part of this group working in waste picking.

The recycling chain in Brazil is essentially structured in three stages: *recovery* (collecting, sorting, pressing and baling of recyclable materials); *reevaluation* (processing of the material and production of intermediates); and *transformation* (processing of the recovered materials to be transformed into new products). Recyclable materials pass from the waste pickers to the scrap merchants, from them to jobbers and, finally, to the recycling industries. At each step, value is added to the recyclable material (Gonçalves-Dias 2009). The waste pickers are the fragile link in the chain, since they do not take part in the waste recovery stage. Besides, the recycling market is configured as an oligopsony, whereby a small number of companies absorb the recyclables and dictate conditions and prices to the waste pickers.

Approximately 43 per cent of the waste pickers in Brazil work collectively (Silva et al. 2013). The cooperatives are self-managed organisations which claim to follow the Solidarity Economy principles and operate in the stage of recovery of materials in the recycling chain. In relation to the handling

of materials, working with waste picking is associated with several physical, chemical, and biological risks, making waste pickers more vulnerable to health problems such as dermatitis, infections, worms, and autoimmune diseases (Galon/Marziale 2016). Moreover, workers are exposed to possible occupational accidents due to the handling of sharp materials, inhalation of toxic gases, and ergonomic factors associated with posture and weight overload (Galon/Marziale 2016). So, it is noted that the risks are inversely proportional to the economic gains assigned to the waste pickers in the recycling chain (Gonçalves-Dias 2009). While these workers are those who have the most strenuous work, with risks that directly affect their health, they are the ones who get the lowest incomes.

Despite the precariousness, the organisation of the waste pickers through MNCR led to several achievements that have made their experience unprecedented in the world, mainly due to the programmes and public policies focused on this category. Inclusion of the waste pickers in the National Policy on Solid Waste was an important advancement for their recognition (Brasil 2010). In addition, some cooperatives were hired for municipal selective collection service. In this sense, we agree with Leubolt and Romão (2017) that waste pickers' cooperatives in Brazil represent a social innovation. However, there are some challenges to be considered for the effective social inclusion of these workers and their life quality. Firstly, there are no strategies that favour the progress of waste pickers in the recycling chain which would also allow cooperatives to participate in the more advanced stages of *reevaluation* and *transformation* of materials. Secondly, the degree of inclusion of the waste pickers in the selective collection depends directly on who occupies the municipal public power structure and its interests (Godoy 2015). Furthermore, the fact that the waste picker's work is not regulated and considered informal, still allows its exploitation by the industries. Simultaneously, the work of the waste pickers is appropriated by the State (Wirth 2013).

The fact that the majority of workers organised in waste pickers cooperatives are women is due in particular to the typical flexibility for absences and delays in these organisations, making it possible to combine reproductive and productive work (Cherfem 2014). However, this malleability results in contradictions. The absences corroborate the persistence of the precariousness of women's work, since the more women are absent from

work, the less productive the cooperative becomes, and the lower their income can be (Wirth 2013). Even if incomes are low and work is precarious, women 'accept' to work in these conditions due to the lack of other alternatives to reconcile the double burden (Wirth 2013).

Moreover, in Brazil, while men work in the press and transport stages of materials (better valued and paid jobs), women are predominant in the material sorting stage (the stage which is most devalued, poorly remunerated and highly exposed to occupational risks). The allocation of women to a specific function in the productive process is directly related to a biologizing speech in which the minuteness and dexterity of women are naturalised, making them apt for such functions (Wirth 2013; Kergoat 2003). On the other hand, the material transport and pressing functions are conceived of as masculine jobs, due to the demand for greater physical strength and the use of machinery such as presses and forklifts (Wirth 2013; Kergoat 2003).

This leads to an impasse: on the one hand, the most important step in the recycling chain is sorting, because it is at this stage that garbage is transformed into residue and economic and environmental value is added to the materials. On the other hand, it is precisely the sorting, the most devalued and worst paid stage of the production chain, which is the work performed by women.

Contradicting this logic, women have been articulating and appropriating activities that are considered masculine. Even in this context, the permanence of the sexual division of labour and the need to discuss and deepen this issue in the cooperatives should not be disregarded. As Wirth (2013) puts it, it must be recognised that the sexual division of labour is not only a construction, but also a structuring social organisation that imposes itself on each cooperative.

### **3. Methodology**

This study has adopted a qualitative exploratory approach as a descriptive-analytical study (Denzin/Lincoln 2000) using the Extended Case Study method (Burawoy 1998). Two techniques of data collection were used in order to perform the information triangulation: the narrative inter-

view (Hollway/Jefferson 2008) and observation as a technique for collecting primary data, and surveying documents as secondary data (IBGE 2010). The field diary was also a relevant tool adopted to validate observation. The narrative interviews followed the script in which stimulus questions were made in three axes: life trajectory, trajectory in the slum and trajectory in the cooperative. Sixteen interviews were conducted, which represented all the women who worked at the cooperative at the time. The cooperative was tracked for a period of three years, from May 2013 to April 2016. The Narrative Analysis technique was used to analyse the data (Fraser 2004).

The area studied was the Flowers Garden Slum, located in the East Zone of the city of São Paulo in Brazil. The East Zone has the worst income distribution in the City of São Paulo (IBGE 2010). The low supply of positions forces the population to move to the living area of the wealthy to find employment, which leads to a process of appropriation of the travel time of these workers by the upper classes (Villaça 2011). These characteristics influence the East Zone to be the poorest large region of the metropolis and, therefore, one of the most segregated (Villaça 2011). According to the data of the last demographic census, there are 4,052 people residing in the Flowers Garden Slum, and 66 per cent declared themselves to be black (IBGE 2010).

The Roses Cooperative is located in this territory and constitutes a group of female waste pickers organised by women resident in this slum. The Roses Cooperative has existed since 2010. The cooperative was self-built and has a precarious infrastructure. Rose Cooperative was chosen as a case study because it allowed combining the dimensions of housing and work, since both are in the same territory.

## **4. Results**

### **4.1 Environmental injustice in the household**

The landscape of Flowers Garden Slum is sloping and mountainous and, in some parts, declivitous and steep, and two streams pass through the area (SVMA/SEMPLE 2002). Given the environmental conditions of the region, the slum presents characteristics of geomorphological risk:

namely landslide. In addition, a portion of the slum lies just below high voltage transmission lines, which poses risks to the safety and health of the population living in that territory. It is important to highlight that the section of the population that is not exposed to the geomorphological risks suffers the risks associated with the electromagnetic field. This causes the great majority of the population living in the slum to be exposed to some type of risk, as can be seen in Figure 2.

When asked what the main problems in the slum are, most respondents answered that it is sanitation. In the Flowers Garden Slum, most of the population uses the sewage ditch (44 per cent) or the streams (44 per cent). The absence of basic sanitation was noted in the interview, as follows: “For me, the biggest problem is sewage. Everything falls into that river, so it is harmful, right? On the upper side there is an open sewage and many kids have already fallen in there. Besides, it was very disgusting to pass by and see all that filth stuff and that bad smell” (Interview 1).

Another big sanitation problem is the garbage collection. There are few garbage dumpsters in the slum. Because of this, garbage is everywhere throughout the slum. “The problem is that there are few trash dumpsters for a lot of people, it gets filthy. Here, nobody recycles anything, and I think that’s pretty crazy, you know? We work with recycling, but our trash, our recycled material here from the slum goes all to the landfill or to the river.” (Interview 2)

We can observe in this speech of a waste picker a great contradiction, in which precisely those who work with waste are those that do not have their materials recycled, due to the lack of public policies of selective collection in the slum. Even more problematic is the lack of proper waste collection in these territories. The sanitation and garbage problems generate several diseases and infections that compromise residents’ health. Moreover, as the focus of the problem is not solved, the diseases tend to be recurrent.

Among the interviewed (16), the heads of households and blacks (7) have the most precarious housing and live close to the streams, while white and black women with spouses (9) are in a relatively better situation, living in houses made of bricks or in less vulnerable places. When questioned about why they live in those places, all of them replied that it was because they found the lowest prices to rent houses. As they do not have partners to share their living expenses, those places appeared as the best deal for them.

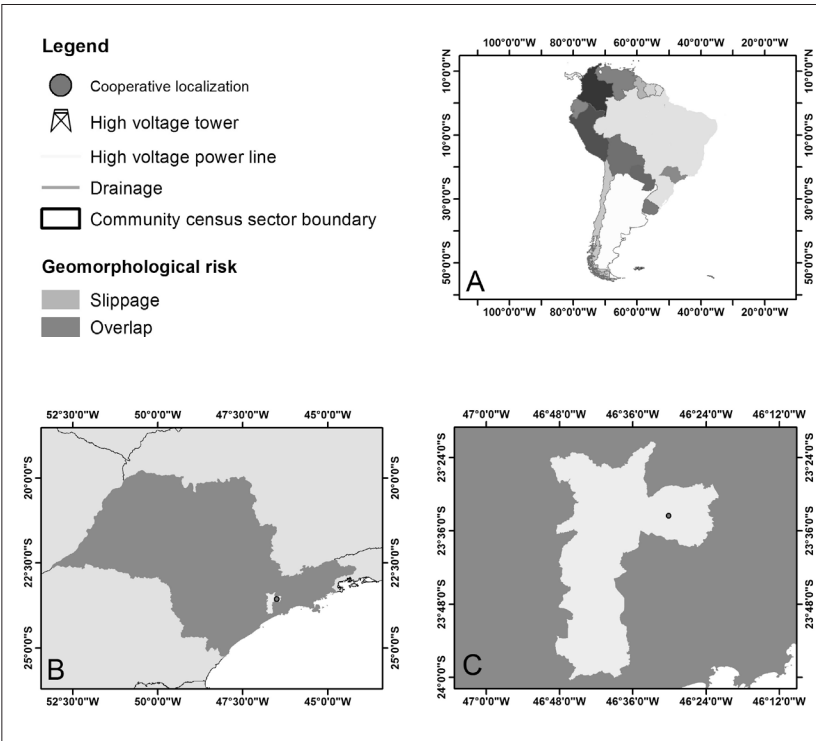


Figure 2: Geomorphological risks and high-voltage lines in the Flowers Garden Slum. *Source: Data from IBGE (2010)*

Nine of the women interviewed were born and raised in The Flowers Garden Slum. Although some of the women have previously lived in other places, the great majority lived most of their life in other slums. The one who lived the shortest time there, has lived in The Flowers Garden Slum for 12 years.

Four female waste pickers had already lived in neighborhoods with better infrastructure until their families became unemployed and were unable to remain in those neighborhoods. However, it was noted that this occurred only with white women. In the case of the black waste pickers, the phenomenon of living in slums areas crosses several generations. Even





amongst the ones who had previously lived elsewhere (3), these were other slums areas. This fact evidences the connection between class and race of those who live in the slums of Brazil.

The following statements note the obstacles to changing this situation. “Because here in the community the rent is cheaper, right? Outside is very expensive. I pay BRA 300.00 (EUR 70.02) for two rooms, there’s no other place I can get that price, so that’s it, I know the City Hall can get us out of here, but what can we do? I have no husband to help me” (Interview 3). “I left Barra Funda because there they destroyed the slum, they said it was dangerous to live there, they gave some money to the people,

to people to save. Then my cousin said there was a shack here to sell and I came here” (Interview 4).

As noted, the Interviewed 3 does not have the financial resources to live in a place other than the slum. In addition, interviewed 4 left an area of risk to live in another area of risk. In this way, it can be understood that Interviewed 3 and Interviewed 4, as well as most women under the same conditions, are in a situation of permanent risk. Ideally this scenario would change when the economic condition of these women increases. However due to the factor of class, race and gender, the scenario of segregation remain an obstacle to be surpassed.

The major part of the population from the Flowers Garden Slum are black, and are exposed to geomorphological risks, electromagnetic field, and the absence of basic sanitation. Therefore, this population carries a disproportionate environmental burden as compared to other social classes and races. Thus, this characterises a life of daily environmental injustice. In addition to these factors, it was also observed that the women are more exposed to environmental risks than men.

The daily routine of the interviewees consists, in brief, of waking up early, getting their children ready, taking them to schools and daycare centres, working in the cooperative, going home and washing clothes, cleaning the house, and cooking. After that, picking children up from schools and daycare centres, bathing and feeding the children, cleaning the house, and preparing children’s backpacks and uniforms for the next day. As one of the interviewees said, “I finally go to sleep”. It was observed that this routine differs greatly if compared to the female waste pickers’ male partners. Men wake up early and go to work, mostly downtown, come back at the end of the day, go to the bar, play football, go home, eat dinner and go to bed.

The interviewed women reported spending an average of five hours a day on reproductive work, while their spouses spent an average of 0.6 hours. Regarding productive work, women reported spending eight hours a day and their spouses, on average, nine hours, as can be seen in the Table 1.

Reproductive work (hours / day)		Productive work (hours / day)	
Women	Men	Women	Men
5	0.6	8	9

Table 1: Average daily amount of hours devoted to productive and reproductive work by female waste pickers and their spouses.

*Source: own elaboration*

The discrepancy between the hours spent by women compared to men doing household chores is unfair between genders. However, women also reported that, given their responsibilities to their homes and children, they spent more time in the slum, almost never leaving that territory. On the other hand, they said that their spouses spend the day outside, returning only at night to the slum.

This dynamic suggests that the injustice associated with the sexual division of labour is also an environmental injustice, since these women end up being exposed to the environmental risks associated with housing. Other studies (Tavares 2015; Neumayer/ Plümper 2007) also demonstrate the greater vulnerability of women to environmental risks, such as landslide, due to reproductive burden. Evidence indicates that impoverished women living in slums have a greater burden of domestic activities and a greater burden of risk exposure as compared to men. Therefore, the reproductive burden of these women is also a burden of environmental injustice.

#### **4.2 Environmental injustices in the workplace**

The Roses Cooperative, located at the entrance of the Flowers Garden Slum, is situated in a flat region outside the geomorphological risk area, but exposed to the risk of high voltage lines. However, the structure of the cooperative constitutes another risk for its members. The cooperative has two floors with a mezzanine and occupies an area of 24x36m, with its structure entirely made of timber and medium density fiberboard (MDF). In its cover there are aluminum plates that, on hot days, cause an intense thermal discomfort. On the other hand, on cold days, and due to the gaps between the structures, women are exposed to low temperatures. In the area where the municipal truck dumps the material, also known as ‘the

mount', women work under rain and sun without any protection. Many women have had sunstrokes because of this.

The cooperative has electric power; however, it is not connected directly to the general network. Some of the improvised wiring is peeled and exposed, posing a fire hazard. In addition, the sanitation of the cooperative restrooms is a rudimentary septic tank, with imminent risk of soil and water contamination. Due to the gaps between the pieces of wood, pigeons have nested in the structures and, throughout the day, they perch above the heads of the women, near the ceiling. This animal is a vector of several diseases, such as salmonellosis and meningitis. In addition, it is common for women to find dead animals among the materials, such as rats that are vectors to serious infections, such as leptospirosis.

It was noted that, during the three years in which the cooperative was tracked, sharp materials caused the most frequent accidents at work. Several of the women presented scars near the neck, legs, and arms, due to cuts. Also, they reported risks related to hospital materials, such as syringe needles, that appears among the recyclables. Women use the basic Personal Protective Equipment, such as gloves and boots for work that is available for carrying out their activities. They just do not use them when there is no money to buy them.

It has been noted that there are environmental risks associated with waste picking, due to the handling of the materials and the precarious working conditions. In addition to the risks to which they are exposed, waste pickers are exploited by middlemen and the recycling industry, thus earning low wages. In the case of the interviewed, their incomes vary from BRL650 to BRL800 (approx. EUR 150 to EUR 187,50), with an average of four dependents, and most of the women (10), are head of household.

Regarding sexual division of labour, it was observed that among the 16 women, only two were married to male waste pickers. It was observed in the interviews, that the two women complained about their responsibilities when compared with those of their partners. "They earn more because we had, besides to work full day, look after the kids and take care of the house. We come back home and have to cook dinner, wash the dishes, clean the house and a lot of housework, and they don't. They take shower, rest in the sofa and wait there till the food is done" (Interview 5). "I had to cook every day, wash his dirty underwear and endure that nasty breath. And if I didn't

want to do it all it would be because I supposedly had an affair. And I still had to hear that he earned more and worked more than me. So, in the end I am better alone” (Interview 4).

These statements explain the extent of the double burden of women, but also the sexual obligation and the dislike of doing these tasks. It was also observed that, due to the childcare obligation, women’s productive capacity is affected, which in turn means smaller incomes compared to men performing the same job. Thus, female waste pickers have their productive work devalued and their reproductive work is turned invisible.

Maternity plays an important role in the interviewees’ identity. Low expectations about the future in teenage years directly contributed to the female waste pickers becoming pregnant, abandoning studies, and then becoming pregnant again. Among the 16 members of the cooperative, 13 gave birth during this time of their lives. There is a repetitive cycle in the trajectory of the female waste pickers families, once their mothers and grandmothers also abandoned their studies due to pregnancy in their teenage years. This fact contributes to keep the pre-existing exclusion of poor women from the formal labour market and the persistence of their poverty for generations.

Furthermore, there seems to be a tendency of repetition of family life trajectory to female entry in the activity of the waste picking, as both parents and siblings of female waste pickers, for the most part, work in the construction industry. Comparing the work carried out by the sons and daughters of the female waste pickers, a gender pattern was identified. Among the seven female waste pickers who have children over 19 years old, it was observed that the sons are unemployed, imprisoned, or work in other professions such as bricklayers, waiters, drivers, and security workers. None of the sons are waste pickers, while the daughters, for the most part, are either housewives or waste pickers. Only two out of the 11 daughters worked in another activity: one in the metallurgical industry and one as a health agent.

There seems to be a broader outlook for men who have the same race and class as female waste pickers. At first, they do not think about working with waste picking, because they expect to get some better work. According to one interviewee, her son, who was raised in the waste landfill, is totally averse to the idea of working as a waste picker. “My boy curses me, when

I tell him to work with me. He says: 'I'd rather be unemployed, I'll get a job soon, I'm not good at messing up in waste, not at all'" (Interview 4).

Moreover, because women spend more time in the slum because due to their household duties, the cooperative has a much greater appeal than just the financial aspect. Even though there are several reasons that have led women to pick waste, one element in common is that they found in the activity a relatively safe and long-lasting way to obtain income and to reconcile productive tasks with reproductive ones. Seen in this way, one can reflect that, while the man seeks a job, mainly for the remuneration it brings, the woman looks for an alternative that guarantees her some income, but also flexibility. Potentially, this is the reason why women accept the precarious job conditions and thus represent the majority of employees in the waste picker's cooperatives in Brazil. Therefore, these social forms of appropriation and exploitation which lead to the exposure of women to environmental risks in workplace, culminate in the condition of environmental injustice associated with their work.

Regarding race, no racial division of labour was observed in the dynamics of the cooperative, since women perform the same activities and are remunerated in the same way, which creates a sense of equality among all of them and silences racial issues. At the same time, women find it difficult to identify themselves as black and even to recognise the other women as black. Some interviewees believed that most waste pickers in the cooperative were white. They recognise each other as "pardo" ("morenas" in Portuguese). After being explained the characteristics of each race, the women came to identify themselves as black. However, even after this new perception, no discussion of racial issues in the cooperative was observed.

Although no differences were observed in the cooperative, it was possible to identify them during the interviews. Three main groups were identified: 1) Waste pickers who had worked in dumps and in the streets; 2) Waste pickers who had had other work prior to the cooperative; and, 3) The ones who had never worked before (who were housewives).

The group of waste pickers who worked in dumps consisted of five black people and one white person. In general, they began the activities of waste picking during childhood and in the company of relatives. Because the early initiation in waste picking, they are the ones who have spent the

most working time in activity. They have the lowest levels of education, are illiterate, or have only incomplete elementary schooling. They all worked uninterruptedly throughout their lives, even during pregnancy. In this group, all women are heads of families. The strategy adopted to reconcile the double burden was by taking children with them to work (collecting waste in streets).

The double burden was not the main factor that led them to work in the cooperative, but rather the desire to increase their income and avoid urban violence. According to these women, their incomes were lower when they worked on the streets (approximately BRA 500.00 or EUR 117.16). It was also reported that during their work on the streets they have suffered attempts of sexual abuse and violence.

Five of the women interviewed had other work prior to waste picking. These women are three blacks and two whites. Their previous occupations were as house maid, cleaning lady, cook, and dressmaker helper. These women had to commute to downtown, taking on average two and a half hours of travel. Others got jobs in the East Zone region, but they still needed to take buses, and spent an average of an hour and a half commuting. For these working women, distance was one of the great causes of conflict, because they could not be there on time to pick up their children at schools and daycare centres, while having to pay other women to take care of them, which had a direct impact on their wages and their maternal identities. In addition, because jobs were often far away, women were often absent when needed to take their children to the doctor or to resolve family issues. For this reason, after staying for a few months in the jobs, either they were fired or quit.

Some of the women were better paid in the activities they had before waste picking. However, all of them said they preferred working in the cooperative in order to be close to their homes. This was because it facilitated their routines with their reproductive work and reduced transport and the costs of caregivers for their children. The male partners of women waste pickers also experience urban spatial segregation and take about the same time (two hours) to commute to their jobs. However, because they do not have the responsibility of the reproductive work, they end up having greater stability in their jobs and do not have as much pressure with the necessary time for their travel.

Although urban spatial segregation impacts working men and women, the women are most affected, and reveals important contradictions in the world of precarious work. It was observed that female waste pickers leave a better paid job in downtown for a job with lower income and in precarious conditions, but closer to their houses, which can represent a gain in their life quality.

Five women, three white and two black, were housewives before working as waste pickers. They are the ones that have the best schooling and the ones who have spent the least time in the area, from two years to a few months. For them, working in the cooperative initially represented an income supplement, since they were married and their partners financially supported the household. Many said they felt lonely for spending all day at home, but they did not want other jobs where they would not be able to take care of their children. When families and friends talked about the cooperative as a flexible workplace where they could eventually be absent to look after their child, they accepted. For them, the work brought autonomy and self-esteem. “It is the issue about our own appreciation, as a woman and owner of my life; now I can spend my own money the way I want. When I started to work in the Cooperative I changed my vision of life, I started to want to conquer my own things and value what I have” (Interview 6). “For me it is very important to work, I can’t only stay at home anymore. It is great to work, and besides all the difficulties, I really like it” (Interview 7).

This sense of accomplishment is related to the change in the women’s life structures allowed by the work in the cooperative. On the one hand, the continuity in the cooperative may represent a limitation of possibilities, but, on the other hand, it represents the achievement of not being merely a housewife. For these women, it represents an important space of socialisation and opportunity.

## **5. Discussion**

It can be seen due to urban spatial segregation, the whole population of Flowers Garden Slum is exposed to some type of risk. The dynamics of the segregation ensures that the more the population is in “economic despair”,



the less freedom individuals have to live in safe places and reject jobs that could eventually adversely affect their health (Acserald et al. 2004) This mechanism was well illustrated when some waste pickers indicated that they did not have enough income to live in other places. Furthermore, there were also cases of waste pickers that were removed from other slums because of risks associated with living there, but, without enough money, they eventually had to returned to live in slums. This indicates an important limitation of possibilities and a situation of permanent risk, indicating a process of environmental injustice in housing.

Urban spatial segregation also has a direct effect on the working conditions of individuals that live in peripheral areas (Villaça 2011) The population living in these territories is marked by a consubstantiality of social relations, which excludes them from the formal labour market and pushes them to accept the most precarious jobs. The appropriation of the waste pickers' workforce is profitable for those who own the means of production in the recycling chain. They transfer the negative externalities of the production process to the waste pickers, profiting from the degradation of their bodies, exposing them to environmental risks. In this logic, there is a kind of "environmental surplus value", whereby the capital accumulates through the appropriation of environmental benefits (Acserald et al. 2004).

Therefore, waste pickers do not have the same purchasing power as those who generate the waste they collect. Thus, in one hand a small social segment with high consumption patterns and an ultra-intensive appropriation of natural resources (Acserald et al. 2004). On the other hand, the waste pickers remain below of the consumption patterns required for a decent quality of life and still suffering from the undesirable risks of working with waste. In addition, the work carried out by waste pickers mitigates the problems created by the excessive waste generation of the high purchasing power group. This dynamic indicates an environmental injustice in the work of waste pickers.

However, it was also noted that the daily experience of environmental injustice is differentiated amongst those who experience it. The results of this study show that the experience of women in slums differs from that of men, due to the sexual division of labour. The unpaid reproductive work performed by women is often invisible and favours their staying

in the private space of their homes (Hirata 2014). In the context of this study, the reproductive work leads women to spend more time in the slum while almost never leaving the territory, which makes them most exposed to environmental risks. Thus, besides their overloading with child care and housework, there is also an overload of environmental damage. This demonstrates the intertwining of the reproductive work of these women with the environmental injustice they experience.

It was also recognised that this reproductive work favours the entry and remain of women in waste picking, even following a pattern of family trajectory. Since waste picking is a flexible job that allows the reconciliation of reproductive and productive work, it becomes an attractive option for women. Even in informal jobs, the working conditions of black men are better than those of black women (Cherfem 2014). This is especially due to the sexual division of labour, in which women's work is more undervalued (Kergoat 2003). These elements can explain the why there is a greater pressure on black women to work as waste pickers, instead of black men, in the Cooperative of Roses. In addition, there are several risks inherent to waste picking and it was also possible to identify several risks related to the infrastructure of the Rose Cooperative. Considering these elements, an environmental justice case was configured for female waste pickers. Therefore, there is also an interweaving of environmental injustice with the productive work of the waste pickers.

The crossing between environmental injustice and consubstantiality shows that the more imbricated the class, race, and gender relations are, the greater is the oppression and the environmental burden, in the case studied here, for the female waste pickers. The double burden placed upon these women ends up also causing them to suffer environmental injustices in their productive work and greater exposure to risks in the household, forcing them to experience what we called in this study “the double burden of environmental injustice”.

In addition, differences between the waste pickers themselves were also identified. In the dynamics of the cooperative, no racial division of labour was observed. This may be associated with the women's own difficulty in identifying themselves as black. This phenomenon can be understood as a consequence of the great racial discrimination existing in Brazil, which interferes in how individuals identify themselves as black people

(Hasenbalg/Silva 1999). In this context, few blacks self-declare themselves as such. However, because of social conditions, low income, low schooling and the phenotypic traits of the black population, they also cannot identify themselves as white (Cherfem 2014).

However, differences were noted in the individual trajectories of the interviewees. Most of the workers in the Cooperative are black, but the white ones have better schooling and a shorter working experience as waste pickers. Most of the white workers live with partners, have a higher family income, and are located in areas with less risk in the slums, as compared to the black families. It was also found that the black women who had previously worked in dumps and on the streets are the most vulnerable, since they have been exposed to the risks associated with the activity for their entire lives. Considering also that they are the most impoverished women and the ones who have the worst housing conditions in the Flowers Garden Slum, it is possible to say that they are those who most intensely experience the double burden of environmental injustice.

However, despite the situation of environmental injustice that permeates work in the Roses Cooperative, it was also observed that what had been a burden later became an opportunity. Working in the cooperative facilitated the double burden of female waste pickers because the following factors: a) better working conditions (related to safety) and income; b) to escape of the long commutes to the previous jobs; c) financial autonomy; d) possibility of socialisation for those who had been housewives before the activity. For these women who were already exposed to risks and a condition of environmental vulnerability, the cooperative represents better conditions for dealing with the challenges of their daily lives. Thus, the activity of waste picking should not simply be condemned because of the risks associated with the activity, but also needs to be better structured and organised in order to guarantee adequate working conditions for those who live from this activity.

Although this study deals with a single case study, the literature reveals that the reality of the female waste pickers presented here reflects the daily lives of poor black women under the same conditions around the world, especially those from the Global South. The double burden of environmental injustice experienced by them is inherently local, but its root lies in global structural economic inequality.

- 1 The real names of the cooperative and the slum were kept anonymous to preserve and respect the female waste pickers interviewed.

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## List of interviews

- Interview 1: slum dweller/waste picker [descripton, A.C.P.], 25 years old, white, 10/14/2016, translated by authors.
- Interview 2: slum dweller/waste picker [descripton, M.C.S.], 37 years old, black, 10/14/2016, translated by authors.
- Interview 3: slum dweller/waste picker [descripton, J.M.], 36 years old, black, 10/14/2016, translated by authors.
- Interview 4: slum dweller/waste picker [descripton, H.D.S.], 48 years old, black, 10/21/2016, translated by authors.
- Interview 5: slum dweller/waste picker [descripton, F.C.B.], 48 years old, black 10/21/2016, translated by authors.
- Interview 6: slum dweller/waste picker [descripton, V.S.], 31 years old, white 10/28/2016, translated by authors.
- Interview 7: slum dweller/waste picker [descripton, R.E.F.], 25 years old, black 10/28/2016, translated by authors.

*ABSTRACT Dieser Artikel untersucht den Zusammenhang zwischen Umweltgerechtigkeit und der Konsubstantialität im Alltag von Müllsammlerinnen einer Kooperative in Brasilien. Zu diesem Zweck wurden 16 Müllsammlerinnen der Rose Cooperative im Flower Garden Slum, São Paulo, befragt. Zur Analyse der Konsubstantialität werden drei Konzepte herangezogen: räumliche Segregation in Städten zum Verständnis von Klassenaspekten, rassifizierte Arbeitsteilung zur Untersuchung von Rassismus und vergeschlechtlichte Arbeitsteilung für die Analyse von Geschlechterverhältnissen. In Bezug auf Umweltgerechtigkeit bilden diese drei Konzepte den Rahmen für die Analyse von Umweltbelastungen auf Grund der Wohnsituation sowie Umweltrisiken in Zusammenhang mit der Müllsammeltätigkeit und den Infrastrukturbedingungen innerhalb der Kooperative. Es wurde festgestellt, dass Müllsammlerinnen aufgrund ihrer Doppelbelastung verstärkten Umweltrisiken ausgesetzt sind: Einerseits im Zusammenhang mit den Wohnverhältnissen und andererseits mit der Unsicherheit ihrer Arbeit. Dabei bestimmt die Konsubstantialität von rassifizierten, vergeschlechtlichten und Klassenverhältnissen das tägliche Leben der Bewohner\_innen von Flower Garden und die Arbeitsbedingungen der Müllsammlerinnen.*

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